STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

STAFF REPORT FOR REGULAR MEETING OF DECEMBER 5 – 6, 2013
Prepared on October 22, 2013

ITEM NUMBER: TBD

SUBJECT: Approve Revisions to Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands Order No. R3-2012-0011, Condition 65 – Public Disclosure of Well Location

ACTION

Approve revisions to Condition 65 of Agricultural Order No. R3-2012-0011, Tier 1 Monitoring Reporting Program - Part 3 (A2), Tier 2 Monitoring Reporting Program - Part 5 (A2), and Tier 3 Monitoring Reporting Program - Part 8 (A2).

DISCUSSION

Per the Central Coast Water Board's July 11, 2013 Approval of Central Coast Cooperative Groundwater Program (enclosed), and in response to concerns related to public health and safety, the Executive Officer agreed to recommend to the Central Coast Water Board specific revisions to Agricultural Order No. R3-2012-0011 and associated Monitoring and Reporting Programs (MRPs). See page 6, No. 18 of Attachment 1.

The recommended revision changes the public disclosure of groundwater well location and data so that it is referenced within aone-mile square of the actual well location instead of a one-half mile radius of the actual well location. This revision is consistent with the same protocol and standard care implemented to protect locations of public drinking water supply wells regulated by the California Department of Public Health (CDPH). The revision would affect the public disclosure of any groundwater well location reported to the Central Coast Water Board in compliance with the Agricultural Order, including public disclosures related to a Public Records Act Request (PRAR), report, or presentation.

These revisions are in addition to modifications required by the State Water Resources Control Board's Order WQ 2013- adopted on September 24, 2013, resolving several petitions received on the Agricultural Order and associated MRPs.

CHANGES FROM THE EXISTING ORDER

The Executive Officer recommends the following specific language changes to the specified sections of the Agricultural Order and MRPs, as follows:

Agricultural Order [Page 27, Part D. Submittal of Technical Reports for All Dischargers – Tier 1, Tier 2, Tier 3; Condition No. 65]

MRP -01 [Page 12, Part 3.A.2], MRP -02 [Page 16, Part 5.A.2], and MRP -03 [Page 23, Part 8.A.2]:

> "…In the interest of public health and safety, the Central Coast Water Board will not make available for public inspection, the precise location of any groundwater well monitored in compliance with this Order. Consistent with the ~~reporting of groundwater wells~~ display of public supply wells regulated by CDPH on GeoTracker, groundwater well location and data will only be referenced within a ~~one-half mile radius~~ one mile square of the actual well location."

COMMENTS

Public notice of these proposed revisions was provided to interested parties on October 22, 2013. Interested parties must provide written comments by November 22, 2013.

RECOMMENDATION

Revise Order No. R3-2012-0011, Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands and Monitoring and Reporting Program Order Nos. R3-2012-0011-01; -02; and -03, proposed.

ATTACHMENT

1. July 11, 2013 Groundwater Cooperative Work Plan approval letter, titled "Agricultural Regulatory Program - Approval of Central Coast Cooperative Groundwater Program (CCCGP)."

July 11, 2013

Sent via Hard Copy and Electronic Mail

Northern Central Coast Groundwater Task Force
Abby Taylor-Silva
Vice President, Policy and Communications
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Dear Ms. Taylor-Silva:

AGRICULTURAL REGULATORY PROGRAM - APPROVAL OF CENTRAL COAST COOPERATIVE GROUNDWATER PROGRAM (CCCGP)

On May 31, 2013, you submitted a final workplan titled "*Northern Central Coast Cooperative Groundwater Program*" (workplan) to the Central Coast Regional Water Quality Control Board (Central Coast Water Board). The stated purpose of this document was to set forth the workplan for a Northern Central Coast Cooperative Groundwater Program that satisfies the groundwater monitoring requirements in Order No. R3-2012-0011 Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands (Agricultural Order) and the associated Monitoring and Reporting Program Orders (MRPs) for participating landowners and growers in Monterey, Santa Cruz, Santa Clara, and San Benito Counties. On July 9, 2013, you submitted a slightly revised workplan with clarifications.

I am pleased to grant approval of the cooperative program as described in the July 9, 2013 workplan, with the following specific conditions and comments described below. These conditions are important and required to clarify and confirm our expectations about how you will comply with the Agricultural Order and the associated MRPs on behalf of individual landowners and growers who participate in your cooperative program. I find these conditions to be flexible and responsive to your concerns, as well as reasonable given the severity of groundwater quality conditions and impacts to drinking water in agricultural areas. We appreciate the effort you've made to create this workplan and recognize the significant progress that you have made in improving the workplan since our initial meeting in January 2013.

