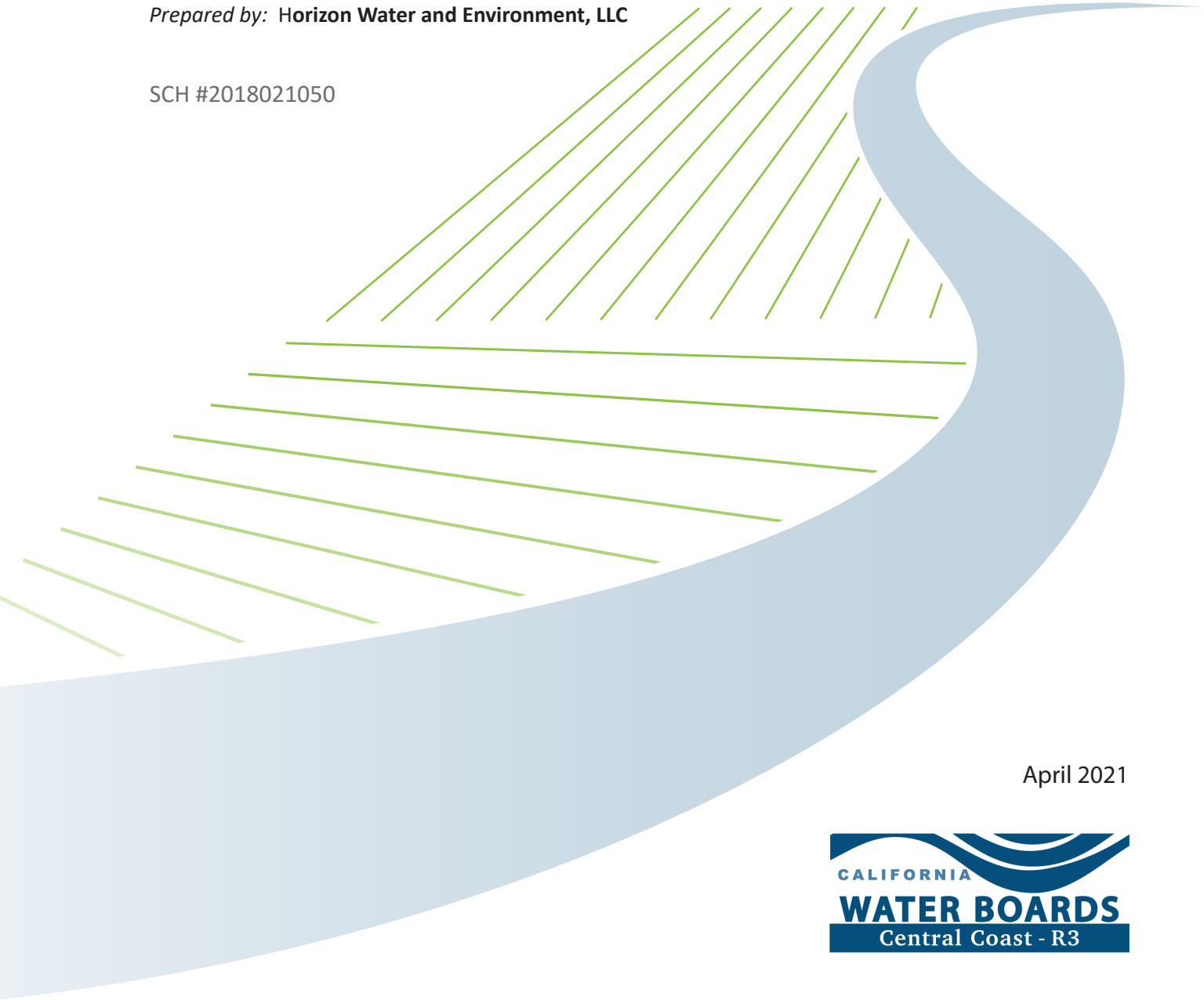
Proposed General Waste Discharge Requirements for Discharges from Irrigated Lands (Agricultural Order)

Final Environmental Impact Report

Volume 3 – Comments and Responses to Comments on the Draft Environmental Impact Report and Draft Agricultural Order 4.0

Prepared by: **Horizon Water and Environment, LLC**

SCH #2018021050



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CALIFORNIA WATER BOARDS
Central Coast - R3

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California Regional Water Quality Control Board, Central Coast Region

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Acronyms and Abbreviations

1,2,3-TCP	1,2,3-trichloropropane
A	
A_{FER}	fertilizer nitrogen application rates
Ag Order 3.0	Agricultural Order 3.0
A_{IRR}	nitrogen applied in irrigation water
B	
BMP	best management practice
BPTC	best practicable treatment and control
C	
CCA	community choice aggregator
CCR	California Code of Regulations
CCWB	Central Coast Regional Water Quality Control Board
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CIMIS	California Irrigation Management Information System
CMP	cooperative monitoring program or Central Coast Cooperative Monitoring Program for Agriculture
CPRA	California Public Records Act
CVWB	Central Valley Water Board
CWC	California Water Code
D	
DAO 4.0	Draft Agricultural Order 4.0
DDE/DDT	dichlorodiphenyldichloroethylene /dichlorodiphenyltrichloroethane
DEIR	draft environmental impact report
DPR	Department of Pesticide Regulation
E	
EIR	environmental impact report
ESJ	East San Juaquin
ELAP	Environmental Laboratory Accreditation Program
eNOI	electronic notice of intent

EO	Executive Order
eNOI	electronic Notice of Intent
ESJ Order	Eastern San Joaquin Order
F	
Farm Plan	Farm Water Quality Management Plan
FEIR	final environmental impact report
FPPA	United States Farm Land Protection Policy Act
FREP	Fertilizer Research and Education Program
G	
GWP	groundwater protection
I	
INMP	irrigation and nutrient management plan
M	
MCV	Manual of California Vegetation
MMRP	mitigation monitoring and reporting plan
MRP	monitoring and reporting plan
N	
NCCP	natural community conservation plan
NOA	notice of availability
NOC	notice of completion
NOP	notice of preparation
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NUE	nitrogen use efficiency
P	
PAO 4.0	Proposed Agricultural Order 4.0
Proposed Project	Agricultural Order for Discharges from Irrigated Lands (Agricultural Order 4.0)
PRA	Public Records Act
Q	
QAPP	quality assurance project plan
R	
RAO 4.0	Revised Agricultural Order 4.0
R	nitrogen removed from the field

RCDSCC	Resource Conservation District of Santa Cruz County
RCDMC	Resource Conservation District of Monterey County's
S	
SAP	sampling and analysis plan
SAGE	Sustainable Agriculture and Energy
SCHVP	Santa Clara Valley Habitat Plan
SEMP	Sediment and Erosion Management Plan
SGMA	Sustainable Groundwater Management Act
SIP	state implementation plan
SWRCB	State Water Resources Control Board
T	
TDS	Total Dissolved Solids
TIE	toxicity identification evaluations
TMDL	total maximum daily load
TNA	total nitrogen applied
TU	toxic unit
TAP	technical assistance provider
U	
U.C.	University of California
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
V	
Valley Water	Santa Clara Valley Water
W	
WDR	waste discharge requirement

Definitions

See Volume 1, Table of Contents, for definitions of terms used in this FEIR.

Chapter 1
INTRODUCTION

The California Regional Water Quality Control Board, Central Coast Region (CCWB) has prepared this document to respond to comments provided on the Draft Environmental Impact Report (DEIR) for the Draft General Waste Discharge Requirements for Discharges from Agricultural Lands (DAO 4.0), and to identify changes to the text of the DEIR. The document also responds to comments on the DAO 4.0 itself, which was circulated for public review concurrently with the DEIR.

This document has been prepared in compliance with the California Environmental Quality Act (CEQA) of 1970 (as amended) and the CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.). Together with Volumes 1 and 2, this document constitutes the Final Environmental Impact Report (FEIR) for the Proposed Project.

1.1 Format and Organization of this Document

This "Comments and Responses to Comments" document contains the following components:

- **Chapter 1, *Introduction***. This chapter describes the organization of the document and its preparation. This chapter also contains information on the public review period for the DEIR and DAO 4.0, and the FEIR certification process.

- **Chapter 2, *Master Responses***. This chapter contains the master responses prepared in response to comments received on the DEIR and DAO 4.0. As described in Section 1.4, a total of 3,746 comment letters (including form letters) were received during the public review period for the DEIR. Many of these letters raised similar concerns, and in many cases did not contain specific comments on the draft document. As such, master responses were prepared to eliminate repetitiveness in responding to comments and to address the shared concerns and comments expressed in letters received during the public review period.

- **Chapter 3, *Individual Responses to Comments.*** This chapter contains responses to individual comments received on the DEIR analysis and the contents of DAO 4.0. In many cases, where appropriate, responses to individual comments within comment letters refer the reader to the applicable master response(s), which are contained in Chapter 2. Chapter 3, *Individual Responses to Comments* contains a list of the persons, agencies, and organizations that provided unique comment letters on the DEIR and/or DAO 4.0.

- **Chapter 4, *Form Letters.*** This chapter contains a copy of the form letter that was received during the public review period for the DEIR and DAO 4.0. The chapter provides

responses to the comments in the form letter and a list of the individuals that submitted the form letter.

- **Chapter 5, *Revisions to the DEIR and DAO 4.0.*** This chapter describes revisions to the DEIR and the DAO 4.0. As described in Section 1.6, revisions to the DEIR and DAO 4.0 were either made in response to comments received during the public review period or were initiated by CCWB.

- **Chapter 6, *Report Preparation.*** This chapter lists the individuals who assisted in the preparation of Volume 3 of the FEIR.

- **Chapter 7, *References*.** This chapter lists the references cited to in Volume 3 of the FEIR.

Note that the Mitigation Monitoring and Report Program (MMRP) for the Proposed Project is Appendix D in Volume 2 of the FEIR.

1.2 Public Review of the DEIR and Draft Agricultural Order 4.0

The public review period for the DEIR and DAO 4.0 was initiated on February 21, 2020 with the filing of the Notice of Completion (NOC) with the State Clearinghouse and the distribution and posting of the Notice of Availability (NOA). The NOA was sent to all trustee agencies, any person or organization requesting a copy, and to the county clerks' offices for all nine counties within CCWB's jurisdictional area (i.e., Kern, Monterey, San Benito, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, and Ventura) for posting. CCWB also posted the NOA on its website along with the electronic DEIR files. The public review period for both the DEIR and DAO 4.0 was extended due to the COVID-19 pandemic and ultimately lasted until June 22, 2020. In total, the public review period lasted for 122 days. The revised NOA is posted on CCWB's website.

1.3 Public Workshops on the DEIR and Draft Agricultural Order 4.0

During the public review period for the DEIR and DAO 4.0, CCWB held three public stakeholder workshops, as indicated below. Due to the COVID-19 pandemic, the workshops were conducted virtually to avoid in-person gatherings.

Table 1-1. Public Stakeholder Workshops Information

Date	Location	Time
June 2, 2020 Tuesday	Virtual Workshop #1 (via Zoom) Santa Cruz County & San Benito County	9:00 a.m. – 11:30 a.m.
June 3, 2020 Wednesday	Virtual Workshop #2 (via Zoom) Monterey County & San Luis Obispo County	9:00 a.m. – 11:30 a.m.
June 4, 2020 Thursday	Virtual Workshop #3 (via Zoom) Santa Barbara County & Ventura County	9:00 a.m. – 11:30 a.m.

The workshops each featured the same content, including five brief presentations followed by a question-and-answer session. Copies of the workshop presentation recordings and slides are available for download on CCWB's website.

1.4 Comments Received During the Public Review Period

CCWB received a total of 3,746 letters during the public review period for the DEIR and DAO 4.0. Of these letters, 3,533 were identical form letters (i.e., letters that were exactly the same except for the name of the person who signed the letter). As such, of the 3,746 total letters, 213 were unique letters.

Letters were submitted by federal, state, and local agencies; other stakeholders, such as agricultural organizations and environmental groups; and individual members of the public. Refer to Chapter 3, *Individual Responses to Comments* and Chapter 4, *Form Letters* for copies of the letters submitted during the public review period and the lists of persons, agencies and organizations that submitted comment letters.

Although the NOA instructed commenters to clearly indicate whether the comments being submitted related to the DEIR or the DAO 4.0, in practice, it is difficult to differentiate the comments. As a result, many of the comment letters contain a mix of comments on the environmental analysis in the DEIR and the specific components and requirements in DAO 4.0. To provide a full and transparent accounting of the comments received during the public review period and CCWB's responses to those comments, the comments are included and responded to in this FEIR, regardless of whether they pertain specifically to the DEIR analysis or DAO 4.0.

1.5 Board Workshops and Additional Stakeholder Engagement

Following the close of the public review period for the DEIR and DAO 4.0, CCWB held several Board workshops that focused on the DEIR and DAO 4.0. These included the following:

- September 10-11 and 23-24, 2020: This was a four-day workshop, split between two meetings, focused on DAO 4.0. The first three days allowed for stakeholder

presentations, public comment and discussion. The fourth day began the CCWB staff presentation and Board discussion.

- October 22-23, 2020: This was a continuation of the workshop from September 23-24 and consisted of additional discussion of DAO 4.0 between the Board and CCWB staff.
- December 9-10, 2020: This was a continuation of the workshop that began on September 10 and continued on September 11, 23-24, and October 22-23. This meeting consisted of additional discussion of DAO 4.0.
- January 7-8, 2021: This was a continuation of the previous workshops and consisted of additional discussion of DAO 4.0.

All Board workshops were virtual due to the COVID-19 pandemic and broadcast live on the Internet (links provided through CCWB's website) for viewing by the public. Recordings are also available online through CCWB's website. Based on comments received and Board discussion, portions of the riparian management component (i.e., Part 2, Section C.5 and associated tables) of DAO 4.0 was removed. See discussion of the Revised Agricultural Order (RAO) 4.0 below.

The Board workshops described above were conducted outside of the CEQA public review period for the DEIR and, thus, any public oral or written comments shared at the workshops were not considered official public comments on the DEIR and are not responded to in this FEIR.

1.6 Revised Draft Agricultural Order 4.0 Review and Comment Period

On January 26, 2021, CCWB released RAO 4.0 for public review and comment. The review and comment period lasted for 30 days and concluded on February 25, 2021. As noted above, based on comments received on DAO 4.0 and Board discussion, the riparian and operational setback requirements were removed and other changes were made to the DAO 4.0. The revisions incorporated into RAO 4.0 were as follows:

- Addition of discount factor for organic fertilizers
- Addition of nitrogen scavenging credit for cover crops and high carbon amendments
- Addition of third-party alternative compliance pathway for groundwater protection
- Addition of third-party program priority areas and follow-up implementation and work plan due dates for surface water protection
- Streamlined total nitrogen applied (TNA) and irrigation and nutrient management plan (INMP) summary reporting section
- Streamlined surface water protection requirements section

- Removal of slope and certified sediment and erosion control plan requirements for impermeable surfaces, but with continued and modified requirements to manage stormwater discharge volume and intensity from impermeable surfaces

- Removal of some riparian area management requirements (i.e., riparian area management plan, and operational and riparian setbacks), but with continued and modified requirements to document and maintain existing riparian areas

CCWB received a total of 34 comment letters during the RAO 4.0 review period from a variety of stakeholders and individual members of the public. The comments ranged from support of or opposition to various components of RAO 4.0 to detailed suggestions for additional changes or refinements. Refer to the "Revised Draft Agricultural Order 4.0, Master Response to Comments" document (April 2021), available through the project website[1], for a detailed summary of the comments on RAO 4.0 and CCWB's responses to those comments. The changes from RAO 4.0 to PAO 4.0, made based on comments received on RAO 4.0, are described in Chapter 5, *Revisions to the DEIR and DAO 4.0.* From a CEQA standpoint, these changes were not substantive and did not affect the environmental analysis in Volumes 1 and 2 of this FEIR.

The RAO 4.0 review and comment period was conducted as part of the order development process, which is separate from the CEQA process. Thus, the public comments on the RAO 4.0 are not considered CEQA comments and are not responded to in this FEIR. However, the revisions to the original DAO 4.0 are reflected in Volumes 1 and 2 of this FEIR (i.e., the DEIR text has been revised to be consistent with the RAO 4.0). The responses to comments provided in this Volume 3 document also reference the revisions to the original DAO 4.0, where appropriate.

Because the changes to the riparian area management requirements, and other changes to the DAO 4.0, would not result in any new previously undisclosed significant environmental impacts or substantially worse impacts from those evaluated and disclosed in the DEIR, CCWB was not required to recirculate the DEIR.

1.7 Preparation of the FEIR

Preparation of the FEIR involved preparing responses to comments received during the public review period for the DEIR and DAO 4.0, and revising the DEIR text in response to comments and/or in accordance with the changes to the DAO 4.0. As described in Section 1.4, CCWB received a large number of comments on the DEIR and DAO 4.0. Comments were responded to either through master responses (for common recurring themes) or through individual responses to comments, or a combination of the two. Unique comment letters were assigned a letter code (e.g., A or AA) and individual comments within the unique comment letters were bracketed and numbered (e.g., A-1, A-2, etc.). Copies of the unique comment letters and associated responses to comments are provided in Chapter 3 of this document. Form letters are

[1] All documents related to Agricultural Order 4.0 can be accessed via this link: https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/ag_order4_renewal.html

responded to in Chapter 4, *Form Letters.* Only one response is provided to the individual comments contained in the form letter.

The revisions to the DEIR text are shown in Volume 1 of the FEIR, with substantive changes from the DEIR shown in underline/strikeout, and described in Chapter 5, *Revisions to the DEIR and DAO 4.0*. The Project Description (Chapter 2) of the DEIR was revised in this FEIR (see Volume 1) to reflect RAO 4.0.

1.8 FEIR Review and Certification

The FEIR will be posted on CCWB's website, and all parties that submitted comments on the DEIR (including public agencies) will be notified of the FEIR's availability at least 10 days before its certification. At the close of the 10-day public agency review period, CCWB will consider the Environmental Impact Report (EIR), staff recommendations, and public testimony, and decide whether to certify the EIR and whether to approve or deny the Proposed Project (Agricultural Order 4.0). If CCWB chooses to certify the EIR and approve the Proposed Project, it will file a Notice of Determination (NOD) with the Office of Planning and Research (OPR) (14 CCR 15093[c]). Because removal of the riparian and operational setback requirements, as reflected in the RAO 4.0, would eliminate the significant and unavoidable impacts identified for the Proposed Project, a statement of overriding considerations would not be needed as part of the record of project approval (14 CCR 15093[c]).

Chapter 2
MASTER RESPONSES

This chapter contains the master responses prepared in response to comments submitted on the Draft Environmental Impact Report (DEIR) and Draft Agricultural Order 4.0 (DAO 4.0) released for public comment on February 21, 2020 with written comments due by June 22, 2020. As described in Chapter 1, *Introduction,* numerous comments and concerns were raised repeatedly in comment letters, and the Central Coast Regional Water Quality Control Board (CCWB) has determined that preparing master responses would be the most appropriate and efficient means of responding. Each master response first summarizes the comments raised in letters and then provides a comprehensive response.

In consideration of comments received and public meetings held in September 2020, October 2020, December 2020, and January 2021, the CCWB released a revised Agricultural Order 4.0 (RAO 4.0) on January 26, 2021 for public comment. Response to comments on RAO 4.0 as they relate to changes between RAO 4.0 and Proposed Agricultural Order 4.0 (PAO 4.0) are addressed separately and are not included here.

Analyses of narrative comments come with constraints. Interpretation is subjective. A single comment letter may contain specific comments related to different subject areas of DAO 4.0 and the DEIR. The CCWB has used its best efforts to interpret the comments and group common comments together to provide meaningful responses.

This master response to comments represents a compilation of 10 major comment subject categories identified in the comment letters and master responses to those comments (Master Response Nos. 1 to 10). Within each of these master responses, subsections are also included. The ranking reflects the placement of the comment subject category in the Order[1]; not a ranking in terms of the number of comments related to a comment subject category.

The CCWB reviewed all written comment letters received during the public comment period and considered these comments when developing RAO 4.0 which was published on January 26, 2021.

[1] "Order" is used to refer to Agricultural Order 4.0 generally (e.g., when not distinguishing between DAO 4.0, RAO 4.0, etc.).

