

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

**AMENDED (APRIL 29, 2020) MONITORING AND REPORTING PROGRAM
ORDER No. R3-2017-0002-03**

TIER 3

**DISCHARGERS ENROLLED UNDER
CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS FOR
DISCHARGES FROM IRRIGATED LANDS**

This Monitoring and Reporting Program Order No. R3-2017-0002-03 (MRP) is issued pursuant to California Water Code (Water Code) sections 13267 and 13269, which authorize the California Regional Water Quality Control Board, Central Coast Region (hereafter Central Coast Water Board) to require preparation and submittal of technical and monitoring reports. Water Code section 13269 requires a waiver of waste discharge requirements to include as a condition, the performance of monitoring and the public availability of monitoring results. *Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands*, Order No. R3-2017-0002 (Order), includes criteria and requirements for three tiers. This MRP sets forth monitoring and reporting requirements for **Tier 3 Dischargers** enrolled under the Order. A summary of the requirements is shown below.

SUMMARY OF MONITORING AND REPORTING REQUIREMENTS FOR TIER 3:

- Part 1: Surface Receiving Water Monitoring and Reporting (*cooperative or individual*)
- Part 2: Groundwater Monitoring and Reporting (*cooperative or individual*)
Total Nitrogen Applied Reporting (*Tier 3 Dischargers with farms/ranches growing high risk crops*);
- Part 3: Annual Compliance Form
- Part 5: Individual Surface Water Discharge Monitoring and Reporting
- Part 6: Irrigation and Nutrient Management Plan (*required for subset of Tier 3 Dischargers if farm/ranch has High Nitrate Loading Risk*)
- Part 7: Water Quality Buffer Plan (*required for subset of Tier 3 Dischargers if farm/ranch contains or is adjacent to a waterbody impaired for temperature, turbidity or sediment*)

Pursuant to Water Code section 13269(a)(2), monitoring requirements must be designed to support the development and implementation of the waiver program, including, but not limited to, verifying the adequacy and effectiveness of the waiver's conditions. The monitoring and reports required by this MRP are to evaluate effects of discharges of waste from irrigated agricultural operations and individual farms/ranches

on waters of the state and to determine compliance with the Order. Time schedules are shown in Table 5.

MONITORING AND REPORTING BASED ON TIERS

The Order and MRP includes criteria and requirements for three tiers, based upon those characteristics of the individual farms/ranches at the operation that present the highest level of waste discharge or greatest risk to water quality. Dischargers must meet conditions of the Order and MRP for the appropriate tier that applies to their land and/or the individual farm/ranch. Within a tier, Dischargers comply with requirements based on the specific level of discharge and threat to water quality from individual farms/ranches. The lowest tier, Tier 1, applies to dischargers who discharge the lowest level of waste (amount or concentration) or pose the lowest potential to cause or contribute to an exceedance of water quality standards in waters of the State or of the United States. The highest tier, Tier 3, applies to dischargers who discharge the highest level of waste or pose the greatest potential to cause or contribute to an exceedance of water quality standards in waters of the State or of the United States. Tier 2 applies to dischargers whose discharge has a moderate threat to water quality. Water quality is defined in terms of regional, state, or federal numeric or narrative water quality standards. Per the Order, Dischargers may submit a request to the Executive Officer to approve transfer to a lower tier. If the Executive Officer approves a transfer to a lower tier, any interested person may request that the Central Coast Water Board conduct a review of the Executive Officer's determination.

PART 1. SURFACE RECEIVING WATER MONITORING AND REPORTING REQUIREMENTS

The surface receiving water monitoring and reporting requirements described herein are generally a continuation of the surface receiving water monitoring and reporting requirements of Monitoring and Reporting Program Order No. 2012-0011-03, as revised August 22, 2016, with the intent of uninterrupted regular monitoring and reporting during the transition from Order No. R3-2012-0011 to Order No. R3-2017-0002.

Monitoring and reporting requirements for surface receiving water identified in Part 1.A. and Part 1.B. apply to Tier 3 Dischargers. Surface receiving water refers to water flowing in creeks and other surface waters of the State. Surface receiving water monitoring may be conducted through a cooperative monitoring program on behalf of Dischargers, or Dischargers may choose to conduct surface receiving water monitoring and reporting individually. Key monitoring and reporting requirements for surface receiving water are shown in Tables 1 and 2. Time schedules are shown in Table 5.

A. Surface Receiving Water Quality Monitoring

1. Dischargers must elect a surface receiving water monitoring option (cooperative monitoring program or individual receiving water monitoring) to

comply with surface receiving water quality monitoring requirements, and identify the option selected on the Notice of Intent (NOI).

2. Dischargers are encouraged to choose participation in a cooperative monitoring program (e.g., the existing Cooperative Monitoring Program or a similar program) to comply with receiving water quality monitoring requirements. Dischargers not participating in a cooperative monitoring program must conduct surface receiving water quality monitoring individually that achieves the same purpose.
3. Dischargers (individually or as part of a cooperative monitoring program) must conduct surface receiving water quality monitoring to a) assess the impacts of their waste discharges from irrigated lands to receiving water, b) assess the status of receiving water quality and beneficial use protection in impaired waterbodies dominated by irrigated agricultural activity, c) evaluate status, short-term patterns and long-term trends (five to ten years or more) in receiving water quality, d) evaluate water quality impacts resulting from agricultural discharges (including but not limited to tile drain discharges), e) evaluate stormwater quality, f) evaluate condition of existing perennial, intermittent, or ephemeral streams or riparian or wetland area habitat, including degradation resulting from erosion or agricultural discharges of waste, and g) assist in the identification of specific sources of water quality problems.

Surface Receiving Water Quality Sampling and Analysis Plan

4. **By March 1, 2018, or as directed by the Executive Officer**, Dischargers (individually or as part of a cooperative monitoring program) must submit a surface receiving water quality Sampling and Analysis Plan (SAAP) and Quality Assurance Project Plan (QAPP); this requirement is satisfied if an approved SAAP and QAPP addressing all surface receiving water quality monitoring requirements described in this Order has been submitted pursuant to Order No.R3-2012-0011 and associated Monitoring and Reporting Programs. Dischargers (or a third-party cooperative monitoring program) must develop the Sampling and Analysis Plan to describe how the proposed monitoring will achieve the objectives of the MRP and evaluate compliance with the Order. The Sampling and Analysis Plan may propose alternative monitoring site locations, adjusted monitoring parameters, and other changes as necessary to assess the impacts of waste discharges from irrigated lands to receiving water. The Executive Officer must approve the Sampling and Analysis Plan and QAPP.
5. The Sampling and Analysis Plan must include the following minimum required components:

