Attachment A: Monitoring and Reporting Program

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Attachment A: Monitoring and Reporting Program

I. Summary

This Monitoring and Reporting Program (MRP) is issued pursuant to California Water Code section 13267, which authorizes the North Coast Water Board to require the preparation and submittal of technical and monitoring reports. The Executive Officer may modify this MRP as necessary or appropriate. This MRP establishes monitoring and reporting requirements for both Individual Enrollees and Coalitions acting on behalf of their enrolled members to evaluate compliance with the provisions of the General Order and to determine whether state waters receiving discharges from enrolled parcels are achieving applicable water quality goals. See Section I.E of the Order for additional findings regarding this MRP.

This MRP establishes specific monitoring, reporting, and electronic data deliverable requirements for Coalition Members and Individual Enrollees. This Monitoring and Reporting Program (MRP) consists of the following elements: (1) Surface Water Monitoring; (2) Groundwater Trend Monitoring; (3) Drinking Water Supply Well Monitoring; and (4) Reporting.

1) Surface Water Monitoring: The objectives of the Surface Water Monitoring program are to: (1) monitor synthetic pesticide and dissolved copper concentrations in surface waters downstream from Commercial Lily Bulb Operations; (2) evaluate if discharges from Commercial Lily Bulb Operations are causing or contributing to exceedances of Water Quality Benchmarks in surface waters receiving those discharges or otherwise adversely affecting beneficial uses; and (3) support improvement of on-farm management practices through an iterative Adaptive Management process designed to achieve the Receiving Water Limitations and conditions of this Order.

2) Groundwater Trend Monitoring: The objectives of Groundwater Trend Monitoring are to: (1) determine current water quality conditions of groundwater relevant to Commercial Lily Bulb Operations, (2) develop long-term groundwater quality information with respect to the pollutants of concern that can be used to evaluate the regional impacts of lily bulb farming and its practices on groundwater quality and beneficial uses, and (3) support improvement of on-farm management practices through an iterative Adaptive Management process designed to achieve the Receiving Water Limitations and conditions of this Order.

3) Drinking Water Supply Well Monitoring: The purpose of the Drinking Water Supply Well Monitoring Program is to identify potential human health impacts from nitrate and pesticides and notify groundwater well users of nitrate or pesticides concentrations above a Maximum Contaminant Level (MCL) or human health level for drinking water wells located on parcels commercially farmed for lily bulbs.

4) Reporting: Reporting requirements consist of an Annual Compliance Report and a Water Quality Trend Monitoring Report submitted to the North Coast Water Board

by either the Individual Enrollee or the Coalition on behalf of its members. Annual Compliance Reports include an inventory of management practices implemented by Enrollees, Enrollee outreach event attendance, CEQA Mitigation Monitoring, and water quality monitoring results. The Water Quality Trend Monitoring Report includes actions taken to meet Receiving Water Limitations and Order conditions, including but not limited to, revised or additional management practices implemented along with an evaluation of monitoring data to identify spatial trends and patterns.

II. Master Schedule

1) A schedule of Monitoring and Reporting is provided in Table A.1 below. All Enrollees shall participate in the monitoring requirements, below. The Coalition may perform Surface Water Monitoring and Groundwater Trend Monitoring on behalf of its enrolled Members.

2) Enrollees or the Coalition may request an extension of a deadline in this MRP by submitting a Request for Extension to the Executive Officer 60 days prior to the deadline. The request shall include an explanation of the anticipated inability to meet the deadline and a proposed time schedule to come into compliance with this MRP.

Table A.1: Water Quality Monitoring Master Schedule

Requirement	Frequency	Parameters	Where to Report
Surface Water Monitoring (see Section IV.A)	3 times per Water Year during the wet season	Dissolved Copper and pesticides	Annual Compliance Report and Trend Monitoring Report
Groundwater Trend Monitoring (see Section IV.B)	Annually in October	Nitrate and pesticides	Annual Compliance Report and Trend Monitoring Report
Drinking Water Well Sampling (See Section IV.C)	Annually or once every five years in accordance with Section IV.C of this MRP	Nitrate and pesticides	Submitted to GeoTracker

Table A.2: Reporting Master Schedule

Requirement	Elements of Report	Submittal deadline to North Coast Water Board and Frequency
Water Quality Monitoring Workplan (see Section III)	Responsible party and scope; surface water monitoring locations; groundwater monitoring network design; sampling methods, frequency, and analysis; data evaluation and trend methods; Quality Assurance Project Plan (QAPP); and optional crop nitrogen removal coefficient.	By **#DATE.**
Annual Compliance Report (see Section V.A)	Farm Evaluation, Irrigation and Nutrient Management Plan, annual water quality monitoring results, and CEQA Mitigation Measures	By **#DATE**, and by **March 1st** annually thereafter. Note that the Annual Water Quality Monitoring results are not due until the year after the Workplan is approved.
Water Quality Trend Monitoring Report (Trend Monitoring Report) (see Section V.B)	All receiving water surface and groundwater monitoring results for the previous five years with an accompanying trend analysis.	Within **five years** of approval of Water Quality Monitoring Workplan and every five years by **March 1st** thereafter.

III. Water Quality Monitoring Workplan

1) By **DATE,** Individual Enrollees (e.g., not in a Coalition) shall submit a Monitoring and Reporting Workplan, for Executive Officer review and approval, which describes how they will implement the monitoring and reporting requirements of this MRP. Once approved, the Individual Enrollees shall implement the approved Workplan and report results. Individual Enrollees shall conduct all monitoring and reporting for all enrolled parcels.

2) By **DATE**, Coalitions, on behalf of their members, shall submit a Monitoring and Reporting Workplan, for Executive Officer review and approval, that describes how it implements the monitoring and reporting requirements of this MRP. Once approved, the Coalition and its members shall implement the approved Workplan and report results.

3) The Workplan shall include all elements necessary to meet the monitoring, reporting, and quality assurance requirements of this MRP for both Surface Water Monitoring and Groundwater Trend Monitoring. All applicable requirements are located in Sections IV-V of this MRP.

4) Mapping and Documentation: The Workplan shall include a map(s) and GPS coordinates of all proposed monitoring locations required under this MRP. Monitoring locations must also specify access routes, ingress/egress points, and potential hazards. The map(s) may be an aerial photograph(s), topographic map, LiDAR-derived shaded relief map, Google Earth image, or equivalent, that depicts features at 1-inch = 50 feet or larger scale and clearly delineates all monitoring points required in this MRP. The map(s) may also be transmitted digitally as a set of geographic information system (GIS) files such as points, lines, polygons, and rasters in commonly accessible formats such as shapefiles and GeoTIFFs.

5) Data Evaluation and Methodology: The Workplan shall include methodology(ies) to evaluate trends in groundwater monitoring data and receiving surface water data.

6) Quality Assurance: The Workplan shall include a Quality Assurance Project Plan (QAPP) that outlines procedures used to ensure the data collected and analyzed meet requirements of this MRP. The QAPP shall be consistent with guidance provided by the State Water Resources Control Board (State Water Board) regarding Quality Assurance/Quality Control.

7) Surface Water Monitoring: This MRP specifies Surface Water Monitoring locations in Section IV.A. However, the Coalition or Individual Enrollee may propose additional or alternate locations in the Workplan accompanied by a map(s), description, and GPS coordinates of all proposed monitoring locations. The Workplan shall describe sampling methods, frequency, and analytical procedures consistent with the requirements of Section IV.A of this MRP. All data collection and analysis for surface water monitoring shall adhere to the approved Quality Assurance Project Plan (QAPP) included in the Workplan.

8) Groundwater Trend Monitoring: The Workplan shall include a map(s) and GPS coordinates of all proposed groundwater trend monitoring wells that meet(s) the requirements of Section IV.B of this MRP. The Workplan shall consider the following criteria for identifying Groundwater Trend Monitoring wells in areas that may be at higher risk of nitrate impacts to groundwater quality from lily bulb agriculture:

   (1) existing water quality data;
   (2) depth to groundwater with consideration given to selecting wells that best represent the groundwater zones most likely to be affected by lily bulb farming and where appropriate to evaluate potential nitrate migration to deeper aquifer; and
   (3) presence of wells in locations that are not influenced by other potential nitrogen sources (e.g., dairies) so that monitoring results reflect nitrate impacts associated with lily bulb farming.