BACKGROUND

The Central Coast Water Board adopted the Agricultural Order and associated MRPs on March 15, 2012. The Agricultural Order and the MRPs specify that enrolled landowners and growers have the option to comply with groundwater monitoring requirements by either monitoring groundwater individually on their agricultural operations, or by joining a groundwater cooperative monitoring program. The workplan states that the cooperative program will implement two

ATTACHMENT 1

related technical tasks: locating and sampling domestic supply wells on participant owned/leased/operated land, and characterizing groundwater aquifers in the cooperative program area with a focus on the quality of shallow groundwater.

We recognize that cooperative third party approaches may provide a number of short and long-term advantages. For example, third parties may have the expertise to provide a high level of technical assistance and training to growers to achieve measureable water quality improvement. In addition, cooperative efforts provide leadership and can bring participants together to better understand the severity of groundwater quality impairment related to irrigated agriculture and maximize regional efforts toward improving water quality.

CONDITIONS

Phased Approach

1. As previously discussed, use of a phased approach provides additional time and flexibility to implement the cooperative program. The phased approach also requires multiple "phased" approvals and therefore comes with some risks, as an approval of the phased workplan does not obligate me or any future Executive Officer to approve any subsequent section or part when details are submitted for approval in the future.

2. If the Executive Officer makes a final determination that any section or part of the phased workplan is not approved or if the cooperative program fails to implement any part of the workplan as approved (including approved time schedule or a deliverable), growers become individually responsible for implementing the MRP and may be subject to enforcement.

3. Implementation begins upon approval of the workplan. All phases of the workplan must be completed by March 15, 2015, including submittal of all deliverables to the Central Coast Water Board.

Third-Party Organization

4. The workplan indicates that you will form a non-profit organization to direct and administer the workplan and that the organization will be formed immediately after approval of the workplan (p. 21). Within 30 days of this letter, you must provide the Central Coast Water Board with an update on the status of the non-profit organization.

5. The workplan indicates that by September 1, 2013, you will provide the list of participating landowners and growers and quarterly thereafter, you will provide a list of newly participating landowners and growers (p. 21). As a modification to these deliverables, on September 1, 2013, you must submit the list of participating landowners and growers. The subsequent quarterly submittals must also provide a complete list of participating landowners and growers, clearly identifying those that are new. In addition, the quarterly submittals must also provide a list of any landowners and growers who are no longer participating in the cooperative program and the date of their termination.

Domestic Drinking Water Wells

6. The workplan indicates that you will conduct sampling of domestic drinking water wells in three phases, with sampling to begin by September 1, 2013 and complete by September 1, 2014. As previously discussed, the sampling of domestic drinking water wells is the Central Coast Water Board's highest priority for the cooperative programs. Failure to provide well lists, conduct sampling, or upload data to GeoTracker according to the schedules described in Tables 3, 4, and 5 of the workplan (p. 11-13) is a violation of the Agricultural Order and MRP, and grounds for immediate disapproval/termination of the cooperative program.

7. The workplan indicates that the initial list of wells to be sampled will be submitted on September 1, 2013, along with a sampling schedule. The workplan also indicates that well sampling will start on the same date (September 1, 2013) and that a final list of wells to be sampled will be submitted on November 1, 2013. The latter well list will include justification for selected wells and for those that are excluded.

8. As discussed on April 26, 2013 and described in our May 20, 2013 letter, the cooperative program must sample all domestic drinking water wells on participant owned/leased/operated land, unless an acceptable technical rationale is provided for sampling a representative subset in specific areas. In Tables 3, 4, and 5 of the workplan, you indicate that you will submit a list of all wells on participant owned/leased/operated land. This list serves to describe the universe of all domestic drinking water wells available for sampling prior to selection. The list of all wells must include the actual well location (latitude and longitude), along with all available information regarding construction details for each well (i.e., screen interval, total depth, lithology/stratigraphy in screened portion, etc.).

9. The workplan presents criteria to prioritize wells for sampling (including well log availability, depth/screened interval, and condition of well head and seal) (p. 8). The Central Coast Water Board's highest priority is to evaluate domestic drinking water well water quality and minimize exposure to unsafe drinking water, regardless of whether or not the well log is available or the depth/screened interval is precisely known. Staff recognizes that use of known well construction information as a sampling criteria is common for groundwater assessments, that the lack of this type of information may affect the use of these specific data for the overall groundwater characterization, and that as a result additional wells may be needed for groundwater characterization.