- a. Monitoring strategy to achieve objectives of the Order and MRP;
 - b. Map of monitoring sites with GIS coordinates;
 - c. Identification of known water quality impairments and impaired waterbodies per the current U.S. EPA-approved Clean Water Act 303(d) List of Impaired Waterbodies (List of Impaired Waterbodies);
 - d. Identification of beneficial uses and applicable water quality standards;
 - e. Identification of applicable Total Maximum Daily Loads;
 - f. Monitoring parameters;
 - g. Monitoring schedule, including description and frequencies of monitoring events;
 - h. Description of data analysis methods;
6. The QAPP must include receiving water and site-specific information, project organization and responsibilities, and quality assurance components of the MRP. The QAPP must also include the laboratory and field requirements to be used for analyses and data evaluation. The QAPP must contain adequate detail for project and Water Board staff to identify and assess the technical and quality objectives, measurement and data acquisition methods, and limitations of the data generated under the surface receiving water quality monitoring. All sampling and laboratory methodologies and QAPP content must be consistent with U.S. EPA methods, State Water Board's Surface Water Ambient Monitoring Program (SWAMP) protocols and the Central Coast Water Board's Central Coast Ambient Monitoring Program (CCAMP). Following U.S. EPA guidelines¹ and SWAMP templates², the receiving water quality monitoring QAPP must include the following minimum required components:
- a. Project Management. This component addresses basic project management, including the project history and objectives, roles and responsibilities of the participants, and other aspects.
 - b. Data Generation and Acquisition. This component addresses all aspects of project design and implementation. Implementation of these elements ensures that appropriate methods for sampling, measurement and analysis, data collection or generation, data handling, and quality control activities are employed and are properly documented. Quality control requirements are applicable to all the constituents sampled as part of the MRP, as described in the appropriate method.

¹ USEPA. 2001 (2006) USEPA Requirements for Quality Assurance Project Plans (QA/R-5) Office of Environmental Information, Washington, D.C. USEPA QA/R-5

² http://waterboards.ca.gov/water_issues/programs/swamp/tools.shtml#qa

- c. **Assessment and Oversight.** This component addresses the activities for assessing the effectiveness of the implementation of the project and associated QA and QC activities. The purpose of the assessment is to provide project oversight that will ensure that the QA Project Plan is implemented as prescribed.
 - d. **Data Validation and Usability.** This component addresses the quality assurance activities that occur after the data collection, laboratory analysis and data generation phase of the project is completed. Implementation of these elements ensures that the data conform to the specified criteria, thus achieving the MRP objectives.
7. The Central Coast Water Board may conduct an audit of contracted laboratories at any time in order to evaluate compliance with the QAPP.
8. The Sampling and Analysis Plan and QAPP, and any proposed revisions are subject to approval by the Executive Officer. The Executive Officer may also revise the Sampling and Analysis Plan, including adding, removing, or changing monitoring site locations, changing monitoring parameters, and other changes as necessary to assess the impacts of waste discharges from irrigated lands to receiving water.

Surface Receiving Water Quality Monitoring Sites

9. The Sampling and Analysis Plan must, at a minimum, include monitoring sites to evaluate waterbodies identified in Table 1, unless otherwise approved by the Executive Officer. The Sampling and Analysis Plan must include sites to evaluate receiving water quality impacts most directly resulting from areas of agricultural discharge (including areas receiving tile drain discharges). Site selection must take into consideration the existence of any long-term monitoring sites included in related monitoring programs (e.g. CCAMP and the existing CMP). Sites may be added or modified, subject to prior approval by the Executive Officer, to better assess the pollutant loading from individual sources or the impacts to receiving waters caused by individual discharges. Any modifications must consider sampling consistency for purposes of trend evaluation.

Surface Receiving Water Quality Monitoring Parameters

10. The Sampling and Analysis Plan must, at a minimum, include the following types of monitoring and evaluation parameters listed below and identified in Table 2:
 - a. Flow Monitoring;

- b. Water Quality (physical parameters, metals, nutrients, pesticides);
 - c. Toxicity (water and sediment);
11. All analyses must be conducted at a laboratory certified for such analyses by the State Department of Public Health (CDPH) or at laboratories approved by the Executive Officer. Unless otherwise noted, all sampling, sample preservation, and analyses must be performed in accordance with the latest edition of *Test Methods for Evaluating Solid Waste*, SW-846, U.S. EPA, and analyzed as specified herein by the above analytical methods and reporting limits indicated. Certified laboratories can be found at the web link: <http://www.cdph.ca.gov/certlic/labs/Documents/ELAPLablist.xls>.
 12. Water quality and flow monitoring is used to assess the sources, concentrations, and loads of waste discharges from individual farms/ranches and groups of Dischargers to surface waters, to evaluate impacts to water quality and beneficial uses, and to evaluate the short-term patterns and long-term trends in receiving water quality. Monitoring data must be compared to existing numeric and narrative water quality objectives.
 13. Toxicity testing is to evaluate water quality relative to the narrative toxicity objective. Water column toxicity analyses must be conducted on 100% (undiluted) sample. At sites where persistent unresolved toxicity is found, the Executive Officer may require concurrent toxicity and chemical analyses and a Toxicity Identification Evaluation (TIE) to identify the individual discharges causing the toxicity.

Surface Receiving Water Quality Monitoring Frequency and Schedule

14. The Sampling and Analysis Plan must include a schedule for sampling. Timing, duration, and frequency of monitoring must be based on the land use, complexity, hydrology, and size of the waterbody. Table 2 includes minimum monitoring frequency and parameter lists. Agricultural parameters that are less common may be monitored less frequently. Modifications to the receiving water quality monitoring parameters, frequency, and schedule may be submitted for Executive Officer consideration and approval. At a minimum, the Sampling and Analysis Plan schedule must consist of monthly monitoring of common agricultural parameters in major agricultural areas, including two major storm events during the wet season (October 1 – April 30).
15. Storm event 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. For purposes of this MRP, a storm event is defined

as precipitation producing onsite runoff (surface water flow) capable of creating significant ponding, erosion or other water quality problem. A significant storm event will generally result in greater than 1-inch of rain within a 24-hour period.

16. Dischargers (individually or as part of a cooperative monitoring program) must perform receiving water quality monitoring per the Sampling and Analysis Plan and QAPP approved by the Executive Officer.

B. Surface Receiving Water Quality Reporting

Surface Receiving Water Quality Data Submittal

1. Dischargers (individually or as part of a cooperative monitoring program) must submit water quality monitoring data to the Central Coast Water Board electronically to the California Environmental Data Exchange Network (CEDEN), according to CEDEN submittal guidelines, or, in a format specified by the Executive Officer, each January 1, April 1, July 1, and October 1.