2.1 Master Response 1: General Comments

General comments related to DAO 4.0 focused on the following themes.

2.1.1 General (Support)

Comments

Commenters that generally support DAO 4.0 stated that the human right to safe, clean, affordable, and accessible water is fundamental and needs to be achieved. DAO 4.0 improves water quality for communities, agriculture, and the environment on the central coast in a way that balances all the needs of the region and takes some important steps to rein in pollution. A critical aspect of the proposed Agricultural Order 4.0 is the evolution to the General Waste Discharge Requirements (WDRs). The CCWB will get pushback from the "big guys." Groundwater quality remediation must be the long-term goal.

Response

The CCWB acknowledges these comments. No changes were made to RAO 4.0 in consideration of these comments. .

2.1.2 General (Oppose)

Comments

Commenters that generally oppose DAO 4.0 stated that there have been no improvements to water quality even after all the work imposed on farmers. DAO 4.0 cannot be implemented without extreme changes to complex farming practices. The CCWB is proposing an onerous and restrictive regulatory program in a time of great economic uncertainty. DAO 4.0 is poorly written, far reaching, and myopically focused with casual disregard to the far-reaching consequences. DAO 4.0 imposes an unnecessary extra burden to an already highly regulated industry. The requirements are an overreach, burdensome, onerous, restrictive, and overly broad, and discourage crop rotation. There needs to be reasonable ways to reduce or end regulation as objectives are achieved over time. This type of rigorous red tape will not result in better water quality and environmental preservation. This appears to be a one-sided affair; concerns from constituents in a State Assemblyman's district were ignored. The tone and content of DAO 4.0 feels more like an attack on agriculture than an attempt to help us improve. Authors of DAO 4.0 appear to lack a real-world knowledge or understanding of local agriculture and the possible ramifications. There needs to be more time for more public dialogue and education to learn the impacts that have obviously not been considered; should invest in rebuilding relationships with growers. To begin to rebuild trust, agricultural representatives and staff might sit down and review existing empirical, scientific studies on Central Coast water pollution together.

Commenters also stated that DAO 4.0 is an extreme example of regulatory overreach without adequate education on the impact of unintended consequences, seems arbitrary, is embedded with excessive staff discretion, does not provide information that suggests it will accomplish what it is set out to accomplish. The CCWB is at odds with California water laws and policies,

which consistently promulgate a balanced standard, not only to protect environmental resources, but also to ensure human health, public welfare, a prosperous economy, and the protection of personal rights. A commenter also stated that the proposed "limits" are prescriptive and unattainable with the science and tools that exist today, and that the CCWB cannot mandate specific farming practices and can only impose limits on the amount and/or concentration of materials in a discharge.

Response

Please refer to RAO 4.0, Attachment A, Findings, for the CCWB's technical, legal, and policy rationale for establishing the Order requirements. As discussed in Attachment A, Section B, the terms and conditions comply with the California Water Code (CWC) as well as applicable plans and policies. The CCWB does not specify a manner or method of compliance.

2.1.3 Aquatic Species Protection

Comments

The CCWB must do more to protect the needs of aquatic life and endangered species, as required by both state and federal law.

Response

RAO 4.0 includes receiving water limits to achieve water quality objectives and protect beneficial uses, including those for aquatic life. The receiving water limits were developed based on either water quality objectives that have been adopted in the Basin Plan or total maximum daily loads (TMDLs) for impaired waterbodies. To further protect aquatic life and endangered species, RAO 4.0 carries over a prohibition against the disturbance (e.g., removal, degradation, or destruction) of existing, naturally occurring, and established native vegetative cover (e.g., trees, shrubs, and grasses) from previous Agricultural Orders adopted by the CCWB. Dischargers must avoid disturbance in riparian areas to minimize waste discharges and protect water quality and beneficial uses (RAO 4.0, page 44, paragraph 24). In the case where disturbance of riparian areas is authorized, Dischargers must implement appropriate and practicable measures to avoid, minimize, and mitigate erosion and discharges of waste (RAO 4.0, page 44, paragraph 25).

2.1.4 Complicated Regulations

Comments

Commenters stated that DAO 4.0 is bewildering in its complexity, has a laser like focus on limited numeric outcomes without addressing the complexity of the system, is long, complicated, and confusing with different reporting and timelines for different constituencies, an onerous and restrictive regulatory program, and is burdensome and overly complex, without a benefit to water quality. This type of rigorous red tape will not result in better water quality. The length and complexity are mind boggling. DAO 4.0 would be more effective if all the various compliance requirements were summarized in one document. Staff outreach webinars explained prioritization but details on annual reporting were insufficient.

Response

RAO 4.0 has been streamlined in terms of timelines and reporting requirements. To provide clarity and simplify compliance, the CCWB will develop a compliance calendar, identify the groundwater phasing and surface water priority areas that apply to each discharger on their electronic Notice of Intent in GeoTracker, develop reporting templates, instructions, and other education and outreach materials to support Dischargers in complying with the Order. RAO 4.0 also includes the provision of third-party programs to provide assistance to growers, by coordinating activities, streamlining processes, creating economies of scale, and assisting Dischargers to achieve compliance with requirements.

2.1.5 Reporting Requirements

Comments

Commenters stated that significant data collection and retention will be required to meet annual compliance reporting. They cautioned awareness of the added burden and cost of these regulations. Commenters also pointed out that there is no upload function from standardized formats or spreadsheets for reporting.

Response

RAO 4.0 has been streamlined in terms of reporting requirements. CCWB staff will develop reporting templates and tools to assists growers and intends to work closely with third-party programs to streamline data collection, including the ability to develop standardized formats and spreadsheets, as well as batch upload data on behalf of their members.

2.1.6 Phasing / Prioritization

Comments

While DAO 4.0 allows for phased in compliance based on priority areas, in the end, Dischargers will all still have to do the required monitoring and reporting even for low-risk crops or farming in lower risk ranches.

Response

The purpose of groundwater phasing and surface water prioritization is to focus on groundwater basins or watersheds with severe water quality problems first and progress through the entire Central Coast region over time. CCWB staff explored the potential to allow for reduced monitoring and reporting for low-risk crops. We do not currently have sufficient data to justify this because total nitrogen applied reporting did not apply to all Dischargers enrolled in Agricultural Order 3.0 (Ag Order 3.0) and further because nitrogen removal data has not been collected to date. There is the potential that reduced monitoring and reporting could be included in a future iteration of the Agricultural Order based on data collected under RAO 4.0. RAO 4.0 allows for the development and implementation of commodity-based third-party programs that may be used to streamline or reduce requirements for low risk crops.

2.1.7 Minimum Farm Size / Low Risk Crops

Comments

Commenters suggested that if the CCWB starts with regulating farms that are a minimum of 100-acres in size, the CCWB might have a better chance to make a difference. Commenters also stated that vineyards and small farms should be exempt from these requirements; they cause little problem.

Response

CCWB staff explored the potential to allow for exemptions for small farms and/or low risk crops. We do not currently have sufficient data to justify this because total nitrogen applied reporting did not apply to all Dischargers enrolled in Ag Order 3.0 and further because nitrogen removal data has not been collected to date. There is the potential that such an exemption could be included in a future iteration of the Agricultural Order based on data collected under RAO 4.0. However, small farms need to be addressed because a large number of contiguous "minimum acreage" farms have the same potential to discharge pollutants as larger farms.

2.1.8 Incentives

Comments

Commenters suggested that the CCWB incentivize the use of Best Management Practices (BMPs) by reducing required monitoring, reporting, and fees, incentivize new technologies and innovation to reach our joint water quality objectives, place more focus on innovation and providing credits for mitigating nitrogen to groundwater, not limiting fertilizer inputs. Commenters also stated that the use of high nitrogen water should be incentivized, incentives should be built into the reporting calculations, there should be a focus on creating a framework that incentivizes the adoption of practices that protect water quality by reducing the regulatory requirements, and that reducing regulatory requirements will incentivize adoption of practices that protect water quality.

Commenters stated the CCWB should incorporate new technologies, including container production and appropriate regulatory requirements for proprietary genetics/production systems (e.g. containerized production) should be included.

Commenters also stated that an expert panel should be formed to review proposed limits in later years before the rules are codified.

Commenters further stated that the CCWB should consider the potential unintended consequences of biomass removal, testing of residual soil nitrate levels in the soil and adjusting fertilizer applications, more nitrogen removal research, nitrogen technologies (e.g. slow and controlled release fertilizers), improved irrigation management to reduce nitrate leaching, rotational crops (such as broccoli) that scavenge residual soil nitrate from deeper in the soil profile, winter cover crops that serve a critical role in capturing the fall pool of soil nitrate, high carbon compost that captures soil nitrate.

Response

RAO 4.0 allows growers to develop, modify and implement management practices that will be the most effective based on farm specific conditions and includes third-party program options that provide opportunities for reduced monitoring, reporting, and fees. RAO 4.0 has been revised to include three compliance pathways for nitrogen discharge targets and limits that incentivize new technologies and innovations (RAO 4.0, page 21, paragraph 8; page 50, Table C.1-3). The use of irrigation water nitrogen as a method of reducing the amount of fertilizer nitrogen applied to crops is encouraged (RAO 4.0, page 22, paragraph 8). Additional incentives in RAO 4.0 include the use of compost to improve soil health, nutrient and carbon sequestration, and water holding capacity consistent with the state's Healthy Soils Initiative (RAO 4.0, page 22, paragraph 8). The use of organic fertilizers and amendments to improve soil health, nutrient and carbon sequestration, and water holding capacity consistent with the state's Healthy Soils Initiative (RAO 4.0, page 21, paragraph 8 and page 23, paragraph 11). The amount of crop material removed through harvest or other methods allows measurements to be taken using existing crop conversion coefficients or for Dischargers to develop their own (RAO 4.0, page 23, paragraph 12). The amount of nitrogen removed through sequestration in woody material of permanent or semi-permanent crops may also be used to calculate total nitrogen removal (RAO 4.0, page 23, paragraph 13). Dischargers that implement best management practices that reduce nitrogen leaching in the wet/rainy season may claim a nitrogen scavenging credit (RAO 4.0, page 24, paragraph 14).

RAO 4.0 encourages Dischargers to develop and implement innovative methods for removing nitrogen from the environment to improve water quality. Dischargers may use treatment methods (e.g., bioreactors) to remove nitrogen from groundwater or surface water and may count this towards their nitrogen removal value if they are able to quantify the amount of nitrogen removed (RAO 4.0, page 24, paragraph 15). Dischargers that demonstrate removal of additional nitrogen through other means may include this additional removal (RAO 4.0, page 24, paragraph 16).

Dischargers, groups of dischargers, or commodity groups who can quantify the amount of nitrogen discharged from their ranch or for specific crops or via specific management practices by directly monitoring it at the points of discharge can propose an alternative monitoring methodology to comply with the nitrogen discharge targets and limits, in lieu of using the nitrogen applied minus removed compliance formulas. Example situations where this may apply includes greenhouse, nursery, container production or intensive crop production where irrigation and drain water is captured and allows for direct monitoring of discharges (RAO 4.0, page 25, paragraph 22). In lieu of an expert panel, RAO 4.0 includes an effectiveness evaluation process (RAO 4.0, page 8, paragraph 35).

2.1.9 Enforcement / Fairness

Comments

Commenters stated that enforcement is the CCWB's weakness; farmers should manage their runoff. Until it can be ensured that all dischargers will be regulated and held to the same standards, it is inappropriate to initiate these requirements.

Response

RAO 4.0 requires all Dischargers to achieve numeric targets and limits instead of Ag Order 3.0's requirements to implement management measures. The enforcement program relies on well-developed compliance monitoring systems that are designed to identify and correct violations. An exceedance of a numeric limit is one of the easiest ways to identify a violation for enforcement follow up. Consistent with other CCWB regulated entities that have discharges that exceed numeric limits, the typical approach for enforcement is progressive enforcement. Progressive enforcement contemplates an escalating series of actions beginning with notification of violations and compliance assistance, followed by additional consequences, culminating in a complaint for civil liabilities or other formal enforcement. Enforcement is a critical ingredient in creating the deterrence needed to encourage the regulated community to anticipate, identify, and correct violations. Formal enforcement is intended to be used as a tool to maintain a level playing field for those who comply with their regulatory obligations by setting appropriate civil liabilities for those who do not.

2.1.10 Suggestions for Improvement

Comments

Commenters recommended cooperative third-party monitoring and reporting party programs for trend monitoring networks, regulatory flexibility to adjust requirements as new and improved science and/or data becomes available, clear and practical objectives, along with reasonable and meaningful ways to reduce or end regulation as objectives are achieved over time, and improved Board and staff training and knowledge of agricultural operations.

Response

RAO 4.0 includes the option to comply with portions of the Order by participating in third-party groups or programs (e.g., certification program, watershed group, water quality coalition, monitoring coalition, or other cooperative effort) to assist individual Dischargers in achieving compliance with this Order, including implementing water quality improvement projects and required monitoring and reporting (RAO 4.0, page 14, paragraph 32). RAO 4.0 includes an effectiveness evaluation process for the CCWB to receive updates regarding the implementation of the Order as well as to consider potential modifications (RAO 4.0, page 8, paragraph 35).

2.1.11 Research / Science

Comments

Commenters stated that the CCWB should ensure requirements are supported by the best available science, look for ways to fund research so that, together with other funding sources, we can gain a better understanding of practices that can move us towards the goals of this Order. Scientific research must consider all crops, soil types, and climates. There needs to be science behind the metrics. There is a need for more resources to invest in research for developing Central Coast specific coefficients for the proposed nitrogen applied exceedance and nitrogen removed. The CCWB should support industry efforts to work with resource conservation organizations to design projects that benefit water resources and fit within their landscape and plan for future research to develop solutions to water quality problems.

Commenters also stated that most of what this Order is proposing is not possible to obtain with current science. Success is likely only possible if there is an aggressive research and development program that is properly funded so that new technologies may be developed and implemented by growers. CCWB staff should be directed to work more directly with farmers and University of California (U.C.) Researchers to come up with management measures, and more importantly identify fertilizers and chemical inputs that do not contain salts. Commenters further stated that the CCWB should consider extending timelines and including a reasonable process for growers and researchers to come up with practical solutions (include in that process the ability to adapt and adopt new practices and approaches).

Response

Please refer to Attachment A, Findings, for the CCWB's scientific rationale of the requirements under RAO 4.0. CCWB staff has and will continue to explore ways to fund research and leverage that funding to the benefit of Dischargers. RAO 4.0 includes third-party programs that could potentially include resource conversation organization efforts to develop projects that benefit water resources and solve water quality problems. The CCWB acknowledges the need to implement new or adapt existing farming practices to meet the targets and limits in RAO 4.0. To address this, groundwater phasing and surface water prioritization, along with extended timelines to meet targets and limits (e.g., over a 30-year period) are included in RAO 4.0. RAO 4.0 includes an effectiveness evaluation process (RAO 4.0, page 8, paragraph 35) that allows for the consideration of new research, emerging science, and management measures.

2.1.12 Farm Roads

Comments

Commenters stated that constructing farm roads to state codes is unnecessary and costly.

Response

Improper construction and maintenance of farm roads in irrigated agricultural areas can result in significant erosion and sediment discharges to water bodies. RAO 4.0 requires the implementation of best practicable treatment and control (BPTC) measures for the construction and maintenance of farm roads to minimize erosion and sediment discharges that can contribute to nonpoint source pollution. The CCWB requirement does not exempt Dischargers from complying with other state or local agency requirements.

2.1.13 Disadvantaged Farmers

Comments

Commenters stated the need for technical assistance funding to assist beginning, limited resource and socially disadvantaged farmers enroll and manage their compliance, and suggested a phased in approach (or even an exemption) for some of the new requirements (e.g., reporting on nitrogen removal). Commenters also stated that the disadvantaged farmer demographic is marginalized due to institutional structures and participation methodologies.

Response

The CCWB recognizes that certain limited resource growers (as defined by the U.S. Department of Agriculture) may have difficulty achieving compliance with this Order. The CCWB will prioritize assistance for these growers, including but not limited to technical assistance, grant opportunities, and necessary flexibility to achieve compliance with this Order (e.g., adjusted monitoring, reporting, or time schedules). (RAO 4.0, page 7, paragraph 30).

2.1.14 Support Ag Partners' Proposal

Comments

Commenters stated that we should look to and lean upon the "Ag Association Partners' Comprehensive Submittal," including the redline revisions.

Response

RAO 4.0 now includes a third-party cooperative alternative compliance pathway for groundwater protection and trend monitoring that incorporates many components of the Ag Association Partners' submittal (RAO 4.0, Part 2, Section C.2, pages 28-32, paragraphs 1-23).

2.1.15 Education

Comments

Commenters stated that there will have to be educational programs or professional assistance to help small operations meet the requirements. They asked whether dischargers who exceed the fertilizer nitrogen application limits, nitrogen discharge targets and limits, or surface water limits must complete additional relevant water quality education (e.g., a "traffic school" model), who would design the curriculum, whether growers, UC Cooperative Extension, Certified Crop Advisors, and Technical Service Providers would have a seat to contribute at the course planning tables, how many required education hours would be required, and whether a credit system would be established.

Commenters also stated that this section of DAO 4.0 is vague and so are the mechanics, such as specifying who from an operation can / needs to obtain education. They asked how many hours would be required, what subject matter would need to be covered, and who would be qualified to provide the training.

Response

RAO 4.0 includes modified language clarifying continuing education requirements. Dischargers are required to attend outreach and education events annually to obtain technical skills and assistance necessary to achieve compliance with the limits established by this Order (RAO 4.0, page 17, paragraph 4). Dischargers who exceed the fertilizer nitrogen application limits, nitrogen discharge targets and limits, or surface water limits must complete additional relevant water quality education sufficient to fully inform the implementation of additional or improved management practices to avoid future exceedances (RAO 4.0, page 18, paragraph 5).

2.1.16 Reduced Loopholes

Comments

Commenters stated that loopholes or off-ramps that allow farmers to avoid enforceable standards, especially the protection of wetlands and riparian habitats, undermine the integrity of the waste discharge requirements and contribute to violations of water quality standards.

Response

RAO 4.0 contains enforceable limits combined with language to ensure that loopholes or offramps are minimized. The riparian area management requirements related to riparian and operational setbacks and alleged loopholes and offramps that concern the commenters have been removed.

2.2 Master Response 2: Third-Party Programs

Comments related to third-party programs focused on the following themes.

2.2.1 General

Comments

Commenters stated that third parties should not be expected to educate Dischargers on new requirements and that there are currently no identified and qualified third parties except Central Coast Water Quality Preservation, Inc.

Response

Third-party programs must provide continuing education opportunities as appropriate either directly through the program or through coordination with other third-party programs/groups or local entities to ensure their members obtain technical skills and assistance necessary to achieve compliance with the requirements established in this Order. In the instance of third-party monitoring programs, membership outreach and education should be implemented to inform members about the monitoring results relative to meeting specific water quality objectives, targets, or limits (RAO 4.0, page 16, paragraph 37.k). The CCWB will initiate a formal request for proposal process to solicit potential third-party programs that may be interested in assisting Dischargers in the Central Coast Region shortly after the Order is adopted. Central Coast Water Quality Preservation, Inc. has been successfully managing the third-party surface water quality trend monitoring program for over a decade. Several organizations including Central Coast Water Quality Preservation, Inc. have expressed an interested in assisting with third-party formation and implementation. Third-party program expectations are outlined in the RAO 4.0, Third-Party Programs section, at pages 14-16, paragraphs 32-37.

2.2.2 Sustainability Certifications Incentive

Comments

Commenters stated that the CCWB should maintain the sustainability certifications incentive of reduced monitoring/reporting requirements and that wine grape growers deserve separate consideration and reduced monitoring/reporting requirements.

Response

Third-party programs that include sustainability certifications are encouraged to assist their members in efforts to quantifiably demonstrate that their ranches pose limited or no threat to surface water quality or groundwater quality by submitting a technical report to the Executive Officer (EO) for review and approval. If approved, the Discharger is not required to conduct the nitrogen application or removal monitoring and reporting or to submit the Irrigation and Nutrient Management (INMP) Summary report, regardless of what Groundwater Phase area the ranch is in (RAO 4.0, page 25, paragraph 20).

