Board Workshop (7/23/13)
A-2209 (a)-(e)
Deadline: 7/16/13 by 12 noon

CALIFORNIA Water Boards

Central Coast Regional Water Quality Control Board

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Via Electronic Mail
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RECEIVED
7-16-13
SWRCB Clerk

DATE: July 16, 2013

TO: Ms. Jeanine Townsend
Clerk to the Board
State Water Resources Control Board

Michael Thomas
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Date: 2013.07.16 11:07:08 -07'00'

FROM: Michael Thomas
Assistant Executive Officer
CENTRAL COAST REGIONAL WATER QUALITY CONTROL BOARD

SUBJECT: **COMMENTS TO SWRCB/OCC FILE A-2209(a)-(e) – JULY 23, 2013 BOARD WORKSHOP**

The Central Coast Regional Water Quality Control Board (Central Coast Water Board) appreciates the time and effort of the State Water Resources Control Board (State Water Board) to address the critically important water quality issues in the Central Coast Region. It is clear that the State Water Board takes these issues seriously, as evidenced by your June 6, 2013 Draft Order regarding the Central Coast Water Board's Conditional Waiver of Waste Discharge Requirements for Discharges From Irrigated Lands, Order No. R3-2012-0011, (Agricultural Order).

We appreciate the Draft Order's confirmation of the severity of groundwater and surface water quality conditions resulting from agricultural discharges, including the significant impacts to drinking water aquifers due to the discharge of nitrate from fertilizers. We also appreciate the Draft Order's support of our efforts to address nitrate in groundwater, and of the Central Coast Water Board's stakeholder process and our effort to provide extensive opportunities for public input during the development of the Agricultural Order.

The Draft Order weighs many of the same factors that challenged the Central Coast Water Board. For example:

1. The urgent needs of disadvantaged communities and domestic well owners who are exposed to polluted drinking water versus the need to provide growers with sufficient time and flexibility to adapt and make iterative improvements over time.
2. The uncertainty and variability that growers face in implementing management practices versus the regulatory need to demonstrate pollutant load reductions and reasonable progress in achieving water quality improvement.

3. The growers' desire to minimize reporting and liability versus the regulatory need for information to effectively implement the program and prioritize follow up actions.

These issues are not easily addressed and we appreciate your concern for the reasonable interpretation and implementation of the Agricultural Order to ensure water quality improvement and the protection of beneficial uses.

COMMENTS

In general, our comments can be grouped into three main issues:

1. Defining compliance;
2. Requiring sufficient monitoring and reporting to respond to the severity of water quality conditions and impacts to beneficial uses;
3. Ensuring efficient and effective implementation of the Agricultural Order;

We provide comments on each issue below, followed by recommended language to address the issue. Our comments also identify certain significant conclusions in the Draft Order that we strongly support. We have not attempted to comment on all aspects of the Draft Order, especially if our position is neutral.

ISSUE 1: Defining Compliance

Draft Order page 45, "Good Faith Efforts"

The Draft Order changes "compliance" from achieving and maintaining water quality standards[1] to "making good faith efforts" (page 45 of the Draft Order, regarding Agricultural Order Provision 82). Such a standard is not implementable or enforceable. It is impossible to prove whether a grower is acting in good faith or not. The phrase "good faith efforts" is subjective and dependent on individual growers' time, resources, and level of effort, and potentially their state of mind and perspective on regulation. "Good faith efforts" might also fail to take into account the severity of the water quality degradation and threat to human health.

With respect to the efforts of the dischargers, the Water Code specifically provides for consideration of the behavior of a discharger – good faith or not – in the context of enforcement of violations. For example, in determining the amount of civil liability, the Water Boards must take into account, for example, "the degree of culpability," "voluntary cleanup efforts undertaken," and "such other matters as justice may require". (Wat. Code, §13351.) Whether a person is acting in "good faith" is an enforcement issue, and is not an adequate substitute for compliance with water quality objectives or other provisions of the Agricultural Order. Dischargers can objectively demonstrate compliance by engaging in the iterative process of effectively controlling waste discharges.

[1] The terms "water quality standards" and "water quality objectives" are both defined in the Agricultural Order. We defined the term "water quality standard" to mean any applicable federal or state water quality standards or objectives, numeric or narrative, regarding groundwater or surface water, and including the California Toxics Rule and National Toxics Rule (Agricultural Order, Attachment A, ¶70, pp. 93-94.) We use the term "water quality standard" here as defined in the Agricultural Order.

There are approximately 4,000 individual farms covered by the Agricultural Order. While many growers are implementing efforts to reduce pollutant loading and achieve water quality standards, some growers are not making adequate progress. The Agricultural Order must include requirements that are clear enough to allow the Water Boards to take enforcement action in those cases where growers are not reducing pollutant loads or otherwise demonstrating and reporting progress. Even-handed enforcement is essential in achieving water quality improvement, but also in creating a level playing field within the industry. "Good faith efforts," which has no regulatory definition, will not further these goals.

The Central Coast Water Board's intent was to make the Agricultural Order consistent with the State Water Board's Non-Point Source (NPS) Policy, which states: *A NPS control implementation program's ultimate purpose shall be explicitly stated. Implementation programs must, at a minimum, address non-point source pollution in a manner that achieves and maintains water quality objectives and beneficial uses, including any applicable anti-degradation requirements."* (Key Element 1, pp. 11-12.) The NPS Policy further states that *"Where a RWQCB determines it is necessary to allow time to achieve water quality requirements, the NPS control implementation program shall include a specific time schedule, and corresponding quantifiable milestones designed to measure progress toward reaching the specified requirements."* (Key Element 3, p. 13.)

The Agricultural Order implements the NPS Policy. For example, it sets forth the goals to ultimately achieve and maintain water quality objectives and beneficial uses and includes milestones designed to measure progress with water quality objectives and other conditions of the Order.

In many cases, growers cannot achieve compliance with water quality standards immediately. The intent behind the Agricultural Order was to require reductions in pollutant loading and improvements in water quality over time, and to require reporting of information that demonstrates this result. We understand the fear that growers will be subject to immediate enforcement despite their genuine "good faith" efforts to make improvements if those efforts are not successful in the short term, and discharges continue to cause or contribute to exceedances of water quality standards. It is important that the Central Coast Water Board be transparent about how it will evaluate compliance.

The Central Coast Water Board received many comments expressing concerns that growers would be subject to enforcement if they did not immediately meet water quality standards. In response, the Central Coast Water Board repeatedly stated that growers were not expected to achieve water quality standards immediately[2]. This is reflected in the Agricultural Order itself:

- "Dischargers must implement, and where appropriate update or improve, management practices, which may include local or regional control or treatment practices and changes in farming practices to effectively control discharges, meet water quality standards and achieve compliance with this Order." (Finding 10, p.4.)

- "If the discharger fails to address impacts to water quality by taking the actions required by this Order, including evaluating the effectiveness of their

[2] AR File Nos. 228, 233, 337, and 343.

management practices and improving as needed, the discharger may then be subject to progressive enforcement and possibly monetary liability." (*Ibid.*)

- "The Central Coast Water Board recognizes that dischargers may not achieve immediate compliance with all requirements." (Finding #2, Attachment A, p. 41.)

- "In cases where dischargers are participating in effective local or regional treatment strategies, and individual on-farm discharges continue to cause exceedances of water quality standards in the short term, the Executive Officer will take into consideration such participation in the local or regional treatment strategy and progress made towards compliance with water quality standards in evaluating compliance with this Order." (Finding 11, p.4.)