Surface Receiving Water Quality Monitoring Annual Report

2. **By July 1, 2017**, and every July 1 annually thereafter, Dischargers (individually or as part of a cooperative monitoring program) must submit an Annual Report, electronically, in a format specified by the Executive Officer including the following minimum elements:
 - a. Signed Transmittal Letter;
 - b. Title Page;
 - c. Table of Contents;
 - d. Executive Summary;
 - e. Summary of Exceedance Reports submitted during the reporting period;
 - f. Monitoring objectives and design;
 - g. Monitoring site descriptions and rainfall records for the time period covered;
 - h. Location of monitoring sites and map(s);
 - i. Tabulated results of all analyses arranged in tabular form so that the required information is readily discernible;
 - j. Summary of water quality data for any sites monitored as part of related monitoring programs and used to evaluate receiving water as described in the Sampling and Analysis Plan.
 - k. Discussion of data to clearly illustrate compliance with the Order and water quality standards;
 - l. Discussion of short-term patterns and long-term trends in receiving water quality and beneficial use protection;

- m. Evaluation of pesticide and toxicity analyses results, and recommendation of candidate sites for Toxicity Identification Evaluations (TIEs);
- n. Identification of the location of any agricultural discharges observed discharging directly to surface receiving water;
- o. Laboratory data submitted electronically in a CEDEN comparable format;
- p. Sampling and analytical methods used;
- q. Copy of chain-of-custody forms;
- r. Field data sheets, signed laboratory reports, laboratory raw data;
- s. Associated laboratory and field quality control samples results;
- t. Summary of Quality Assurance Evaluation results;
- u. Specify the method used to obtain flow at each monitoring site during each monitoring event;
- v. Electronic or hard copies of photos obtained from all monitoring sites, clearly labeled with site ID and date;
- w. Conclusions.

PART 2. GROUNDWATER MONITORING AND REPORTING REQUIREMENTS

Groundwater monitoring may be conducted through a cooperative monitoring and reporting program on behalf of growers, or Dischargers may choose to conduct groundwater monitoring and reporting individually. Qualifying cooperative groundwater monitoring and reporting programs must implement the groundwater monitoring and reporting requirements described in this Order, unless otherwise approved by the Executive Officer. An interested person may seek review by the Central Coast Water Board of the Executive Officer's approval or denial of a cooperative groundwater monitoring and reporting program.

Key monitoring and reporting requirements for groundwater are shown in Table 3.

A. Groundwater Monitoring

1. Dischargers must sample private domestic wells and the primary irrigation well on their farm/ranch to evaluate groundwater conditions in agricultural areas, identify areas at greatest risk for nitrogen loading and exceedance of drinking water standards, and identify priority areas for follow up actions.
2. Dischargers must sample at least one groundwater well for each farm/ranch on their operation, including groundwater wells that are located within the property boundary of the enrolled county assessor parcel numbers (APNs). For farms/ranches with multiple groundwater wells, Dischargers must sample all domestic wells and the primary irrigation well. For the purposes of this MRP, a "domestic well" is any well that is used or may be used for domestic use purposes, including any groundwater well that is connected to a

- residence, workshop, or place of business that may be used for human consumption, cooking, or sanitary purposes. Groundwater monitoring parameters must include well screen interval depths (if available), general chemical parameters, and general cations and anions listed in Table 3.
3. Dischargers must conduct two rounds of monitoring of required groundwater wells during calendar year 2017; one sample collected during spring (**March - June**) and one sample collected during fall (**September - December**).
 4. Groundwater samples must be collected by a qualified third party (e.g., consultant, technician, person conducting cooperative monitoring) using proper sampling methods, chain-of-custody, and quality assurance/quality control protocols. Groundwater samples must be collected at or near the well head before the pressure tank and prior to any well head treatment. In cases where this is not possible, the water sample must be collected from a sampling point as close to the pressure tank as possible, or from a cold-water spigot located before any filters or water treatment systems.
 5. Laboratory analyses for groundwater samples must be conducted by a State certified laboratory according to U.S. EPA approved methods; unless otherwise noted, all monitoring, sample preservation, and analyses must be performed in accordance with the latest edition of *Test Methods for Evaluating Solid Waste*, SW-846, United States Environmental Protection Agency, and analyzed as specified herein by the above analytical methods and reporting limits indicated. Certified laboratories can be found at the web link below: http://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/docs/resources4growers/2016_04_11_labs.pdf.
 6. If a discharger determines that water in any domestic well exceeds 10 mg/L of nitrate as N, the discharger or third party must provide notice to the Central Coast Water Board within 24 hours of learning of the exceedance. For domestic wells on a Discharger's farm/ranch that exceed 10 mg/L nitrate as N, the Discharger must provide written notification to the users within 10 days of learning of the exceedance and provide written confirmation of the notification to the Central Coast Water Board.

The drinking water notification must include the statement that the water poses a human health risk due to elevated nitrate concentration and include a warning against the use of the water for drinking or cooking. In addition, Dischargers must also provide prompt written notification to any new well users (e.g. tenants and employees with access to the affected well), whenever there is a change in occupancy.

For all other domestic wells not on a Discharger's property, the Central Coast Water Board will notify the users promptly.

The drinking water notification and confirmation letters required by this Order are available to the public.

B. Groundwater Reporting

1. **Within 60 days of sample collection**, Dischargers must coordinate with the laboratory to submit the following groundwater monitoring results and information, electronically, using the Water Board's GeoTracker electronic deliverable format (EDF):
 - a. GeoTracker Ranch Global Identification Number
 - b. Field point name (Well Name)
 - c. Field Point Class (Well Type)
 - d. Latitude
 - e. Longitude
 - f. Sample collection date
 - g. Analytical results
 - h. Well construction information (e.g., total depth, screened intervals, depth to water), as available
2. Dischargers must submit groundwater well information required in the electronic Notice of Intent (eNOI) for each farm/ranch and update the eNOI to reflect changes in the farm/ranch information within 30 days of the change. Groundwater well information reported on the eNOI includes, but is not limited to:
 - a. Number of groundwater wells present at each farm/ranch
 - b. Identification of any groundwater wells abandoned or destroyed (including method destroyed) in compliance with the Order
 - c. Use for fertigation or chemigation
 - d. Presence of back flow prevention devices
 - e. Number of groundwater wells used for agricultural purposes
 - f. Number of groundwater wells used for or may be used for domestic use purposes (domestic wells)

C. Total Nitrogen Applied Reporting

1. By March 1, 2018, and by March 1 annually thereafter, Tier 3 Dischargers with farms/ranches growing high risk crops must record and report total nitrogen applied for each specific crop that was irrigated and grown for commercial purposes on that farm/ranch during the preceding calendar year (January through December).

High risk crops are: beet, broccoli, cabbage, cauliflower, celery, Chinese

cabbage (napa), collard, endive, kale, leek, lettuce (leaf and head), mustard, onion (dry and green), spinach, strawberry, pepper (fruiting), and parsley.

Total nitrogen applied must be reported on the Total Nitrogen Applied Report form as described in the Total Nitrogen Applied Report form instructions.

Total nitrogen applied includes any product containing any form or concentration of nitrogen including, but not limited to, organic and inorganic fertilizers, slow release products, compost, compost teas, manure, and extracts.

2. The Total Nitrogen Applied Report form includes the following information:
 - a. General ranch information such as GeoTracker file numbers, name, location, acres.
 - b. Nitrogen concentration of irrigation water
 - c. Nitrogen applied in pounds per acre with irrigation water
 - d. Nitrogen present in the soil
 - e. Nitrogen applied with compost and amendments
 - f. Specific crops grown
 - g. Nitrogen applied in pounds per acre with fertilizers and other materials to each specific crop grown
 - h. Crop acres of each specific crop grown
 - i. Whether each specific crop was grown organically or conventionally
 - j. Basis for the nitrogen applied
 - k. Explanation and comments section
 - l. Certification statement with penalty of perjury declaration
 - m. Additional information regarding whether each specific crop was grown in a nursery, greenhouse, hydroponically, in containers, and similar variables.