2.2.3 Coalition Approach

Comments

Commenters stated that they support the Agricultural Association Partner's third-party coalition approach and the Central Valley Water Board's third-party approach.

Response

RAO 4.0 incorporates groundwater protection areas, formulas, values, and targets and a complimentary groundwater quality trend monitoring program proposed by the Agricultural Association Partner's third-party coalition approach, which is in large part based on the Central Valley Water Board's third-party (i.e., coalition) approach (RAO 4.0, pages 30-32, paragraphs 14-23). Participating Dischargers in a groundwater protection (GWP) area that exceed the interim or final GWP targets by 20% or more, as evaluated individually and on an annual basis, are subject to follow-up by the approved third-party program administrator , which could include additional education or implementation of additional or improved management practices (RAO 4.0, page 32, paragraph 22).

2.2.4 Third-Party Approach

Comments

Commenters stated that they support the CCWB's third-party approach. See also Master Response 2.2.3.

Response

The CCWB acknowledges these comments related to the third-party approach in the Order. No changes were made to RAO 4.0 in consideration of these comments.

2.2.5 Offers to Assist

Comments

Commenters expressed an interested in assisting with third-party formation and implementation.

Response

The CCWB will initiate a formal request for proposal process to solicit potential third-party programs that may be interested in assisting shortly after the Order is adopted. Third-party program expectations are outlined in the Third-Party Programs section of the RAO (pages 14-16, paragraphs 32-37).

2.3 Master Response 3: Irrigation and Nutrient Management for Groundwater and Surface Water Protection

Comments related to irrigation and nutrient management for groundwater and surface water focused on the following themes.

2.3.1 General

Comments

Commenters stated that the Order should incentivize management measure implementation, that provisions that disallow practices already in place to generate any positive compliance are disincentives to continue those practices, nitrogen technologies (e.g. slow and controlled release fertilizers) can improve nitrogen use efficiency in some cases and help reduce the applied factor, testing residual soil nitrate levels in the soil and adjusting fertilizer applications is the most powerful tool growers have for affecting the applied part of the applied minus removed equation, improved irrigation management to reduce nitrate leaching during the crop production season is key to maintaining nitrate in the rootzone, rotational crops such as broccoli have been shown to scavenge residual soil nitrate from deeper in the soil profile and return it to the soil surface where it can be made of use for further crop growth, winter cover crops serve a critical role in capturing the fall pool of soil nitrate that is at risk for leaching with winter rains, a shift from prescriptive nitrogen application and discharge limits to an outlier approach based on development of crop specific or crop type ranges of targets, and that time would be better spent implementing “on-farm” practices in watersheds where the results are actually going to improve our water quality (surface and groundwater).

Commenters also stated that the CCWB should consider an “operation-wide” INMP which covers all the ranches, provide Irrigation and Nutrient Management and Irrigation and Nutrient Management Summary Report templates for use by growers, expressed strong support for outreach, education, and technical assistance resources from non-regulatory technical assistance providers to assist growers, aligning the order with the California Department of Food and Agriculture (CDFA) and U.C. Davis practices, and concerns that the U.C. Cooperative Extension will not be able to sustain the online CropManage irrigation and nutrient management decision support tool without funding.

Commenters asked why the CCWB has pulled back from providing technical compliance assistance to smaller, low capitalized growers, especially those whose first language is not English and whether CCWB staff is prepared to inform and financially assist with the required ongoing research in crop breeding and field-evaluation of emerging technologies that appears essential to the proposed discharge limit timelines. Commenters also stated that the CCWB is in a unique position to bring together stakeholders and identify all possible funding.

Response

The CCWB acknowledges these comments and input on how nitrogen application limits and nitrogen discharge targets and limits can be met and incorporated many of these ideas in RAO 4.0 (see Master Response 2.1.8, Incentives).

The nitrogen application limits and discharge targets and limits use the outlier approach suggested by some commenters. In establishing the nitrogen application limits, the approach presented in the East San Joaquin (ESJ) Order was considered. The ESJ Order approach involves making comparisons among the population of Dischargers to determine "outliers." The crop-specific application limits established in RAO 4.0 follow that approach. First the 90th percentile of fertilizer nitrogen application for each crop is used to establish the application limits for the top six crops reported in the Central Coast region and by 2025, the 85th percentile of fertilizer nitrogen application is used as the limit (RAO 4.0, Attachment A at page 100, paragraph 23).

The CCWB acknowledges that management measures have been and continue to be implemented by some Dischargers in the Central Coast region to protect groundwater quality. However, groundwater quality data document that of the over 2600 on-farm domestic wells sampled during Agricultural Orders 2.0 and 3.0 (2012 through 2019), 28 percent had mean concentrations that exceeded the nitrate maximum contaminant level for drinking water and the concentrations in some groundwater basins were significantly higher than the regional average of 11.0 mg/l NO3-N (RAO 4.0, Attachment A at page 94, paragraphs 8-9). Further, analysis of nitrate trends in individual wells indicate that regionwide 13 percent show increasing trends in nitrate concentrations while only 8 percent show decreasing trends (water quality is getting better for nitrate) and in some groundwater basins, the number of wells with increasing trends greatly exceeds the number of wells with decreasing trends, indicating water quality is continuing to degrade for nitrate (RAO 4.0, Attachment A at pages 95-96, paragraph 10). The primary drivers of the observed increase in nitrate concentration in groundwater are over-application of synthetic fertilizer nitrogen, the amount of residual nitrogen remaining in the field after crops are harvested, under-utilization of nitrate present in the soil and/or irrigation water, and inefficient irrigation (RAO 4.0, Attachment A, page 96-97, paragraphs 11-16). RAO 4.0, Attachment A, at pages 96-101, paragraphs 11-24 further details the sources and primary drivers of nitrate contamination in groundwater.

Operation-wide irrigation and nutrient management was considered during the Order development process; however, this proved infeasible since our data revealed that operations may have ranches in multiple groundwater basins. The CCWB intends to develop INMP templates for use by Dischargers, and encourages outreach, education, and technical assistance resources from non-regulatory technical assistance providers to assist Dischargers.

The CCWB has and will continue to provide technical compliance assistance to smaller, low capitalized Dischargers, especially those whose first language is not English (see Master Response 2.1.13).

The CCWB has and will continue to coordinate with CDFA's Fertilizer Research and Education Program (FREP). The CCWB has and will continue to coordinate with the University of California Cooperative Extension, and where possible promote funding for CropManage and the development and implementation of other viable tools. The CCWB has and will continue to engage with stakeholders and identify possible funding resources for Dischargers. The State Water Resources Control Board, Division of Financial Assistance, administers the implementation of financial assistance programs that include loan and grant funding for watershed protection projects, nonpoint source pollution control projects, and groundwater treatment and remediation.

2.3.2 Nitrogen Discharge Limits (Support)

Comments

Commenters stated their support for the adoption of strong numeric application and discharge limits for nutrients such as fertilizers, specific numeric limits based on a crop-specific applied minus removed calculation the reduction of nitrogen application limits and the phasing in of more aggressive standards (but some stated that the nitrogen discharge limits and reductions in those limits are phased in too gradually and would unnecessarily result in continued surface water and groundwater pollution), the ratcheting-down process to drive change and achieve improved water quality, the alternative to nitrogen loading limits through "pump and treat" methods, and the R_{OTHER} option (removal of additional nitrogen through other means not otherwise quantified in DAO 4.0) which may seem far-fetched today but may get us where we all want to be in the next few decades. Commenters also stated that they have already achieved 50 pounds of applied nitrogen a year, and in some cases much less. Commenters further stated that that thirty years to bring nitrogen use into non-contamination compliance is too long (should be 20 years).

Response

The CCWB acknowledges these comments. The nitrogen discharge limits are phased in over 30 years to allow sufficient time for Dischargers to adapt (RAO 4.0, page 50, Table C.1-3) and for development of new and improved management practices and tools. No changes were made to RAO 4.0 in consideration of these comments.

2.3.3 Nitrogen Discharge Limits (Oppose)

Comments

Commenters stated that nitrogen discharge limits will inhibit the ability to rotate crops, are too low and the compliance timelines are too short, would eliminate commercial strawberry production on the central coast, new production practices and crop protection tools will be necessary, create a disincentive to utilize irrigation water that is high in nitrate, will all but eliminate a grower's ability to advance or slow the maturity of their product so the crop can be harvested on time and be available to the market when needed, there should be considerations

for total crop loss due to unforeseen factors (market conditions, a natural disaster, food safety), and the proposed targets and limits are contrary to the ESJ Order.

Commenters also stated that estimating evapotranspiration is overly burdensome for growers and the estimation of water application is not supported by agronomic science. The CCWB should consider aquifer recharge from clean water (low nitrate) draining from land outside of agricultural boundaries, using nitrogen use efficiency (NUE) or a modeling tool to calculate the nitrogen balance, seek collaborative incentives to increase nitrogen use efficiency, current data is inadequate to support the limits, the nitrogen loading limits should be removed until more research is completed, and an option to develop groundwater protection formulas, values, and targets cooperatively.

Response

The CCWB adopted its first permit regulating waste discharges from irrigated agricultural activities in 2004. Over 15 years of data indicates limited water quality improvements in the central coast region despite years of regulation under prior Agricultural Orders that required implementation of management measures to control nitrogen discharges (RAO 4.0, Attachment A, pages 1-2, paragraphs 5-6). The inclusion of nitrogen discharge limits in this Order is based on the CCWB's experience with regulating waste discharges from irrigated agriculture in the central coast region and the effectiveness of the earlier Agricultural Orders. See also Master Response 2.5.8 (Incentivize Best Management Practices) and Response to Comment BN-20 discussing the inclusion of numeric targets and limits in the Order.

The CCWB acknowledges that some Dischargers may need to implement new or adapt their existing farming and management practices to achieve the nitrogen discharge limits, where applicable. The nitrogen discharge limits do not take effect until 2027 and final limits are phased in over 30 years to allow sufficient time for farming and management practices to adapt (RAO 4.0, page 50, Table C.1-3) and for new practices and tools to emerge. RAO 4.0 includes an effectiveness evaluation process (RAO 4.0, page 8, paragraph 35) that allows for the consideration of new research, emerging science, and management measures. The CCWB encourages the use of irrigation water with high nitrate concentrations (RAO 4.0, page 22, paragraph 9) and RAO 4.0 includes two compliance pathways and associated targets and limits to incentivize irrigation water nitrate (compliance pathways 2 and 3) (RAO 4.0, page 21, paragraph 8 and page 50, Table C.1-3). The CCWB will consider if non-compliance is the result of unforeseen or uncontrollable circumstances before requiring a Discharger to complete ranch-level discharge monitoring and reporting (RAO 4.0, page 27, paragraph 30 and RAO 4.0, page 38, paragraph 21.g).

As part of the nitrogen discharge compliance pathway 1 the amount of nitrogen applied in the irrigation water is estimated from the volume of water required for crop evapotranspiration (RAO 4.0, page 22, paragraph 8.f). RAO 4.0 continues to require that Dischargers measure and report the total volume of irrigation water applied to the ranch. As nitrogen applied, nitrogen removed, and irrigation water management data is reported by Dischargers, the CCWB will analyze this data along with other information to consider Order modifications as appropriate (RAO 4.0, page 8, paragraph 35). RAO 4.0 includes the option for a third-party program to develop alternative groundwater protection formulas, values, and targets (RAO 4.0, pages 30-32, paragraphs 14-23).

2.3.4 Nitrogen Removal

Comments

Commenters stated that the applied minus removed formula does not account for all the nitrogen removed, denitrification, volatilization, does not account for alternate types of nitrogen fertilizers that are coming or on the market that do not leach out of the soils, broaden the standardized nitrogen removed processes in the calculations to include: $R_{COVER\ CROPS}$: winter cover crops capture nitrate-N that would be leached during winter fallow; $R_{HIGH\ C:N\ COMPOST}$: ties up pool of nitrate in soil in the fall and reduces nitrate leaching over the winter; R_{OM}: soil organic matter building practices that increase soil carbon and nitrogen storage in the soil; $R_{DENITRIFICATION\ BEDS}$: gaseous nitrogen loss to atmosphere from denitrification from tail water treatment beds; R_{GAS}: gaseous losses to atmosphere from denitrification and volatilization from crop residues; $R_{MITIGATION}$: vadose zone nitrate mitigation through microbial and/or chemical transformation, a nitrogen credit through sequestration in woody materials of permanent of semi-permanent crops, nitrogen removed through quantifiable treatment methods (bioreactors), a "biomass discount factor" (much of the nitrogen applied is not immediately available for crops), there should be a methodology based on protein content of harvested portion of crop, management practices recommended in the State Healthy Soils Program (cover cropping, organic fertilizers or soil amendments, and composting) should be encouraged and supported, standardized nitrogen removed factors/coefficients should be developed and along with associated calculations, nitrogen fate depends on many factors and can be controlled with adequate management, additional research is needed to develop a nitrogen removal coefficient for most strawberry crops, and a classification for organic growers (less reporting) or organic fertilizers treated similar to compost.

Commenters also stated that more precise crop conversion coefficients for 85% (and then 95%) of total crop acreage should be developed before identifying crop-specific and/or crop type ranges of target values, CCWB Staff fails to recognize that scientifically and technically sound crop conversion coefficients are not yet available for many Central Coast crops, the removed factor is over simplified and should be reviewed by an expert panel, and that no one is going to treat soil water leaching below the rootzone for removal of nitrogen.

Response

"The requirement for use of coefficients for conversion of yield to nitrogen removed values shall be precedential for irrigated lands regulatory programs statewide. The regional water boards will have discretion to determine the number of crops to be analyzed and the timeline for development of the coefficients" (ESJ Order WQ 2018-0002, page 42). The CCWB currently has a list of approved conversion coefficients. The public review process for this Order meets the public review process for approving conversion coefficients contemplated by the ESJ Order. Dischargers have the option of selecting from the list of approved conversion coefficients or determining their own operation-specific coefficient, as described in the Monitoring and Reporting Program (MRP). The CCWB is currently coordinating with CDFA to develop conversion coefficients for various central coast region crops over the next few years. As new conversion coefficients are developed or identified, they will be added to the list of approved coefficients for Dischargers to select from. (RAO 4.0, Attachment A, page 63, paragraph 200.c). As nitrogen removed data is reported by Dischargers, the CCWB will analyze this data along with other

information to consider Order modifications as appropriate (RAO 4.0, page 8, paragraph 35). In lieu of an expert panel, RAO 4.0 includes an effectiveness evaluation process (RAO 4.0, page 8, paragraph 35). See also Master Response 2.1.8 (Incentives) for a discussion of alternative removal factors included in RAO 4.0.

2.3.5 Low Risk Crops

Comments

Commenters stated that anyone who can grow a crop with less than 50 pounds of nitrogen per acre annually should be exempt, vineyards should not be held in the same standard due to their low impact to water quality, consider alternative compliance for low risk vineyards, sustainability certifications should be recognized as an alternative compliance pathway and sustainability certification documentation should be recognized in lieu of listed farm planning requirements.

Response

Dischargers who can quantifiably demonstrate that their ranch is achieving the final nitrogen discharge limit of 50 pounds of nitrogen per acre per year are not required to submit nitrogen removal reporting (RAO 4.0, page 25, paragraph 21). See also Master Response 2.2.2 (Sustainability Certifications Incentive) for a discussion of incentives for sustainability certification third-party programs. Dischargers must develop, implement, and update as necessary a Farm Water Quality Management Plan (Farm Plan) for each ranch. A current copy of the Farm Plan must be maintained by the Discharger and must be submitted to the CCWB upon request. At a minimum, the Farm Plan must include discrete sections discussing irrigation and nutrient management, pesticide management, sediment and erosion management, water quality education, and California Environmental Quality Act (CEQA) mitigation measures. Certain elements included in the Farm Plan must be reported; however, in general, the Farm Plan is a planning and recordkeeping tool used by Dischargers to manage various aspects of their agricultural operation (RAO 4.0, page 17, paragraphs 1-3). Dischargers that qualify for a sustainability certification third-party program that includes a requirement to develop, implement, and maintain a Farm Plan that includes these elements would comply with this requirement.

2.3.6 Nitrogen Applied Discount Factors

Comments

Commenters stated that the CCWB should give organic fertilizers or amendments a discount factor, as for compost, most organic growers do not rely on compost for plant-available nitrogen, apply a biomass discount factor to plant biomass mulched back into the field as a part of the applied minus removed formula, cover cropping must be incentivized for growers, the compost impact on nitrogen in the applied minus removed formula is an over-simplification, and there are certain pesticides that contain nitrogen as part of their chemical structure; these should be excluded from this requirement.

Other commenters stated they are not in favor of hiding some nitrogen applied such as in the compost discount factor, that the carbon to nitrogen ratio has more often been found to be a

poor and occasionally a good predictor of nitrogen release and commends staff for applying a discount factor when determining the amount of compost nitrogen.

Response

As nitrogen applied through compost data is reported by Dischargers, the CCWB will analyze this data along with other information to consider Order modifications as appropriate (RAO 4.0, page 8, paragraph 35). See also Master Response 2.1.8 (Incentives) for a discussion of alternative removal factors included in RAO 4.0.

2.3.7 Compliance Pathway 1

Comments

Commenters stated that the use of crop-specific applied minus removed rates with specific timetables and numeric limits are long-needed and overdue. This is an excellent approach; however, water quality concerns (salinity) should be incorporated in this compliance pathway.

Other commenters stated that this oversimplifies a complex and dynamic process by assuming that all excess nitrogen becomes a discharge, disregards soil and crop management practices that can reduce or limit excess nitrogen discharge, collective treatment type projects should be given more credit under the applied minus removed equation, consider inclusion of R_{COVER} to incentivize this critical conservation practice, the calculation for estimating nitrogen applied from irrigation water should be based on crop evapotranspiration, the required reporting of applied nitrogen from irrigation water should only be counted as equal to the crop's evapotranspiration demand for water, and growers should be incentivized to clean wells with high nutrient concentrations through a pump and treat alternative, a fall season soil nitrate test should be explicitly encouraged, and if a portable nitrate testing kit can generate a precise measurement, this should remain an option for fulfilling Total Nitrogen Applied and Irrigation and Nutrient Management requirements.

Commenters also stated that the CCWB should consider seating an expert panel to review management strategies that growers and research scientists submit for consideration, management of the mobility of nitrogen is equally important to minimize nitrate leaching hazard, variability in soil types throughout the Central Coast region is not considered, nor are weather sub-sets that may influence the amount of A_{IRR} utilized for any crop, calculations of residual nitrogen loading to groundwater be managed on a farm or ranch annual production cycle basis, then aggregated to a township level or a geographical area that fits with any third-party monitoring efforts approved (like the ESJ precedential order), and rely on the Agricultural Expert Panel, the ESJ Order sets forth the multi-year applied over removed ratio, or alternatively a multi-cropping cycle, as a performance metric for measuring nitrogen left in the field.

Commenters further stated that the CCWB needs to provide a more convincing argument that these applied minus removed limits are ecologic, agronomic, and hydrologically rigorous, we cannot be sure that the limits proposed can be met by technology and human operators, applied minus removed reported in the Irrigation and Nutrient Management Summary Report should be used to identify outliers first, and then determine progress towards meeting groundwater protection targets, once approved.

Response

The CCWB acknowledges these comments related to the use of crop-specific applied minus removed rates with specific timetables and numeric limits. RAO 4.0 also includes an effectiveness evaluation process (RAO 4.0, page 8, paragraph 35) that allows for the consideration of new research, emerging science, and management measures. Emerging water quality concerns can be considered as part of the evaluation process. No changes were made to RAO 4.0 in consideration of these comments.

The application of nitrogen in excess of what is removed from the field (applied minus removed) results in a potential nitrogen waste discharge that could affect the quality of groundwater. While it is possible in some situations that subsequent crops may uptake the excess nitrogen, the overapplication of synthetic fertilizer nitrogen creates the risk that excess nitrogen will become a waste discharged to groundwater. (RAO, Attachment A, page 99, paragraph 19). See Master Response 2.1.8 (Incentives) for a discussion of alternative removal factors included in RAO 4.0.