   You must sample all domestic drinking water wells on participant owned/leased/operated land; unless an acceptable technical rationale is provided for sampling a representative subset in specific areas. The absence of well construction details or a well log is not an appropriate criterion/rationale to justify not sampling a domestic drinking water well, especially if that well potentially serves unsafe drinking water. Sufficient technical rationale must provide evidence that groundwater quality from the well not sampled is represented by other wells sampled with reasonable certainty, based on factors such as close proximity, same aquifer, and similar well depth and screened interval. Technical rationale will be carefully evaluated especially in areas of known or likely exceedance of safe drinking water standards. The proposed list of wells for sampling and any technical

rationale for sampling a subset must be evaluated by Water Board staff and approved by the Executive Officer prior to implementation.

Adequacy of Sampling Locations and Density, Contour Maps

10. The workplan indicates that you will determine the adequacy of the number of wells for characterizing domestic drinking water well water quality based on the spatial variability of groundwater nitrate concentrations at various depths and geostatistical methods. You must also consider the hydrogeologic variability to determine if the sampling density is sufficient to represent domestic drinking water quality on and near participant owned/leased/operated land within reasonable certainty. The sampling density, resolution and scale must be sufficient such that individual domestic well owners that reside in agricultural areas within the cooperative groundwater monitoring program boundary can make informed decisions related to their drinking water quality and potential health exposure to nitrate.

    In follow-up discussions, your consultant Mr. Michael Johnson indicated that once the samples are collected, analyzed, and you have conducted a proper statistical analysis, you will then re-evaluate the numbers of wells and need to collect additional samples to estimate the concentrations in any given area within an acceptable confidence interval, with the intent of achieving the highest confidence interval possible using all publicly available well samples and integrating the wells sampled by the program. The Groundwater Cooperative Program analysis will be performed to achieve the highest level of certainty possible with the wells that are selected for sampling, and that the analysis will explicitly provide the confidence value for any location on the map. If you determine that there are more wells that may be sampled in order to achieve a higher confidence interval, you must immediately inform the Executive Officer and present a plan, including schedule, for additional sampling as appropriate, to be approved by the Executive Officer.

11. The workplan indicates that you will prepare a Technical Memo on nitrate concentration and also produce contour maps. In our discussions, you indicated that these deliverables are intended to be the primary tool for providing summary information and displaying water quality information to the public. For the purposes of determining the adequacy of the number and density of well sampling, as well as for the purposes of producing contour maps of nitrate concentration, proper geostatistical methods must be utilized (e.g. copulas[1] or similar method). Contour maps should use the State Drinking Water Standard of 45 mg/L Nitrate as NO3 and the initial contour intervals must be approximately every 10 mg/L Nitrate as NO3. After reaching the 45 mg/L Nitrate as NO3 contour, you may increase the size of the contour interval, if appropriate. Any contour maps produced must include the confidence interval for estimated values, and the quality assurance project plan (QAPP) must include additional sampling for use as a validation data set to confirm adequacy of contours. Contour maps must be reviewed by Water Board staff and approved by the Executive Officer prior to acceptance for display on GeoTracker. If the Executive Officer determines that the contour map does not

[1] Bardossy, Andras and Jing Li. Geostatistical interpolation using copulas, (July 2008). Water Resources Research, V.44 No.7; Summary citation from AGRICOLA online catalog of the National Agricultural Library (NAL) http://openagricola.nal.usda.gov/Record/IND44120067

present the data within an adequate confidence interval that is acceptable for providing reliable information to the public, the Executive Officer may not approve the use of the contour map on GeoTracker.

12. Contour maps for the cooperative program must be developed by, or under the review of a registered Professional Geologist or Professional Engineer based on a sampling design that is statistically defensible given the spatial variability of the aquifer (i.e., hydrogeological heterogeneity, etc.) and specific local conditions. The sampling density, resolution and scale must be approved by the Executive Officer, in advance of contour map preparation, to avoid the problem of not having sufficient data to produce an acceptable contour map. Contour maps must be provided as a geographic information systems (GIS) shapefile according the time scheduled identified in Table 3 though Table 6.