- The Agricultural Order identifies the multiple types of information the Central Coast Water Board will use to determine compliance. (Finding 15, p.6, and Condition 82, p.32.)

The Central Coast Water Board determined that the Agricultural Order itself and "compliance" must *ultimately* be based on achieving water quality standards. However, we understand that language revisions may be necessary to clarify that we are requiring reasonable pollutant load reductions and progress toward achieving water quality standards via iterative efforts. We are proposing revisions to the Draft Order to clarify that the Central Coast Water Board expects dischargers to comply through the use of the iterative process as set forth in the NPS Policy and to further clarify that the Central Coast Water Code recognizes that dischargers are not expected to achieve immediate compliance with water quality objectives.

Recommendation #1:

We recommend the following text to replace the Draft Order language (p. 45) regarding Condition 82 of the Agricultural Order:

To be considered in compliance with water quality standards and/or water quality objectives and Provisions 84 – 87, dischargers must implement management practices that prevent or reduce discharges of waste that are causing or contributing to exceedances of water quality standards. To the extent practice effectiveness evaluation or reporting, monitoring data, or inspections indicate that the implemented management practices have not been effective in preventing or reducing waste discharges, the Discharger must revise and implement modified management practices to prevent or reduce discharges of waste that are causing or contributing to exceedances of water quality standards. A Discharger will not be subject to immediate civil liability (penalties) if the Discharger demonstrates that it is timely engaged in an iterative process of implementing, evaluating, and modifying management practices to prevent or reduce discharges of wastes, and is otherwise in compliance with this Order (e.g. fees, monitoring, and reporting).

In addition, we recommend a revision to Finding #2, Attachment A as follows:

The Central Coast Water Board recognizes that Dischargers may not achieve immediate compliance with all requirements and this Order does not require

Dischargers to achieve immediate compliance with water quality standards and/or water quality objectives. Table 4 of the Order sets forth a Time Schedule for Milestones, including achieving water quality standards in waters of the State or of the United States that are indicators of progress towards compliance, but not considered enforceable deadlines.

ISSUE 2: Requiring Sufficient Monitoring and Reporting to Respond to the Severity of Water Quality Conditions and Impacts to Beneficial Uses

Draft Order page 22 - 24, "Farm Plan/Practice Effectiveness and Compliance"

The Draft Order makes revisions to Condition 44.d and Condition 44.g of the Agricultural Order regarding information dischargers include in the farm water quality management plan (Farm Plan). The Central Coast Water Board intended that some of the information included in the Farm Plan was to be reported to the Central Coast Water Board in the Annual Compliance Form for Tier 2 and Tier 3 farms. Thus, revisions to Condition 44 may have an effect on required reporting in the Annual Compliance Form as discussed below[3].

The Draft Order uses the term "standard farming practices" (p. 22) in two ways -- with reference to management practices, and with reference to determining the effectiveness of management practices.[4] We realize that this is confusing and needs to be corrected. On page 22, the Draft Order refers to "standard farming practices" in a way that could be considered to limit the management practices that could be used to control waste discharges: *During the stay proceedings, the Central Coast Water Board testified that Provision 44.g does not dictate how the discharger would evaluate practice effectiveness and that it was the Board's expectation that dischargers could meet the requirements of 44.g by reporting on* ***standard farming practices****, such as evaluating irrigation efficiency to determine water use, combined with visual inspection and record keeping.* [Emphasis added.] It was not our intent to limit management practices to control waste discharges to "standard farming practices," and we recommend against any language that would suggest this limitation. Growers may implement management practices that are not necessarily considered standard farming practices to control waste discharges, and in some cases management practices not considered standard may be necessary to address some of the more severe water quality impacts. Our intent was to say that the methods used to evaluate the effectiveness of management practices can be "standard effectiveness evaluation methods."[5] The term "standard farming practices" should not be used in the context of evaluating effectiveness. It is the effectiveness evaluation that can be "standard," not necessarily the management practices.

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[3] The Central Coast Water Board requests the State Water Board to take official notice pursuant to Title 23, Cal. Code Regs. § 648.2, of the Annual Compliance Form (Attachment 1). The Annual Compliance Form was issued by the Executive Officer after adoption of the Agricultural Order and is not part of the Central Coast Water Board's administrative record for the Agricultural Order. The Annual Compliance Form was included in the documents submitted by the Central Coast Water Board for the Stay Hearing on August 30, 2012 and was modified at the direction of the State Water Board after the stay proceedings on September 19, 2012 in this matter and is further addressed in the Draft Order and is appropriate to be used in consideration of the Draft Order.

[4] The Agricultural Order uses the term "management practices" separately from "farming practices." (Agricultural Order, ¶¶ 10, 67; Attachment A, Part A, ¶22.) A farming practice may also be a management practice.

[5] AR File No. 021 and AR File No. 224 describe methods and self-evaluation techniques for growers to assess effectiveness and to determine whether water quality changes were attributed to management practice implementation.

Also on page 22, the Draft Order states: *In its Response to the Petitions, the Central Coast Water Board has recommended that the State Water Board provide clarifying language for Provision 44.g, consistent with its position that practice effectiveness verification may rely on* ***standard farming practices****, visual inspections, and record keeping.* [Emphasis added.] As above, we intended that the methods used to determine the effectiveness of management practices could be "standard effectiveness evaluation methods." The term "standard farming practices" should not be used.

Again on Page 24, the Draft Order revises the Agricultural Order Condition 44.g as follows: *A description of the method and schedule for assessing the effectiveness of each management practice, treatment, and control measure identified in accordance with subsection (f). Such methods for assessing effectiveness are expected to be based on* ***standard farming practices****, visual inspections, and recordkeeping.* **[Emphasis added.]**

Recommendation #2

We recommend that the Draft Order replace the revised language for Condition 44.g with the following:

> **g. A description of the method and schedule for assessing the effectiveness of each management practice, treatment, and control measure identified in accordance with subsection (f). Such methods for assessing effectiveness are expected to be based on standard effectiveness evaluation methods, visual inspections, and recordkeeping. Dischargers may also choose more advanced methods for assessing effectiveness (e.g., water quality sampling, discharge characterization, reductions in pollutant loading, etc.).**

Reporting Effectiveness Information

As part of the Annual Compliance Form required reporting for Tier 2 and Tier 3 farms, the Central Coast Water Board includes multiple options for growers to choose to report methods for assessing the effectiveness of management practices, treatment and control measures. Growers can select the assessment method appropriate for their farms based on their unique characteristics and report those methods on the Annual Compliance Form. However, discussions during the State Water Board Stay Order Hearing deleted some management practice evaluation methods and made reporting the outcomes of such assessment methods "optional" rather than mandatory[6]. The effectiveness evaluation and reporting requirements are consistent with Water Code section 13269(a)(2) and the NPS Policy. The effectiveness evaluation and the reporting of the information to the Water Board are fundamental elements of an effective program. These requirements are vital for the Central Coast Water Board to evaluate the growers' compliance with the iterative process as discussed above.

Recommendation #3

We recommend revising Part 3A (1g) of the Tier 2 and Tier 3 MRP to explicitly require reporting of the methods used to assess the effectiveness of management practices implemented and the outcomes of such assessments to evaluate progress towards achieving water quality improvement, as follows:

[6]See Attachment 1

g. Identification of specific farm water quality management practices completed, in progress, and planned to address water quality impacts caused by discharges of waste including irrigation management, pesticide management, nutrient management, salinity management, stormwater management, and sediment and erosion control to achieve compliance with this Order, and identification of specific methods used for the purposes of assessing the effectiveness of management practices implemented and the outcomes of such assessments.