The fertilizer nitrogen application limits were established based on what the CCWB has determined to be both feasible and protective after reviewing the nitrogen applied data reported to the Board since 2014 (RAO 4.0, Attachment A, page 70, paragraph 209.e). The applied minus removed data-based nitrogen discharge values act only as targets until 2027 to allow for the learning curve associated with the new requirements (RAO 4.0, Attachment A, page 70, paragraph 209.f).

Applied minus removed data and associated targets and limits are a defensible proxy for evaluating nitrogen discharges to groundwater in the absence of direct measurements of nitrate leaching below the root zone of crops; whereas, unitless applied over removed ratios only provide a relative comparison of NUE between farms, crops and crop cycles. Applied and removed data will be collected and applied over removed values will be analyzed to determine if creating a metric for maximum applied over removed presents additional value in evaluating management practice effectiveness and reduced nitrogen loading in conjunction with the value presented by the maximum nitrogen surplus calculated through applied minus removed. (RAO, Attachment A, page 104-105, paragraphs 34-36). “The regional water boards will need to use their discretion in how they implement the multi-cropping-cycle period to ensure that it is appropriate to the circumstances” (ESJ Order WQ 2018-0002, page 38, footnote 108). As part of the nitrogen discharge compliance pathway 1 the amount of nitrogen applied in the irrigation water is estimated from the volume of water required for crop evapotranspiration (RAO 4.0, page 22, paragraph 8.f). RAO 4.0 continues to require that Dischargers measure and report the total volume of irrigation water applied to the ranch. Dischargers must conduct soil nitrogen monitoring to inform fertilizer application decision for their ranch (RAO 4.0, Attachment B, page 6, paragraph 11.a). Soil nitrogen content must be measured at the time of year or the stage during the crop cycle when soil nitrogen content is high and therefore should be accounted for as a source of nitrogen (RAO 4.0, Attachment B, page 6, paragraph 11.c).

The current average nitrogen waste discharge is approximately 340 pounds of nitrogen per acre per year and this is the primary cause of the widespread and severe groundwater nitrate contamination observed in the central coast region (RAO 4.0, Attachment A, page 102, paragraph 26). The nitrogen discharge limits are based on the best data currently available;

additional irrigation water reporting information will allow the regional board to revisit the discharge limits in the future and adjust the limit higher or lower or develop different limits for different areas within the region (RAO 4.0, Attachment A, page 104, paragraph 33). RAO 4.0 includes a process for a third-party program to develop the groundwater protection formulas, values, and targets for designated groundwater protection areas consistent with the precedential direction in the ESJ Order.

Many ranches in the central coast region grow several crops in the same location within a single year. Additionally, it is common for Dischargers in the central coast region to rotate between ranches, often staying at a particular ranch for only a few years or less than a year. Dischargers are required to achieve nitrogen discharge targets and limits on an annual basis, accounting for all crops grown and harvested throughout the year. (RAO 4.0, Attachment A, page 65, paragraph 202)

2.3.8 Compliance Pathway 2

Comments

Use of high-nitrogen irrigation water should be incentivized and both calculation methods should build on that incentive. Compliance pathway 2 is agronomically unfeasible for most crops because it assumes that 100% of the N applied is removed from the field at the end of the crop. Dischargers should also report first-crop pre-plant A_{SOIL} and after final harvest A_{SOIL}. The issue of nitrogen-rich crop residues is not addressed by the applied minus removed formula because residues are not taken into account in either A or R.

Response

See Master Response 2.1.8 (Incentives) and 2.3.3 (Nitrogen Discharge Limits) for a discussion of alternative removal factors included in RAO 4.0.

2.3.9 Irrigation Water Reporting Requirements

Comments

Commenters stated that the innovative technique of container production (e.g., Driscoll's) should be incentivized, more clarity on the collection of evapotranspiration information is needed, the calculations do not account for water content removed at harvest for any given crop; multiple wells may be blended on any farm to achieve optimal irrigation efficiency, which can vary the nitrogen content based on how water is sourced from each well (how will variable amounts of nitrogen in A_{IRR} be recorded within the coefficient calculation), A_{IRR} is utilized to moisturize soil for field preparation and germination when there is little or no nitrogen uptake (growers with irrigation wells with a high-nitrate concentration will be at a disadvantage to meet regulatory objectives when utilizing this farm practice).

Commenters also stated that the use of irrigation water on agricultural fields is not a discharge of a waste, the CCWB fails to recognize that on-going groundwater infiltration from all sources will be critical to achieving a sustainable groundwater supply, some California Irrigation Management System (CIMIS) weather stations across the region are not reporting reference

evapotranspiration, and that more than the total water applied to a ranch area, irrigation scheduling has a critical, direct impact on crop fertilizer nitrogen use efficiency.

Commenters further stated that the CCWB should specify that compliance with the final nitrogen limit removes any potential obligation to develop and implement a ranch-level groundwater discharge monitoring work plan, include quantitative success or enforceable targets or limits for water volume assumed to be discharged to groundwater, and that for any grower exceeding an enforceable milestone or limits, the next year should become an enforceable milestone and a grower exceeding a milestone for two years should be required to incorporate ranch-level groundwater discharge monitoring.

Response

See also Master Response 2.1.8 (Incentives) for a discussion of alternative removal factors included in RAO 4.0. RAO 4.0 incentivizes container production with drain capture and other practices allowing for the direct measurement and quantification of nitrogen discharges by allowing modified monitoring and reporting in lieu of the A-R compliance pathway formulas (RAO 4.0, page 25, paragraph 22). The application of nitrogen in excess of what is removed from the field (applied minus removed) results in a potential nitrogen waste discharge that could affect the quality of groundwater. While it is possible in some situations that subsequent crops may uptake the excess nitrogen, the overapplication of synthetic fertilizer nitrogen creates the risk that excess nitrogen will become a waste discharged to groundwater. As part of the nitrogen discharge compliance pathway 1 the amount of nitrogen applied in the irrigation water is estimated from the volume of water required for crop evapotranspiration (RAO 4.0, page 21, paragraph 8.f). Acceptable methods to calculate crop evapotranspiration include, but are not limited to, using reference evapotranspiration data from a local weather station (e.g., CIMIS or an on-farm station), using a crop coefficient conversion value, or using direct measurement (RAO 4.0, Attachment B, pages 11-12, paragraph 17.a.i). RAO 4.0 continues to also require that Dischargers measure and report the total volume of irrigation water applied to the ranch. The CCWB encourages the use of irrigation water nitrogen as a method to reduce the amount of fertilizer nitrogen applied to crops. This is incentivized through compliance pathways 2 and 3. The amount of irrigation water nitrogen is not used in the compliance calculation (RAO 4.0, page 22, paragraph 9).

The current average nitrogen waste discharge is approximately 340 pounds of nitrogen per acre per year and this is the primary cause of the widespread and severe groundwater nitrate contamination observed in the central coast region (RAO 4.0, Attachment A, page 102, paragraph 26). The nitrogen discharge limits are based on the best data currently available; additional irrigation water reporting information will allow the regional board to revisit the discharge limits in the future and adjust the limit higher or lower or develop different limits for different areas within the region (RAO 4.0, Attachment A, page 104, paragraph 33). RAO 4.0 does not include requirements related to irrigation water volume discharged to groundwater. RAO 4.0 does include requirements related to minimizing nitrate discharges to groundwater (RAO 4.0, page 2, paragraph 5.a.i).

Ranch-level groundwater discharge monitoring may be discontinued with the approval of the EO when the Discharger comes into compliance with the nitrogen discharge targets or limits, or the discharge has otherwise ceased (RAO 4.0, page 27, paragraph 30).

Ranch-level groundwater discharge monitoring is based on groundwater quality data or significant and repeated exceedance of the nitrogen discharge targets or limits (RAO 4.0, page 27, paragraph 30).

2.3.10 Fertilizer Application Limits

Comments

Commenters stated that optimum nitrogen management is based on implementing the Four R's of Nutrient Stewardship including: 1) using the right nitrogen source; 2) applied at the right rate; 3) applied at the right time; and 4) applied at the right place and that the CCWB lacks legal authority to impose fertilizer application limits.

Other commenters stated that fertilizer application limits should be targets because there is so much variability in farming, fertilizer limits are not supported by agronomic science, anybody that tells you they can grow a spinach crop with 60 lbs. of nitrogen is lying, suggest continuing the process with a series of stepped down milestones over a period of 10 years, the nitrates in water alone are not enough to sustain a healthy crop, and the CCWB should provide a more complete list of crop uptake values.

Commenters asked why "all other crops" are given the highest nitrogen application limit of 500 pounds per acre/year, if crops such as broccoli, cauliflower, and lettuce are already at or below 300 lbs./acre/year, many additional crops have science-based, field trial tested, uptake values why doesn't the need for reducing nitrogen use begin in 2022 instead of 2026, the application limit should a single deadline (2022) with no further stepping down of this excessively loose limit, and if they have not had an agricultural or domestic well go over the current drinking water limits in roughly 100 years why they need to comply with the limits.

Response

Existing irrigation and nutrient management practices based on "agronomic science" are primarily focused on crop production performance metrics and do not sufficiently address water quality. The RAO groundwater protection requirements are intended to promote a cultural shift in agricultural practices to include water quality-based performance metrics that are protective of water quality and beneficial uses while maintaining crop productivity to the extent practicable. Dischargers must comply with the fertilizer application limits at the 90^{th} percentile in 2023 and the 85^{th} percentile in 2025 (RAO 4.0, page 49, Table C.1-2). CCWB staff agrees with the Four Rs approach of Nutrient Stewardship. See also Response to Comment BN-19 discussing the inclusion of fertilizer application targets and limits in the Order.

Based on Total Nitrogen Applied data from 2014 through 2019, fertilizer nitrogen application rates (A_{FER}) have not changed significantly in response to the Total Nitrogen Applied reporting requirement alone. The overapplication of fertilizer results in nitrogen residual that is not taken up by crops and is instead introduced to waters of the state as a waste discharge. To make progress towards reducing nitrogen waste discharges arising from the over-application of synthetic fertilizer nitrogen and to reduce the risk of nitrogen discharge, enforceable fertilizer application limits are established. (RAO 4.0, Attachment A, page 99, paragraph 20). The use of numeric fertilizer application limits is to identify outliers; that is, an outlier is a Discharger who

applied nitrogen in excess of the relevant nitrogen application target or limit or who discharged nitrogen in excess of the annual nitrogen discharge target or limit (RAO 4.0, Attachment A, page 66, paragraph 203.b). The fertilizer nitrogen application limits are based on what the CCWB has determined to be both feasible and protective of water quality after reviewing the nitrogen applied data reported to the Board since 2014 (RAO 4.0, Attachment A, page 70, paragraph 209.e).

As outlined in Attachment A, Findings, a large number of scientific research studies and research papers indicate if current nitrogen loading rates continue, the current problem will continue; in this case, future attempts to address the water quality problem will require more stringent requirements to reduce loading. There is also strong consensus that loading reductions will result in groundwater quality improvement over time. Delays in loading reductions will result in compounded delays in the cleanup timeframe and increased costs to rural residents and communities associated with nitrate contamination of groundwater supply wells, both due to the amount of time delay itself, as well as the amount of continuing degradation during the delay. For example, 10 years of delay in loading reductions will result in significantly more than 10 years of delay in the groundwater cleanup timeframe due to the additional loading and water quality degradation that occurs before the loading reductions are realized (RAO 4.0, Attachment A, pages 115-116, paragraphs 74-76).

RAO 4.0 does not limit Dischargers' ability to account for and utilize nitrate in groundwater to fertilize crops. The CCWB currently has a list of approved conversion coefficients. The public review process for this Order meets the public review process for approving conversion coefficients contemplated by the ESJ Order. Dischargers have the option of selecting from the list of approved conversion coefficients or determining their own operation-specific coefficient, as described in the monitoring and reporting plan (MRP). The CCWB is currently coordinating with CDFA to develop conversion coefficients for various central coast region crops over the next few years. As new conversion coefficients are developed or identified, they will be added to the list of approved coefficients for Dischargers to select from. (RAO 4.0, Attachment A, page 63, paragraph 200.c)

The CCWB recognizes that Dischargers may operate in areas with evidence of no or very limited impacts of nitrogen to surface water or groundwater. RAO 4.0 does not include explicit exemptions for Dischargers described above, due primarily to the widespread scale and severity of groundwater degradation from nitrate contamination in the central coast region. However, Dischargers may submit proposals for alternative monitoring and reporting requirements for approval by the EO.

2.4 Master Response 4: Groundwater Protection

Comments related to groundwater protection focused on the following themes.

2.4.1 Groundwater Quality Trend Monitoring

Comments

Commenters stated they prefer large scale to ranch scale groundwater quality trend monitoring like the ESJ Order, third-party groundwater quality trend monitoring and reporting should be

same as ESJ Order, the individual versus third-party approach should be defined, there should be similar expectations for the individual or third-party approach, there should be a public process for work plan approval.

Commenters also stated that staff should use existing data from agencies and not require Dischargers to monitor and report, and expressed support for formation of third party programs, and the MRP should include the specific objective of trend monitoring, (clear and practical objectives).

Response

Dischargers have the option to perform groundwater quality trend monitoring either individually (ranch scale) or through a third-party program (large scale) (RAO 4.0, pages 26-27, paragraph 29). In response to comments, the CCWB added a third-party alternative compliance pathway to RAO 4.0 based on the Agricultural Partners' Alternative proposal and the ESJ Order (RAO 4.0, Part 2, section C-2, pages 28-32, paragraphs 1-23). The individual and third-party approaches are defined in RAO 4.0 at pages 26-27, paragraph 29. The expectations for a third-party groundwater quality trend monitoring program are described in Attachment B of RAO 4.0 at pages 15-17, paragraphs 19-22. The expectations for individual groundwater quality trend monitoring are described in Attachment B of RAO 4.0 at pages 17-18, paragraphs 23-29. Dischargers electing to perform groundwater trend monitoring and reporting individually must submit an individual trend monitoring work plan to the EO for approval prior to implementation (RAO 4.0, Attachment B, page 17, paragraph 23). An approved third-party entity representing Dischargers must develop and submit a regional groundwater trend monitoring and reporting work plan, by the dates specified in Attachment B (Monitoring and Reporting Program) or by an alternative schedule approved by the EO. Alternatively, Dischargers may elect to participate in the Third Party Alternative Compliance Pathway for Groundwater Protection. (RAO 4.0, Attachment B, page 15, paragraph 19).

Existing data from other agencies is insufficient to identify trends in groundwater quality for the Central Coast region. However, trend monitoring programs could utilize other entity/agency expertise, data, and infrastructure to supplement a robust trend monitoring program and the RAO 4.0 third-party criteria encourages coordination with and leveraging of other entities/agencies to create consistency and to streamline and maximize program effectiveness. The CCWB encourages and supports the formation of third-party programs to assist Dischargers with groundwater quality trend monitoring. The specific objective of groundwater quality trend monitoring is to allow the regional board to assess the effectiveness of this Order's requirements at improving groundwater quality over time (RAO 4.0, Attachment A, page 29, paragraph 77.b.ii).

2.4.2 Clear Monitoring and Reporting Objectives

Comments

Commenters stated that ranch-level groundwater discharge monitoring and reporting is punitive and will not provide additional insight into groundwater quality, clear and unique objectives for each of the five types of groundwater monitoring/reporting are not defined and are partially or

wholly redundant with others, and clarification is needed regarding ranch- level groundwater discharge monitoring (objective, when imposed, actual specific required elements),

Commenters asked how growers can use a portable measuring device to get a precise measurement of nitrate in irrigation well if we require monitoring for constituents in addition to nitrate and labs are required to upload additional data to GeoTracker.

Response

The requirement to conduct ranch-level groundwater discharge monitoring is based on groundwater quality data or significant and repeated exceedances of the nitrogen discharge targets or limits. Dischargers must complete ranch-level groundwater discharge monitoring and reporting, either individually or as part of a third-party effort as described in the Monitoring and Reporting Program. CCWB staff will coordinate with Dischargers and/or their representatives prior to the EO invoking this requirement to determine if non-compliance is the result of unforeseen or uncontrollable circumstances and to provide the Discharger with 90-day advanced notice of the forthcoming requirement. Ranch-level groundwater discharge monitoring may be discontinued with the approval of the EO when the Discharger comes into compliance with the nitrogen discharge targets or limits, or the discharge has otherwise ceased. (RAO 4.0, page 27, paragraph 30). Dischargers that participate in the third-party alternative compliance pathway are not required to conduct ranch-level groundwater discharge monitoring (RAO 4.0, pages 28-32, paragraphs 1-26).

RAO 4.0 no longer contains the requirement for including monitoring parameters other than nitrate in irrigation wells for total nitrogen applied (TNA) reporting or INMP Summary reporting (RAO 4.0, Attachment B, page 3, footnote 1). In addition, it is acceptable for Dischargers themselves to obtain and report precise nitrate concentrations on their TNA and INMP Summary reports either by use of a portable measuring device in the field or by reporting laboratory analytical results. Note that Discharger-reported nitrate concentrations (not laboratory-reported data uploaded to GeoTracker) are required for TNA and INMP reporting even if irrigation well nitrate was determined via laboratory analysis (i.e., laboratory upload of nitrate concentrations to GeoTracker is not required in RAO 4.0 for TNA and INMP reporting purposes).

2.4.3 Domestic Wells

Comments

Commenters request monitoring flexibility, state that trend monitoring should not be the primary objective of domestic well monitoring and oppose domestic well monitoring because: (1) it has duplicative objectives, (2) redundant or frequent testing of well water quality should only be for known problem areas, (3) mandatory monitoring and reporting in areas with no documented impairment or water quality exceedances should not be required, and (4) the operator/tenant has the responsibility to monitor, report, and manage drinking water notifications. Commenters also stated the existing MCL for nitrate in domestic wells should remain the same.

Other commenters stated that on-farm drinking water wells should be required to monitor for nitrate, 1,2,3-trichloropropane (1-2-3,TCP) and all pesticides on the Department of Pesticide Regulation's Groundwater Protection List.

Response

Groundwater quality trend monitoring is not the primary objective of domestic well monitoring. On-farm domestic well monitoring and reporting will allow the CCWB to assess the effectiveness of this Order's requirements at improving groundwater quality over time, as well as help ensure that public health is being protected in the interim by ensuring that domestic well users are aware of the nitrate and 1,2,3-TCP concentrations in their well water, the health concerns associated with these constituents, and allow the CCWB to coordinate replacement water efforts where necessary. (RAO 4.0, Attachment A, page 29, paragraph 77.b.ii).

Under RAO 4.0, all Dischargers, must conduct annual sampling of all on-farm domestic drinking water supply wells and report monitoring results for nitrate as nitrogen (or nitrate + nitrite as nitrogen), 1,2,3-TCP, and field parameters as specified in Table MRP-7 and Table MRP-8[2] of the order (RAO 4.0, Attachment B, page 13, paragraph 7). Table MRP-5 in RAO 4.0, Attachment B, at page 37, provides a process to reduce monitoring and reporting for 1,2,3-TCP based on the absence of detectable levels of 1,2,3-TCP over time.

The CCWB recognizes that Dischargers may operate in areas with evidence of no or very limited impacts to groundwater. RAO 4.0 does not include explicit exemptions for Dischargers described above, due primarily to the widespread scale and severity of groundwater degradation from nitrate contamination in the central coast region. However, Dischargers may submit proposals for alternative monitoring and reporting requirements for approval by the EO.

As domestic well monitoring data are collected and analyzed over time, the CCWB may consider the potential for reduced monitoring and reporting in a future iteration of the Agricultural Order. Dischargers are defined in RAO 4.0 as both the landowner and operator of irrigated agricultural land on or from which there are discharges of waste from irrigated agricultural activities that could affect the quality of any surface water or groundwater. Therefore, both the landowner and operator are responsible for compliance with this Order. (RAO 4.0, page 13, paragraph 23).

2.4.4 Irrigation Wells

Comments

Commenters stated that stand-alone irrigation well monitoring and reporting is unnecessary and redundant, the monitoring and reporting requirements should be the same as those in the

[2] This should reference Table MRP-5, not Table MRP-7 and Table MRP-8. This error will be corrected in the proposed Agricultural Order 4.0 presented to the Board for adoption.