9) The Coalition may choose to propose a crop removal coefficient (C_N) in the Workplan. Total Nitrogen Removed is determined by multiplying an Enrollee's crop yield by this coefficient (C_N), which represents the amount of nitrogen in the harvested crop. The Coalition may propose a C_N coefficient determined through testing of nitrogen removed, literature review, or recent research for converting crop yield to nitrogen removed. If no crop removal coefficient is proposed, the North Coast Water Board will determine the coefficient. Enrollees shall use this crop removal coefficient to determine nitrogen reporting as described in Section V of this MRP.

10) Drinking Water Well Sampling as described in Section IV.C of this MRP does not need to be included in the Workplan, as each Enrollee shall determine eligible drinking water wells on their enrolled parcels and conduct sampling in accordance with Section IV of this MRP.

IV. Monitoring Requirements

A. Surface Water Monitoring

1) Overview: Surface Water Monitoring must provide sufficient data to: 1) determine whether surface waters downstream of Commercial Lily Bulb Operations meet applicable Water Quality Benchmarks; 2) trigger adaptive management where existing practices are insufficient to prevent, minimize or eliminate discharges which cause or contribute to exceedances of Water Quality Benchmarks in receiving waters; and 3) track trends in surface water quality associated with discharges from lily bulb operations. Surface waters shall be monitored for the parameters and at the frequency listed in Table A.3.

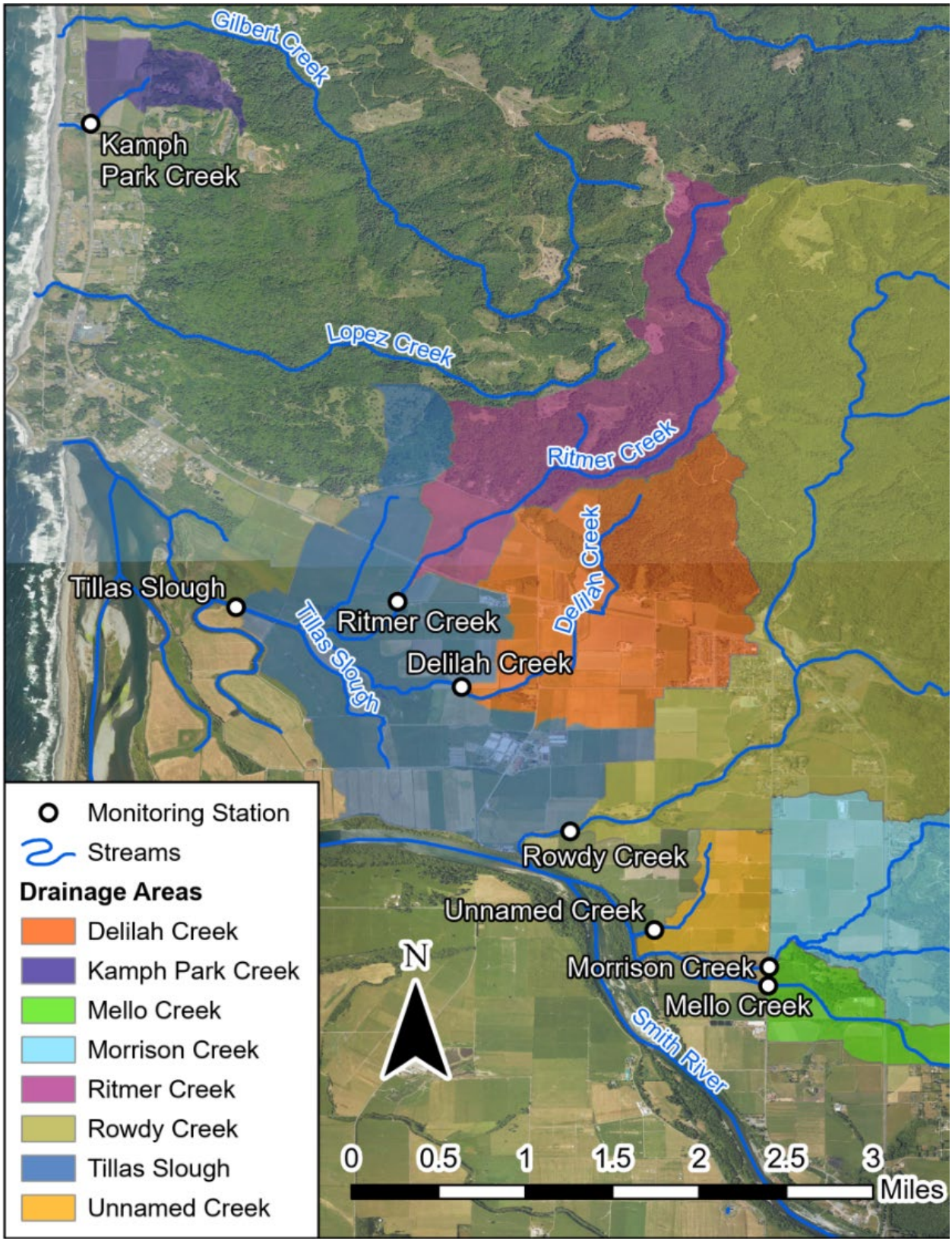
2) Locations: Surface water monitoring stations shall be as far downstream of lily bulb operations[1] in each tributary as possible considering site accessibility. Surface water monitoring stations, including corresponding GPS coordinates and station descriptions, are identified in Table A.3 and shown on Figure A.1. Individual Enrollees and/or the Coalition may propose new or alternate monitoring stations for approval by the Executive Officer to address changes in lily bulb operations, monitoring access constraints, or the need to differentiate monitoring locations among Enrollees within a tributary area. The Executive Officer may add, remove, or reassign monitoring stations as necessary due to changes in enrollment, access, or monitoring objectives.

Table A.3: Surface Water Monitoring Locations

Tributary	Description	GPS Coordinates
Tillas Slough	Upstream side of culvert crossing near relic irrigation pumps	41.93313°, -124.19067°
Ritmer Creek	Upstream side of culvert crossing on Ranch Road	41.93379°, -124.17721°
Delilah Creek	Low water ford downstream of large spruce tree	41.926645°, -124.171889°
Unnamed Creek	~500 feet downstream of small bridge unnamed creek south of Rowdy Creek	41.906370°, -124.155814°
Morrison Creek	Upstream side of culvert crossing on Fred Haight Drive	41.90329°, -124.14628°
Mello Creek	Channel on east side of Fred Haight Drive about 300 feet south of culvert crossing	41.90132° -124.14635°

Tributary	Description	GPS Coordinates
Rowdy Creek	Right bank accessed off levee road	41.91466°, -124.16284°
Kamph Park Creek	Unnamed creek at location downstream of Highway 101 near Post mile 44.69 with a drainage area of ~150 acres	41.973210°°, --124.203566°

Figure A.1: Surface Water Monitoring Stations with Watersheds



3) Frequency: Surface water monitoring shall be conducted three times per Water Year[2] with two sampling events occurring during a Major Storm falling between November 1 and April 30 and one sampling event within 7 days following the end of a Major Storm. The two Major Storm sampling events shall occur at least 30 days apart. Collection of samples during a Major Storm event shall occur within 24 hours following the first inch of precipitation once a Major Storm begins. Additionally, collection of samples from the Tillas Slough monitoring station shall occur on the ebb tide. Refer to Attachment D Section 1 for determining the occurrence of a Major Storm.

4) Parameters: Surface waters shall be monitored for synthetic pesticides, dissolved copper, and other water quality parameters needed to evaluate water quality relative to the Water Quality Benchmarks listed in Table A.4. Water Quality Benchmarks for dissolved copper shall be determined using the BLM. Enrollees and/or a Coalition have two options for evaluating dissolved copper:

   a) **Option 1**: Collect only the parameters required in Table A.5 and use the tributary-specific default values provided in Table A.5 for all other parameters; **or**

   b) **Option 2**: Collect all parameters listed in Table A.6 to independently run the BLM to generate instantaneous water quality criteria to determine whether the Water Quality Benchmark has been exceeded. For a copy of the BLM software and user's guide please contact Kathryn Gallagher (gallagher.kathryn@epa.gov).