PART 3. ANNUAL COMPLIANCE FORM

Tier 3 Dischargers must submit annual compliance information, electronically, on the Annual Compliance Form. The purpose of the electronic Annual Compliance Form is to provide information to the Central Coast Water Board to assist in the evaluation of threat to water quality from individual agricultural discharges of waste and measure progress towards water quality improvement and verify compliance with the Order and MRP. Time schedules are shown in Table 5.

A. Annual Compliance Form

1. **By March 1, 2018, and updated annually thereafter by March 1**, Tier 3 Dischargers must submit an Annual Compliance Form electronically, in a

format specified by the Executive Officer. The electronic Annual Compliance Form includes, but is not limited to the following minimum requirements¹:

- a. Question regarding consistency between the Annual Compliance Form and the electronic Notice of Intent (eNOI);
- b. Information regarding type and characteristics of discharge (e.g., number of discharge points, estimated flow/volume, number of tailwater days);
- c. Identification of any direct agricultural discharges to a stream, lake, estuary, bay, or ocean;
- d. Identification of specific farm water quality management practices completed, in progress, and planned to address water quality impacts caused by discharges of waste including irrigation management, pesticide management, nutrient management, salinity management, stormwater management, and sediment and erosion control to achieve compliance with this Order; and identification of specific methods used, and described in the Farm Plan consistent with Order Provision 44.g., for the purposes of assessing the effectiveness of management practices implemented and the outcomes of such assessments;
- e. Proprietary information question and justification;
- f. Authorization and certification statement and declaration of penalty of perjury.

PART 5. INDIVIDUAL SURFACE WATER DISCHARGE MONITORING AND REPORTING REQUIREMENTS

Monitoring and reporting requirements for individual surface water discharge identified in Part 5.A. and Part 5.B. apply to Tier 3 Dischargers with irrigation water or stormwater discharges to surface water from an outfall. Outfalls are locations where irrigation water and stormwater exit a farm/ranch, or otherwise leave the control of the discharger, after being conveyed by pipes, ditches, constructed swales, tile drains, containment structures, or other discrete structures or features that transport the water. Discharges that have commingled with discharges from another farm/ranch are considered to have left the control of the discharger. Key monitoring and reporting requirements for individual surface water discharge are shown in Tables 4A and 4B. Time schedules are shown in Table 5.

A. Individual Surface Water Discharge Monitoring

¹ Items reported in the Annual Compliance Form are due by March 1 2018, and annually thereafter, unless otherwise specified.

1. Tier 3 Dischargers must conduct individual surface water discharge monitoring to a) evaluate the quality of individual waste discharges, including concentration and load of waste (in kilograms per day) for appropriate parameters, b) evaluate effects of waste discharge on water quality and beneficial uses, and c) evaluate progress towards compliance with water quality improvement milestones in the Order.

Individual Sampling and Analysis Plan

2. **By March 1, 2018, or as directed by the Executive Officer**, Tier 3 Dischargers must submit an individual surface water discharge Sampling and Analysis Plan (SAAP) and QAPP to monitor individual discharges of irrigation water and stormwater that leaves their farm/ranch from an outfall. The Sampling and Analysis Plan and QAPP must be submitted to the Executive Officer; this requirement is satisfied if an approved SAAP and QAPP addressing all individual surface water discharge monitoring requirements described in this Order has been submitted pursuant to Order No.R3-2012-0011 and associated Monitoring and Reporting Programs.
3. The Sampling and Analysis Plan must include the following minimum required components to monitor irrigation water and stormwater discharges:
 - a. Number and location of outfalls (identified with latitude and longitude or on a scaled map);
 - b. Number and location of monitoring points;
 - c. Description of typical irrigation runoff patterns;
 - d. Map of discharge and monitoring points;
 - e. Sample collection methods;
 - f. Monitoring parameters;
 - g. Monitoring schedule and frequency of monitoring events;
4. The QAPP must include appropriate methods for sampling, measurement and analysis, data collection or generation, data handling, quality control activities, and documentation.
5. The Sampling and Analysis Plan and QAPP, and any proposed revisions are subject to approval by the Executive Officer. The Executive Officer may require modifications to the Sampling and Analysis Plan or Tier 3 Dischargers may propose Sampling and Analysis Plan modifications for Executive Officer approval, when modifications are justified to accomplish the objectives of the MRP.

Individual Surface Water Discharge Monitoring Points

6. Tier 3 Dischargers must select monitoring points to characterize at least 80% of the estimated maximum irrigation run-off discharge volume from each farm/ranch based on that farm's/ranch's typical discharge patterns¹, including tailwater discharges and discharges from tile drains. Sample must be taken when irrigation activity is causing maximal run-off. Load estimates will be generated by multiplying flow volume of discharge by concentration of contaminants. Tier 3 Dischargers must include at least one monitoring point from each farm/ranch which drains areas where chlorpyrifos or diazinon are applied, and monitoring of runoff or tailwater must be conducted within one week of chemical application. If discharge is not routinely present, Discharger may characterize typical run-off patterns in the Annual Report. See Table 4A for additional details.
7. Tier 3 Dischargers must also monitor storage ponds and other terminal surface water containment structures that collect irrigation and stormwater runoff, unless the structure is (1) part of a tail-water return system where a major portion of the water in such structure is reapplied as irrigation water, or (2) the structure is primarily a sedimentation pond by design with a short hydraulic residence time (96 hours or less) and a discharge to surface water when functioning. If multiple ponds are present, sampling must cover at least those structures that would account for 80% of the maximum storage volume of the containment features. See Table 4B for additional details. Where water is reapplied as irrigation water. Dischargers shall document reuse in the Farm Plan.

Individual Surface Water Discharge Monitoring Parameters, Frequency, and Schedule

8. Tier 3 Dischargers must conduct monitoring for parameters, laboratory analytical methods, frequency and schedule described in Tables 4A and 4B. Dischargers may utilize in-field water testing instruments/equipment as a substitute for laboratory analytical methods if the method is approved by U.S. EPA, meets reporting limits (RL) and practical quantitation limits (PQL) specifications in the MRP, and appropriate sampling methodology and quality assurance checks can be applied to ensure that QAPP standards are met to ensure accuracy of the test.
9. Tier 3 Dischargers must initiate individual surface water discharge monitoring per an approved Sampling and Analysis Plan and QAPP, unless otherwise directed by the Executive Officer.

¹ The requirement to select monitoring points to characterize at least 80% of the estimated maximum irrigation run-off based on typical discharge patterns is for the purposes of attempting to collect samples that represent a majority of the volume of irrigation run-off discharged; however the Board recognizes that predetermining these locations is not always possible and that sampling results may vary. The MRP does not specify the number or location of monitoring points to provide maximum flexibility for growers to determine how many sites necessary and exact locations are given the anticipated site-specific conditions.