ESJ Order, and monitoring irrigation wells is unnecessary due to groundwater quality trend monitoring.

Response

RAO 4.0 has been modified to require annual "stand-alone" irrigation well monitoring of the Discharger's primary irrigation well during the period between the effective date of the Order and the initiation of groundwater quality trend monitoring. The objectives of this temporary monitoring effort are to evaluate groundwater conditions in agricultural areas and to inform the establishment of an adequate trend monitoring network (RAO 4.0, Attachment B, page 15, paragraph 14). The objective is not to satisfy TNA monitoring and reporting requirements; however, this monitoring can be used for this purpose. As such, it is acceptable for a Discharger to use this "pre-trend" primary irrigation well monitoring (which requires sample collection by a qualified party, analysis by an Environmental Laboratory Accreditation Program (ELAP)-certified laboratory, and data reporting to GeoTracker) to satisfy TNA monitoring requirements in lieu of using a portable nitrate measurement device for precise determination of the amount of applied nitrogen contained in the irrigation water.

2.4.5 Pesticide Monitoring and Reporting

Comments

Commenters stated there are no metrics for determining that a well must be monitored for pesticides and pesticide monitoring and reporting isn't necessary due to the Department of Pesticide Regulation's (DPR's) effort.

Other commenters stated that the CCWB should not rely on other agencies (DPR, U.S. Environmental Protection Agency [USEPA]) for pesticide monitoring and reporting and that pesticide monitoring and reporting should be required.

Response

Under RAO 4.0 there is no requirement for pesticide monitoring and reporting for domestic or irrigation wells. CCWB staff have determined that additional coordination with DPR and other relevant agencies is needed to evaluate data gaps in groundwater pesticide information and determine if further monitoring for pesticides is needed on and in the vicinity of agricultural operations. This coordination is related to a Management Agency Agreement between the State and Regional Water Boards and DPR, which serves to balance the complementary and separate authorities of the two state agencies. The CCWB has and will continue to coordinate and consult with the DPR related to pesticide monitoring and reporting programs. Based on data discussed in RAO 4.0, Attachment A, pages 116-119, paragraphs 81-94, the CCWB anticipates requiring focused groundwater monitoring for specific pesticides in certain locations under Water Code section 13267 authority. (RAO 4.0, Attachment A, page 120, paragraph 96).

2.4.6 Environmental Justice

Comments

Commenters stated that a ten-day period until drinking water notifications are provided is too long and suggest 24-48 hours is more appropriate. Commenters also stated that the CCWB should consider requiring restoration of drinking water for off-farm areas, disagree that the Human Right to Clean Water does not apply, there is no protection for nearby small water systems due to the compliance time schedule, and that the CCWB should work with the Department of Pesticide Regulations as appropriate to better prevent pesticide contamination to groundwater.

Response

RAO 4.0 includes a provision that Dischargers must provide well users with a summary of laboratory analytical results within 3 business days of receiving results from the laboratory (versus the previously proposed 10-day notification requirement in DAO 4.0). Dischargers must also provide a summary of the most recent laboratory analytical results to any new well users (e.g., new tenants and employees with access to the sampled well) within 3 business days whenever there is a change in the population using the well. Such notices must be given to well users by providing them with a copy of a Drinking Water Notification template approved by the EO (and available on the CCWB website) on an annual basis. (RAO 4.0, Attachment B, page 14, paragraph 10). Where appropriate, the CCWB may issue cleanup and abatement orders in actions separate from this Order requiring Dischargers to provide emergency and long-term alternative water supplies or replacement water service, including wellhead treatment, to each affected public water supplier or private well owners. (RAO 4.0, page 4, paragraph 15). Although Water Code section 106.3, which recognizes that "every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes" does not apply to permitting actions such as the adoption of this Order, the CCWB has considered the human right to water, as described in RAO 4.0, Attachment A, pages 56-58, paragraphs 178-185. RAO 4.0 by its very nature implements the state's Human Right to Water policy by addressing drinking water nitrate contamination caused by agricultural practices.

The CCWB has and will continue to coordinate with DPR and the USEPA related to the development and expansion of monitoring and reporting programs to address pesticides in groundwater.

2.4.7 Data / Lab Analysis

Comments

Commenters stated that there is almost no discussion of quality assurance, data validation, or management, data analysis to support reduction in domestic well monitoring frequency, monitoring and reporting should be paid for by the well owner/operator, and the proposed laboratory reporting method for Total Dissolved Solids is incorrect (the reporting limit should be increased from 0.5mg/L to 20mg/L).

Response

The MRP in RAO 4.0, Attachment B, Section G (pages 31-33, paragraphs 1-3) includes the CCWB's minimum components Dischargers must include in a required Sampling and Analysis Plan (SAP) and Quality Assurance Project Plans (QAPP) associated with both groundwater and surface water protection. The minimum components noted in MRP Section G indicate how the SAP and QAPP should address all aspects of project management, data acquisition, validation, and management, as well as data quality assurance. As noted in MRP Section G, page 33, paragraph 3, the SAP and QAPP, and any proposed revisions, are subject to approval by the EO. In addition, it is noted throughout the MRP that a Discharger must comply with requirements noted in the MRP "unless approved otherwise by the Executive Officer." These references to proposed revisions indicate that Dischargers are permitted to propose alternatives to MRP requirements for EO consideration. In addition, the EO may determine that a revision to the SAP is warranted (e.g., adding, removing, or changing monitoring locations, changing monitoring parameters). Note that in addition to revisions proposed by Dischargers, the EO may determine that revisions to the MRP are warranted. Such changes may include reduced or increased requirements. Dischargers are defined in RAO 4.0 as both the landowner and operator of irrigated agricultural land (RAO 4.0, page 13, paragraph 23). Therefore, both the landowner and operator are responsible for compliance with this Order, including requirements for on-farm domestic well monitoring.

Based on clarification from various analytical laboratories frequently used by Dischargers enrolled in previous Agricultural Orders, the MRP in RAO 4.0 (Attachment B) has been revised to reflect the reporting limit for Total Dissolved Solids (TDS) at 10 mg/L for analytical method SM 2540-D. Dischargers may use alternative analytical methods approved by the USEPA after obtaining EO approval (RAO 4.0, Attachment B, pages 38-40, Table MRP-6, Table MRP-7 and Table MRP-8).

2.5 Master Response 5: Surface Water Protection

Comments related to surface water protection focused on the following themes.

2.5.1 Limits (Support)

Comments

Commenters stated that the CCWB should adopt strong discharge limits for fertilizers and pesticides, with comprehensive tests for aquatic toxicity, generally support numeric limits, the limits are not protective enough, the limits and monitoring frequency should be updated based on new data availability, the time schedules to meet numeric limits are too long, and the time schedules to meet numeric limits should include interim milestones.

Response

RAO 4.0 establishes surface receiving water limits for nutrients (fertilizers), pesticides and toxicity, and sediment/turbidity based on water quality objectives adopted in the Basin Plan or TMDLs, which are respectively designed to be protective of water quality or established to achieve water quality objectives in impaired waters. (RAO 4.0, page 35-36, paragraphs 15-19;

Tables C.3-1 to C.3-7). Additional receiving water limits for pesticides are based on values from sources described in RAO 4.0, Attachment A, page 143, paragraph 110 and page 144, Table A.C.3-2). These values are considered to be protective of water quality because the USEPA aquatic life benchmark values are developed based on aquatic ecological effects of chemicals in surface water and from risk assessments for individual pesticides. Toxicity identification evaluations (TIEs) may be required by the EO where toxicity has been identified as a chronic or acute issue in surface receiving waters (RAO 4.0, Attachment B, page 44, Table MRP-10). Under the Monitoring and Reporting Program requirements, annual reports should include recommendations for candidate sites for TIEs (RAO 4.0, Attachment B, page 25, paragraph 12.e).

The time schedules in this Order to comply with the surface receiving water limits are established to allow Dischargers time to implement new or adapt their existing farming practices. Surface water prioritization areas, the requirements to conduct follow-up implementation, and the timelines are designed to allow time for technical assistance providers and third-party programs to increase their capacity to provide compliance assistance to Dischargers (RAO 4.0, Attachment A, page 124, paragraphs 10-11). The Follow-Up Surface Receiving Water workplan must include interim quantifiable milestones to confirm progress is being made to reduce the discharge of relevant constituents and achieve the limits established in the Order, consistent with their time schedule (RAO 4.0, Attachment B, page 26, paragraph 15.b).

2.5.2 Limits (Oppose)

Comments

Commenters stated that it is Infeasible to meet numeric limits at edge of field under all conditions and that numeric limits are scientifically unsupported and inappropriate.

Response

Section C.2 (Surface Water Protection), pages 122-124, paragraphs 1-11 of Attachment A of RAO 4.0 provides the rationale for surface receiving water limits. Edge of field (ranch-level) surface discharge monitoring and reporting may be required by the EO based on surface water quality data or significant and repeated exceedances of surface water quality limits (RAO 4.0, page 38, paragraph 21.g). See also Master Responses 2.3.3 (Nitrogen Discharge Limits – Oppose) and Master Response 2.3.10 (Fertilizer Application Limits) for discussion of the rationale for nitrogen discharge and fertilizer application limits. Surface water prioritization areas, the requirements to conduct follow-up implementation, and the timelines are designed to allow time for technical assistance providers and third-party programs to increase their capacity to provide compliance assistance to Dischargers (RAO 4.0, Attachment A, page 124, paragraphs 10-11).

2.5.3 Monitoring and Reporting

Comments

Commenters stated that all ranches should not be required to conduct ranch-level discharge monitoring, the Order is too broad in its definition of when ranch-level monitoring is required, the need to clarify what triggers ranch-level monitoring and an appeal process for ranch-level

monitoring requirements, and do not support ranch-level discharge monitoring at all. Commenters also stated that it is not possible to meaningfully address follow-up monitoring within a five-year period.

Commenters further stated that water quality parameters (alkalinity, calcium, magnesium, etc.) have never been required in the past and are not needed to meet program objectives, supports the Agricultural Partners' Alternative proposal, and the Annual Compliance Form should be reviewed and revised with a third party monitoring program and interested growers to support management practice information collection and implement a cooperative approach.

Other commenters stated that first flush events should be sampled.

Response

RAO 4.0 has further clarified this requirement. Ranch-level surface discharge monitoring and reporting is not required for all dischargers but may be required by the EO based on surface water quality data or significant and repeated exceedances of surface water quality limits (RAO 4.0, page 38, paragraph 21.g). Dischargers must develop a follow-up surface receiving water implementation work plan, either individually or through a third-party program. The work plans are subject to EO approval following a 30-day period to receive written public comments. The work plan due date is based on the Surface Water Priority of the ranch. (RAO 4.0, page 37, paragraph 21). Dischargers who elect to participate in a third-party program to develop and implement their work plan will not be subject to ranch-level surface discharge monitoring and reporting (RAO 4.0, page 37, paragraph 21.d). Dischargers who elect to develop their work plan individually and whose ranches are located in areas where surface receiving water monitoring shows an exceedance of an applicable surface water limit may be subject to ranch-level surface discharge monitoring and reporting based on surface water quality data or significant and repeated exceedance of the surface water quality limits (RAO 4.0, pages 37-38, paragraphs 21.d and 21. f).

Additional water quality parameters were included as part of surface receiving water quality monitoring based on the need to compare data in irrigated agriculture areas to data in non-irrigated agriculture areas. These parameters were included to remain consistent with the Central Coast Ambient Monitoring Program in the central coast region. These additional parameters ensure consistent data sets to evaluate for trends and will help inform contaminant source and mixing analyses. It is the intent of the CCWB to coordinate a review of Annual Compliance Form content.

Stormwater monitoring must be conducted within 18 hours of storm events, preferably including the first flush run-off event that results in significant increase in stream flow (RAO 4.0, Attachment B, page 24, paragraph 10 and page 27, paragraph 19). See also Master Response 2.5.5.

2.5.4 Phasing / Prioritization

Comments

Commenters stated that phasing/prioritization should be based on operational risk, the process for determining prioritization and associated time schedules should be clarified, the most recent Cooperative Monitoring Program for Surface Water data (2017-2019) should be used for prioritization, and the Pajaro Watershed should be in Surface Water Priority Area 1 or 2.

Response

The rationale for identifying surface water priority areas is discussed in RAO 4.0, Attachment A, pages 122-124, paragraphs 1-11). In response to comments, RAO 4.0 includes new surface water priority areas for Dischargers participating in a third-party program. This third-party surface water follow-up program addresses exceedances at monitoring sites based on a scale of high, medium, and low priority (RAO 4.0, Attachment A, page 124, paragraphs 12, 14). The Pajaro Watershed is included in Surface Water Priority Area 3, based on the watershed's relative level of water quality impairment identified at monitoring sites, the number of miles of impaired waterbodies, and the percent of irrigated agricultural land located within the watershed (RAO 4.0, Attachment A, page 122, paragraph 2).

2.5.5 Watershed-Based Third-Party Approach

Comments

Central coast agricultural organizations have been working on a watershed-based third-party group concept for surface water monitoring and reporting; this process should be encouraged and implemented in priority watersheds.

Response

RAO 4.0 allows Dischargers to complete surface receiving water monitoring and reporting (trend and follow-up monitoring) as described in Attachment B, either individually or through a third-party monitoring program approved by the EO (RAO 4.0, page 36, paragraph 20, page 37, and paragraph 21). Prior to applicable compliance dates, Dischargers who elect to participate in a third-party program to develop and implement their work plan will not be subject to ranch-level surface discharge monitoring and reporting (RAO 4.0, page 37, paragraph 21.d).

2.5.6 Total Maximum Daily Loads

Comments

Commenters stated that the numeric limits are too low, and the cooperative monitoring program design should be verified as adequate to the meet the needs of the turbidity TMDLs.

Commenters further stated that the compliance dates for non-TMDL areas should become the TMDL compliance date, any surface water or watershed with an established TMDL and a compliance date of 2021 should be included in Surface Water Priority Area 1, there are no consequences for dischargers that have not met TMDLs with compliance deadlines that have

passed, dischargers in TMDL areas should have to comply with load allocation or limit whichever is lower, the TMDLs are inadequate because they have none of the essential properties required by the Nonpoint Source Policy, the TMDL qualifiers are artificially low and difficult to establish (need more reasonable values).

Response

There are no approved turbidity TMDLs in the central coast region. The numeric limits for turbidity in RAO 4.0 are based on the evaluation guidelines used to interpret the narrative turbidity water quality objective for the purpose of determining if waterbodies should be placed on the federal Clean Water Act section 303(d) List of Impaired Waters.

See also Master Response 2.3.3 (Numeric Discharge Limits-Oppose) and Master Response 2.3.10 (Fertilizer Application Limits) for a discussion on the rationale for numeric limits. Third-party programs work plans for surface water trend and follow-up monitoring must be approved by the EO, which includes a 30-day period to receive and consider written public comments (RAO 4.0, page 36, paragraph 20 and page 37, paragraph 21).

The compliance dates for surface receiving water limits based on TMDLs have been revised to reflect compliance dates no earlier than December 31, 2032, as described in RAO 4.0, Attachment A, pages 23-24, paragraphs 62-66. As a result of these revisions, the earliest compliance date for TMDL-based surface receiving water limits is the same date as the compliance date for surface receiving water limits that are not based on TMDLs (RAO 4.0, pages 56-71, Tables C.3-2 through C.3-7).

2.5.7 Third Parties

Comments

Commenters stated that it would be helpful to know what the Surface Water Cooperative Monitoring Program is currently required to monitor and report to reveal the new requirements, they generally support cooperative watershed action to meet numeric limits, and that the Surface Water Cooperative Monitoring Program is an ambient monitoring program (the design is not conducive to identification of specific sources and potential follow-up actions; this is a role for follow-up monitoring).

Response

An underline-strike through (track changes) version of DAO 4.0 compared to Ag Order 3.0, as well as one for a comparison between DAO 4.0 and RAO 4.0 were provided and posted to the Irrigated Lands Program website under the Renewal of Agricultural Order link. The underline-strike though comparisons reflect the current monitoring and reporting requirements for the Surface Water Third-Party Program and any revisions made to those requirements under RAO 4.0. The CCWB also supports cooperative watershed action to meet numeric limits. RAO 4.0 includes opportunities for surface water third-party programs to assist Dischargers with compliance (see Master Response 2.5.5). For additional information related to the existing surface water monitoring program, please visit the Preservation Inc. Third-Party Monitoring Program website at https://ccwqp.org/monitoring/.

2.5.8 Incentivize Best Management Practices

Comments

Erosion plan, cover crop, buffer areas, lined water ways, sediment management plan should all be considered as incentives to being placed in a different phasing or prioritization and/or less monitoring and reporting.

Response

Irrigated agricultural waste discharges have been regulated by the CCWB for over 15 years, since the adoption of the first agricultural order in 2004. The previous agricultural orders relied on a management practice implementation approach without clear and enforceable requirements (e.g., numeric limits and time schedules) or monitoring and reporting necessary to drive the development and implementation of effective management practices or evaluate their effectiveness with respect to reducing pollutant loading, achieving water quality objectives and protecting beneficial uses. However, the previous orders generated significant additional data documenting ongoing widespread and severe water quality degradation associated with irrigated agricultural activities. The previous orders also generated nitrogen application data documenting excessive applications of fertilizer nitrogen relative to published crop needs for a significant subset of central coast Dischargers. Although the previous orders increased awareness of the pollutant loading and associated water quality problems caused by agricultural activities, they have not resulted in improved water quality or beneficial use protection. (RAO 4.0, Attachment A, pages 1-2, paragraph 4).

Rather than relying on best management practices and incentives for them, RAO 4.0 takes a more meaningful performance-based approach focused on accountability and verification of resolving the known water quality problems by establishing 1) numeric targets and limits to protect water quality (i.e., application targets and limits, discharge targets and limits, and receiving water limits), 2) time schedules to meet the numeric targets and limits, 3) monitoring and reporting to verify compliance with the numeric targets and limits, and 4) consequences for not meeting the numeric targets and limits. Reasonable time schedules are incorporated to ensure that pollutant loading is decreased over time, while also providing time for Dischargers to reach full compliance with the final targets and limits. Dischargers are required to implement management practices to achieve the established targets and limits and to perform monitoring and reporting to demonstrate that progress is being made to achieve water quality objectives and protect beneficial uses. The CCWB encourages Dischargers to participate in third-party programs to facilitate compliance with this Order. (RAO 4.0, Attachment A, page 2, paragraph 6).

2.5.9 Anti-Degradation

Comments

Commenters stated that water quality criteria being required must be shown to have existed at some time in the past.

Commenters also asked what determines that water quality is better and who is responsible for monitoring to determine water quality and how will growers be informed of the results.

Response

See RAO 4.0, Attachment A, Antidegradation Policy at pages 37-48, paragraphs 103-138 for discussion of how this Order complies with the State's Antidegradation Policy.

2.5.10 Management Plans

Comments

Commenters stated that sustainability certification documentation should be recognized in lieu of farm plans and propose operation-wide plans as opposed to individual ranch plans.

Response

Dischargers must develop, implement, and update as necessary a Farm Water Quality Management Plan (Farm Plan) for each ranch. A current copy of the Farm Plan must be maintained by the Discharger and must be submitted to the CCWB upon request. At a minimum, the Farm Plan must include discrete sections in irrigation and nutrient management, pesticide management, sediment and erosion management, water quality education, and CEQA mitigation measures. Certain elements included in the Farm Plan must be reported on; however, in general, the Farm Plan is a planning and recordkeeping tool used by Dischargers to manage various aspects of their agricultural operation (RAO 4.0, page 17, paragraphs 1-3). Dischargers that qualify for a sustainability certification third-party program that includes a requirement to develop, implement, and maintain a Farm Plan that includes these elements would comply this requirement.

2.5.11 Exceedances

Comments

Commenters stated that the requirements must include timelines, milestones, monitoring, and enforcement and specify what actions will be taken when exceedances occur.

Commenters also asked how dischargers that are "causing or contributing" to an exceedance will be identified, what corrective actions will be taken, and how their improvement will be documented.