Table A.4: Surface Water Monitoring Parameters, Frequency, and Water Quality Benchmarks[3]

Parameter	Analytical Method	Water Quality Benchmark	Water Quality Benchmark Exceedance
Dissolved Copper *(and associated BLM input parameters; see Table A.5 or A.6)*	EPA Method 1640	Toxicity Unit[4] <1	Two exceedances of the Chronic BLM-IWQC[5] in a Water Year -OR- single exceedance of the Acute BLM-IWQC.
Diuron	EPA Method 632	Acute 87.5 ug/L Chronic 0.83 ug/L	Two exceedances of the chronic Water Quality Benchmark in a Water Year -OR- a single exceedance of the acute.
Imidacloprid	EPA Method 525	Acute 0.385 ug/L Chronic 0.01 ug/L	Two exceedances of the chronic Water Quality Benchmark in a Water Year -OR- a single exceedance of the acute.
Ethoprop	EPA Method 525	Acute 3.15 ug/L Chronic 0.37 ug/L	Two exceedances of the chronic Water Quality Benchmark in a Water Year -OR- a single exceedance of the acute.

Table A.5: Option 1, BLM Constituent Analytes and tributary-specific default values for BLM Analysis (parameters to measure indicated with *italics*)

Parameter (mg/L)	Ritmer Creek	Delilah Creek	Rowdy Creek	Unnamed Creek	Morrison Creek	Mello Creek	Kamph Park Creek[6]
Dissolved Copper	EPA Method 1640	EPA Method 1640	EPA Method 1640	EPA Method 1640	EPA Method 1640	EPA Method 1640	EPA Method 1640
pH	Field measure	Field measure	Field measure	Field measure	Field measure	Field measure	Field measure
Temperature	Field measure	Field measure	Field measure	Field measure	Field measure	Field measure	Field measure
Specific Conductivity	Field measure	Field measure	Field measure	Field measure	Field measure	Field measure	Field measure
Salinity	Field measure	Field measure	Field measure	Field measure	Field measure	Field measure	Field measure
Alkalinity	20	14	43	19	20	17.7	24
Calcium	5.2	6.0	4.8	4.8	4.9	4.7	4.1
Dissolved Organic Carbon	1.0	1.8	0.8	1.4	1.2	1.6	3.1
Magnesium	2.3	3.8	6.3	2.4	2.3	2.5	3.4
Potassium	0.9	1.2	0.7	1.0	1.0	1.0	1.5
Sodium	8.4	7.0	3.9	4.8	4.9	4.6	11
Sulfate	4.4	3.8	2.3	3.0	2.5	3.4	2.7
Sulfide	0	0	0	0	0	0	0
Chloride, Total	9.4	9.9	3.9	5.5	5.5	5.4	17

Table A.6: Option 2, BLM Constituent Analytes to collect for BLM Analysis

Parameter	Analytical Method	Parameter	Analysis Type
Dissolved Copper	EPA Method 1640	Dissolved Organic Carbon	SM 5310B
pH	Field Measure	Magnesium	EPA Method 200.7
Temperature	Field Measure	Potassium	EPA Method 200.7
Specific Conductivity	Field Measure	Sodium	EPA Method 200.7
Salinity	Field Measure	Sulfate	EPA Method 300.0
Alkalinity	EPA Method 2320B	Sulfide	SM 4500S2
Calcium	EPA Method 200.7	Chloride, Total	EPA Method 300.0

4) Results: If a Water Quality Benchmark is exceeded for any applicable parameter in Table A.4, all Fields in the tributary area that are planted to lily bulbs in the year the sample was collected shall follow the Adaptive Management Program requirements in Section II.H of this Order.

5) Reporting: The results of Surface Water Monitoring shall be reported annually in the Annual Compliance Report and evaluated for trends every five years in the Trend Monitoring Report as described in Section V of this MRP.

Edge-of-Field Monitoring for Adaptive Management Program (Optional)

6) Enrollees may implement an individual Sampling Plan to directly demonstrate that applicable Water Quality Benchmarks identified in Table A.4 for the exceeded parameter are being met at Edge- Of- Field Discharge Point(s) in the lily bulb Field. If Water Quality Benchmarks are being met, that Field is exempted from Adaptive Management requirements despite continued exceedances at the downstream monitoring station. If this option is selected, the Enrollee must comply with the following requirements:

   a) Sampling Plan: By **March 1st** of the year the applicable Field(s) are planted, the Enrollee shall develop and submit an individual Sampling Plan to the Executive Officer for review and approval that identifies all Edge-of-Field

Discharge Point(s) for the applicable Field(s) in the Adaptive Management Program. The Sampling Plan shall include a Field description; the number and location of individual sampling points to adequately characterize the majority of the discharge from the Field based on its typical discharge patterns; a map of the Field(s) with drainage patterns and planned sampling points identified; and a QAPP section with a description of sample collection procedures and a description of how samples will be handled, transported, and received by the laboratory.

b) Sampling Requirements: Enrollees shall refer to Tables A.4-A.6 for the list of parameters that need to be analyzed and the appropriate types of analyses. Enrollees must sample their Edge-of-Field Discharge Point(s) concurrent with the sampling at the downstream monitoring station. Enrollees shall refer to sampling and handling instructions in Attachment D: Methodologies and Procedures.

c) Sampling Analysis: A laboratory that is certified by the State Water Board's Environmental Laboratory Accreditation Program (ELAP) shall conduct all laboratory analyses according to standard methodologies (e.g., USEPA methods and/or Standard Methods for the Examination of Water and Wastewater). Laboratory analytical methods must be included in the QAPP section. The QAPP section shall include the laboratory's Standard Operating Procedures (SOPs).

d) Reporting: Individual Enrollees shall upload all data collected in the Edge-of-Field Sampling Plan in an electronic CEDEN compatible format[7] to GeoTracker. Coalition Members may submit their Edge-of-Field Sampling data to the Coalition, which shall report data to the North Coast Water Board by watershed and Anonymous Field ID in the Annual Report.

e) Results: If sampling indicates that Water Quality Benchmarks are being met at the edge-of-field, the Field is not subject to Adaptive Management requirements, even if the downstream monitoring station has exceeded a Water Quality Benchmark. Once this demonstration has been achieved, an Enrollee must continue to implement their approved Edge-of-Field Sampling Plan to demonstrate compliance or an alternate method approved by the Executive Officer. If the Water Quality Benchmark is not met at the edge-of-field location and the corresponding downstream surface water monitoring station also exceeds a Water Quality Benchmark for the same parameter within the same Water Year, the Field in question shall be escalated in Adaptive Management (e.g., if the Field was in Tier 1, the Field must escalate to Tier 2). The Enrollee shall select and implement the appropriate Adaptive Management requirement during the next crop production cycle.

B. Groundwater Trend Monitoring

1) Overview: The objective of Groundwater Trend Monitoring Program is to characterize groundwater quality in areas where lily bulbs are cultivated. This section establishes the minimum sampling and reporting requirements for Groundwater Trend Monitoring, which may be conducted either by an Individual Enrollee or by a Coalition on behalf of its members.

2) Locations: Each Enrollee shall designate at least one representative monitoring well to characterize groundwater quality associated with all enrolled parcels. This requirement may be satisfied by an existing monitored Drinking Water Well (see Section IV.C), provided the well location and screen interval are representative of current groundwater quality conditions and suitable for evaluating aggregated regional impacts from Commercial Lily Bulb Operations in accordance with the groundwater trend monitoring objective.

3) Workplan: The Individual Enrollee or Coalition on behalf of its Members, shall include in the Water Quality Monitoring Workplan a proposal for representative monitoring well(s) that includes the following details:

    a) GPS coordinates;

    b) California state well number (if known);

    c) Total well depth;

    d) Top and bottom depths of well casing perforations;

    e) A copy of the water well drillers log (if available);

    f) Depth of standing water (static water level), if available (this may be obtained after implementing the Coalition); and

    g) Well seal information (type of material, length of seal).