13. The Technical Memo(s) you submit with the contour maps must clearly describe the method used to contour the groundwater monitoring data, the associated confidence intervals and the areas of uncertainty. In addition, the Technical Memo(s) must include the list of wells specifically used in the development of the contour map and also describe any wells excluded from the contour map development (i.e. outliers) along with rationale for exclusion. The Technical Memo must also include identification and discussion of areas of insufficient data or data gaps as well as recommendations for resolving data gaps.

Timeframe for Sampling

The workplan does not include any sampling to evaluate the temporal variability (i.e., capturing seasonal or land-use variability, etc.) in groundwater quality in the wells sampled. The cooperative program commits to the Central Coast Water Board to perform additional sampling after the initial sampling outlined in this program is completed to determine temporal variability in wells determined by the cooperative program and the Central Coast Board to be high priority.

Deliverables

14. The following deliverable is identified in the workplan but not included in Table 8: Quality Assurance Project Plan (QAPP) due August 15, 2013 (p.19). The Executive Officer must approve the QAPP prior to initiating sampling activities.

15. Deliverables must be submitted in accordance with the schedule identified in Tables 3 through 8 of the workplan. In cases where the identified due date is not a business day, the deliverable is due on the next business day. The Executive Officer must approve deliverables prior to implementation or acceptance for display. In addition, Water Board staff review and Executive Officer approval of planning deliverables (including QAPP, lists of wells, number of wells selected, sampling density, and sampling schedule) are intended to inform adequacy and readiness to proceed with the next steps of workplan implementation.

Reporting and Public Disclosure of Information

16. All data must be uploaded as unique monitoring points with all relevant well location, well construction information (as available), water quality data, and appropriate quality assurance/quality control information to the regulatory side of GeoTracker within 30 days of sample delivery to the laboratory.

17. As previously discussed, it is the policy of the Central Coast Water Board to provide all members of the public with broad and convenient access to its records and to promptly make the fullest possible disclosure of its records. Therefore, upon receipt of a Public Records Act Request (PRAR), the Central Coast Water Board will provide information to the requestor except for that information that is exempt from disclosure under the California Public Records Act (CPRA).

18. In response to concerns related to public health and safety, the Central Coast Water Board will not disclose the precise location of any groundwater well sampled as part of the cooperative program in response to a PRAR. Consistent with the same protocol and standard care implemented to protect locations of public drinking water supply wells regulated by the California Department of Public Health (CDPH), I will recommend to the Central Coast Water Board or the State Water Resources Control Board that they revise the Agricultural Order and MRP to indicate that "Consistent with the display of public supply wells regulated by CDPH on GeoTracker, groundwater well location and data will only be referenced within a one-mile square of the actual well location." Any public use of well location data such as reports and public presentation by the Central Coast Water Board will follow the same protocols to protect the locations of wells.

Internet Display of Information on GeoTracker

19. We understand that the cooperative program participants have significant concerns and objections to displaying individual well locations to the public on maps available on the Internet using GeoTracker. The Central Coast Water Board agrees to display cooperative program data as contour maps on GeoTracker after January 1, 2015[2], as long as 1) the contour maps meet the conditions described in Conditions 10 through 13 above and are approved by the Executive Officer, and 2) the State Water Resources Control Board makes the necessary modifications to GeoTracker so that it can properly display the contour maps with other existing data currently in GeoTracker.

    If by January 1, 2015, the functionality does not exist in GeoTracker to properly display the approved contour maps, the cooperative program has the option to submit static images (e.g. pdf, bitmap) of the contour maps by March 15, 2015; If the cooperative program does not choose to submit static images of the contour maps or if the cooperative program does not submit contour maps that meet Conditions 10 through 13 above, then the data will be displayed as individual wells on GeoTracker and the well location and data will only be referenced within a one-mile square of the actual well location, using the existing mapping functionality for CDPH wells in GeoTracker.

[2] Note that the delay of display of data on GeoTracker until January 1, 2015 does not affect the immediate availability of information to the public in response to a PRAR.

20. Withholding the display of individual well information on maps on the public side of GeoTracker limits the Central Coast Water Board's ability to provide all members of the public with broad and convenient access to its records and to promptly make the fullest possible disclosure of its records. Therefore, I do not agree to withhold the cooperative program individual well data from maps on the public side of GeoTracker in perpetuity unless reviewed and approved by the Central Coast Water Board as they evaluate and adopt future irrigated lands orders or similar order for discharges of waste from irrigated agricultural operations applying to this program's participants. Doing so affects the Central Coast Water Board's ability to adapt in the future to changing needs, and may have unanticipated consequences on the Central Coast Water Board's ability to readily provide information to the public in cases where there is an acute and imminent threat to public health or safety, or to address issues related to consistency between regions and regulatory programs.