Response

RAO 4.0 includes timelines and monitoring requirements and specifies the actions that must be taken when exceedances of surface water limits occur, and ongoing water quality monitoring and reporting will be used to identify exceedances and non-compliant Dischargers. Dischargers who exceed surface water limits must complete additional relevant water quality education sufficient to fully inform the implementation of additional or improved management practices to avoid future exceedances (RAO 4.0, page 18, paragraph 5). Work plans for Dischargers in areas with persistent exceedances of surface water limits must identify and implement follow-up actions to restore the degraded areas (e.g., outreach, education, management practice implementation) and additional surface receiving water monitoring locations for pollutant source identification and abatement (RAO 4.0, pages 37-38, paragraph 21.e). When required by

the EO, based on surface water quality data or significant and repeated exceedance of the surface water quality limits, Dischargers must complete ranch-level surface discharge monitoring and reporting, either individually or as part of a cooperative effort as described in the Monitoring and Reporting Program. CCWB staff will coordinate with Dischargers prior to the EO invoking this requirement to determine if non-compliance is the result of unforeseen or uncontrollable circumstances and to provide the Discharger with 90-day advanced notice of the forthcoming requirement. (RAO 4.0, page 39, paragraph 21.g). The CCWB may pursue enforcement against Dischargers that violate the terms and conditions of the Order.

2.5.12 Quality Assurance / Quality Control

Comments

Commenters asked how the CCWB will manage Quality Assurance / Quality Control (QA/QC) of data submissions.

Response

See Master Response 2.4.7 (Data / Lab Analysis) for a discussion of QA/QC.

2.6 Master Response 6: Pesticide Management for Surface Water Protection

Comments related to pesticide management for surface water protection focused on the following themes.

2.6.1 General

Comments

Commenters stated that these requirements rely too heavily on the DPR and USEPA.

Response

RAO 4.0 establishes numeric surface receiving water limits for pesticides and toxicity (RAO 4.0, pages 35-36, paragraphs 15-19). Reliance on and coordination through the Management Agency Agreement between the State and Regional Water Boards and DPR is necessary to balance the complementary and separate authorities of the two state agencies. The CCWB has and will continue to coordinate with the DPR and the USEPA related to pesticide monitoring and reporting programs.

2.6.2 Pesticides

Comments

Commenters stated that the CCWB lacks authority to regulate pesticide use and DPR should not enforce this order.

Commenters also stated that the CCWB should consider a more accurate definition of pesticide, the pesticide management plan will be very difficult to manage, pesticide requirements may result in prohibiting the use of pesticides, pesticide sources are more than just agriculture, the requirements are duplicate of DPR requirements.

Commenters asked how we will know the source of pesticides in groundwater.

Response

Attachment C of RAO 4.0 at paragraph 80 provides the following definition for pesticide which aligns with definitions under state and federal law:

"Any substance intended to control, destroy, repel, or otherwise mitigate a pest. The term pesticide is inclusive of all pest and disease management products, including insecticides, herbicides, fungicides, nematicides, rodenticides, algicides, etc."

The pesticide management plan is part of the Farm Plan required under RAO 4.0 (and all prior Agricultural Orders). The Farm Plan is a planning and recordkeeping tool used by Dischargers to manage various aspects of their agricultural operation and must include information on management practice implementation (RAO 4.0, page 17, paragraphs 1-2). Dischargers have access to multiple resources to develop Farm Plans, including the pesticide management component, including but not limited to, Resource Conservation Districts, the Department of Pesticide Regulation, technical assistance providers, and staff at the CCWB.

RAO 4.0 does not prohibit or otherwise regulate the use of pesticides. The regulatory oversight of pesticide use falls within the purview of the Department of Pesticide Regulation. RAO 4.0 regulates waste discharges into waters of the state, and in addition to the pesticide management plan, pesticide management provisions include surface receiving water limits for pesticides and toxicity. Monitoring sites for irrigated lands should be in areas where the source of pollutants can be identified by land use. This is currently the case for the Surface Water Third-Party Monitoring Program. The Department of Pesticide Regulation regulates pesticide sales and use but does not establish limits for pesticides and toxicity. The Department of Pesticide Regulation does not enforce this Order. See also Master Response 2.6.1 (General).

2.6.3 Monitoring and Reporting

Comments

Commenters stated that first flush events should be sampled, toxicity and pesticide sampling should be conducted together and monthly during the most active growing season (March through October), toxicity and chemistry sampling should be aligned with bioassessment monitoring (every five years), pesticide constituents should be adjusted to be monitored based on most recent pesticide use data, there should be a provision for reviewing and modifying toxicity test methods and species to ensure ability to detect impacts of newer pesticides, and triggers for Toxicity Identification Evaluations should be established.

Response

Under RAO 4.0, toxicity and pesticide monitoring requirements are established to characterize both the active growing season and wet weather (RAO 4.0, Attachment B, page 42, Table MRP-10), specifically establishing sampling requirements for two events during the active growing season, and twice during the wet season and including requirements for stormwater monitoring that must be conducted within 18 hours of storm events, preferably including the first flush run-off event that results in significant increase in stream flow.

Although the MRP under RAO 4.0 does not require the organic chemistry monitoring be conducted in the same year as the bioassessment monitoring, the quarterly toxicity monitoring does have the same assessment window (April to June). Historically, the Surface Water Third-Party Monitoring Program has aligned the monitoring voluntarily. The CCWB will work with third-party programs to conduct toxicity monitoring concurrently with bioassessment in 2023, consider specific language in future updates to the MRP to require that the toxicity monitoring data is collected concurrently at sites where bioassessment is required.

Under RAO 4.0, Dischargers and third parties may propose modifications to the receiving water quality monitoring, evaluation parameters, frequency, and schedule for EO approval (RAO 4.0, Attachment B, pages 23-24, paragraph 8).

RA0 4.0 requires an annual report submission which includes an evaluation of pesticide and toxicity analyses results, and recommendation of candidate sites for toxicity identification evaluations (RAO 4.0, Attachment B, pages 24-25, paragraph 12.l)

2.6.4 Toxicity

Comments

Commenters expressed support for the focus on numeric limits in combination with toxic unit (TU) measures. Commenters also stated that it is unclear what TUs should be used (values, species, endpoint), failing toxicity tests should be reported within 48 hours of test result and publicly posted with 72 hours with a link to the CCWB's website with the test results, and the focus should not be on individual pesticides or pesticide classes but instead on general water column and sediment toxicity.

Response

The CCWB acknowledges these comments related to numeric limits in combination with TU measures. No changes were made to RAO 4.0 in consideration of these comments.

For areas with TMDLs, toxic units are defined as follows: TUs and/or additive TUs are calculated using the relevant test organisms, as described in the applicable TMDL (e.g. Lethal Concentration 50, Criterion Continuous Concentration, or Criterion Maximum Concentration) (RAO 4.0, page 67, Table C.3-4, footnote 1). For areas without TMDLs, additional TU calculation information will be included in the Order to identify pesticide class, relevant test organism, and relevant test duration. For areas without TMDLs, TUs are calculated by dividing each measured chemical concentration by that chemical's 50 percent effect concentration (e.g., Lethal

Concentration 50) and summing those values for all chemicals in the class (RAO 4.0, page 67, Table C.3-4, footnote 4).

The CCWB does not intend to require Dischargers to report failed toxicity tests with 48 hours or post results within 72 hours. This is consistent with other surface water quality monitoring programs at the CCWB. Continued failed toxicity tests will be prioritized as part of surface water follow-up implementation plans.

The monitoring design is focused on toxicity and includes less frequent individual pesticide monitoring. The Monitoring and Reporting Program requires water column toxicity testing four times each year (quarterly) for each of three test organisms as well as sediment toxicity testing once a year (RAO 4.0, Attachment B, page 44, Table MRP-10). Individual pesticide monitoring will occur once every four years, concurrent with that year's toxicity monitoring events in both water and sediment.

2.6.5 Limits (Support)

Comments

Commenters stated that the CCWB should adopt strong discharge limits for pesticides, with comprehensive tests for aquatic toxicity.

Response

The CCWB acknowledges these comments related to the establishment of limits for pesticides and toxicity consistent with the TMDLs and numeric and narrative water quality objectives in the Basin Plan (RAO 4.0, pages 35-36, paragraphs 15-19). Comprehensive tests for aquatic toxicity established under RAO 4.0 include bioassessments every five years, water column toxicity sampling quarterly each year, pesticide sampling twice in 2021 and 2022 and four times every fourth year beginning in 2026 (quarterly and concurrent with water toxicity monitoring), and sediment toxicity (RAO 4.0, Attachment B, pages 42-50, Table MRP-10). No changes were made to RAO 4.0 in consideration of these comments.

2.6.6 Limits (Oppose)

Comments

Commenters stated that it is infeasible to meet discharge limits for pesticides.

Response

The supporting technical rational and legal authority for regulating pesticide discharges and toxicity are contained within various sections of RAO Attachment A, Findings. The CCWB acknowledges that some Dischargers may need to implement new or adapt their existing farming practices to achieve the pesticide and toxicity discharge limits. Ranch-level surface discharge limits for dischargers that do not achieve surface receiving water limits serve to minimize toxicity at the ranch-level from ranch-level pesticide discharges. The CCWB acknowledges the burdens of achieving the discharge limits the commenter raises. Nevertheless, given that the purpose of the ranch-level surface discharge limits is ultimately to

attain water quality objectives that are protective of beneficial uses, the burden of the requirement is reasonably related the benefits to be obtained.

2.6.7 Third Parties

Comments

Commenters stated that the CCWB should allow the current Surface Water Cooperative Monitoring Program to continue submitting additional in-depth reports on pesticide and toxicity monitoring results.

Response

The CCWB will initiate a formal request for proposal process to solicit potential third-party programs that may be interested in assisting Dischargers shortly after the Order is adopted. Third-party program expectations are outlined in the Third-Party Programs section of RAO 4.0 at pages 14-16, paragraphs 32-37. RAO 4.0 encourages the current Surface Water Third-Party Monitoring Program and other entities to participate in this process. RA0 4.0 requires an annual report submission which includes an evaluation of pesticide and toxicity analyses results, and recommendation of candidate sites for toxicity identification evaluations (RAO 4.0, Attachment B, pages 24-25, paragraph 12.l).

2.6.8 Total Maximum Daily Loads

Comments

Commenters stated that TMDL constituents (endrin, dieldrin, toxaphene, chlordane, and dichlorodiphenyldichloroethylene /dichlorodiphenyltrichloroethane (DDE/DDT), along with all organochlorine pesticides) are not mentioned and should be.

Response

Table C.3-4 of RAO 4.0 at page 62 includes watershed-specific surface receiving water limits for the stated TMDL constituents (endrin, dieldrin, toxaphene, chlordane, and DDE/DDT, along with all organochlorine pesticides).

2.7 Master Response 7: Sediment and Erosion Management for Surface Water Protection

Comments related to sediment and erosion management for surface water protection focused on the following themes.

2.7.1 General

Comments

Commenters expressed support for the Agricultural Partner's submittal regarding sediment and erosion management modeled after the ESJ Order that only requires Sediment and Erosion Management Plans in areas susceptible to erosion.

Response

Please refer to Attachment A, Findings, for the CCWB's rationale for the requirements under RAO 4.0 related to sediments, turbidity, and impermeable surfaces (pages 148-155, paragraphs 113-148). RAO 4.0 requires all dischargers to develop, implement, and update a Farm Water Quality Management Plan (Farm Plan). The Farm Plan is a planning and recordkeeping tool used by dischargers to manage various aspects of their agricultural operation. The Sediment and Erosion Management Plan (SEMP) section of the Farm Plan must include information on management practice implementation (RAO 4.0, page 17, paragraphs 1-3).

2.7.2 Alternative Compliance Pathways

Comments

Commenters stated that the CCWB should consider an alternative compliance pathway for low risk farms and leverage current successful efforts and incentivize adoption of practices that protect water quality by reducing regulatory requirements, and that the requirements disproportionately impacts organic farmers.

Response

See Master Response 2.2.2 (Sustainability Certifications Incentive) for a discussion of sustainability certification incentives as alternative compliance pathways for low risk farms and incentivization of the adoption of practices that protect water quality.

2.7.3 Monitoring and Reporting

Comments

Commenters stated that the monitoring and reporting of stormwater discharges will be difficult to achieve, it is unreasonable to hold a grower responsible for reporting sediment that might occasionally enter creek after flowing across their farm, ranch-level surface discharge monitoring should always be made in the context of a particular operation's potential to contribute to an exceedance, there needs to be a more efficient reporting system, stormwater cannot be predicted or controlled in major storm events, and monitoring and reporting of storm water discharges will be difficult and dangerous.

Commenters asked what constitutes a qualified professional, and how slope is measured.

Response

Surface receiving water monitoring and reporting must be conducted through either a monitoring program on behalf of Dischargers, or Dischargers may choose to conduct surface receiving water monitoring and reporting individually (RAO 4.0, Attachment B, page 22, paragraph 1). The option to participate in a third-party monitoring program makes compliance easier and more cost-effective. Ranch-level surface discharge monitoring and reporting may be required by the EO for Dischargers not participating in a third-party program based on surface water quality data and significant and repeated exceedances of surface receiving water limits (RAO 4.0, page 38, paragraph 21.g).

The CCWB has and will continue to work with third-party programs and individual Dischargers to streamline reporting. Dischargers may select to complete monitoring as part of a cooperative effort or individually (RAO 4.0, Attachment B, page 22, paragraph 2). Stormwater monitoring must be conducted within 18 hours of storm events, preferably including the first flush run-off event that results in significant increase in stream flow A significant storm event will generally result in greater than a half-inch of rain within a 24-hour period. (RAO 4.0, Attachment B, page 24, paragraph 10 and page 27, paragraph 19).

A "Qualified Professional" is defined in Attachment C of RAO 4.0 at page 17, paragraph 88. Slope measurements are no longer required. RAO 4.0 no longer contains requirements related to sediment and erosion management specific to farms with impermeable surfaces during the winter rainy season with slopes greater than five percent.

2.7.4 Total Maximum Daily Loads

Comments

Commenters stated that the TMDLs are too low and cannot be achieved with current farming practices and available science.

Response

Receiving water limits for sediment are based on the Morro Bay Sediment TMDL and the Pajaro River Watershed Sediment TMDL, which have been established in the Basin Plan (Attachment A, Findings, pages 154-155, paragraphs 144-145). Attachment A, Findings, page 155, paragraphs 146-148 describes the CCWB's rationale for establishing receiving water limits for turbidity, which are not based on TMDLs. To the extent that the commenters are challenging the load allocations in the TMDLs, this Order does not establish new TMDLs for sediment or turbidity, and a challenge to the TMDLs established in the Basin Plan is outside the scope of this proceeding.

2.7.5 Slope

Comments

Commenters stated that the CCWB should return to the original 10% slope requirement, and that sediment and erosion control plans should only be required in areas susceptible to erosion, not all slopes.

Response

Please refer to Attachment A, Findings, for the CCWB's rationale for the requirements under RAO 4.0 related to sediment and turbidity (pages 149-151, paragraphs 115-127). Based on comments received, RAO 4.0 no longer includes a percent slope requirement related to impermeable surfaces. Revised impermeable surfaces requirements are outlined in RAO 4.0, pages 34-35, paragraphs 10-13.

2.7.6 Irrigation / Stormwater Runoff Reductions

Comments

Commenters stated that farmers have a responsibility to their neighbors to control irrigation and stormwater runoff; growers must prevent irrigation and stormwater runoff, especially from impermeable surfaces on sloped land during the winter months, so that severe erosion, and sediment flow is avoided, and retention ponds need to be required to mitigate downstream damage, especially when plastic overlays are applied to fields.

Response

Under RAO 4.0, Dischargers are subject to surface receiving water limits for sediment or turbidity related to controlling irrigation and stormwater runoff (RAO 4.0, pages 35-36, paragraphs 15-19). Dischargers whose ranches have impermeable surfaces must report on stormwater management practice implementation (RAO 4.0, page 39, paragraph 23).

2.7.7 Numeric Limits (Support)

Comments

Commenters stated their support for specific numeric limits.

Response

See Master Response 2.7.6 for a discussion of limits for sediment and turbidity.

2.7.8 Numeric Limits (Oppose)

Comments

Commenters stated that numeric limits for sediment and turbidity are scientifically unsupported and inappropriate

Response

Please refer to Attachment A, Findings, for the CCWB's rationale for establishing the requirements under RAO 4.0 related to sediment and turbidity (pages 149-151, paragraphs 115-127).

2.7.9 Time Schedules (Support)

Comments

Commenters stated that the timeline of achieving limits within five years rather than 10 seems reasonable and that interim requirements prompt immediate action towards improving water quality and attaining water quality objectives.

Response

The rationale for the deadlines for compliance with the sediment and turbidity receiving water limits are discussed in Attachment A, pages 154-155, paragraphs 144-148.

2.7.10 Time Schedules (Oppose)

Comments

Commenters stated that to deal with both the sediment TMDLs and turbidity region-wide, we must have meaningful (longer) time schedules with measurable milestones.

Response

Please refer to Attachment A, Findings, for the CCWB's rationale for the timelines under RAO 4.0 related to the sediment and turbidity receiving water limits (RAO, Attachment A, pages 154-155, paragraphs 144-148). Some Dischargers may need to implement new or adapt their existing farming practices to achieve the sediment or turbidity limits, and the Order provides a minimum of 11 years to attain the limits. Receiving water limits based on the Morro Bay Sediment TMDL and the Pajaro River Watershed Sediment TMDL do not become effective until 2053 and 2051, respectively.

2.8 Master Response 8: Riparian Area Management for Water Quality Protection

Comments related to riparian area management for water quality protection focused on the following themes.

2.8.1 General

Comments

Commenters stated that the requirements are burdensome, too difficult, infeasible, and ambiguous, too challenging and detrimental to farms and landowners, want more clarity on exemptions (levees, heavy equipment use in riparian setbacks, permanent/semi-permanent crops, and small farms), and expressed uncertainty on how to measure setback widths, and suggested the CCWB consider the Agricultural Association Partners' Surface Water Program, which includes a supplemental Riparian Program.

Response

See Section 2.8.8.

2.8.2 Setbacks (Support)

Comments

Commenters stated that the setbacks are not wide enough, the compliance time schedules are too long, setbacks should be required on all waterbodies, they want maximum vegetated buffers from all waterbodies and farm fields, setbacks are reasonable and necessary, available data indicate that better protection of the smaller streams actually has more overall benefit to the health of a watershed compared to establishing buffers around the larger bodies, vegetation that will attract pollinators in locations close to crops that may receive pesticide runoff should be avoided, the minimum vegetated setback from any water, including ditches, must be at least 50 feet, rather than requiring an impractical and extremely expensive level of monitoring and analysis it would be more effective to have riparian buffers, setback requirements to protect riparian areas and specifications can improve water quality in a more comprehensive, timely, and enforceable manner than previous requirements, riparian protections are essential to achieving nearly all water quality improvements, would like to see wetland and riparian habitats be protected for their beneficial uses and ecosystem service, including natural water treatment, support greater habitat and wildlife protection, recommend protection of Stream Order 1 (a lot of sediment can be delivered by these small, often upper watershed channels), and recognize this is controversial new territory but we believe it is critically important to protect these important areas that serve as key wildlife corridors, protect aquatic habitat, and improve water quality, and cautioned against loopholes that lessen protections for riparian habitat.

Response

See Section 2.8.8.

2.8.3 Setbacks (Oppose)

Comments

Commenters stated that the setbacks are too wide, the compliance time schedules are too short, setbacks should not be required (should be voluntary and incentivized), should be elective and incentivized, made site specific, are not supported by natural history or distribution of soils and plant communities, there should only be operational setbacks for farms with permanent and semi-permanent crops, will lessen production and complicate farming, are not well researched and the exemptions are unclear, not as easy as sounds, know from personal experience (soil type, animal predation, irrigation, fertilize, pest management), the additional use of groundwater to maintain vegetation in the setbacks will not be feasible, require more nuance and site-specificity, the success criteria are too ambitious, almost all the manmade barriers / levees along the Salinas River are privately maintained at the landowners' cost and should be included in exemption, lack sound scientific basis and RipRAM should not be used as a regulatory requirement, suggested reduced setback requirements to just those areas that have discharge potential, and stated that they have 40-year old citrus and avocado trees on 37 acres, with noteworthy riparian habitat management (please reconsider the rules).