4) Complete construction and location details may not be available for all groundwater trend monitoring wells. In such cases, Enrollees shall provide well information to the maximum extent practicable to allow the Executive Officer to determine that the well is suitable for meeting the objectives of the Groundwater Trend Monitoring Program.

5) Sampling and Parameters: Monitoring wells shall be sampled annually within the month of October. Samples shall be analyzed for the parameters identified in Table A.10 as well as the following field parameters: pH, conductivity (at 25º C), temperature and Total Dissolved Solids (TDS).

Table A.7: Groundwater Monitoring Parameters, Water Quality Benchmarks. Benchmark Exceedances and Analytical Methods

Parameter	Benchmark (ug/L)	Benchmark Exceedance	Analytical Method
Diuron	Acute: 1028 Chronic: 2.0	2 consecutive exceedances of the chronic Benchmark or a single exceedance of the acute.	EPA 632
Imidacloprid	Acute: 283 Chronic: 500	2 consecutive exceedances of the chronic Benchmark or a single exceedance of the acute.	EPA 632
Mefenoxam	Acute: 3000 Chronic: N/A	A single exceedance of the Benchmark	EPA Method 525
Napropramide	Chronic: 710	2 consecutive exceedances of the chronic Benchmark	EPA Method 525
Nitrate	10 (mg/L)	A single exceedance of the Benchmark	SM4500-NO3-E

6) Analysis: Groundwater samples shall be collected using proper sampling methods, chain-of custody, and quality assurance/quality control protocols. Laboratory analyses for groundwater samples shall be conducted by an ELAP-certified laboratory according to the USEPA approved methods; unless otherwise noted, all monitoring, sample preservation, and analyses shall be performed in accordance with the latest edition of Test Methods for Evaluating Solid Waste, SW-846, USEPA, and analyzed as specified herein by the above analytical methods and reporting limits indicated. Certified laboratories can be found on the Water Board's ELAP website (https://www.waterboards.ca.gov/drinking_water/certlic/labs/index.html).

7) Results: If a parameter in Table A.7 exceeds a Water Quality Benchmark, Enrollees and the Coalition shall refer to Section II.H of the Order for Adaptive Management Requirements. Results of Groundwater Trend Monitoring shall be included annually in the Annual Compliance Report (see Section V) and evaluated for trends every five years in the Trend Monitoring Report (see Section V).

C. Drinking Water Supply Well Monitoring

1) Overview: The purpose of Drinking Water Supply Well monitoring is to: (1) identify drinking water wells that have nitrate concentrations that exceed the Maximum Contaminant Level (MCL) of 10 mg/L (milligrams per liter) of nitrate+nitrite as N; (2) identify drinking water wells that have pesticide concentrations above Water Quality Benchmarks (see Table A.7); and (3) and notify any users of those wells of the potential for human health impacts.

2) Required Wells: Enrollees shall monitor all private Drinking Water Supply Wells located on an enrolled parcel. Enrollees may use monitored Drinking Water Supply

Wells to satisfy Groundwater Trend Monitoring requirements provided that the well is representative in accordance with Section IV.B.

2) Parameters: Enrollees shall conduct annual Drinking Water Supply Well sampling for nitrate and any pesticides identified in Table A.7 that the Enrollee has applied on any of their enrolled parcels in the previous five years. Enrollees are not required to monitor for pesticides in Table A.7 that were not applied on their enrolled parcels.

3) Frequency: Enrollees shall conduct sampling of all private Drinking Water Supply Wells for three consecutive years. In lieu of one or more of these initial three annual sampling events, Enrollees may submit existing monitoring results from Drinking Water Supply Wells collected within three years prior to enrollment under this Order, provided that analyses for nitrates and pesticides were performed using USEPA-approved methods and by an ELAP-certified laboratory.

3) Sampling Location: Samples shall 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 shall 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.

4) Submittal Deadlines: The initial sampling event must be completed in time to allow for the results to be submitted electronically to the State Water Board's GeoTracker database by **#DATE** and annually by **March 1st** thereafter.

5) Results: If the concentration of any parameter listed in Table A.7 exceeds either 5 mg/L of nitrate or a pesticide chronic Water Quality Benchmark in any of the first three annual samples, the Enrollee shall continue conducting annual Drinking Water Supply Well sampling for that parameter. If the concentration remains below 5 mg/L of nitrate and all pesticide chronic Water Quality Benchmarks, the Enrollee may reduce the sampling frequency to once every five years, unless a subsequent exceedance occurs. If these levels are exceeded at any time, annual sampling shall resume and continue until concentrations remain below 5 mg/L of nitrate and pesticide chronic Water Quality Benchmarks for three consecutive years. The Executive Officer may, at any time, require an alternative sampling frequency based on evaluation of trend data for the well.

6) Exceedances of Water Quality Benchmark: If water in any well that is used for drinking water exceeds the Water Quality Benchmark listed in Table A.7 of the MRP, the Enrollee shall provide written notice to the drinking water well users within 10-days of learning of the exceedance and send a copy of the notice to the North Coast Water Board. The copy of the notice shall also include a report of number of people the Drinking Water Well supplies. If the Enrollee is not the owner of the parcel enrolled in the Order, the Enrollee may provide notice instead to the owner within 24 hours of learning of the exceedance, and the owner shall provide notice to the drinking water well users within nine days and send a copy of the

notice to the North Coast Water Board. The Enrollee shall also be subject to groundwater Adaptive Management requirements as specified in Section I.H of this Order, which includes developing and implementing a certified Water Quality Management Plan for groundwater.

7) Notification: At a minimum, the Enrollee or non-Enrollee owner shall notify drinking water well users of the exceedance by providing them a copy of a Drinking Water Notification Template approved by the Executive Officer in a language accessible to the well users. Enrollees may contact the North Coast Water Board for receiving language assistance[8]. The template shall be signed by the Enrollee or non-Enrollee owner certifying notice has been provided to the users. A copy of the signed template shall be sent to the North Coast Water Board and retained by the Enrollee or non-Enrollee owner.

8) Laboratory Analyses: Drinking Water well sample analysis shall be conducted by an Environmental Laboratory Accreditation Third-Party (ELAP)-certified laboratory according to the USEPA approved methods; unless otherwise noted, all monitoring, sample preservation, and analyses shall be performed in accordance with the latest edition of Test Methods for Evaluating Solid Waste, SW-846, USEPA9, and analyzed as specified herein by the above analytical methods and reporting limits indicated. Certified laboratories and program information can be found on the Water Board's ELAP website (https://www.waterboards.ca.gov/drinking_water/certlic/labs/index.html).

9) Data Submittal: All Drinking Water Supply Well monitoring data, including any existing data, shall be submitted electronically to the State Water Board's GeoTracker database by the testing laboratory. The data submitted shall include the Assessor's Parcel Number (APN) where the Drinking Water Supply Well is located and the coordinates (latitude and longitude) of the Drinking Water Supply Well.

10) Ceasing Sampling: Sampling may cease if a drinking water well is taken out of service or no longer provides drinking water because replacement water is being supplied. Enrollees shall keep any records (e.g., photos, bottled water receipts) establishing that the well is not used for drinking water.

V. Reporting Requirements

1) Enrollees shall comply with all reporting requirements and schedule outlined in Table A.2.

2) Individual Enrollees shall create a GeoTracker user account. Instructions for setting up an account and the process of claiming a site, formatting, and uploading data, and other technical information can be found under "ESI Overview" and "Getting Started" sections on the State Water Board's website[10.] Drinking water well monitoring data and all analytical data required of Individual Enrollees shall be uploaded to GeoTracker in an Electronic Deliverable Format (EDF). Additionally, all monitoring reports, and correspondence shall be in searchable Portable Document Format (PDF) and shall be uploaded annually to GeoTracker.