B. Individual Surface Water Discharge Reporting

Individual Surface Water Discharge Monitoring Data Submittal

By March 1, 2018, and annually thereafter by March 1, Tier 3 Dischargers must submit individual surface water discharge monitoring data and information to the Central Coast Water Board electronically, in a pdf format, containing at least the following items, or as otherwise approved by the Executive Officer:

- a. Electronic laboratory data
 - All reports of results must contain Ranch name and Global ID, site name(s), project contact, and date.
 - Electronic laboratory data reports of chemical results shall include analytical results, as well as associated quality assurance data including method detection limits, reporting limits, matrix spikes, matrix spike duplicates, laboratory blanks, and other quality assurance results required by the analysis method.
 - Electronic laboratory data reports of toxicity results shall include summary results comparable to those required in a CEDEN file delivery, including test and control results. For each test result, the mean, associated control performance, calculated percent of control, statistical test results and determination of toxicity, must be included. Test results must specify the control ID used to calculate statistical outcomes.
 - Field data results, including temperature, pH, conductivity, turbidity and flow measurements, any field duplicates or blanks, and field observations.
 - Calculations of un-ionized ammonia concentrations
 - Calculations of total flow and pollutant loading (for nitrate, pesticides if sampled, total ammonia, and turbidity) (include formulas);
- b. Narrative description of typical irrigation runoff patterns;
- c. Location of sampling sites and map(s);
- d. Sampling and analytical methods used;
- e. Specify the method used to obtain flow at each monitoring site during each monitoring event;
- f. Photos obtained from all monitoring sites, clearly labeled with location and date;
- g. Sample chain-of-custody forms do not need to be submitted but must be made available to Central Coast Water Board staff, upon request.

PART 6. IRRIGATION AND NUTRIENT MANAGEMENT PLAN

Monitoring and reporting requirements related to the Irrigation and Nutrient Management Plan (INMP) identified in Part 6.A., and 6.B, apply to Tier 3 Dischargers identified by the Executive Officer that are newly enrolled in Order No. R3-2017-0002, and Tier 3 Dischargers that were subject to Irrigation and Nutrient Management Plan

Requirements in Order R3-2012-0011 per MRP Order No. R3-2012-0011-03. Time schedules are shown in Table 5.

A. Irrigation and Nutrient Management Plan Monitoring

1. Tier 3 Dischargers required in Order No. R3-2012-0011 to develop and initiate implementation of an Irrigation and Nutrient Management Plan (INMP) certified by a Professional Soil Scientist, Professional Agronomist, or Crop Advisor certified by the American Society of Agronomy, or similarly qualified professional, are required to update (as necessary) and implement their INMP throughout the term of this Order.
2. The Executive Officer will assess whether an INMP is required for new Tier 3 Dischargers that enroll in Order No. R3-2017-0002 during the term of the Order. The Executive Officer will use the criteria established in Order No. R3-2012-0011 to make this assessment. If a Tier 3 Discharger is required to develop an INMP, the Tier 3 discharger must develop and initiate implementation of an Irrigation and Nutrient Management Plan (INMP) certified by a Professional Soil Scientist, Professional Agronomist, or Crop Advisor certified by the American Society of Agronomy, or similarly qualified professional, **within 18 months** of the Executive Officer's assessment of the INMP requirement.
3. The purpose of the INMP is to budget and manage the nutrients applied to each farm/ranch considering all sources of nutrients, crop requirements, soil types, climate, and local conditions in order to minimize nitrate loading to surface water and groundwater in compliance with this Order. The professional certification of the INMP must indicate that the relevant expert has reviewed all necessary documentation and testing results, evaluated total nitrogen applied relative to typical crop nitrogen uptake and nitrogen removed at harvest, with consideration to potential nitrate loading to groundwater, and conducted field verification to ensure accuracy of reporting.
4. Tier 3 Dischargers required to develop and initiate implementation an (INMP) must include the following elements in the INMP. The INMP is not submitted to the Central Coast Water Board, with the exception of the INMP Effectiveness Report:
 - a. Proof of INMP certification;
 - b. Map locating each farm/ranch;
 - c. Identification of crop nitrogen uptake values for use in nutrient balance calculations;
 - d. Record keeping annually by either Method 1 or Method 2.

- e. To meet the requirement to record total nitrogen in the soil, dischargers may take a nitrogen soil sample (e.g. laboratory analysis or nitrate quick test) or use an alternative method to evaluate nitrogen content in soil, prior to planting or seeding the field or prior to the time of pre-side dressing, or at an alternative time when it is most effective to determine nitrogen present in the soil that is available for the next crop and to minimize nitrate leaching to groundwater. The amount of nitrogen remaining in the soil must be accounted for as a source of nitrogen when budgeting, and the soil sample or alternative method results must be maintained in the INMP.
 - f. Identification of irrigation and nutrient management practices in progress (identify start date), completed (identify completion date), and planned (identify anticipated start date) to reduce nitrate loading to groundwater to achieve compliance with this Order.
 - g. Description of methods Discharger will use to verify overall effectiveness of the INMP.
5. Tier 3 Dischargers must evaluate the effectiveness of the INMP. Irrigation and Nutrient Management Plan effectiveness monitoring must evaluate reduction in new nitrogen¹ loading potential based on minimized fertilizer use and improved irrigation and nutrient management practices in order to minimize new nitrogen loading to surface water and groundwater. Evaluation methods used may include, but are not limited to analysis of groundwater well monitoring data or soil sample data, or analysis of trends in new nitrogen application data.

B. Irrigation and Nutrient Management Plan Reporting

1. **By March 1, 2019**, Tier 3 Dischargers required to develop and initiate implementation of an INMP must submit an INMP Effectiveness Report to evaluate reductions in nitrate loading to surface water and groundwater based on the implementation of irrigation and nutrient management practices in a format specified by the Executive Officer. Dischargers in the same groundwater basin or subbasin may choose to comply with this requirement as a group by submitting a single report that evaluates the overall effectiveness of the broad scale implementation of irrigation and nutrient management practices identified in individual INMPs to protect groundwater. Group efforts must use data from each farm/ranch (e.g., data from individual groundwater wells, soil samples, or nitrogen application). The INMP Effectiveness Report must include a description of the methodology used to evaluate and verify effectiveness of the INMP.

¹ New nitrogen is nitrogen from fertilizers, amendments, and other nitrogen sources applied other than nitrogen present in groundwater.

PART 7. WATER QUALITY BUFFER PLAN

Monitoring and reporting requirements related to the Water Quality Buffer Plan identified in Part 7.A. and Part 7.B. apply to Tier 3 Dischargers that have farms/ranches that contain or are adjacent to waterbody identified on the List of Impaired Waterbodies as impaired for temperature, turbidity, or sediment. Time schedules are shown in Table 5.