Commenters also asked what happens when the river channel changes and moves, how the CCWB contemplates dealing with highly erosive stream reaches or banks (due to high flows, along bends, at slope breaks, etc.) where vegetation is not adequate to stabilize the bank or channel, and what scientific evidence is being used to prove that if no irrigation tail water is being discharged into a riparian area that water quality can be improved.

Response

See Section 2.8.8.

2.8.4 Low Risk / Small Farms

Comments

Commenters stated that the CCWB should consider an alternative compliance pathway for low risk farms and leverage current successful efforts and incentivize adoption of practices that protect water quality by reducing regulatory requirements.

Other commenters stated that they want narrow operational setback requirements and a small acreage / vineyard exemption, the requirements are an overreach with lack of education and unintended consequences that will especially burden small farms, there should be different requirements for farms under five acres, the requirements will especially burden small farms.

Response

See Section 2.8.8.

2.8.5 Legal Authority

Comments

Commenters stated that the installation of new riparian vegetation as a requirement for water quality is not consistent with our authority related and should not be mandated, is overreaching and constitutes a "taking," is regulatory overreach with buffers and has no reality given climate and historical use, are not consistent with the CCWB's authority, the riparian restrictions go far beyond protection and potentially represent a large and illegal taking of productive private property, the setback requirements violate the state Water Code because there is no evidence that setbacks will improve water quality, the CCWB is prohibited from mandating the means for compliance by imposing setbacks on all Dischargers, the CCWB does not have legal authority to impose riparian and operational setbacks and require certain percentages of native vegetative cover, conflicts with the intent of local, state, and federal laws to preserve agricultural land from conversion.

Response

See Section 2.8.8.

2.8.6 Food Safety (is an issue)

Comments

Commenters stated that the riparian setback requirements conflict with food safety measures that come with vegetative setbacks adjacent to production fields, expanded vegetative buffers pose additional risk to food safety in bordering crops, cited a substantial increase in food safety risks and conflicts with food safety measures and expressed concern with policies that could compromise food safety, including those that are prescriptive of vegetation, and significant conflicts with food safety measures come with vegetative setbacks adjacent to production fields.

Response

See Section 2.8.8.

2.8.7 Food Safety (should not be an issue)

Comments

Commenters stated that food safety issue warrants further scientific research but should not preclude setback establishment, and appropriate scientific research should be conducted to fully understand threats and causes of foodborne illnesses prior to destruction or degradation of natural habitats.

Response

See Section 2.8.8.

2.8.8 Master Response

Based on comments received, the riparian area management requirements related to riparian and operational setbacks have been removed from RAO 4.0.

2.9 Master Response 9: Cost Considerations

Comments related to cost considerations associated with complying with DAO 4.0 focused on the following themes.

2.9.1 General

Comments

Commenters stated that costs were underestimated or not considered (increased reporting and compliance costs, job losses, land use conversion, fallowed land, SAP/QAPP development, road improvements, Sustainable Groundwater Management Act (SGMA) implementation, increased enforcement cost to state, decreased production, increased product costs, lower produce quality/lower produce prices, and hiring professionals), cumulative regulatory costs were not considered, DAO 4.0 would disproportionately impact disadvantaged communities and/or small farms, farmers are price-takers not price-setters, and DAO 4.0 will force farms out of

region/state, would result in funding reductions for capital improvements, and that broader policy consequences were not considered. Commenters also stated that disadvantaged farmers need funding assistance and there should incentives for reduced monitoring and reporting or monetary credit.

Response

The CCWB considered costs related to potential adverse economic impacts from DAO 4.0 and acknowledges the concerns related to regulatory costs and proposed requirements. Please refer to (RAO 4.0, Attachment A, pages 6-19, paragraphs 13-55).

CWC section 13241 requires the CCWB to consider certain factors, including economic considerations, in the adoption of water quality objectives. CWC section 13263 requires the CCWB to take into consideration the provisions of CWC section 13241 in adopting waste discharge requirements. The Water Code "cost consideration" requirements do not specify the need for detailed financial analyses, rather estimates based on available information within the confines of various uncertainties and assumptions. RAO 4.0, Attachment A at pages 6-19, paragraphs 13-55 discusses the potential change in regulatory costs between Ag Order 3.0 and this Order.

In comments submitted on the February 2020 draft order, stakeholders stated they believed there would be significant economic impacts from adopting this Order. However, leading up to and after the release of the DAO, agricultural stakeholders did not provide detailed cost analyses to substantiate these statements, even following pointed requests by staff. Notwithstanding, the CCWB has considered the cost information submitted through these comments and other available sources. Where appropriate, RAO 4.0, Attachment A, Findings, have been revised to reflect revised cost information. However, two significant proposed revisions to the draft order from the February 2020 to January 2021 versions make portions of the analyses submitted by stakeholders inapplicable. First, changes to the riparian area management requirements eliminates many of the costs associated with operational setbacks and riparian-area management. Second, a third-party alternative compliance pathway has been added that is expected to further reduce the cost of individual compliance with the Order requirements. (RAO 4.0, Attachment A, pages 9-10, paragraph 27).

2.9.2 Riparian Area Management Requirements

Comments

Commenters stated that farm acreage taken out of production was underestimated, fencing costs and planting/maintenance costs and decreased land values/lease rates/property tax revenues were not considered. Commenters also stated that the requirements would result in farmland conversion, increased production cost, irrigation water use, vector, and flood control issues.

Response

Based on comments received, the riparian area management requirements related to riparian and operational setbacks have been removed from RAO 4.0.

2.9.3 COVID-19 Pandemic

Comments

Commenters asked that the Order adoption process be delayed due to changing markets, lost wages due to illness, reductions in employee productivity, and supply chain impacts caused by the COVID-19 pandemic.

Response

Because of the COVID-19 pandemic, the CCWB extended the 45-day comment period for DAO 4.0 to 122 days (February 21, 2020, to June 22, 2020). The CCWB also postponed public meetings and staff outreach meetings focused on discussion of DAO 4.0 originally scheduled for March and May 2020 to June and September 2020. The CCWB recognizes the disruptions and challenges that the COVID-19 pandemic has presented to the regulated community and other interested persons, but is unable to further delay the Order adoption process because the CCWB is subject to a Sacramento Superior Court Order to replace Ag Order 3.0 with this Order by April 16, 2021, leaving a regulatory gap if a replacement order is not adopted.

2.9.4 Nitrogen Limits

Comments

Commenters stated that costs should be offset through funding and targeted research and that the nitrogen limits would eventually eliminate strawberry farming completely and limit ability to rotate crops.

Response

Please refer to Master Response 2.3.3 (Nitrogen Discharge Limits-Oppose).

2.9.5 Social Costs

Comments

Commenters stated that the cost of alternative water supplies, the human health effects, and the increased cost of water from public supply systems were not considered.

Response

While not specifically estimated because of various uncertainties associated with the exact number and severity of polluted water supply wells, existing and future alternative water supply alternatives and associated costs, the social costs of alternative water supplies, the human health effects, and the increased drinking water nitrate pollution costs were considered and enumerated based on available information (RAO 4.0, Attachment A, pages 56-58, paragraphs 178-185). In particular, the CCWB recognizes that users of groundwater for drinking water will continue to bear the cost of the historic degradation of high quality waters for the duration of the time schedules in this Order, but such costs are being addressed through other authorities requiring replacement water (RAO 4.0, Attachment A, page 47, paragraph 137).

2.9.6 Sediment and Erosion Control Requirements

Comments

Commenters stated that sediment basins are expensive and conflict with growing certain crops.

Response

The Order does not dictate the manner of compliance and therefore does not specifically require sediment basins. Dischargers may implement management measures that address their site-specific constraints and cost concerns.

2.9.7 Well Sampling Costs

Comments

Commenters stated that pesticide testing of wells is expensive and the sampling cost of 1,2,3-TCP was not included.

Response

RAO 4.0 does not include a requirement for the monitoring and reporting of pesticides in groundwater; therefore, Dischargers will not incur costs associated with such monitoring.

Annual 1,2,3-TCP monitoring has been reduced in RAO 4.0 and is required only for domestic wells for 2022 and 2023; after that time, monitoring is further reduced, and may cease, provided 1,2,3-TCP is not detected in two consecutive sampling events, and the non-detect is further verified in a subsequent sampling event three years later (RAO 4.0, Attachment B, page 37, Table MRP-5). Domestic well monitoring of 1,2,3-TCP is warranted to better characterize the extent of this organic compound's presence in the central coast region and to inform individuals that rely on drinking water from on-farm domestic supply wells about the safety of their drinking water. This characterization is necessary due to the ease by which 1,2,3-TCP migrates in groundwater, its sporadic detections in some parts of the central coast region in public water systems and private wells, particularly in conjunction with nitrate in some agricultural areas and the human health risk it poses (i.e., it is classified as a human carcinogen and the drinking water standard is very low [0.005 parts per trillion]). Based on the characterization of 1,2,3-TCP from domestic well monitoring, inclusion of this compound as a monitoring parameter in groundwater quality trend monitoring programs may be warranted in the future.

2.9.8 Third-Party Program Costs

Comments

Commenters stated that the cost to participate in multiple third-party programs was not considered.

Response

The CCWB anticipates that Dischargers will opt to participate in third-party programs because of the lower cost. RAO 4.0 incorporates third-party alternative compliance pathways that are expected to further reduce the cost of individual compliance with the groundwater requirements (RAO 4.0, pages 28-32, paragraphs 1-24) and surface water requirements (RAO 4.0, page 33, paragraph 5). Dischargers will realize cost savings through participation in third-party programs that offer assistance that help them achieve compliance with surface water trends, follow-up implementation, reporting, management practice implementation, and education. Estimating third-party program costs would be highly speculative prior to their development, but as noted above they will likely create economies of scale resulting in decreased overall costs and other benefits to growers versus the cost of individual requirements. Third-party costs will ultimately be determined by the services provided, membership participation, and the third-party administrators.

2.10 Master Response 10: Economic Impacts (Relevancy under the California Environmental Quality Act)

This master response addresses comments on economic impacts as they relate to CEQA and the analysis undertaken in the DEIR (see Section 3.5, *Economics* of the DEIR). Comments on economic impacts related to the DAO 4.0 and the cost analysis included in the DAO 4.0 Attachment A are addressed in Master Response 9 (see Section 2.9).

2.10.1 Comments

Some commenters from agricultural stakeholders allege that the DAO 4.0 will increase costs, leading to job losses and financial hardship for farm families and agricultural businesses. Specifically, some commenters argue that the DAO 4.0 will result in a reduction in agricultural production due to reduced crop yields and rotations, along with dedicated lands to riparian areas, which will ultimately result in increases in unemployment, reduced tax revenues, and substantial land use changes. These commenters assert that the DAO 4.0 will disproportionately affect small farms, as these small operations cannot afford to hire experts to manage compliance, monitoring and reporting for the long and complex order.

Some commenters assert that the CCWB has fallen short of quantifying the costs of DAO 4.0 in the DEIR. Some commenters state that while the DEIR includes estimates of some costs and requirements, the costs of nitrogen discharge requirements, compliance with surface water discharge limits, riparian setback areas, and other key substantive provisions are not estimated. These commenters state that there is a well-established and widely used approach to quantify the economic impacts of the DAO 4.0, and this approach should have been taken for the DEIR. An example analysis of the economic impacts of the proposed nitrogen discharge limits was prepared by the commenters for iceberg lettuce production in Monterey County. This analysis found that the total gross cost of the DAO 4.0's nitrogen discharge limits would range between $119.4 million at the 200 pounds/acre limit to $683 million per year at the 50 pounds/acre limit.

Some commenters further allege that the DEIR used improper significance criteria in its analysis of economic impacts, which they assert resulted in an undervaluation of the true economic

effects of the DAO 4.0. Additionally, some commenters state that the DEIR improperly shifts the burden of proof of environmental impacts, including those arising from increased costs of compliance, to the public. These commenters argue that the DEIR should not rely on economic impacts being "speculative" to reach significance conclusions of less than significant.

Other commenters from the environmental community argue that the economic analysis in the DEIR improperly omits or downplays the economic benefits of the DAO 4.0 requirements. These commenters argue that benefits such as improved water quality can and should be quantified and incorporated into the economic analysis in the DEIR. One commenter provided a memorandum from an economist supporting this argument, which outlined a recommended comprehensive cost-benefit valuation approach for use in updating the DEIR.

2.10.2 Response

The CCWB considered the concerns of the agricultural community and has taken significant steps to make Agricultural Order 4.0 easily implementable and not overly burdensome for growers. A great deal of flexibility was built into the original DAO 4.0 and additional flexibility has been incorporated into the RAO 4.0, such as the addition of third-party alternative compliance pathway for groundwater protection and trend monitoring, and surface water priority areas and follow-up implementation work plan due dates. The CCWB also made other changes to the original DAO 4.0 (e.g., discount factor for organic fertilizers, nitrogen scavenging credit, streamlined reporting sections, etc.) that will make it easier for growers to comply with the requirements. Most notably, the riparian setback requirements in the original DAO 4.0 have been removed based on comments received and Board discussion. This will reduce the economic impacts of Agricultural Order 4.0 on growers.

As such, based on the changes incorporated into the RAO 4.0 and the numerous Board workshops spent discussing the details of the Order requirements, the CCWB carefully considered the concerns of the regulated community, including those related to the costs of compliance. However, with respect to the commenters' claims that Order requirements will result in significant economic effects, including reduced production, unemployment, lost tax revenues, and land use changes, the CCWB maintains that these potential effects are speculative. As described in the FEIR, Volume 1, Section 3.5, it is not possible to predict which growers will implement which management practices in which locations, and there are numerous potential options for individual growers to meet the discharge, application, and receiving water limits included in the Order. Additionally, the specific impacts of any increased Agricultural Order 4.0 compliance costs would depend on the unique characteristics of individual ranches/operations, including their crop mix, operating costs/capital, cash reserves, and other variable factors.

CEQA requires that a lead agency not speculate in conducting its environmental analysis. Specifically, Section 15064(d)(3) of the CEQA Guidelines states:

> An indirect physical change is to be considered only if that change is a reasonably foreseeable impact which may be caused by the project. A change which is speculative or unlikely to occur is not reasonably foreseeable.

Similarly, Section 15064(f)(5) of the CEQA Guidelines states:

> Argument, speculation, unsubstantiated opinion or narrative, or evidence that is clearly inaccurate or erroneous, or evidence that is not credible, shall not constitute substantial evidence. Substantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts.

Thus, an economic analysis of the effects of Agricultural Order 4.0 based on speculative assumptions regarding how individual growers would choose to comply with the Order requirements (e.g., which management practices to implement) would not be in accordance with the CEQA Guidelines. Likewise, it would be speculative to assert (1) that such compliance actions and costs would affect the overall financial well-being of individual farms, (2) how this could affect employment figures, tax revenues, etc., and (3) this could result in physical changes to the environment.

The CEQA Guidelines clearly state that economic and social effects of a project are significant only so far as they would result in an adverse physical change in the environment. CEQA Guidelines Section 15064(e) states:

> Economic and social changes resulting from a project shall not be treated as significant effects on the environment. Economic or social changes may be used, however, to determine that a physical change shall be regarded as a significant effect on the environment. Where a physical change is caused by economic or social effects of a project, the physical change may be regarded as a significant effect in the same manner as any other physical change resulting from the project. Alternatively, economic and social effects of a physical change may be used to determine that the physical change is a significant effect on the environment. If the physical change causes adverse economic or social effects on people, those adverse effects may be used as a factor in determining whether the physical change is significant. For example, if a project would cause overcrowding of a public facility and the overcrowding causes an adverse effect on people, the overcrowding would be regarded as a significant effect.

CEQA Guidelines Section 15064(f)(6) also states:

> Evidence of economic and social impacts that do not contribute to or are not caused by physical changes in the environment is not substantial evidence that the project may have a significant effect on the environment.

Therefore, as described in the FEIR, Volume 1, Section 3.5, the fact that the Agricultural Order 4.0 would increase the costs of compliance for growers is not enough to conclude that the economic impacts would be significant under CEQA. Rather, it would need to be shown, with substantial evidence, that the increased costs borne by growers would result in an adverse physical change in the environment. This was the reasoning behind the first significance criterion used in the economic impact analysis ("Increase costs for growers to such a degree that it would cause or result in growers going out of business, such that agricultural lands would be converted to non-agricultural uses"). As such, the intent was not to downplay the significance of the economic effects on the agricultural community, but rather to comport with the requirements of CEQA governing the relationship between economic factors and physical environmental effects.

Given CEQA's prohibition on speculation, the DEIR provided a good faith effort to calculate the additional costs of the DAO 4.0 that could be reasonably estimated, and to disclose the economic effects and factors that could not be estimated or accurately quantified. Although it could not be predicted which management practices will be implemented by regulated individuals and entities, the approximate costs for the different types of reasonably foreseeable management practices were provided in Table 3.5-9 of the DEIR. The estimated total costs of the additional monitoring and reporting requirements in the DAO 4.0, as compared to the estimated total costs of complying with the existing monitoring and reporting requirements in Agricultural Order 3.0, were provided in the DEIR, Table 3.5-17. Additionally, a literature review of the existing regulatory financial burden on growers in California was conducted and relevant information was provided in the DEIR, Section 3.5.3. A discussion of cumulative impacts related to economics is provided in Table 5-3 of the DEIR. In short, the DEIR provided a reasonable and good faith evaluation of the economic impacts of the DAO 4.0 under CEQA.

The example economic analysis provided by commenters (see Comment Letter BN, Comments BN-368 to BN-415), which considers the economic impacts of complying with the nitrogen discharge limits on iceberg lettuce in Monterey County, is misleading in that it cherry-picks one element of Agricultural Order 4.0 (the lower nitrogen discharge limits that would go into effect in years after the Order adoption) to exaggerate economic impacts. As discussed in the January 2021 Board workshop, the CCWB acknowledges that the nitrogen discharge limits below 300 pounds/acre will be difficult to achieve for many growers using current technology and farming techniques, particularly in situations where multiple crops are rotated on a given field during the course of a year. For this reason, the RAO 4.0 includes a third-party alternative compliance pathway for groundwater protection and trend monitoring, along with the stipulation that "Final year 2028 nitrogen discharge targets for compliance pathways 1 and 3 in Table C.2-2 will be re-evaluated based on discharger reported nitrogen applied and removed data, new science, management practice effectiveness evaluations, and third-party GWP targets before becoming effective" (RAO, Part 2, Section C.2, 10).

The commenters' example economic analysis also appears to disregard potential ways that growers could adapt their practices to reduce nitrogen discharges. First, the entire analysis is predicated on one study (Hoque et al. 2010), which attempts to establish a relationship between nitrogen application and iceberg lettuce yield. Even assuming this relationship (a quadratic function) is correct, the analysis authors then assert that the only way that lettuce growers can comply with the nitrogen discharge limits in the Order is by reducing applied nitrogen. "Given that the nitrogen in irrigation water and the percent proportion of nitrogen in the harvested crop are beyond the control of the grower, the primary response available to the grower is to reduce applied nitrogen to meet discharge limits specified in the Order" (see Comment BN-383). However, this ignores the possibility that growers could take other measures, such as increasing the removal of non-harvest crop material between crop cycles to reduce nitrogen discharges to groundwater. Additionally, growers could potentially install bioreactors on the peripheries of fields, quantify the amount of nitrogen removed through this treatment, and thereby increase the amount of nitrogen removed through "R_{TREAT}".

In short, the example economic analysis provided by the commenters is based upon speculative assumptions regarding grower behavior with respect to the economic impacts of Agricultural Order 4.0. The "standard economic impacts analysis approach" referenced by the commenters

would necessarily involve many more unreasonable over-simplifications and speculative assumptions if applied to Agricultural Order 4.0, and thus would yield data of dubious quality.

Finally, regarding the concerns of some members of the environmental community that the economic impacts analysis in the DEIR does not adequately consider and quantify the benefits of Agricultural Order 4.0, the CCWB acknowledges these comments. Commenters are correct that the DEIR focused on the adverse effects of the DAO 4.0. Specifically, the economic impact analysis focused on the adverse physical changes to the environment that could occur due to increased costs borne by growers. Largely, this was due to the nature of CEQA, which is fundamentally designed to: "Identify the ways that environmental damage can be avoided or significantly reduced" (CEQA Guidelines Section 15002(a)[2]). "A significant effect is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project" (CEQA Guidelines Section 15002(g)). As such, an environmental analysis under CEQA should focus on the adverse physical environmental effects, relative to existing (baseline) conditions, which occur due to a project being implemented.