2) Coalition Members shall submit all required data through the Coalition except for the Certified WQMP and the Drinking Water Well Sampling data, which shall be submitted directly to the North Coast Water Board and uploaded to GeoTracker respectively. The Coalition shall submit all required information as detailed in this section on behalf of its enrolled Members to the North Coast Water Board. Data required of Coalitions on behalf of their enrolled members shall be submitted to the North Coast Water Board in accordance with the requirements set forth in the following sections.

3) Information collected through the MRP shall be reported in the Annual Compliance Report as described in Section V.A of this MRP. Sample results from Surface Water Monitoring and Groundwater Trend Monitoring shall be analyzed for trends every five years in the Trend Monitoring Report as described in Section V.B of this MRP.

A. Annual Compliance Report

1) Individual Enrollees shall complete and upload their Annual Compliance Report to GeoTracker by **#DATE**, and by **March 1st** annually thereafter. A Coalition may upload one Annual Compliance Report on behalf of their enrolled members by **#DATE** and by **March 1st** annually thereafter.

2) The Annual Compliance Report for Individual Enrollees shall consist of the following elements (as also described in detail below in this section):

    a) Farm Evaluation: Inventory of management practices to control the discharge of sediment, pesticides, and nutrients from the Farm Area and identification of wells, watercourses, and appurtenant structures. The Farm Evaluation also includes Adaptive Management reporting.

    b) Irrigation and Nutrient Management Plan: Inventory of management practices to control the movement of nutrients to groundwater and reporting of Nitrogen Applied and Removed.

c) Compliance Education Event Attendance: The Enrollee shall report on the annual compliance education event attended in the previous year.

d) CEQA Mitigation Monitoring: The Enrollee shall report on the CEQA mitigation measures in Attachment E employed to comply with the provisions of the Order in the previous year.

e) Annual Water Quality Monitoring Results: Results from Surface Water Monitoring , Edge-of-Field monitoring (if applicable), and Groundwater Trend Monitoring. Drinking Water Well sampling is uploaded separately to GeoTracker in accordance with Section IV.C and does not need to be included in the Annual Compliance Report.

4) The Annual Compliance Report that a Coalition may submit on behalf of its enrolled Members shall consist of:

a) The Participant List: The Participant List shall include the Owner/Operator name, address, and total number of enrolled acres of all enrolled Members of the Coalition. The Participant List shall also identify Enrollees who are no longer Members of the Coalition and include a reason for non-participation including, but not limited to: (1) No longer farming/sold farm, or (2) Plan to enroll in the Order as an Individual Enrollee. Finally, the Participant List shall indicate which Fields are in the Adaptive Management Program as described in Section II.G of the Order, the parameters being addressed, Tier of Adaptive Management, Fields not currently meeting Water Quality Benchmarks, and how many years each Field has been in the Adaptive Management Program for each applicable parameter.

b) Management practice implementation and adaptive management data from the most recently submitted Farm Evaluations: Enrollees shall submit information from their Farm Evaluations, which the Coalition shall report by an Anonymous Field ID.

c) Nitrogen reporting from the most recently submitted INMPs: The Coalition shall report INMP information by Anonymous Field ID and Township, Range, Section.

d) Outreach Attendance: The Coalition shall report outreach event attendance for its enrolled Members by Member ID in accordance with Section II of this Order.

e) CEQA Mitigation Monitoring: The Coalition shall report the mitigation measures in Attachment E their members implemented to comply with the provisions of the Order. These mitigation measures shall be reported to the Coalition by the Enrollees and aggregated and submitted to the North Coast Water Board by Anonymous Field ID.

f) Annual Monitoring Report: Results from Surface Water Monitoring , Edge-of-Field monitoring (if applicable), and Groundwater Trend Monitoring. Drinking Water Well sampling is uploaded separately to GeoTracker in accordance with Section IV.C.

Farm Evaluation

5) All Enrollees shall complete an annual Farm Evaluation to inventory the management practices currently implemented on their Commercial Lily Bulb Operation and to identify any additional practices needed to prevent discharges that could cause or contribute to exceedances of water quality objectives or violate the Receiving Water Limitations in Section II.C. The Farm Evaluation shall include all Fields in lily bulb rotation, including fields planted to lily bulbs, fallow fields, and fields producing other crops that are part of the rotation. Fields may be exempt from Farm Evaluation reporting once they have been out of lily bulb production for five years or more.

6) Enrollees shall complete a Farm Evaluation each year for all enrolled Fields. Where this MRP requires reporting by Field, Enrollees may aggregate data for multiple Fields provided that the reported area has (1) the same fertilizer inputs, (2) the same irrigation management, and (3) the same management practices. Any Fields that are aggregated for reporting purposes in this way shall be referred to in the INMP as a Management Unit and shall be defined, labeled and consistent across all INMP and Farm Evaluation reporting.

7) Enrollees may use the use the Farm Evaluation Template on the North Coast Water Board's website, or an alternative template which meets all below requirements. At a minimum, the Farm Evaluation Template will require the following:

   a) Owner/Operator Identification: The name, business address, mailing address, email address, phone number of the owner and operator (if different from owner).

   b) Commercial Lily Bulb Operation Identification: Location(s) of parcel(s) that are part of the Farming operation[11], including: (1) the address, (2) the Assessor Parcel Numbers (APNs), (3) the Township, Range, and Section (TRS) of each enrolled APN; (4) the self-appointed Field ID[12] of each enrolled APN, if applicable, and (5) the total acreage under cultivation for each APN.

   c) Well Identification: The number of (1) irrigation wells, (2) Drinking Water Supply Wells, and (3) abandoned or inactive wells located within each enrolled APN. Each well shall be given a unique Well ID.

   d) Farm Map: A Farm Map shall include all enrolled parcels and may be an aerial photograph, topographic map, LiDAR-derived shaded relief map,

Google Earth image, or equivalent that depicts features at 1-inch = 50 feet or larger scale. The farm base map(s) shall include a north arrow, scale bar, legend for any symbology, and labels on the following appurtenant features on all enrolled parcels:

i) Field ID(s),

ii) Fields planted to lily bulbs. For all other fields, indicate land use (e.g., another crop, fallow, grazing, etc.).

ii) Farm buildings[13] and equipment yards,

iii) Nutrient or pesticide handling and mixing sites, storage facilities, staging areas; and

e) Management Practices: A list of management practices implemented within each Field to minimize and prevent erosion and the discharge of pollutants from the Farm Area, agricultural roads, and Streamside Areas. Enrollees shall report whether the minimum Streamside Area widths in Table II.1 are being met in each applicable Field and, and specify where minimum Streamside Area width is not being achieved, if applicable.

f) Irrigation and Nutrient Management: (1) A list of management practices implemented within each Field to minimize or prevent discharges of nutrients to surface waters and to minimize leaching of nitrogen past the root zone, (2) Primary and secondary irrigation methods for each APN, and (3) irrigation management practices to minimize or prevent surface run-off or groundwater leaching.

g) Adaptive Management Reporting (if applicable): For all Fields in the Adaptive Management Program, the Enrollee must report Adaptive Management Tier, indicate which parameter Adaptive Management is addressing and report the selected Adaptive Management Compliance Option as specified in Section II.G of the Order.

h) Certification of Maintenance: The Enrollee shall certify on their Farm Evaluation that all management practices are designed, installed, maintained, and promptly repaired in accordance with Section II of the Order.

7) The Coalition may submit Farm Evaluation data in the Annual Compliance Report in lieu of Enrollee submittal of their individual Farm Evaluations to the North Coast Water Board. The following data from the prior year's Farm Evaluations shall be reported to the North Coast Water Board for each Field in an Excel Workbook format and be accompanied by a quality assessment of the collected information (e.g., missing data, potentially incorrect/inaccurate reporting), and a description of corrective actions to be taken regarding any deficiencies in the quality of data

submitted, if such deficiencies were identified:

a) Anonymous Enrollee ID and Field number.

b) Anonymous APN Number

c) Township, and Range, of Field. Drainage area Field is located (see Figure A.1)

d) Irrigation method.

e) Irrigation practices.

f) Pesticide water quality management practices.

g) Sediment and erosion control management practices.

h) Nitrogen management practices.

i) Number of irrigation wells (both active and inactive).

j) Number of drinking water wells on the parcel.

k) Adaptive Management Tier and Compliance Option (if applicable), and parameter for which Adaptive Management is being implemented.