Reporting Discharge Information

The Draft Order (p.23) revises 44.d of the Agricultural Order and replaces the requirement to describe the "typical volume of discharges and when the discharge is typically present", with the phrase "typical magnitude and frequency of discharges." This change may increase confusion due to the vagueness of the term and decreases the ability of the Central Coast Water Board to use these measurements to evaluate the discharger's risk to water quality. The term "typical magnitude" is vague compared to "typical volume" because it is undefined and subjective. For example, a typical magnitude can be described as "a lot" or "a little", compared to volume which is the result of a direct measurement or calculation. As part of the Annual Compliance Form required reporting for Tier 2 and Tier 3 forms, the Central Coast Water Board includes ranges of typical volumes of discharges for growers to choose to describe their discharge.

Similarly, "typical frequency" is vague and can be described as "most of the time" or "hardly ever". As part of the Annual Compliance Form required reporting for Tier 2 and Tier 3 forms, the Central Coast Water Board includes specific ranges of duration in days for growers to choose to describe the presence of the discharge. For example, a farm that discharges less than 30 days out of the year may have a different risk to water quality compared to a farm that discharges greater than 270 days out of the year. The requirement to report ranges of discharge characteristics is reasonable. More importantly, these measurements of discharge characteristics are essential for the Central Coast Water Board to evaluate risk to water quality and prioritize farms for appropriate follow-up in the most severely impaired areas.

The Draft Order (p.46) makes similar revisions in Part 3A. (1e) of the Tier 2 and Tier 3 MRPs related to the Annual Compliance Form. For the reasons described above, the Central Coast Water Board disagrees with this revision as the terms are vague and unnecessarily difficult to implement. We also want to note here that growers have already complied with the requirement to submit information regarding discharge characteristics (including estimated ranges of flow/volume and when the discharge is typically present) in the Annual Compliance Form for approximately 1328 individual farms.

Recommendation #4

We recommend that the State Water Board retain the existing language in Condition 44.d of the Agricultural Order. We also recommend that the State Water Board retain the existing language in the Part 3A. (1e) of the Tier 2 and Tier 3 MRPs to require reporting of estimated flow/volume and number of tailwater days among other discharge characteristics in the Annual Compliance Form.

In addition, we request clarification in the Draft Order that the inclusion of the reporting of ranges of volume and number of tailwater days to describe discharges in the Annual Compliance Form would still be acceptable, should the State Water Board reject our recommendation and use the term "typical magnitude and frequency of discharge."

Draft Order page 24, "Groundwater Monitoring"

We strongly agree with the Draft Order's support of the groundwater monitoring requirements in the Agricultural Order and the affirmation of the compelling concerns regarding drinking water safety and nitrate in groundwater. As the Draft Order points out, growers have the option of individual groundwater monitoring or sharing costs by joining a third party group for cooperative groundwater monitoring. The Central Coast Water Board has made significant efforts to work with agricultural representatives and has approved two cooperative monitoring programs.

Many growers have already complied with the individual groundwater monitoring requirements by submitting existing data or by sampling their groundwater wells with the support of local laboratories. Growers have submitted groundwater data for nearly 900 individual farms. In some cases, results of sampling confirm high quality groundwater. In other cases, the results indicate that groundwater being used for drinking water significantly exceeds the safe drinking water standard for nitrate. In the cases where domestic drinking water wells exceed the drinking water standard, the Central Coast Water Board follows up by notifying well users and by prioritizing these farms to assess nutrient management practices.

Draft Order page 27, "Photo Monitoring"

We agree with the Draft Order's revisions to adjust dates and clarify alternative methods for photo monitoring. The due date for photo monitoring was October 1, 2012, and many growers have already completed this requirement[7]. We also want to point out that on August 10, 2012, the Executive Officer revised the MRP (Tier 2, Part 4.A3; Tier 3, Part 4.A3) to require growers to maintain photos in the Farm Plan and submit upon request of the Executive Officer. The Central Coast Water Board implemented this change to simplify reporting and reduce costs related to the submittal of photos.

Upon the State Water Board's adoption of the final State Water Board Order, the Executive Officer will revise the photo monitoring protocol to specifically allow aerial photography and elevated vantage photography, and establish an appropriate methodology for monitoring documentation, and reporting for these alternatives.

Draft Order pages 28-33, "Individual Surface Water Discharge Monitoring"

We strongly agree with the Draft Order's support of the individual surface water discharge monitoring requirements in the Agricultural Order to address the highest risk discharges in the most severely impaired areas, and to retain some accountability for high-risk dischargers. In addition, the Agricultural Order is the legal mechanism in numerous impaired water bodies for

[7] Staff has received anecdotal reports from growers who have completed photo monitoring that such monitoring has resulted in new information learned during photo monitoring. For example, growers have reported that they became aware of impacts in these areas resulting from farming practices and subsequently changed farming practices to improve the conditions in these areas as a result.

implementing many Total Maximum Daily Loads (TMDLs) adopted by the Central Coast Water Board, and the associated monitoring and reporting requirements are essential components of TMDL implementation. In addition, many TMDLs rely specifically on the individual surface water discharge monitoring and reporting requirements to track progress.[8]

The Draft Order (p.30 - 31) seeks to clarify that the individual surface water discharge monitoring does not include monitoring of sheet flow. We agree that individual surface water discharge monitoring should not include sheet flow. The Tier 3 MRP (Part 5) and associated guidance provided to growers provides flexibility to the Discharger to identify monitoring locations to most effectively characterize at least 80% of the estimated run-off. The Discharger identifies the selected monitoring locations in the Sampling and Analysis Plan which is approved by the Executive Officer. We understand that the Draft Order's intent is to limit monitoring of discharges to those conveyed through pipes, ditches, swales, tile drains, and other discreet structures and features. However, we find that the term "outfall" in the Draft Order is problematic. Outfalls, as they are routinely defined in other programs, like the storm water program, do not generally exist on farms.

We suggest that the Draft Order retain the existing language in the Agricultural Order or revise the language consistent with the State Water Board's intent to exclude sheet flow and limit monitoring of discharges to those conveyed through pipes, ditches, swales, tile drains, and other discreet structures and features, rather than introduce the term "outfall."

The Draft Order (p. 31) also introduces the term "natural water body." We also find this term problematic because there is no regulatory definition for "natural water body" and it confuses the primary purpose of the Agricultural Order, which is to address the discharges of waste to "waters of the State." The beneficial uses of waters of the State must be protected. In agricultural areas, many streams and creeks that are waters of the State have been modified and turned into irrigation ditches and no longer have the physical characteristics of a "natural water body," but are still considered waters of the State. Many growers do not consider such irrigation ditches as waters of the State, and do not understand that discharges of waste to such ditches are subject to requirements. Such requirements are necessary to protect the modified natural drainages as well as the downstream water bodies to which they are tributary.