In the case of Agricultural Order 4.0 (Proposed Project), many of the adverse environmental conditions (e.g., poor water quality, reduced riparian habitat) are represented in the environmental baseline and are being caused by existing irrigated agricultural activities. These adverse conditions are described in the environmental settings sections within the DEIR and FEIR, where appropriate, but the beneficial effects of the Proposed Project in correcting these adverse conditions are not the focus of the impact analysis. The CCWB believes this approach is consistent with the CEQA Guidelines and, therefore, the economic impact analysis in the DEIR is not deficient for not also considering the potential economic benefits of the implementation of the Order. Performing a comprehensive cost-benefit analysis of the Agricultural Order 4.0 regulations, such as is recommended by the commenters, would be unreasonably burdensome due to the inherent difficulties involved in quantifying environmental benefits (i.e., no direct market for environmental goods) and is not necessary for the purposes of the EIR. Additionally, for many of the same reasons discussed above in response to the agricultural community's comments, such an analysis performed for Agricultural Order 4.0 would necessarily involve many speculative assumptions.

The CCWB is also compelled to comply with the State Nonpoint Source Pollution Control Program, the State Antidegradation Policy, and other relevant statutes and water quality plans and policies. The basis for the Proposed Project is well-established and explained in the FEIR, Volume 1, Chapter 2, *Project Description* and a cost-benefit analysis is not needed or required to document the need for the Proposed Project.

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Chapter 3
INDIVIDUAL RESPONSES TO COMMENTS

This chapter contains copies of the unique comment letters[1] received on the Draft Environmental Impact Report (DEIR) and Draft Agricultural Order 4.0 (DAO 4.0), and provides individual responses to the comments contained in the unique comment letters. Form letters (i.e., non-unique letters) are addressed in Chapter 4. Each unique letter within this chapter has been assigned a letter code (e.g., A or AA) and individual comments within each letter have been numbered consecutively in the left margin. Brackets are placed adjacent to individual comments to indicate the extent of the comment. Each comment letter is followed by the Central Coast Regional Water Quality Control Board's (CCWB's) responses to that letter, with the responses numbered to correspond with the comments marked on the letter. Where appropriate, responses to individual comments in this chapter refer the reader to the applicable master response(s), which are provided in Chapter 2.

3.1 List of Unique Comment Letters

Table 3-1 presents the list of unique comment letters received on the DEIR and DAO 4.0. The comment letters are organized by type: (1) federal agencies; (2) state agencies; (3) local agencies; (4) other stakeholder groups, and (5) individuals.

Table 3-1. List of Unique Comment Letters

Letter Code	Commenter Name	Commenter Agency / Organization	Letter Date
Federal Agencies			
A	Stephen P. Henry	U.S. Fish and Wildlife Service	April 7, 2020
B	Joshua Fuller	National Oceanic and Atmospheric Administration	June 19, 2020
C	Karen Lowell	U.S. Department of Agriculture, Natural Resources Conservation Service	June 22, 2020
State Agencies			
D	Fernando Galli	California Department of Fish and Wildlife	April 9, 2020

[1] The term "letter" is used broadly in this chapter to include written comments submitted in any form, such as email, U.S. mail, fax, etc.

Letter Code	Commenter Name	Commenter Agency / Organization	Letter Date
E	Jordan Cunningham	Assembly California Legislature, 35th District	June 19, 2020
Local Agencies			
F	Mike LeBarre	City of King	June 10, 2020
G	Chris Lopez	Monterey County	June 12, 2020
H	Willy Cunha	Shandon-San Juan Water District / Shandon-San Juan Groundwater Sustainability Agency	June 18, 2020
I	Paul Robins	Resource Conservation District of Monterey County	June 22, 2020
J	Lisa Lurie	Resource Conservation District of Santa Cruz County	June 22, 2020
K	Vanessa De La Piedra	Santa Clara Valley Water District	June 22, 2020
Additional Stakeholder Groups			
L	Judy Paulson	N/A	March 20, 2020
M	Ann R. Myhre	N/A	April 12, 2020
N	Brian Talley	Talley Farms and Talley Vineyards	April 13, 2020
O	David Schwartz	Deja View Farm	May 1, 2020
P	Joji Muramoto	University of California Cooperative Extension, Center for Agroecology and Sustainable Food Systems, U.C. Santa Cruz	June 1, 2020
Q	Glenn Olson	Fruit Growers Laboratory	June 3, 2020
R	Marisa Bloch	Pasolivo	June 11, 2020
S	Ron Labastida	Babe Farms Inc.	June 12, 2020
T	Christopher Bunn	N/A	June 15, 2020
U	Kevin Gee	Darensberries LLC	June 15, 2020
V	Jazmin Lopez	Pisoni Farms	June 15, 2020
W	Frank Tucker	Tucker Family Farms	June 16, 2020
X	Chris Matthews	Alta Vista Farms	June 17, 2020
Y	David Rickert	N/A	June 17, 2020
Z	Till Guldimann	N/A	June 17, 2020
AA	Joel Wiley	Wilbur-Ellis Agribusiness	June 17, 2020
AB	Nathan Harkleroad	ALBA	June 18, 2020
AC	Jennifer Clarke	California Leafy Greens Research Program	June 18, 2020

Letter Code	Commenter Name	Commenter Agency / Organization	Letter Date
AD	Melissa Egger	Mesa Vineyard Management, Inc.	June 18, 2020
AE	Dana M. Merrill	Mesa Vineyard Management, Inc.	June 18, 2020
AF	Patrick Headley	Hahn Family Wines	June 18, 2020
AG	Soren Bjorn and Tannis Thorlakson	Driscoll's of the Americas	June 18, 2020
AH	Adam Franscioni	Gary Franscioni, Inc.	June 19, 2020
AI	Adam Franscioni	Franscioni Lemon Company	June 19, 2020
AJ	Adam Franscioni	Leon Farms LLC	June 19, 2020
AK	Andy Weyrich	Mesa Vineyard Management	June 19, 2020
AL	Bob Tillman	Alta Colina Vineyard & Winery	June 19, 2020
AM	David Estrada	Clos Tita Winery	June 19, 2020
AN	Don Howell	Floricultura Pacific Inc.	June 19, 2020
AO	George Donati	Pacific Coast Farming	June 19, 2020
AP	Kasey MacInnes	Pacific Coast Farming	June 19, 2020
AQ	Max Teclaw	Babe Farms Inc.	June 19, 2020
AR	Norman C. Groot	Monterey County Farm Bureau	June 19, 2020
AS	Kim Stemler	Monterey County Vintners & Growers Association	June 19, 2020
AT	Lon Lanini	Nutrien Ag Solutions	June 19, 2020
AU	Ramy Colfer and Michael E. Menes	True Organic Products	June 19, 2020
AV	Will Wagner	Wilbur-Ellis	June 19, 2020
AW	Mark Ripata	Wilbur-Ellis Agribusiness	June 19, 2020
AX	William Coy	N/A	June 19, 2020
AY	Patricia Dingus	Yara	June 19, 2020
AZ	Richard W. Nutter	Ag Land Trust	June 20, 2020
BA	Andy Niner	Niner Wine Estates	June 20, 2020
BB	Bruce Kobara	S. Kobara & Sons	June 20, 2020
BC	Marcus Buchanan	Buchanan Associates	June 20, 2020
BD	Kelly Damewood	California Certified Organic Farmers	June 20, 2020
BE	Heather Golden	Golden Ag Assistance LLC	June 20, 2020
BF	John Tubb	Que Sera Syrah Vineyard	June 20, 2020
BG	Gina Bella Colfer	Wilbur-Ellis Agribusiness	June 20, 2020
BH	Jonathan Evans	Center for Biological Diversity	June 21, 2020

Letter Code	Commenter Name	Commenter Agency / Organization	Letter Date
BI	Colby Pereira	N/A	June 21, 2020
BJ	Daniel M. Rodrigues	Vina Quest	June 21, 2020
BK	Doug Filipponi	Margarita Vineyards, LLC	June 21, 2020
BL	Stephen Sinton	N/A	June 21, 2020
BM	Tom Ikeda	N/A	June 21, 2020
BN	Abby Taylor-Silva, Kari Fisher, Gail Delihant, Norman C. Groot, Claire Wineman, and Renee Pinel	Grower-Shipper Association of Central California, California Farm Bureau Federation, Western Growers Association, Monterey County Farm Bureau, Grower-Shipper Association of Santa Barbara and San Luis Obispo Counties, Western Plant Health Association, California Association of Pest Control Advisors, California Strawberry Commission, Monterey County Vintners & Growers, Santa Barbara County Farm Bureau, San Benito County Farm Bureau, San Luis Obispo County Farm Bureau, Santa Clara County Farm Bureau, Santa Cruz County Farm Bureau, and San Mateo County Farm Bureau	June 22, 2020
BO	Adam Secondo	Secondo Farms L.P.	June 22, 2020
BP	Bill and Teresa Hinrichs	Ranchita Canyon Vineyard	June 22, 2020
BQ	Brett Ferini	Rancho Laguna Farms	June 22, 2020
BR	Brian Driscoll	Driscoll Strawberry Affiliates	June 22, 2020
BS	Brian Driscoll	Berry Mist Farms, LP	June 22, 2020
BT	Brian Driscoll	Robdon Properties, LLC	June 22, 2020
BU	Brooke Carhartt	Carhartt Vineyard	June 22, 2020
BV	Ruthann Anderson	California Association of Pest Control Advisers	June 22, 2020
BW	Michael Miiller	California Association of Winegrape Growers	June 22, 2020
BX	Kaitlyn Kalua	California Coastkeeper Alliance	June 22, 2020
BY	Steve Shimek	California Coastkeeper Alliance, Santa Barbara Channelkeeper, and Monterey Coastkeeper	June 22, 2020
BZ	Sarah Aird	Californians for Pesticide Reform	June 22, 2020
CA	Lisa Hunt	American Rivers	June 22, 2020

Letter Code	Commenter Name	Commenter Agency / Organization	Letter Date
CB	Eric Lauritzen	California Strawberry Commission	June 22, 2020
CC	Allison Jordan	California Sustainable Winegrowing Alliance	June 22, 2020
CD	Kevin Merrill and Sarah Lopez	Central Coast Water Quality Preservation, Inc.	June 22, 2020
CE	Kevin O'Connor	Central Coast Wetlands Group, Moss Landing Marine Labs	June 22, 2020
CF	Jeffrey Odefey	Clean Water Supply Program, American Rivers	June 22, 2020
CG	Debi Ores	Community Water Center	June 22, 2020
CH	Ryan R. Waterman, Brownstein Hyatt Farber Schreck, LLP	On behalf of Costa Farms Inc., Costa Family Farms, and Anthony Costa & Sons	June 22, 2020
CI	Don Chartrand	Creek Lands Conservation	June 22, 2020
CJ	Darlene Din	N/A	June 22, 2020
CK	David Goldfarb	Clos de la Tech Vineyards and Winery	June 22, 2020
CL	David Lafond	Lafond Vineyard	June 22, 2020
CM	David Marihart	Marihart Family LLC	June 22, 2020
CN	Dennis Lebow	Reiter Affiliated Companies	June 22, 2020
CO	Dirk Giannini	Christensen & Giannini, LLC	June 22, 2020
CP	Danilu Ramirez	DRAM Agricultural Consulting	June 22, 2020
CQ	Dustin Hauge	N/A	June 22, 2020
CR	Frank Arciero Jr.	Arciero Farms	June 22, 2020
CS	Fred Holloway	JUSTIN Vineyards & Winery LLC	June 22, 2020
CT	Benjamin Waddell	Fruit Growers Laboratory, Inc. / FGL Environmental	June 22, 2020
CU	George Adam	N/A	June 22, 2020
CV	Greg Gonzalez	Scheid Family Wines	June 22, 2020
CW	Abby Taylor-Silva	Grower-Shipper Association of Central California	June 22, 2020
CX	Claire Wineman	Grower-Shipper Association of Santa Barbara and San Luis Obispo Counties	June 22, 2020
CY	Jynel Gularte	Rincon Farms, Inc.	June 22, 2020
CZ	Karl F. Wittstrom	Margarita Vineyards	June 22, 2020
DA	Karl F. Wittstrom	Wittstrom Vineyard	June 22, 2020
DB	Ken Altman	Altman Specialty Plants	June 22, 2020

Letter Code	Commenter Name	Commenter Agency / Organization	Letter Date
DC	Steve Shimek	The Otter Project	June 22, 2020
DD	Kay Mercer	Provost & Pritchard Consulting Group	June 22, 2020
DE	Brent Burchett	San Luis Obispo County Farm Bureau	June 22, 2020
DF	Joe Desmond	Sustainable Agriculture and Energy	June 22, 2020
DG	Kris Beal	Central Coast Vineyard Team	June 22, 2020
DH	Jason Smith	Valley Farm Management	June 22, 2020
DI	Jesus Chavez	Coastal Vineyard Care Associates	June 22, 2020
DJ	Jesus Chavez	Coastal Vineyard Care Associates	June 22, 2020
DK	Jesus Chavez	Coastal Vineyard Care Associates	June 22, 2020
DL	Jesus Chavez	Coastal Vineyard Care Associates	June 22, 2020
DM	Jesus Chavez	Coastal Vineyard Care Associates	June 22, 2020
DN	Jesus Chavez	Coastal Vineyard Care Associates	June 22, 2020
DO	Jesus Chavez	Coastal Vineyard Care Associates	June 22, 2020
DP	Jesus Chavez	Coastal Vineyard Care Associates	June 22, 2020
DQ	Jesus Chavez	Coastal Vineyard Care Associates	June 22, 2020
DR	Jesus Chavez	Coastal Vineyard Care Associates	June 22, 2020
DS	Jesus Chavez	Coastal Vineyard Care Associates	June 22, 2020
DT	Jesus Chavez	Coastal Vineyard Care Associates	June 22, 2020
DU	John DeCarli, Steve Bassi, and Scott Rossi	Tanimura & Antler	June 22, 2020
DV	John Bramers	Merrill Farms LLC	June 22, 2020
DW	Josh Roberts	Triangle Farms, Inc.	June 22, 2020
DX	Kevin Peck	N/A	June 22, 2020
DY	Mara Miller	Royal Oaks Farms LLC, Rancho Royal Oaks LLC	June 22, 2020
DZ	Melissa Duflock	San Bernardo Rancho	June 22, 2020
EA	Michael Griva	Franscioni-Griva Corporation	June 22, 2020
EB	Mike Ahumada	Sunview Vineyards of California, Inc.	June 22, 2020
EC	Mike Sinor	Bassi Vineyard	June 22, 2020
ED	Mindy Record	Paso de Record Vineyard	June 22, 2020
EE	Nob Furukawa	Gold Coast Farms, Inc.	June 22, 2020
EF	Phil Tubbs	Evening Star Vineyard	June 22, 2020
EG	Randy Record	Paso de Record Vineyard	June 22, 2020
EH	Jerry & Suzanne Rava	Chad Rava Vineyards	June 22, 2020

Letter Code	Commenter Name	Commenter Agency / Organization	Letter Date
EI	Raymond Gularte	N/A	June 22, 2020
EJ	Rebecca Griva	F&G Vineyard, LLC	June 22, 2020
EK	Robb Howell	San Bernardo Rancho	June 22, 2020
EL	Robert Rodoni	N/A	June 22, 2020
EM	Robert Silacci	N/A	June 22, 2020
EN	Sarah Ragan	Diamond West Farming Company, Inc.	June 22, 2020
EO	Susanne Zechiel	Jackson Family Wines	June 22, 2020
EP	Wayne Gularte	Rincon Farms, Inc.	June 22, 2020
EQ	Willy Cunha	Sunview Shandon	June 22, 2020
ER	Willy Cunha	Sunview Shandon	June 22, 2020
ES	Magaly Santos	Greenaction for Health and Environmental Justice	June 22, 2020
ET	Paul Poister	Nutrien Ag Solutions	June 22, 2020
EU	Steve Petrie	Yara North America Inc.	June 22, 2020
EV	Lowell Zelinski	Precision Ag Consulting	June 22, 2020
EW	Jill Holihan	Pyrethroid Working Group	June 22, 2020
EX	Delia Bense-Kang, Brad Snook, Allison Webster, Antony Tersol	Surfrider Foundation	June 22, 2020
EY	J. Stacey Sullivan	Sustainable Conservation	June 22, 2020
EZ	Richard Smith	University of California Cooperative Extension, Monterey County	June 22, 2020
FA	Michael Cahn	University of California Cooperative Extension, Monterey County	June 22, 2020
FB	Randy Heinzen	Vineyard Coalition and VPS, Inc.	June 22, 2020
FC	Adam Kotin, Kim Stemler, Joel Peterson	Wine Institute, Monterey County Vintners & Growers, Paso Robles Wine Country Alliance	June 22, 2020
FD	Sarah Hoyle, Aimee Code	Xerces Society for Invertebrate Conservation	June 22, 2020
FE	Jim Orradre	Orradre Farming	June 22, 2020
FF	Christopher Hight	Betteravia Farms, LLC.	June 23, 2020
FG	Pete Anecito	Mission Ranches	June 23, 2020
FH	Ian Teresi	George Chiala Farms, Inc.	June 24, 2020

Letter Code	Commenter Name	Commenter Agency / Organization	Letter Date
Individuals			
FI	Marla Anderson		March 26, 2020
FJ	Janine Butler		April 7, 2020
FK	Michael Thomas		June 22, 2020
Fl	Wayne Barnes		March 20, 2020
FM	Carole Cassidy		March 20, 2020
FN	Carolyn Barkow		March 20, 2020
FO	Celia Carroll		March 20, 2020
FP	Connie Spenger		March 20, 2020
FQ	Dennis Therry		March 20, 2020
FR	Donna Uran		March 20, 2020
FS	Elise Kroeber		March 20, 2020
FT	Ellen Kelley		March 20, 2020
FU	Evan Jane Kriss		March 20, 2020
FV	Forrest Hopping		March 20, 2020
FW	Gary Lee		March 20, 2020
FX	Hazel Holby		March 20, 2020
FY	Holly Harris		March 20, 2020
FZ	Holly Sletteland		March 20, 2020
GA	Jane Dalpino Dalpino		March 20, 2020
GB	Jerry Ludeke		March 20, 2020
GC	Jessica Kelmon		March 20, 2020
GD	Jessie Cowley		March 20, 2020
GE	Kacie Shelton		March 20, 2020
GF	Kara Masters		March 20, 2020
GG	Kathie Jenni		March 20, 2020
GH	Kathryn Wild		March 20, 2020
GI	Ken Wallace		March 20, 2020
GJ	Laura Jacobson		March 20, 2020
GK	Mark Feldman		March 20, 2020
GL	Mary Bull		March 20, 2020
GM	Mary Church		March 20, 2020
GN	Mary Robinson		March 20, 2020

Letter Code	Commenter Name	Commenter Agency / Organization	Letter Date
GO	Megan Shumway		March 20, 2020
GP	Rita A		March 20, 2020
GQ	Tamara Trussell		March 20, 2020
GR	Wesley Chuang		March 20, 2020
GS	Anne Greene		March 21, 2020
GT	Barbara Barnes		March 21, 2020
GU	Carla Cicchi		March 21, 2020
GV	Charles Smith		March 21, 2020
GW	Ellen Gachesa		March 21, 2020
GX	Joe Gonzales		March 21, 2020
GY	Lisa Buckingham		March 21, 2020
GZ	Margaret Tilden		March 21, 2020
HA	Richard Bradus		March 21, 2020
HB	Subir Trivedi		March 21, 2020
HC	Anne Hodgkinson		March 23, 2020
HD	Varenka Lorenzi		March 23, 2020
HE	Christopher Lish		April 5, 2020

3.2 Comment Letters and Responses to Comments

This section presents copies of the individual response comment letters or e-mails received on the DEIR and DAO 4.0, and responses to each comment contained in the letters. Letters are presented first, followed by responses. Non-specific and voluminous comment letter attachments are provided in Section 3.3.