Irrigation and Nitrogen Management Plan

8) Annually, Enrollees shall prepare, implement, and get certified[14] an Irrigation and Nitrogen Management Plan (INMP) for each Field that is either planted to lily bulbs, or planted to another crop that receives an external source of nitrogen[15]. The INMP shall be annually submitted to the North Coast Water Board for the previous crop year as part of the Annual Compliance Form. Alternatively, Enrollees may submit their INMP to the Coalition who shall submit Enrollee data to the North Coast Water Board annually in accordance with Section V of this MRP. A copy of the INMP shall be located at the Enrollee's farming operations headquarters or primary place of business. The Enrollee must provide the INMP to North Coast Water Board staff, if requested.

9) Where this MRP requires reporting by Field, Enrollees may aggregate data for a portion of a Field or for multiple Fields provided that the reported area has (1) the same fertilizer inputs, (2) the same irrigation management, and (3) the same management practices. These "Management Units' shall be defined, labeled and consistent across all INMP and Farm Evaluation reporting.

10) Enrollees shall use the INMP Template approved by the North Coast Water Board's Executive Officer. At a minimum, the INMP shall include the following information:

a) Crop Year.

b) Owner/Operator name.

c) Assessor Parcel Number (APN).

d) Total acreage for each APN identified.

e) Planted acreage for each APN identified.

f) Irrigation method(s).

g) Crop Yield (tons/planted acre)

h) Nitrogen Applied (lbs./acre) from the following sources:

i) All applied water

ii) Synthetic Fertilizers, and/or

iii) Organic Amendments (e.g., manure, compost, etc.)

i) Documented compliance education received or attended during the previous year in accordance with Section II.I of this Order.

11) Enrollees shall use this information to calculate the Applied/Removed (A/R) ratio for nitrogen, and an Applied-Removed (A-R) difference for nitrogen, as defined in the equations in Table A.8. These shall be submitted either to the Coalition or in the Annual Compliance Report in accordance with the schedule outlined in Table A.2. Additionally, every third reporting year, Enrollees shall average the past 3 years of their AR Reporting across their farmed lily bulb Fields and provide a 3-year A/R Ratio and A-R Difference either to the Coalition or in the Annual Compliance Report as defined in the equations in Table A.8.

Table A.8: Nitrogen Reporting Equations

Description	Equation
The A/R ratio is the ratio of total Nitrogen Applied to Nitrogen Removed (including all harvested materials)	$$\text{A/R Ratio} = \frac{\text{Nitrogen Applied (lbs./acre)}}{\text{Nitrogen Removed (lbs./acre}}$$
For each Field for which three consecutive years of A/R ratio is available, the multi-year A/R ratio shall be reported as the ratio of total nitrogen applied to total nitrogen removed (calculated below) for the three prior consecutive years	$$A/R_{3\ year}\ \text{Ratio} = \frac{A_n + A_{n-1} + A_{n-2}}{R^n + R_{n-1} + R_{n-2}}$$ Where n = current reporting cycle A = Nitrogen Applied R = Nitrogen Removed
The A-R difference is the difference of total Nitrogen Applied and the total Nitrogen Removed	A-R Difference= Nitrogen Applied (lbs./acre) – Nitrogen Removed (lbs./acre)
The multi-year A-R difference shall be reported as the numerical difference between total nitrogen applied and total nitrogen removed for the three prior consecutive years.	$A\text{-}R_{3\ year}$ Difference= $[A_n + A_{n-1} + A_{n-2}] – [R_n + R_{n-1} + R_{n-2}]$ Where n = current reporting cycle A = Nitrogen Applied R = Nitrogen Removed
Total Nitrogen Removed is determined by multiplying an Enrollee's crop yield by a crop-specific nitrogen coefficient, (C_N) which represents the amount of nitrogen in the harvested crop. The Coalition may submit a C_N coefficient in accordance with Section V.C of this MRP. If no C_N coefficient is available, Enrollees shall report Crop Yield in place of Nitrogen Removed.	Nitrogen Removed (lbs./acre) = Crop Yield (tons/acre) x C_N (lbs./tons)

11) The INMP shall be certified in one of the following ways:

    a) Certified by an Irrigation and Nitrogen Planning Specialist[16]. The specialist that certifies the INMP must be capable of answering questions relevant to the INMP and should be fully competent and proficient by education and experience in the Field(s) of study covered by certification relevant to the development of an INMP; or

    b) Self-certified by the Enrollee who attends a California Department of Food and Agriculture (CDFA), or other Executive Officer approved Third-Party training for INMP certification. The Enrollee must retain written documentation of their attendance in the Third-Party training; participate and obtain documentation of such participation in any continuing education required by CDFA; and make such documentation available to the North Coast Water Board on request; or

    c) Self-certified by the Enrollee that the plan adheres to a site-specific recommendation from the Natural Resources Conservation Service (NRCS) or the University of California Cooperative Extension. The Enrollee must retain written documentation of the recommendation provided and make such documentation available to the North Coast Water Board on request; or

    d) Self-certified by the Enrollee if no Nitrogen is applied to the Field; or

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

13) The Coalition may submit data as described below from the prior year's Irrigation and Nitrogen Management Plans (INMP) and additional calculations as described below in three tables in Excel workbook format in lieu of Enrollee submittal of individual INMPs to the North Coast Water Board.

14) The Coalition shall calculate the values as described in Table A.8 and convert them to per acre values for inclusion into three tables as described below and the calculated values shall be reported to the North Coast Water Board as part of the Annual Compliance Report.

    a) Table 1: Individual Field-Level AR Data by Anonymous Enrollee ID: One entry is made for each Field reported:

        i) Anonymous Enrollee ID: Each Anonymous Enrollee ID may be associated with more than one Field.

        ii) Nitrogen applied via fertilizers (lbs./acre).

iii) Nitrogen applied via organics and compost (lbs./acre).

iv) Nitrogen applied via water (lbs./acre).

v) Total Nitrogen applied (lbs./acre) [sum of nitrogen from fertilizer, organics/compost, and all applied water].

vi) Nitrogen removed per acre (lbs./acre).

vii) A/R ratio as defined in calculations in Table A.10.

viii) A-R difference (lbs./acre) as defined in calculations in Table A.10.

ix) 3-year A/R ratio if available as defined in calculations in Table A.10.

b) Table 2: Individual Field-Level AR Data Table: An entry for a Field may be repeated if there is more than one Anonymous APN ID associated with the Field or Management Unit.

i) Anonymous APN ID: List on a separate line each Anonymous APN ID assigned to parcels the Field overlays completely or partially.

ii) Associated groundwater basin or sub-basin.

iii) Township, range and section of each anonymous APN ID.

iv) Nitrogen applied via fertilizers (lbs./acre).

v) Nitrogen applied via organics and compost (lbs./acre).

vi) Nitrogen applied via irrigation water (lbs./acre).

vii) Total Nitrogen applied (lbs./acre) [sum of nitrogen from fertilizer (iv), organics/compost (v), and irrigation water (vi)]

viii) Nitrogen removed per acre (lbs./acre).

ix) A/R ratio as defined in calculations in Table A.10.

x) A-R difference (lbs./acre) as defined in calculations in Table A.10.

c) Table 3: Township-Level Aggregated AR Data Table:

i) Township and range.

ii) Total acreage: sum for all the acreage within the township (acres).

iii) Total nitrogen applied via fertilizer: sum for all acreage in township (total lbs.).

iv) Total nitrogen applied via organics and compost: sum for all acreage in township (total lbs.). Total nitrogen applied via irrigation water: sum for all acreage in township (total lbs.).

v) Total nitrogen applied (total lbs.) [sum of nitrogen from fertilizer, organics/compost, and all applied water)].

vi) Total nitrogen removed for all acreage in acreage (total lbs.).

vii) A/R ratio for township as defined in calculations in Table A.10.

viii) A-R difference for township (total lbs.) as defined in calculations in Table B.4.