However, we agree that growers should have flexibility in determining the best location to characterize the discharge of waste from their operations, especially when considering unique efforts to control or treat their discharges, such as through wetland treatment systems, vegetated waterways, bioreactors, or other systems. The Agricultural Order supports these systems and the appropriate associated monitoring programs that would be approved by the Executive Officer. On the other hand, the Agricultural Order should not allow uncontrolled (or unmonitored) waste discharges to agricultural drainages, ditches, or similar conveyance systems. For example, Quail Creek in the Salinas Valley has been converted to an agriculture drainage ditch in areas adjacent to row crop operations. Quail Creek also causes a toxic plume where it converges with the Salinas River. Sampling upstream of the confluence of Quail Creek and the Salinas River is necessary to determine the source of the plume. The purpose of the

[8]TMDL for Chlorpyrifos and Diazinon in the Pajaro River Watershed; TMDL for Nitrogen Compounds and Orthophosphate in the Lower Santa Maria River Watershed and Tributaries to Oso Flaco Lake; TMDL for Nitrogen and Orthophosphate in the Lower Salinas River and Reclamation Canal Basin and Moro Cojo Slough Subwatershed; TMDL for Diazinon and Additive Toxicity with Chlorpyrifos in Arroyo Paredon Watershed; TMDL for Chlorpyrifos in San Antonio Creek; TMDL for Chlorpyrifos and Diazinon in the Lower Salinas River Watershed;

individual monitoring requirements is to characterize individual farm waste discharges before they aggregate with other discharges so that improved management practices can effectively address the water quality problem.

Additionally, we disagree with the proposal in the Draft Order to strike the requirement to monitor water in containment structures (p. 30). Many farms utilize containment structures to capture and percolate irrigation runoff and some containment structures are of significant volume. The Agricultural Order does not directly regulate the quality of water in containment structures. However, these containment structures can be a significant source of nitrate loading to groundwater and contribute to nitrate pollution of sources of drinking water. Such monitoring is necessary for the Central Coast Water Board to identify and prioritize farms that are at greatest risk for loading nitrate to groundwater. Reporting related to the volume and management practices associated with containment structures is important to evaluate risk to water quality and pollutant loading. The State Water Board stayed requirements to report the related management practices and treatment and control measures for containment structures in the Annual Compliance Form (see Attachment) and did not remove the stay of that reporting.

Recommendation #5

We recommend that the State Water Board revise the Draft Order to retain the existing language in the Tier 3 MRP (Part 5A) to describe individual surface water discharge monitoring locations or revise the language consistent with the intent to exclude sheet flow and limit monitoring of discharges to those conveyed through pipes, ditches, swales, tile drains, and other discreet structures and features.

Recommendation #6

We also recommend that the State Water Board revise the Draft Order to retain the requirement for Tier 3 dischargers to monitor and report the nitrate concentration of water captured in containment structures.

In addition, we request that the State Water Board revise the Draft Order to clarify that it is acceptable for the Central Coast Water Board to require the related Annual Compliance Form reporting of the estimated range of volume of containment structures and the related management practices and treatment and control measures for containment structures.

Draft Order p. 33-42, "Conditions Addressing Nitrogen Application"

Reduction of nitrate loading to groundwater and protection of drinking water supplies is one of the Central Coast Water Board's highest priorities for the Agricultural Order. The Draft Order confirms that nitrate in groundwater is a significant public health threat. We strongly agree with the Draft Order's statements (p.33) that the work to address nitrate in groundwater is too critical to delay and that efforts to control nitrate and work on this important public health and environmental issue must continue to move forward. Consistent with this priority, tt is essential that the Agricultural Order require sufficient monitoring and reporting to allow the Central Coast Water Board to respond to these severe water quality conditions and prioritize farms for appropriate follow-up in a timely manner.

The State Water Board plans to convene a panel of experts to assess existing agricultural nitrate control practices and propose new practices to protect groundwater. The Central Coast Water Board also consulted a group of experts during the development of the Agricultural Order to identify and recommend requirements for practices that will minimize nitrate loading to groundwater and maximize water quality protection, and the type of information that should be reported to verify progress. This group of experts is described in more detail under Issue 3 below. Moreover, there is a long history of studies and recommendations sponsored by the State Water Board and other organizations to address the problem of nitrate in groundwater. This body of evidence demonstrates that reductions in pollutant loading can be accomplished now. Therefore, we ask that the State Water Board not delay important, basic reporting requirements that are needed now to advance water quality improvements and assure the protection of public health, and so that we can measure progress in the future. We also plan to provide specific input to the State Water Board regarding the scope of work for the panel of experts in a separate document.

We strongly agree with the Draft Order's proposal (p.34) to retain the nitrate loading risk determination for Tier 2 and Tier 3 farms using the methodology developed by the Central Coast Water Board or the Groundwater Pollution Nitrate Hazard Index developed by the University of California Agricultural and Natural Resources (UCANR) group. We acknowledge that neither method is perfect, but both are reasonable for the purposes of requiring more stringent monitoring and reporting requirements for a higher risk subset of dischargers. The experts we consulted agreed with this approach to evaluate general risk.[9]

We also strongly agree with the Draft Order's proposal (p.35) to require the reporting of total nitrogen applied. We agree that the practice of recording and budgeting of nitrogen application is a relatively low-cost, standard industry practice that is widely recommended by agronomists and crop specialists and already utilized by many growers in the Central Coast region. We agree with the Draft Order's revisions clarifying how growers must report total nitrogen applied. We also agree with the language in the Draft Order striking the more costly alternative to develop an individual groundwater monitoring and reporting program in lieu of reporting total nitrogen applied.

We disagree with the Draft Order's language (p.46) striking the requirement to report nitrate concentration of irrigation water in the Annual Compliance Form for Tier 2 and Tier 3 farms. Nitrate concentration of irrigation water is one of several pieces of information we use to identify and prioritize farms that may be impacting nitrate levels in surface water or groundwater. For example, a farm that applies irrigation water with a nitrate concentration less than 45 mg/L nitrate as NO3 is generally a lower priority for follow-up than a farm that applies irrigation water with a nitrate concentration of greater than 200 mg/L nitrate as NO3, in terms of the potential for surface runoff and percolation to groundwater.

Currently, the Annual Compliance Form requires Tier 2 and Tier 3 growers to report the range of nitrate concentration of their irrigation water. This requirement is reasonable as the Central Coast Water Board only requires growers to report the range of nitrate concentration which can be determined using an inexpensive field test. In addition, many growers already must consider this information to determine their nitrogen application and nutrient budgeting. We also want to note that growers have already complied with the requirement to report this information in the

[9] AR File No. 177, AR File No. 178, and AR File No. 179.

Annual Compliance Form for approximately 1328 individual farms, and the Central Coast Water Board is already using this information to prioritize farms for follow-up. We recognize that the State Water Board has indicated that this reporting required is not necessary because it is already included in the reporting of total nitrogen applied. We disagree; the total nitrogen applied reporting requirement only applies to a subset of the Tier 2 and Tier 3 growers. We recommend that the State Water Board retain the existing language in Part 3A. (1h) of the Tier 2 and Tier 3 MRPs to require reporting of nitrate concentrations of irrigation water for all Tier 2 and Tier 3 farms.

Recommendation #7

We recommend that the State Water Board revise the Draft Order to retain the existing language in Part 3A.(1h) of the Tier 2 and Tier 3 MRPs to require dischargers to report the nitrate concentration of irrigation water in the Annual Compliance Form.

While we strongly agree with the Draft Order's proposal to require Tier 3 farms that are high risk for nitrate loading to groundwater to develop and implement Irrigation and Nutrient Management Plans (INMP) certified by a Certified Crop Advisor, we disagree with the removal of the requirement to report elements of the INMP. We discuss this further and provide a specific recommendation in Issue 3 below.