    I will agree to withhold the display of individual wells sampled by the cooperative program on maps on the public side of GeoTracker for at least the term of the Agricultural Order, which expires on March 14, 2017. The decision to maintain cooperative program data on the regulatory-only side of GeoTracker would be an issue for Regional Board review as part of a renewed Waiver, or other similar order for discharges of waste from irrigated agricultural operations. Further, if the existing Waiver expires prior to adoption of renewed Waiver or other similar order, this data would remain on the regulatory-only side of GeoTracker until such time that a renewed Waiver or other similar order is adopted. If moved to the public side of GeoTracker during the term of this Agricultural Order, any well data point locations will be shown with an uncertainty to at least one (1) mile squared.

21. The agreement to withhold the display of individual wells sampled by the cooperative program on maps on the public side of GeoTracker for the term of the Agricultural Order only pertains to the display of individual wells on maps. It does not affect the ability of the Water Board to provide groundwater quality data for individual wells to the public using available reports in GeoTracker (e.g. tabulated results in response to public queries). Additionally, it does not affect the Water Board's ability to publish, present or use individual well data in any reports or presentations. In all cases, the Central Coast Water Board would show with an uncertainty the precise locations of groundwater wells by one mile squared as described above.

Future Monitoring Needs

22. Groundwater monitoring programs like that described in the workplan evolve through time as the initial monitoring data is evaluated and the conceptual model of the basin is subsequently revised in an iterative manner. As part of this evolving understanding of the basins, new wells may prove: 1) beneficial to cover areas poorly understood or to monitor key groundwater flow paths, 2) cost-effective, by reducing the number of wells necessary to represent an area from both hydrogeological and water quality perspectives, and 3) necessary in future orders to address gaps in data and our understanding of groundwater quality in agricultural areas. I recommend that you work closely with your consultants and my staff as we seek to optimize the monitoring system going forward, and as unanticipated issues arise.

RECOMMENDATIONS

In addition to conducting the required groundwater monitoring, we appreciate your efforts to focus on finding solutions to address groundwater quality problems from existing agricultural practices and in communicating both the significance of the impairments and the necessary actions to quantify and address these water quality problems. We recognize that the cooperative program participants have made the commitment to address groundwater quality problems, especially related to drinking water sources. The workplan indicates that in cases where results indicate the exceedance of the safe drinking water standard, the cooperative program will make the landowner/tenant/operator aware so that they may take immediate steps to address the problem and minimize exposure to unsafe drinking water. At that time, the cooperative program will request permission of the landowner/tenant/operator to inform the Central Coast Water Board if replacement drinking water is currently begin provided to well users. We also recommend that the cooperative program consider providing resources or other assistance to limited resource individuals and disadvantaged communities affected by nitrate contamination who may need assistance in resolving water quality problems and ensuring safe drinking water.

The workplan also indicates that you will inform landowners and growers about their responsibility to use farming practices that are protective of groundwater resources. We recognize that this type of outreach is critical to improve water quality. We encourage the cooperative program and participants to take a leadership role in demonstrating urgency and innovation to implement practices that will reduce nitrate loading to groundwater and protect drinking water.

ACCEPTANCE OF CONDITIONS

The above described conditions are required for my approval of the workplan. Based on our discussions, you have indicated to me that you agree to these conditions.

In closing, I want to emphasize that Central Coast Water Board staff recognize that cooperative third party approaches may provide a number of short and long-term advantages that can bring participants together to maximize regional efforts toward understanding and improving water quality. We appreciate your efforts to work together to develop an effective cooperative program, and we find the conditions for approval described in this letter to be flexible and responsive to your concerns, as well as reasonable given the severity of groundwater quality conditions and impacts to drinking water in agricultural areas. We understand that the cooperative program participants are committed to improving water quality and we sincerely hope your efforts to implement the program are successful.

If you have any questions, please contact **Angela Schroeter at (805) 542-4644 or Aschroeter@waterboards.ca.gov** or John Robertson at (805) 542-4630 or JRobertson@waterboards.ca.gov.

Sincerely,

Kenneth A. Harris Jr.
Interim Executive Officer

cc:

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