15) Beginning the third year of reporting, the Coalition shall report a three-year running total for both the A/R ratio and the A-R difference (A/R3 year and A-R3 year) by township in accordance with the equations in Table A.8.

Compliance Education Event Attendance

16) The Enrollee shall either submit in their Annual Compliance Report or to the Coalition as part of its Annual Compliance Report, compliance education event attendance information. At a minimum, the outreach event records shall include:

a) Date of annual event attended,

b) Type of event (e.g., in-person meeting, online video, printed materials), and,

c) Brief description of topics covered.

CEQA Mitigation Monitoring

17) The Enrollee shall either submit in their Annual Compliance Report or to the Coalition as part of its Annual Compliance Report, a report on the CEQA mitigation measures in Attachment E employed to comply with provisions of the Order. The CEQA Mitigation Monitoring reported in the Annual Compliance Report shall include information on the implementation of CEQA mitigation measures (mitigation measures are described in Attachment E of the Order), including the measure implemented, identified potential impact the measure addressed, parcel(s) where of the mitigation measure was employed, and any steps taken to monitor the ongoing success of the measure.

Annual Water Quality Monitoring Results

18) The Annual Water Quality Monitoring results submittal shall include all Surface Water Monitoring, Groundwater Trend Monitoring, and Adaptive Management Program Edge-of-Field Sampling (if applicable) from the past crop year. Individual Enrollees shall upload all data into GeoTracker. The Coalition may submit data on

behalf of its enrolled Members to the North Coast Water Board. Submittal deadlines are provided in the Master Schedule in Section II of this MRP.

19) All analytical data required of Individual Enrollees shall be uploaded to GeoTracker in an Electronic Deliverable Format (EDF). Additionally, monitoring data, monitoring reports, and correspondence shall be in searchable Portable Document Format (PDF) and shall be uploaded annually to GeoTracker. Data required of Coalitions on behalf of their enrolled Members shall be submitted to the North Coast Water Board in accordance with the requirements set forth in the following sections.

Surface Water Monitoring and Groundwater Trend Monitoring Data Submittal

20) The Enrollee or Coalition shall submit results using a template on the North Coast Water Board website or an alternate template approved by the Executive Officer. Data shall be submitted in an electronic format and include the following for the required reporting period:

    a) Excel workbook containing all surface water data.

    b) Excel workbook containing all groundwater monitoring data.

    b) Electronic copies of all field sheets.

    c) Electronic copies of all applicable laboratory analytical reports shall be submitted once per year with the Annual Compliance Report.

    e) For chemistry data, analytical reports shall include, at a minimum, the following:

        i) A lab narrative describing quality control failures.

        ii) Analytical problems and anomalous occurrence.

        iii) Chain of custody and sample receipt documentation.

        iv) All sample results for contract and subcontract laboratories with units. Reporting Limits and Method Detection Limits.

        v) Sample preparation, extraction, and analysis dates.

        vi) Results for all quality control samples including all field and laboratory blanks, lab control spikes, matrix spikes, field and laboratory duplicates, and surrogate recoveries.

21) If any data is missing from the annual report, the submittal shall include a description of what data is missing and when it will be submitted to the North Coast Water Board.

Adaptive Management Program Edge-of-Field Data Submittal (if applicable)

22) Enrollees in the Adaptive Management Program who have elected to conduct Edge-of-Field Sampling shall submit data to the Coalition, which shall include these results in its Annual Compliance Report submittal to the North Coast Water Board. Individual Enrollees must submit Edge-of-Field sampling data directly to the North Coast Water Board.

23) The following information shall be reported for each applicable Field:

    a) Site description, including a map showing Field boundaries, drainage patterns, and Monitoring points

    b) Analytical results submitted in a tabular format

    c) Any exceedance(s) of Water Quality Benchmark

    d) Data interpretation including assessment of compliance and/or noncompliance with Water Quality Benchmarks

    e) Copy of chain of custody, submitted electronically

    f) Associated laboratory and field quality control samples results, with summary of precision and accuracy

    g) Quality control data interpretation, including assessment of data quality objectives

B. Water Quality Trend Monitoring Report

1) The Water Quality Trend Monitoring Report (Trend Monitoring Report) shall be submitted in accordance with the Master Schedule. The Trend Monitoring Report shall either be submitted to GeoTracker by individual Enrollees or submitted to the North Coast Water Board by the Coalition on behalf of their enrolled Members.

2) The Trend Monitoring Report shall cover Surface Water Monitoring and Groundwater Trend Monitoring from the previous five calendar years and shall include the following components:

    a) A signed transmittal letter shall accompany each report. The transmittal letter shall be submitted and signed in accordance with the requirements of Section II.I of the Order, Provisions

    b) Title page.

    c) Table of contents.

    d) Executive summary.

e) Monitoring objectives and design.

f) Sampling site/monitoring well descriptions and rainfall records for the time period covered under the Trend Monitoring Report.

g) Location map(s) of sampling sites/monitoring wells. An accompanying GIS shapefile or geodatabase of monitoring site and monitoring well information must include site code and name (for surface water only) and Global Positioning System (GPS) coordinates (for all Surface Water monitoring locations and wells used for Groundwater Trend monitoring). GPS coordinates must be provided as latitude and longitude in the decimal degree coordinate system (at a minimum of five decimal places). The map(s) must contain a level of detail that ensures they are informative and useful. The datum must be clearly identified on the map. The source and date of all data layers must be identified on the map(s). All data layers/shapefiles/geodatabases included in the map shall be submitted with the Trend Monitoring Report.

h) Results of all surface water and groundwater analyses arranged in tabular form so that the required information is readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with the data collection requirements of the MRP.

i) The report shall include a discussion of compliance with the data collection requirements of the MRP. If a required component was not met, an explanation for the missing data shall be included. Results shall also be compared to water quality objectives and benchmarks.

j) Sampling and analytical methods used.

k) Electronic laboratory data reports of chemical results must 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. The Enrollee or Coalition may ask the laboratory to provide assistance with evaluation of their QA/QC data, provided that the Enrollee prepares the summary table or narrative description of the results for the Trend Monitoring Report.

l) Summary of exceedances of all Water Quality Benchmarks occurring during the reporting period. In the event of exceedances of Water Quality Benchmarks for pesticides or an increasing trend of pesticide concentration in any monitoring location, county pesticide use data from Pesticide Use Reports must be included in the Trend Monitoring Report and analyzed with respect to the pesticide of concern.

m) Actions taken to address water quality objective exceedances that have

occurred, including but not limited to information collected in the Adaptive Management Program over the past five years.

n) Evaluation of monitoring data to identify spatial trends and patterns.

i) The Enrollee or Coalition shall evaluate its monitoring data in the Trend Monitoring Report to identify potential trends and patterns in surface water and groundwater quality that may be associated with waste discharge from enrolled parcel(s). As part of this evaluation, the Enrollee or Coalition must analyze all readily available monitoring data that meet quality assurance requirements to determine deficiencies in monitoring for discharges from Commercial Lily Bulb Operations and whether additional sampling locations are needed. If deficiencies are identified, the Enrollee or Coalition must propose a schedule for additional monitoring or source studies.

ii) Wherever possible, the Enrollee or Coalition should utilize tables or graphs that illustrate and summarize the data evaluation.

iii) Conclusions and recommendations.

C. Groundwater Protection Plan

1) The objective of the Groundwater Protection Plan (GWP Plan) is to protect and improve groundwater quality by ensuring that nitrogen applied to lily bulb Fields does not cause or contribute to nitrate concentrations in groundwater that exceed water quality objectives or violate the State's Antidegradation Policy. The GWP Plan is developed using INMP and Groundwater Trend Monitoring information and establishes a framework for quantifying and managing nitrogen loading to groundwater through development of township-level Groundwater Protection Formulas (GWP Formulas), Groundwater Protection Targets (GWP Targets), and a nitrogen removal coefficient (C_N) for lily bulbs. It is intended to identify areas where nitrate over-application is occurring and guide implementation of adaptive management and best management practices to reduce nitrogen discharges to groundwater. The Groundwater Protection Plan (GWP Plan) may be developed and submitted by the Coalition. If the Coalition elects not to do so, the North Coast Water Board shall establish the GWP Formulas, GWP Targets, and C_N coefficients.