Draft Order p. 42, "Water Quality Buffer Plan"

We agree with the Draft Order's proposal to require specific Tier 3 farms to prepare a Water Quality Buffer Plan to improve conditions along water bodies with known impairments due to pollutants associated with agricultural discharges. We agree that the use of buffers for filtration of pollutants is one of the most effective practices for protecting these most vulnerable water bodies.

ISSUE 3: Ensuring Efficient and Effective Implementation

Draft Order p. 15, "Reasonableness of Tiering Criteria"

The Draft Order recognizes the need for a general order given the general similarity of operations and discharges for the agricultural community in the Central Coast and in particular the considerations of efficiency in regulating a large number of dischargers. We appreciate that the Draft Order recognizes the tiering approach in the Agricultural Order as reasonable to address relative risk to water quality and to require water quality improvement efforts in the most severely impacted areas.

As described in the Draft Order, the Central Coast Water Board could have chosen an approach based on regional characteristics, where dischargers are placed in a higher risk category commensurate with existing impairments or the vulnerability of the groundwater in the larger geographic area, rather than individual farm characteristics. We considered this approach and ultimately decided against it because the result would have been to include a much larger number of farms in the highest risk group (Tier 3) due to the widespread impairments and vulnerability of groundwater in agricultural areas of the Central Coast Region.

We agree with the Draft Order's approach to uphold the tiering criteria. It is a crucial element in prioritizing farms and requiring water quality improvements based on risk and severity of impairments.

Draft Order p. 37, "Irrigation and Nutrient Management Plan"

We strongly agree with the Draft Order's support of requirements for specific Tier 3 farms to develop and implement an Irrigation and Nutrient Management Plan (INMP) certified by Certified Crop Advisor. The INMP is an essential step in improving nutrient management in the Central Coast Region to reduce nitrate loading to groundwater and protect drinking water supplies. Furthermore, the certification requirement helps to assure the Central Coast Water Board that growers will retain qualified assistance to prepare an INMP that is agronomically sound and environmentally effective. However, it is important to point out that there is no requirement in the Agricultural Order for a grower to implement the specific recommendations provided by a Certified Crop Advisor. In fact, in many cases, technical assistance providers have reported frustration that despite grant funds to conduct outreach, education, and farm-specific recommendations to growers, many growers do not implement the recommendations because there is little or no incentive to do so.

During development of the Agricultural Order, the Central Coast Water Board consulted with a group of regional experts in irrigation and nutrient management (e.g., representatives from UC Agriculture and Natural Resources, UC Cooperative Extension, and Certified Crop Advisors) to recommend requirements related to irrigation and nutrient management practices for inclusion in the Agricultural Order. The experts recommended required reporting of total nitrogen applied, as well as the use of specific nutrient balance ratios for the Agricultural Order, as the reporting provides a strong incentive for the effective implementation of the INMP[10].

The Draft Order (p. 38) removes requirements in Condition 77 of the Agricultural Order to report specific INMP information to the Central Coast Water Board. Because these values are estimates, the Draft Order concludes the reporting has questionable value. We disagree. The reporting requirements in question are:

1. Crop nitrogen uptake values.
2. Annual balance of nitrogen applied per crop compared to typical crop uptake.
3. Annual estimate of nitrogen loading to groundwater and surface water.
4. Annual evaluation of reductions in nitrogen loading.

The Central Coast Water Board must require reporting of meaningful information in a manner and format that facilitates timely analysis and action. To effectively implement the Agricultural Regulatory Program, the Central Coast Water Board must be able to access this basic information efficiently and effectively to evaluate risks; demonstrate progress toward source reduction and achieving water quality standards; and prioritize follow-up actions. At a minimum, we recommend that the State Water Board retain requirements for specific Tier 3 farms to report crop nitrogen uptake values and the annual balance of nitrogen applied per crop compared to the typical crop uptake (nutrient balance ratio).

The Central Coast Water Board recognizes that these are estimates and not absolute numbers; by their nature, all of these values are estimates due to the diversity of crops, farm

[10] AR File No. 177, 178, 179.

characteristics, soil, weather, etc. However, reporting these estimates allows the Central Coast Water Board to prioritize and focus its efforts on following-up with dischargers who may be applying nitrogen in excess of agronomic rates. The Central Coast Water Board also determined that reporting this information is reasonable based on the increasing availability of Certified Crop Advisors in the region, the availability of nutrient management information, and the on-line reporting system.

In the simplest terms, the nitrogen balance ratio is the typical nitrogen crop uptake (e.g., as recommended by a Certified Crop Advisor or as identified in the literature for that particular crop type) compared to the total nitrogen applied. There is a significant amount of information already available on the typical nitrogen crop uptake for the crop types that are high risk for nitrate loading to groundwater with the highest acreage on the Central Coast, such as lettuce, broccoli, cabbage, spinach, and strawberries[11]. University of California crop researchers and advisors have historically established nitrogen rate guidelines through replicated research trials. These guidelines provide ranges of nitrogen rates that are generally sufficient to obtain maximum production. These guidelines are not necessarily protective of groundwater – yet serve as a useful screening tool to evaluate reasonable nitrogen application. Guidelines are widely available in bulletins and reports published by UC Agriculture and Natural Resources (UCANR).

Furthermore, the amount of nitrogen applied to a particular crop varies widely among growers. Some growers apply less than what a Certified Crop Advisor recommends as the typical crop nitrogen uptake, and some growers apply three, four, and five times as much nitrogen as is recommended[12]. Throughout the Agricultural Order renewal process, technical experts repeatedly stated that significant reductions in fertilizer applications could be readily achieved and should be the first step in source reduction. The nutrient balance ratios provide important screening-level information so that growers and the Central Coast Water Board can quickly identify and prioritize those farms that may be applying excessive amounts of nitrogen, to conduct the appropriate follow-up and correct obvious problems quickly, especially with respect to drinking water contamination.

We understand there is concern that the calculation of nitrogen balance ratios may require the precise measurement of the amount of nitrogen remaining in the soil after harvest and does not consider the difficulty in addressing the variability in soil nitrogen measurements spatially and temporally. To reiterate, we did not intend for the nitrogen balance ratio to be a precise measurement of loading. In addition, we want to clarify that there is no requirement to measure the amount of nitrogen remaining in the soil after harvest to determine the nitrogen balance ratio.

The Central Coast Water Board also found that it is important for the growers themselves to calculate the nitrogen balance ratio. This requires dischargers to determine the typical crop nitrogen uptake value that they use to inform their fertilizer decisions and compare that to their total nitrogen application. This assists the Central Coast Water Board by providing efficiency in obtaining the calculation, while providing the grower with the ability to evaluate their farm-specific practices and confirm that they are applying a reasonable amount of nitrogen. Furthermore, consistent with recommendations by experts, the requirement to report key information assures that growers implement an effective system of fertilizer record keeping and

[11] AR File Nos. 243, 410, 411, 412, 413, 414 and 416.
[12] *Ibid.*

nutrient management that they can utilize to inform fertilizer application decisions that are agronomically sound and environmentally effective in the long term[13].

The Draft Order also states that this information is not appropriate for wide-scale reporting. We disagree because the nitrate loading problem exists over a broad area and wide-scale reporting is necessary to efficiently evaluate the risks to domestic wells and surface waters, and may help flag such risks and begin to address them before water quality monitoring indicates problems.