A. Water Quality Buffer Plan

1. **By 18 months following enrollment in Order No. R3-2017-0002 of a Tier 3 farm/ranch**, Tier 3 Dischargers adjacent to or containing a waterbody identified on the List of Impaired Waterbodies as impaired for temperature, turbidity or sediment must submit a Water Quality Buffer Plan (WQBP) to the Executive Officer that protects the listed waterbody and its associated perennial and intermittent tributaries. The purpose of the Water Quality Buffer Plan is to prevent waste discharge, comply with water quality standards (e.g., temperature, turbidity, sediment), and protect beneficial uses in compliance with this Order and the following Basin Plan requirement:

Basin Plan (Chapter 5, p. V-13, Section V.G.4 – Erosion and Sedimentation, *“A filter strip of appropriate width, and consisting of undisturbed soil and riparian vegetation or its equivalent, must be maintained, wherever possible, between significant land disturbance activities and watercourses, lakes, bays, estuaries, marshes, and other water bodies. For construction activities, minimum width of the filter strip must be thirty feet, wherever possible....”*

2. The Water Quality Buffer Plan must include the following or the functional equivalent, to address discharges of waste and associated water quality impairments:
 - a. A minimum 30 foot buffer (as measured horizontally from the top of bank on either side of the waterway, or from the high water mark of a lake and mean high tide of an estuary);
 - b. Any necessary increases in buffer width to adequately prevent the discharge of waste that may cause or contribute to any excursion above or outside the acceptable range for any Regional, State, or Federal numeric or narrative water quality standard (e.g., temperature, turbidity);
 - c. Any buffer less than 30 feet must provide equivalent water quality protection and be justified based on an analysis of site-specific conditions and be approved by the Executive Officer;
 - d. Identification of any alternatives implemented to comply with this requirement, that are functionally equivalent to described buffer;
 - e. Schedule for implementation;

- f. Maintenance provisions to ensure water quality protection;
 - g. Annual photo monitoring;
2. The WQPB must be submitted using the Water Quality Buffer Plan form, or, if an alternative to the WQPB is submitted, in a format approved by the Executive Officer.
3. **By March 1, 2019**, Tier 3 Dischargers that submitted a WQBP pursuant to Order No. R3-2012-0011 or Order No. R3-2017-0002, are required to update (as necessary) and implement their WQBP, and annually submit a WQBP Status Report of their WQBP implementation using the Water Quality Buffer Plan form, or, if an alternative to the WQBP was submitted, an Alternative to WQBP Status Report, electronically, in a format approved by the Executive Officer.

PART 8. GENERAL MONITORING AND REPORTING REQUIREMENTS

A. Submittal of Technical Reports

1. Dischargers must submit reports in a format specified by the Executive Officer (reports will be submitted electronically, unless otherwise specified by the Executive Officer). A transmittal letter must accompany each report, containing the following penalty of perjury statement signed by the Discharger or the Discharger's authorized agent:

"In compliance with Water Code §13267, I certify under penalty of perjury that this document and all attachments were prepared by me, or under my direction or supervision following a system designed to assure that qualified personnel properly gather and evaluate the information submitted. To the best of my knowledge and belief, this document and all attachments are true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment".

2. If the Discharger asserts that all or a portion of a report submitted pursuant to this Order is subject to an exemption from public disclosure (e.g. trade secrets or secret processes), the Discharger must provide an explanation of how those portions of the reports are exempt from public disclosure. The Discharger must clearly indicate on the cover of the report (typically an electronic submittal) that the Discharger asserts that all or a portion of the report is exempt from public disclosure, submit a complete report with those portions that are asserted to be exempt in redacted form, submit separately (in a separate electronic file) unredacted pages (to be maintained separately by staff). The Central Coast Water Board staff will determine whether any such report or portion of a report qualifies for an exemption from public

disclosure. If the Central Coast Water Board staff disagrees with the asserted exemption from public disclosure, the Central Coast Water Board staff will notify the Discharger prior to making such report or portions of such report available for public inspection.

B. Central Coast Water Board Authority

1. Monitoring reports are required pursuant to section 13267 of the California Water Code. Pursuant to section 13268 of the Water Code, a violation of a request made pursuant to section 13267 may subject you to civil liability of up to \$1000 per day.
2. The Water Board needs the required information to determine compliance with Order No. R3-2017-0002. The evidence supporting these requirements is included in the findings of Order No. R3-2017-0002.
3. This Monitoring and Reporting Program Order No. R3-2017-0002-03 is amended pursuant to section 13267 of the Water Code on the date signed by the Executive Officer. The amendments update electronic submission requirements, reference the current List of Impaired Waterbodies, and ensure continued compliance with Order No. R3-2017-0002, which was extended by court order in the case *Monterey Coastkeeper v. Central Coast Regional Water Quality Control Board, et al.*, Sacramento Superior Court Case No. 34-2017-80002655 (September 27, 2019).
4. Amended Monitoring and Reporting Program Order No. R3-2017-0002-03 is effective upon signing by the Executive Officer.

Matthew T.
Keeling



Digitally signed by Matthew T.

Keeling

Date: 2020.04.29 17:41:14

07:00'

Matthew T. Keeling
Executive Officer

Date

Table 1. Major Waterbodies in Agricultural Areas¹

Hydrologic SubArea	Waterbody Name	Hydrologic SubArea	Waterbody Name
30510	Pajaro River	30920	Quail Creek
30510	Salsipuedes Creek	30920	Salinas Reclamation Canal
30510	Watsonville Slough	31022	Chorro Creek
30510	Watsonville Creek ²	31023	Los Osos Creek
30510	Beach Road Ditch ²	31023	Warden Creek
30530	Carnadero Creek	31024	San Luis Obispo Creek
30530	Furlong Creek ²	31024	Prefumo Creek
30530	Llagas Creek	31031	Arroyo Grande Creek
30530	Miller's Canal	31031	Los Berros Creek
30530	San Juan Creek	31210	Bradley Canyon Creek
30530	Tesquisquita Slough	31210	Bradley Channel
30600	Moro Cojo Slough	31210	Green Valley Creek
30910	Alisal Slough	31210	Main Street Canal
30910	Blanco Drain	31210	Orcutt Solomon Creek
30910	Old Salinas River	31210	Oso Flaco Creek
30910	Salinas River (below Gonzales Rd.)	31210	Little Oso Flaco Creek
30920	Salinas River (above Gonzales Rd. and below Nacimiento R.)	31210	Santa Maria River
30910	Santa Rita Creek ²	31310	San Antonio Creek ²
30910	Tembladero Slough	31410	Santa Ynez River
30920	Alisal Creek	31531	Bell Creek
30920	Chualar Creek	31531	Glenn Annie Creek
30920	Espinosa Slough	31531	Los Carneros Creek ²
30920	Gabilan Creek	31534	Arroyo Paredon Creek
30920	Natividad Creek	31534	Franklin Creek

¹ At a minimum, monitoring sites must be included for these waterbodies in agricultural areas, unless otherwise approved by the Executive Officer. Monitoring sites may be proposed for addition or modification to better assess the impacts of waste discharges from irrigated lands to surface water. Dischargers choosing to comply with surface receiving water quality monitoring, individually (not part of a cooperative monitoring program) must only monitor sites for waterbodies receiving the discharge.

² These creeks are included because they are listed waterbodies on the U.S. EPA-approved 303(d) list of Impaired Waters that are associated with areas of agricultural discharge.