2) By **July 1st**, seven years following initial INMP reporting, the Coalition may choose to submit a GWP Plan that establishes a nitrogen removal coefficient (C_N) and proposes GWP Formulas and GWP Targets. The Coalition shall notify the North Coast Water Board by **January 1** prior to the submission deadline if they do not plan to submit a GWP Plan.

3) C_N Removal Coefficient: Total Nitrogen Removed is determined by multiplying an Enrollee's crop yield by a crop-specific nitrogen coefficient (C_N) which represents the amount of nitrogen in the harvested crop. The Coalition may propose a C_N

coefficient determined through nitrogen removed testing, literature review or recent research for converting crop yield to nitrogen removed.

4) GWP Formula and Targets: In the GWP Plan, the Coalition may propose a Groundwater Protection Formula (GWP Formula) to the Executive Officer. The purpose of the GWP Formula is to generate a Groundwater Protection Value (GWP Value), expressed as either a nitrogen loading number or a concentration of nitrate in water (e.g., mg/l) as appropriate, reflecting the total applied nitrogen, total removed nitrogen, recharge conditions, and other relevant and scientifically supported variables that influence the potential average concentration of nitrate in water expected to reach groundwater in a given township over a given time period. The Coalition shall use the GWP Formula to compute GWP Values for each township. The GWP Values shall be subject to public review and comment and Executive Officer approval. GWP Values shall be developed and included in an updated GWP Plan no later than one year from Executive Officer approval of the GWP Formula.

5) Groundwater Protection (GWP) Targets by Township: The purpose of the GWP Targets is to set a Nitrogen Applied and Removed (A/R or A-R value) that results in a nitrogen discharge to groundwater that is compliant with the Antidegradation Policy and meets the water quality objective. The first year following approval of the GWP Values, the Coalition shall develop Groundwater Protection Targets (GWP Targets) for each township for which a GWP Values was computed the prior year. The GWP Targets shall be reviewed and subject to approval by the Executive Officer after an opportunity for public review and comment. The GWP Targets shall be reviewed and revised as necessary every five years. GWP Targets will be used to identify Enrollees who may be contributing to nitrate leaching to groundwater. Enrollees with Nitrogen Applied and Removed over the GWP Target will need to notify the North Coast Water Board and perform adaptive management as directed in this section to limit the over application of nitrogen.

6) Following approval of GWP Targets, the Coalition shall report annual and 5-year average nitrogen loading rates for each township in the Trend Monitoring Report and compare the actual loading rate with the township's GWP Targets. If nitrogen Applied-to-Removed (A/R) rates in any Field exceed the township GWP Target in a single crop year, those Fields are subject to the Adaptive Management Program for groundwater that focused on irrigation and nutrient management practices. Enrollees with Fields that exceed the township GWP Target shall refer to Section II.H in the Order related to groundwater adaptive management requirements.

VI. Modifications to the Monitoring and Reporting Program

1) The Executive Officer may revise the monitoring parameters, schedule, locations, or frequencies as necessary to reflect changes in enrollment, trends in pesticide use, or implementation of management practices. For example, changes in pesticide use practices or emerging pesticides of concern may prompt modifications to monitoring parameters at the Executive Officer's discretion.

2) This MRP allows Enrollees or the Coalition to request modifications to monitoring schedules and/or frequencies after no less than 2 Trend Monitoring cycles in cases where: (1) the Enrollee or Coalition has demonstrated overall compliance with requirements of the Order; and (2) monitoring data indicate that the Enrollee or group of Enrollees are not causing, contributing to, or threatening an exceedance of applicable water quality objectives or a condition or pollution or nuisance; or unreasonably affecting applicable beneficial uses. The request must be supported by applicable water quality monitoring data and applicable information to indicate Enrollee compliance with Order requirements (e.g., Farm Evaluation data, inspection reports, or information supplied by the Enrollee or Coalition).

3) The Executive Officer may revoke reduced monitoring frequencies and re-instate monitoring schedules indicated in the MRP for Enrollee(s) who no longer meet the conditions for which reduced monitoring was granted.

VII. MRP Endnotes

[1] Monitoring stations shall be as far downstream of lily bulb operations that is possible, considering site accessibility.

[2] A Water Year is defined as October 1st through September 30th of each calendar year.

[3] See Section G.1 in the Findings for a discussion on Water Quality Benchmarks and sources of these Benchmarks. Laboratory analyses should have the detection limit and reportable detection limit lower than corresponding numeric water quality objectives or water quality guidelines. Change of laboratory method with approval of the North Coast Water Board may be required to meet the reporting limits requirement.

[4] The toxicity unit (TU) is a simple ratio of the measured concentration of dissolved copper to the BLM-generated criteria and is calculated by dividing the measured value by the modelled criteria.

[5] The BLM Instantaneous Water Quality Criteria or BLM-IWQC is a criterion developed using a set of ten parameters to account for complex chemical reactions associated with copper in the environment: pH, Dissolved Organic Carbon (DOC), Calcium (Ca), Magnesium (Mg), Sodium (Na), Sulfate (SO4), Potassium (K), Chlorine (Cl), Alkalinity, and Temperature. The IWQC is used as a water quality threshold for dissolved copper for that specific site and sampling event only. The model's output also includes a toxicity unit (numerical value) to represent the relative risk of copper toxicity in the waterbody at the time of sample collection.

[6] These values are based on one sample event.

[7] Compatible CEDEN formats available at http://www.ceden.org/ceden_datatemplates.shtml.

[8] Request language services here: Public Request for Language Services | California State Water Resources Control Board https://www.waterboards.ca.gov/about_us/public_participation/language-access.html

[9] Test Methods for Evaluating Solid Waste, SW-846 (https://www.epa.gov/hw-sw846).

[10] GeoTracker electronic submittal of information (https://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/).

[11] All parcels that have been planted to lily bulbs anytime in the five years previous to enrollment are considered part of the Commercial Lily Bulb Operation for purposes of this Order. Parcels may be unenrolled after they have not been planted to lily bulbs for over five years.

[12] Fields are defined as areas of similar agrochemical, nutrient, and irrigation management for purposes of reporting.

[13] Farm buildings include equipment storage sheds, farmworker housing, and processing buildings.

[14] INMPs shall be certified either by a by a certified irrigation and nitrogen planning specialist or self-certified by the Enrollee. A certified irrigation and nitrogen planning specialist is a Certified Crop Advisor (CCA) who has completed the

California Nitrogen Management exam through The California Department of Food and Agriculture (CDFA), the University of California – Davis, the American Society of Agronomy's (ASA) International Certified Crop Adviser (ICCA) Third-Party and/or the CCA – Western Region (WR) Board and takes the required continuing education credits. Enrollees may self-certify their INMP if they take the CDFA Irrigation and Nitrogen Management Training for Grower Self-Certification, pass the Irrigation and Nitrogen Management Training and Exam and maintain the certification through continuing education (https://www.cdfa.ca.gov/is/ffldrs/frep/training.html).

[15] External sources of nitrogen do not include livestock manure. For example, if a Field is planted to forage crops or irrigated pasture and only receives nitrogen through grazed livestock manure, an INMP is not required for that Field.

[16] An Irrigation and Nitrogen Planning Specialist is a Certified Crop Advisor (CCA) who has completed the California Nitrogen Management exam through The California Department of Food and Agriculture (CDFA), the University of California – Davis, the American Society of Agronomy's (ASA) International Certified Crop Adviser (ICCA) Third-Party and/or the CCA – Western Region (WR) Board and takes the required continuing education credits. Enrollees may self-certify their INMP if they take the CDFA Irrigation and Nitrogen Management Training for Grower Self-Certification, pass the Irrigation and Nitrogen Management Training and Exam and maintain the certification through continuing education (https://www.cdfa.ca.gov/is/ffldrs/frep/training.html).