The Draft Order strikes the reporting requirements in the short-term, and instead defers to another expert panel for recommendations to evaluate alternative approaches. In addition, the Draft Order notes that the Central Coast Water Board can obtain the information by issuing Water Code section 13267 orders to individual dischargers. It is not feasible for the Central Coast Water Board to send orders to all dischargers in impacted areas because of the magnitude of the problem. Large areas of the Central Coast region are already impacted by severe water quality degradation, and we already know that this information is needed in these areas. Thus, we should not be subject to delay in imposing these important reporting requirements. Furthermore, one of the primary reasons for using a general order is to provide a more efficient and consistent approach to regulating dischargers. Requiring the Central Coast Water Board to gather the information only on a case-by-case basis undermines the effectiveness of the use of a general order. More significantly, it would result in significant delay in the Central Coast Water Board's ability to follow-up on priority farms despite current and continuing impacts on drinking water supplies. We therefore recommend against this change.

We recognize that some growers are concerned about having to report this information before they can make improvements or implement expert recommendations. The Central Coast Water Board explicitly delayed the reporting requirements related to the INMPs to October 2015 to allow growers time to evaluate their practices and make iterative improvements. The implementation of new practices would also be part of the report, providing an important tool allowing growers to demonstrate compliance with the Agricultural Order's requirements. It is also important to note that information related to nitrogen application or farm-specific nutrient management practices are protected as trade secret or secret process information and cannot be disclosed to the public.

The Draft Order also revises the requirements related to the INMP Effectiveness Report and fundamentally changes the related objectives. The Central Coast Water Board's intent was to evaluate progress towards protecting, preserving, and restoring groundwater quality in the uppermost aquifer as a result of more efficient nutrient management practices implemented by growers. In other words, given local conditions and the reductions in nitrate loading to groundwater, the INMP Effectiveness Report would estimate how long it may take for groundwater to meet safe drinking water standards. This was the basis for requiring the INMP Effectiveness Report to be prepared by a professional. The Draft Order reduces the objectives of the INMP Effectiveness Report and removes the requirement for the report to be prepared by

[13] Several growers in the Central Coast Region in areas where drinking water is impacted by nitrate have already reported this type of information to the Central Coast Water Board pursuant to requirements to prepare technical reports. In many cases, the grower reported to the Water Board that they were not tracking the information necessary to be able to compare fertilizer applications to the typical crop nitrogen uptake. Thus, the Water Board could not assess if fertilizer applications were reasonable compared to the typical crop nitrogen uptake identified by experts. In many cases growers working with Certified Crop Advisor reported to the Water Board that they were able to realize additional fertilizer application reductions.

a professional. We recommend that the expert panel to be convened by the State Water Board evaluate the effectiveness of nutrient management practices to reduce pollutant loading and estimate the time to restore the groundwater beneficial uses in impacted groundwater basins, considering the current loading and expected reductions in nitrogen loading to groundwater from agricultural operations. The methodology and results will require analysis of soil conditions, aquifer parameters, nitrate loading, groundwater recharge, and nitrate fate and transport. These analyses must be conducted by professionals in order to be meaningful.

Recommendation #8

We recommend that the State Water Board retain Condition 77 of the Agricultural Order and specifically uphold the requirement to report crop nitrogen uptake values and the nitrogen balance ratio (Tier 3 MRP, Part 6B.(1a)(1b)).

CONCLUSION

Protecting water quality in agricultural areas is among the highest priorities of the Central Coast Water Board. Many growers are already successfully implementing the requirements in the Agricultural Order. The results of required monitoring and reporting are already providing the Board and growers with information necessary to identify water quality issues and prioritize follow-up actions. These efforts are significant and will result in real water quality improvement.

In summary, we offer these recommendations with the intent that the final State Water Board Order will allow the Central Coast Water Board to adequately define compliance, require sufficient monitoring and reporting to respond to the severity of water quality conditions in the Central Coast region, and ensure the efficient and effective implementation of the Agricultural Order to protect beneficial uses.

1. Revise the Draft Order language regarding Condition 82 of the Agricultural Order to clarify the iterative process; Revise Finding #2 in Attachment A of the Agricultural Order to clarify that the Agricultural Order does not require immediate compliance with water quality standards.

2. Revise the Draft Order to include revisions to Condition 44(g) of the Agricultural Order to clarify methods for assessing effectiveness of management practices;

3. Revise the Draft Order to include revisions to the Tier 2 MRP and Tier 3 MRP Part 3A (1g) to explicitly include the reporting of practices used for the purposes of assessing the effectiveness of management practices implemented and the outcomes of such assessments to evaluate progress towards water quality improvement.

4. Retain the existing language in Condition 44.d of the Agricultural Order and also retain the existing language in the Part 3A. (1e) of the Tier 2 and Tier 3 MRPs to require reporting of estimated flow/volume among other discharge characteristics in the Annual Compliance Form.

5. Revise the Draft Order to retain the existing language in the Agricultural Order to describe individual surface water discharge monitoring locations or revise the language consistent with the intent to exclude sheet flow and limit monitoring of discharges to those conveyed through pipes, ditches, swales, tile drains, and other discreet structures and features.

6. Revise the Draft Order to retain the existing language in the Agricultural Order that requires Tier 3 dischargers to monitor the nitrate concentration of water captured in containment structures, and confirm the related Annual Compliance Form reporting of the estimated range of volume of containment structures and the related management practices and treatment and control measures for containment structures.

7. Revise the Draft Order to retain the existing language in Part 3A.(1h) of the Tier 2 and Tier 3 MRPs to require the reporting of the nitrate concentration of irrigation water in the Annual Compliance Form.

8. Revise the Draft Order to retain Condition 77 of the Agricultural Order and specifically uphold the Tier 3 MRP, Part 6B.(1a)(1b) requirement to report crop nitrogen uptake values and the nitrogen balance ratio.

The Central Coast Water Board sincerely appreciates the priority the State Water Board has given to the critically important water quality issues in the Central Coast region, and respectfully requests that you consider these recommendations.

Attachment(s)

1. Draft Annual Compliance Form Revised Per September 19, 2012 State Board Meeting, Item 13.

cc: ***[Via Email Only]***

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Lyris List

AGRICULTURAL REGULATORY PROGRAM - ANNUAL COMPLIANCE INFO

Name of Operation: **Test Operation (AW9999)**

Ranch / Farm Name: **Test Farm 1 (Global ID: AGL020006840)**

Section A: General Requirements

Is the information reported in the electronic Notice of Intent (eNOI) accurate and up to date for this ranch/farm? YES NO

Section B: Irrigation Water

What is the primary source of irrigation water on this ranch/farm?:

What is the maximum Nitrate Concentration (Nitrate as NO3 in mg/L) of the primary irrigation water source on this ranch/farm?

What method was used to determine the maximum Nitrate Concentration (Nitrate as NO3 in mg/L)?

Section C: Groundwater Nitrate Loading Risk Determination

Note: This requirement is stayed per State Water Resources Control Board Order WQ-2012-00XX.

~~State if the the nitrate loading risk was determined for the ranch/farm or individual units? * For Individual Risk Units, you must upload a spreadsheet to report results~~

~~Which method was used to determine the nitrate loading risk for this ranch/farm?~~

~~(see instructions for Individual Risk Unit reporting)~~

~~For BOTH Method 1 and Method 2, identify the crop type used for the determination~~

~~For Method 2 ONLY, identify the soil series used for the determination~~

~~Report Results of the Nitrate Loading Risk Determination for this ranch/farm:~~

~~Method 1 Results~~

~~Method 2 Results~~

Section D: Stormwater Discharge Characteristics

Does stormwater leave this ranch / farm?