Table 2. Surface Receiving Water Quality Monitoring Parameters

PARAMETERS AND TEST	RL ³	MONITORING FREQUENCY ¹
PHOTO MONITORING		
Upstream and downstream photographs at monitoring location		With every monitoring event.
WATER COLUMN SAMPLING		
Physical Parameters and General Chemistry		
Flow (field measure) (CFS) following SWAMP field SOP ⁹	0.25	Monthly, including 2 stormwater events.
pH (field measure)	0.1	"
Electrical Conductivity (field measure) (µS/cm)	2.5	"
Dissolved Oxygen (field measure) (mg/L)	0.1	"
Temperature (field measure) (°C)	0.1	"
Turbidity (NTU)	0.5	"
Total Dissolved Solids (mg/L)	10	"
Total Suspended Solids (mg/L)	0.5	"
Nutrients		
Total Nitrogen (mg/L)	0.5	Monthly, including 2 stormwater events.
Nitrate + Nitrite (as N) (mg/L)	0.1	"
Total Ammonia (mg/L)	0.1	"
Unionized Ammonia (calculated value, mg/L)		"
Total Phosphorus (as P) (mg/L)	0.02	
Soluble Orthophosphate (mg/L)	0.01	"
Water column chlorophyll a (µg/L)	1.0	"
Algae cover, Floating Mats, % coverage	-	"
Algae cover, Attached, % coverage	-	"
Water Column Toxicity Test		
Algae - <i>Selenastrum capricornutum</i> (96-hour chronic; Method 1003.0 in EPA/821/R-02/013)	-	4 times each year, twice in dry season, twice in wet season.
Water Flea – <i>Ceriodaphnia dubia</i> (7-day chronic; Method 1002.0 in EPA/821/R-02/013)	-	"
Midge - <i>Chironomus spp.</i> (96-hour acute; Alternate test species in EPA 821-R-02-012)	-	"
Toxicity Identification Evaluation (TIE)	-	As directed by Executive Officer.
Pesticides² /Herbicides (µg/L)		
Organophosphate Pesticides		
Azinphos-methyl	0.02	2 times in both 2017 and 2018, once in dry season and once in wet season of each year, concurrent with water toxicity monitoring.

PARAMETERS AND TEST	RL ³	MONITORING FREQUENCY ¹
		2 times in 2021 concurrent with water toxicity monitoring; once from July-September and once from October-December.
Chlorpyrifos	0.005	"
Diazinon	0.005	"
Dichlorvos	0.01	"
Dimethoate	0.01	"
Dimeton-s	0.005	"
Disulfoton (Disyton)	0.005	"
Malathion	0.005	"
Methamidophos	0.02	"
Methidathion	0.02	"
Parathion-methyl	0.02	"
Phorate	0.01	"
Phosmet	0.02	"
Neonicotinoids		
Thiamethoxam	0.002	"
Imidacloprid	0.002	"
Thiacloprid	0.002	"
Dinotefuran	0.006	"
Acetamiprid	0.01	"
Clothianidin	0.02	"
Carbamates		
Aldicarb	0.05	"
Carbaryl	0.05	"
Carbofuran	0.05	"
Methiocarb	0.05	"
Methomyl	0.05	"
Oxamyl	0.05	"
Herbicides		
Atrazine	0.05	"
Cyanazine	0.20	"
Diuron	0.05	"
Glyphosate	2.0	"
Linuron	0.1	"
Paraquat	0.20	"
Simazine	0.05	"
Trifluralin	0.05	"
Metals (µg/L)		
Arsenic (total) ^{5,7}	0.3	2 times in both 2017 and 2018, once in dry season and once in wet season of each year, concurrent with water toxicity monitoring. 2 times in 2021 concurrent with water toxicity monitoring; once from July-September and once from October-December. ¹⁰
Boron (total) ^{6,7}	10	"
Cadmium (total & dissolved) ^{4,5,7}	0.01	"

PARAMETERS AND TEST	RL ³	MONITORING FREQUENCY ¹
Copper (total and dissolved) ^{4,7}	0.01	"
Lead (total and dissolved) ^{4,7}	0.01	"
Nickel (total and dissolved) ^{4,7}	0.02	"
Molybdenum (total) ⁷	1	"
Selenium (total) ⁷	0.30	"
Zinc (total and dissolved) ^{4,5,7}	0.10	"
Other (µg/L)		
Total Phenolic Compounds ⁸	5	2 times in 2017, once in spring (April-May) and once in fall (August-September). 2 times in 2021 concurrent with water toxicity monitoring; once from July-September and once from October-December.
Hardness (mg/L as CaCO ₃)	1	"
Total Organic Carbon (ug/L)	0.6	"
SEDIMENT SAMPLING		
Sediment Toxicity - <i>Hyalella azteca</i> 10-day static renewal (EPA, 2000)		2 times each year (in 2019), once in spring (April-May) and once in fall (August-September). 1 time in 2020 from April-June. 2 times in 2021; once from April-June and once from August-October. ¹¹
Pyrethroid Pesticides in Sediment (µg/kg)		
Gamma-cyhalothrin	2	2 times in both 2017 and 2018, once in spring (April-May) and once in fall (August-September) of each year, concurrent with sediment toxicity sampling. 1 time in 2021 from August-October concurrent with sediment toxicity sampling. ¹¹
Lambda-cyhalothrin	2	"
Bifenthrin	2	"
Beta-cyfluthrin	2	"
Cyfluthrin	2	"
Esfenvalerate	2	"
Permethrin	2	"
Cypermethrin	2	"
Danitol	2	"
Fenvalerate	2	"
Fluvalinate	2	"
Other Monitoring in Sediment		
Chlorpyrifos (µg/kg)	2	"
Total Organic Carbon	0.01%	"
Sediment Grain Size Analysis	1%	"

¹Monitoring is ongoing through all five years of the Order, unless otherwise specified. Monitoring frequency may be used as a guide for developing alternative Sampling and Analysis Plan.

²Pesticide list may be modified based on specific pesticide use in Central Coast Region. Analytes on this list must be reported, at a minimum.

³Reporting Limit, taken from SWAMP where applicable.

⁴Holmgren, Meyer, Cheney and Daniels. 1993. Cadmium, Lead, Zinc, Copper and Nickel in Agricultural Soils of the United States. J. of Environ. Quality 22:335-348.

⁵Sax and Lewis, ed. 1987. Hawley's Condensed Chemical Dictionary. 11th ed. New York: Van Nostrand Reinhold Co., 1987. Zinc arsenate is an insecticide.

⁶<http://www.coastalagro.com/products/labels/9%25BORON.pdf>; Boron is applied directly or as a component of fertilizers as a plant nutrient.

⁷Madramootoo, Johnston, Willardson, eds. 1997. Management of Agricultural Drainage Water Quality. International Commission on Irrigation and Drainage. U.N. FAO. SBN 92-6-104058.3.

⁸<http://cat.inist.fr/?aModele=afficheN&cpsid=14074525>; Phenols are breakdown products of herbicides and pesticides. Phenols can be directly toxic and cause endocrine disruption.

⁹See SWAMP field measures SOP, p. 17.

mg/L – milligrams per liter; ug/L – micrograms per liter; ug/kg – micrograms per kilogram.