If YES, under what conditions does stormwater leave this ranch/farm during storm events?

If YES, what is the estimated acreage that produces stormwater runoff (doesn't infiltrate) and ends up leaving this ranch/farm during storm events?

Section E: Irrigation Discharge Characteristics

Does irrigation runoff leave this ranch / farm?

If YES provide the following information:

Where is the closest drainage point from this ranch/farm to any surface water body (e.g., Stream, Lake, Bay, and/or Ocean)?

State the number of locations where irrigation runoff leaves this ranch/farm.

State the estimated total number of days/year when irrigation runs off/leaves this ranch / farm at any location(s).

State the primary season(s) when irrigation runoff leaves this ranch / farm:

State the estimated maximum total volume of irrigation runoff leaving from your ranch / farm on the highest flow day of the year. Report in gallons per day.

Section F: Tile Drain Discharge Characteristics

Does tile drain water leave this ranch / farm?

If YES provide the following information:

Where is the closest drainage point from this ranch/farm to any surface water body (e.g., Stream, Lake, Bay, and/or Ocean)?

State the number of locations where tile drain water leaves this ranch/farm.

State the estimated total number of days/year when tile drain water leaves this ranch / farm at any location(s).

State the primary season(s) when tile drain water leaves this ranch / farm:

State the total estimated maximum volume of tile drain water leaving from your ranch / farm on the highest flow day of the year. Report in gallons per day.

Section G: Water Containment Characteristics

Are there water containment structure(s) (i.e., ponds, reservoirs) on this ranch/farm?

OPTIONAL: If YES, state the type of treatment or control that is used to minimize and/or prevent the percolation of waste to groundwater.

Note: Optional Reporting. Providing this information is not required. The requirement is stayed per State Water Resources Control Board Order WQ-2012-00XX.

Section H: Water Quality Management Practices (select all that apply)

Nutrient Management - Practice Implementation

Identify nutrient management measure(s)/practice(s) implemented on this ranch / farm to protect water quality in the last 12 months, if any.

- None
- Evaluated how much fertilizer crop needs and timing of application.
- Scheduled fertilizer applications to match crop requirements.
- Measured nitrogen concentration in irrigation water and adjusted fertilizer nitrogen applications accordingly.
- Measured soil nitrate or soil solution nitrate and adjusted fertilizer nitrogen applications accordingly.

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- Used precision techniques to place fertilizer in the root zone, to ensure crop uptake, with minimal runoff and deep percolation (e.g.fertigation).
- Measured nitrogen in plant tissue and adjusted fertilizer nitrogen applications.
- Measured phosphorus in soil and adjusted fertilizer phosphorus applications.
- Measured nitrogen and phosphorous content of applied manures and other organic amendments.
- Mixed and loaded fertilizers on low runoff hazard sites (e.g. away from creeks and wells)
- Used urease inhibitors and/or nitrification inhibitors.
- Modified crop rotation to use beneficial cover crops, deep rooted species, or perennials to utilize nitrogen.
- Used treatment systems to remove nitrogen from irrigation runoff or drainage water (e.g. wood chip bioreactor).
- ~~Other, describe in Farm Plan and submit upon request.~~

~~Nutrient Management - Practice Assessment~~
~~Identify methods used to assess the effectiveness of the implemented management measure(s) / practice(s), to reduce or eliminate the discharge of wastes from this ranch / farm in the last 12 months.~~

- ~~Not Assessed~~
- Compared amount of nitrogen applied in fertilizer and in irrigation water to crop need.
- Measured nitrate concentration below the root zone.
- Measured nitrate concentration in irrigation runoff.
- Estimated/measured nitrate load in irrigation runoff.
- Measured nitrate concentration in surface receiving water.
- Estimated/measured nitrate load in surface receiving water.
- Estimated/measured nitrate loading to groundwater.
- Measured nitrate concentration in groundwater.
- ~~Modeled or studied nitrate in surface water or groundwater.~~
- Consulted with a qualified professional to assess practice implementation (e.g. CCA, PCA, UCCE Specialist, NRCS, RCD, agronomist or other).
- Other, describe in Farm Plan and submit upon request.

OPTIONAL: Nutrient Management - Practice Outcome(s)
Identify outcomes that demonstrate progress towards reducing or eliminating the discharge of wastes off this ranch / farm in the last 12 Months, if any. Note: Optional Reporting. Providing this information is not required. The requirement is stayed per State Water Resources Control Board Order WQ-2012-00XX.

- None
- Annual fertilizer nitrogen application reduced.
- Total nitrogen applied as fertilizer and in irrigation water matches crop need.
- Reduction in nitrate concentration or load, in irrigation runoff.
- Reduction in nitrate concentration or load, in surface receiving water.
- Reduction in nitrate loading to groundwater.
- Reduction in nitrate concentration in groundwater.
- Water quality standards achieved.
- Other, describe in Farm Plan and submit upon request.

Irrigation Management - Practice Implementation
Identify irrigation management measure(s)/practice(s) implemented on this ranch / farm to protect water quality in the last 12 months, if any.

- None
- Determined amount of crop water uptake and applied irrigation water accordingly.
- Installed more efficient irrigation system (e.g. microirrigation).
- Improved irrigation distribution uniformity (DU) based on results of mobile lab or similar assessment.
- Scheduled irrigation events using soil moisture measurements.
- Scheduled irrigation events using weather information (e.g., evapo-transpiration, crop coefficient).
- Maintained irrigation system to maximize efficiency and minimize losses (e.g. system components are replaced and/or flushed/cleaned).
- Selected sprinkler heads,nozzles, and drip tape/emitter with application rate(s) that match system layout, system pressure, and infiltration rates.
- Installed a variable speed pump and/or control system to improve irrigation distribution uniformity (DU).
- Recycled or reused excess irrigation water.
- Contained and/or treated irrigation water runoff prior to discharge off the farm/ranch.
- ~~Other, describe in Farm Plan and submit upon request.~~

~~Irrigation Management - Practice Assessment~~
~~Identify methods used to assess the effectiveness of the implemented management measure(s)/practice(s), to reduce or eliminate the discharge of wastes from this ranch / farm in the last 12 months.~~

- ~~Not Assessed~~
- Walked the perimeter of the property and cropped areas to verify irrigation runoff has been reduced or eliminated.
- Recorded amount of irrigation water applied.
- Recorded and reduced number of tailwater days/year.
- Compared amount of irrigation water applied to crop water uptake
- Estimated/measured volume of irrigation runoff.
- Conducted field quick tests or used handheld meters to determine waste concentrations in irrigation runoff or tile drain water.
- Conducted laboratory analysis to determine waste concentrations in irrigation runoff.
- ~~Modeled or studied amount of irrigation water losses (runoff or deep percolation).~~
- Conducted photo monitoring before and after practice implementation.

- Consulted with a qualified professional to assess practice implementation (e.g. CCA, PCA, UCCE Specialist, NRCS, RCD, agronomist or other).
- Other, describe in Farm Plan and submit upon request.

OPTIONAL: Irrigation Management - Practice Outcome(s)
Identify outcomes that demonstrate progress towards reducing or eliminating the discharge of wastes off this ranch / farm in the last 12 Months, if any. Note: Optional Reporting. Providing this information is not required. The requirement is stayed per State Water Resources Control Board Order WQ-2012-00XX.

- None
- Volume of water applied matches crop needs.
- Annual volume of irrigation water applied reduced.
- Number of tailwater days/year reduced.
- Reduction in volume of irrigation runoff.
- Elimination of irrigation runoff.
- Reduction in volume of tile drain discharge.
- Reduction in water infiltration/percolation losses.
- Reduction in pollutant concentration in irrigation runoff and/or tile drain discharge.
- Water quality standards achieved.
- Other, describe in Farm Plan and submit upon request.

Pesticide Management - Practice Implementation
Identify pesticide management measure(s)/practice(s) implemented on this ranch / farm to protect water quality in the last 12 months, if any.

- None
- Utilized Integrated Pest Management to reduce pesticide use (e.g., pest scouting, beneficial insects other).
- Selected lower risk pesticides to minimize risk to water quality (e.g. based on toxicity, runoff potential, leaching potential).
- Followed specific label instructions and any local use restrictions.
- Avoided pesticide applications prior to rain events to prevent runoff.
- Avoided pesticide applications during windy conditions to prevent drift.
- Avoided pesticide application in areas adjacent to streams, creeks, or other surface water bodies.
- Eliminated or controlled irrigation runoff during and after pesticide applications.
- Eliminated or controlled sediment erosion and movement to avoid transport of pesticides.
- Treated irrigation runoff with enzymes or other products to breakdown pesticides.
- Used filter strips, vegetated treatment or other systems to remove pesticides and pollutants from irrigation runoff or tile drain water.
- Mixed and loaded pesticides on low runoff hazard sites (e.g. away from creeks and wells)
- ~~Other, describe in Farm Plan and submit upon request.~~

~~Pesticide Management - Practice Assessment~~
~~Identify methods used to assess the effectiveness of the implemented management measure(s)/practice(s), to reduce or eliminate the discharge of wastes from this ranch / farm in the last 12 months.~~

- ~~Not Assessed~~
- Conducted field quick tests or used handheld meters to determine pesticide concentrations or toxicity in irrigation runoff or tile drain water.
- Conducted laboratory analysis to determine pesticide concentrations or toxicity in irrigation runoff.
- Measured pesticide concentrations or toxicity in surface receiving water.
- Measured pesticide concentrations or toxicity in tile drain water
- ~~Modeled or studied pesticides or toxicity in surface water or groundwater.~~
- Conducted photo monitoring before and after practice implementation.
- Consulted with a qualified professional to assess practice implementation (e.g. CCA, PCA, UCCE Specialist, NRCS, RCD, agronomist or other).
- Other, describe in Farm Plan and submit upon request.

OPTIONAL: Pesticide Management - Practice Outcome(s)
Identify outcomes that demonstrate progress towards reducing or eliminating the discharge of wastes off this ranch / farm in the last 12 Months, if any. Note: Optional Reporting. Providing this information is not required. The requirement is stayed per State Water Resources Control Board Order WQ-2012-00XX.

- None
- Annual pesticide application reduced.
- Reduction in pesticide concentration or toxicity in irrigation runoff.
- Reduction in pesticide concentration or toxicity in surface receiving water.
- Water quality standards achieved.
- Other, describe in Farm Plan and submit upon request.

Sediment Management - Practice Implementation
Identify sediment management measure(s)/practice(s) implemented on this ranch / farm to protect water quality in the last 12 months, if any.

- None
- Avoided disturbance of soils adjacent to streams, creeks, and other surface water bodies.
- Minimized presence of bare soil in non-cropped areas.
- Minimized presence of bare soil in cropped areas.
- Minimized tillage to protect soil structure and cover soil.
- Used soil amendments to protect soil structure.

- Planted cover crops.
- Aligned rows for proper drainage and to reduce erosion.
- Diverted runoff and concentrated flows to grassed areas.
- Controlled concentrated drainage on roads by grading to reduce erosion or installing culverts, rolling dips, underground outlet pipe(s).
- Installed filter strips, vegetated treatment or other systems to remove sediment and other pollutants from runoff.
- Installed sediment basin(s), pond(s), reservoir(s) or other sediment trapping structures to remove sediments from discharge
- Applied Polyacrylamide (PAM) in irrigation water
- ~~Other, describe in Farm Plan and submit upon request.~~

~~Sediment Management - Practice Assessment~~
~~Identify methods used to assess the effectiveness of the implemented management measure(s)/practice(s), to reduce or eliminate the discharge of wastes from this ranch / farm in the last 12 months.~~

- ~~Not Assessed~~
- Walked the perimeter of the property to verify erosion controls and that sediment doesn't leave the ranch/farm during irrigation events and/or storm events.
- Conducted laboratory analysis, field quick tests or used handheld meters to measure turbidity in irrigation runoff.
- Estimated sediment load in irrigation and/or stormwater runoff.
- Conducted laboratory analysis, field quick tests or used handheld meters to measure turbidity in stormwater runoff.
- ~~Modeled or studied sediment load in surface water.~~
- Conducted photo monitoring before and after practice implementation.
- Consulted with a qualified professional to assess practice implementation (e.g. CCA, PCA, UCCE Specialist, NRCS, RCD, agronomist or other).
- Other, describe in Farm Plan and submit upon request.

OPTIONAL: Sediment Management - Practice Outcome(s)
Identify outcomes that demonstrate progress towards reducing or eliminating the discharge of wastes off this ranch / farm in the last 12 Months, if any. Note: Optional Reporting. Providing this information is not required. The requirement is stayed per State Water Resources Control Board Order WQ-2012-00XX.

- None
- Soil coverage increased and amount of bare soil reduced.
- Reduction in turbidity or sediment load in irrigation runoff.
- Reduction in turbidity or sediment load in stormwater runoff.
- Reduction in turbidity or sediment load in surface receiving water.
- Reduction in stormwater flow and/or volume.
- Water quality standards achieved.
- Other, describe in Farm Plan and submit upon request.

Section I: Water Quality Improvement Projects
Is this ranch/farm participating in a specific water quality improvement project with other growers?
If YES provide the following information:
Identify the type of project.
Describe the scale of the project.

Section J: Related Permits
Has any work activity been completed and/or proposed within the bed, bank or channel of a lake or stream, including riparian areas, within the last 12 months on this ranch / farm, ? (includes water diversions and routine maintenance of canals, channels, culverts, and ditches)

Section K: Photo Monitoring
By June 1, 2013, Photo monitoring is required for Tier 2 and Tier 3 ranches/farms that contain or are adjacent to a waterbody impaired for temperature, turbidity, or sediment (applies to this ranch/farm if the words Monitoring Required are seen next to the Section K: Photo Monitoring title). Photos must be maintained in the Farm Plan and submitted to the Water Board, upon request. Refer to Photo Monitoring protocols at the following website: http://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/index.shtml

Answering the question below is OPTIONAL until the October 1, 2013 reporting deadline.
If required, has photo monitoring been completed for this ranch or farm?

Proprietary Information
Information related to trade secrets or secret processes are exempt from public disclosure pursuant to Water Code §13267. If the Discharger asserts that all or a portion of a report submitted is exempt from public disclosure the Discharger must provide an explanation of how those portions of the reports are exempt from public disclosure.
Does this Annual Compliance Form contain information related to trade secrets or secret processes)?

Authorization and Certification
By submitting this Annual Compliance Form, in compliance with Water Code § 13267, I certify under penalty of perjury that this document was prepared by me, or under my direction or supervision, following a system designed to ensure that qualified personnel properly gathered and evaluated the information submitted. To the best of my knowledge and belief, this document is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Save & Submit