NTU – Nephelometric Turbidity Units; CFS – cubic feet per second.

¹⁰Anticipate pairing with two additional monitoring events in 2022 (to be specified in Ag Order 4.0), concurrent with water toxicity monitoring in January-March and April-June of 2022.

¹¹Anticipate pairing with one additional monitoring events in 2022 (to be specified in Ag Order 4.0), concurrent with sediment toxicity monitoring in April-May of 2022.

Table 3. Groundwater Monitoring Parameters

Parameter	RL	Analytical Method ³	Units
pH	0.1	Field or Laboratory Measurement	pH Units
Specific Conductance	2.5	EPA General Methods	µS/cm
Total Dissolved Solids	10		
Total Alkalinity as CaCO ₃	1	EPA Method 310.1 or 310.2	
Calcium	0.05	General Cations ¹ EPA 200.7, 200.8, 200.9	mg/L
Magnesium	0.02		
Sodium	0.1		
Potassium	0.1		
Sulfate (SO ₄)	1.0	General Anions EPA Method 300 or EPA Method 353.2	
Chloride	0.1		
Nitrate + Nitrite (as N) ² or Nitrate as N	0.1		

¹General chemistry parameters (major cations and anions) represent geochemistry of water bearing zone and assist in evaluating quality assurance/quality control of groundwater monitoring and laboratory analysis.

²The MRP allows analysis of “nitrate plus nitrite” to represent nitrate concentrations (as N). The “nitrate plus nitrite” analysis allows for extended laboratory holding times and relieves the Discharger of meeting the short holding time required for nitrate.

³Dischargers may use alternative analytical methods approved by EPA. RL – Reporting Limit; µS/cm – micro siemens per centimeter.

Table 4A. Individual Discharge Monitoring for Tailwater, Tile drain, and Stormwater Discharges

Parameter	Analytical Method ¹	Maximum PQL	Units	Min Monitoring Frequency
Discharge Flow or Volume	Field Measure	---	CFS	(a) (d)
Approximate Duration of Flow	Calculation	---	hours/month	
Temperature (water)	Field Measure	0.1	° Celsius	
pH	Field Measure	0.1	pH units	
Electrical Conductivity	Field Measure	100	µS/cm	
Turbidity	SM 2130B, EPA 180.1	1	NTUs	

Parameter	Analytical Method ¹	Maximum PQL	Units	Min Monitoring Frequency
Nitrate + Nitrite (as N)	EPA 300.1, EPA 353.2	0.1	mg/L	
Ammonia	SM 4500 NH3, EPA 350.3	0.1	mg/L	
Chlorpyrifos ²	EPA 8141A, EPA 614	0.02	ug/L	(b) (c) (d)
Diazinon ²				
Ceriodaphnia Toxicity (96-hr acute)	EPA-821-R-02-012	NA	% Survival	
Hyalella Toxicity in Water (96-hr acute)	EPA-821-R-02-012	NA	% Survival	

¹ In-field water testing instruments/equipment as a substitute for laboratory analysis if the method is approved by EPA, meets RL/PQL specifications in the MRP, and appropriate sampling methodology and quality assurance checks can be applied to ensure that QAPP standards are met to ensure accuracy of the test.

² If chlorpyrifos or diazinon is used at the farm/ranch, otherwise does not apply. The Executive Officer may require monitoring of other pesticides based on results of downstream receiving water monitoring.

(a) Two times per year during primary irrigation season for farms/ranches less than or equal to 500 acres, and four times per year during primary irrigation season for farms/ranches greater than 500 acres. Executive Officer may reduce sampling frequency based on water quality improvements.

(b) Once per year during primary irrigation season for farms/ranches less than or equal to 500 acres, and two times per year during primary irrigation season for farms/ranches greater than 500 acres.

(c) Sample must be collected within one week of chemical application, if chemical is applied on farm/ranch;

(d) Once per year during wet season (October – March) for farms/ranches less than or equal to 500 acres, and two times per year during wet season for farms/ranches greater than 500 acres, within 18 hours of major storm events; CFS – Cubic feet per second; NTU – Nephelometric turbidity unit; PQL – Practical Quantitation Limit.

NA – Not applicable.

Table 4B. Individual Discharge Monitoring for Tailwater Ponds and other Surface Containment Features

Parameter	Analytical Method ¹	Maximum PQL	Units	Minimum Monitoring Frequency
Volume of Pond	Field Measure	1	Gallons	(a) (d)
Nitrate + Nitrite (as N)	EPA 300.1, EPA 353.2	50	mg/L	

¹ In-field water testing instruments/equipment as a substitute for laboratory analysis if the method is approved by EPA, meets RL/PQL specifications in the MRP, and appropriate sampling methodology and quality assurance checks can be applied to ensure that QAPP standards are met to ensure accuracy of the test.

(a) Four times per year during primary irrigation season; Executive Officer may reduce monitoring frequency based on water quality improvements.

(d) Two times per year during wet season (October – March, within 18 hours of major storm events)

Table 5. Tier 3 - Time Schedule for Key Monitoring and Reporting Requirements (MRPs)

REQUIREMENT	TIME SCHEDULE ¹
Submit Sampling And Analysis Plan and Quality Assurance Project Plan (SAAP/QAPP) for Surface Receiving Water Quality Monitoring (<i>individually or through cooperative monitoring program</i>)	By March 1, 2018, or as directed by the Executive Officer; satisfied if an approved SAAP/QAPP has been submitted pursuant to Order No. R3-2012-0011 and associated MRPs
Initiate surface receiving water quality monitoring (<i>individually or through cooperative monitoring program</i>)	Per an approved SAAP and QAPP
Submit surface receiving water quality monitoring data (<i>individually or through cooperative monitoring program</i>)	Each January 1, April 1, July 1, and October 1
Submit surface receiving water quality Annual Monitoring Report (<i>individually or through cooperative monitoring program</i>)	By July 1 2017; annually thereafter by July 1
Initiate monitoring of groundwater wells	First sample from March-June 2017, second sample from September-December 2017
Submit individual surface water discharge SAAP and QAPP	By March 1, 2018 or as directed by the Executive Officer; waived if an approved SAAP and QAPP has been submitted and being implemented pursuant to Order No. R3-2012-0011.
Initiate individual surface water discharge monitoring	As described in an approved SAAP and QAPP
Submit individual surface water discharge monitoring data	March 1, 2018, and every March 1 annually thereafter
Submit electronic Annual Compliance Form	March 1, 2018 and every March 1 annually thereafter
Submit groundwater monitoring results	Within 60 days of the sample collection
Submit Water Quality Buffer Plan or alternative	Within 18 months of enrolling new Tier 3 farm/ranch in Order
Submit Status Report on Water Quality Buffer Plan or alternative	March 1, 2019
<i>Tier 3 Dischargers with farms/ranches growing high risk crops:</i>	
Report total nitrogen applied on the Total Nitrogen Applied form	March 1, 2018 and every March 1 annually thereafter
Submit INMP Effectiveness Report	March 1, 2019

¹ Dates are relative to the adoption of this Order on March 8, 2017, unless otherwise specified.