Agenda Item 21: Late Revisions – 5 December 2012

WASTE DISCHARGE REQUIREMENTS GENERAL ORDER
FOR
GROWERS WITHIN THE EASTERN SAN JOAQUIN RIVER WATERSHED
THAT ARE MEMBERS OF THE THIRD-PARTY GROUP

Attachment B – Monitoring and Reporting Program

Attached are the pages with proposed late revisions for the above document.

Parameters that are part of an adopted TMDL that is in effect and for which irrigated agriculture is a source within the Eastern San Joaquin River Watershed shall be monitored in accordance with the adopted Basin Plan provisions or as directed by the Executive Officer. Current adopted TMDLs within the Eastern San Joaquin River Watershed for which irrigated agriculture is a source include the San Joaquin River Deep Water Ship Channel dissolved oxygen; San Joaquin River salt, boron, selenium, diazinon, and chlorpyrifos.

The metals to be monitored at sites within each site subwatershed shall be determined through an evaluation of several factors. The evaluation will provide the basis for including or excluding each metal. Evaluation factors shall include, but not be limited to: documented use of the metal applied to lands for irrigated agricultural purposes in the last three years; prior monitoring results; geological or hydrological conditions; and mobilization or concentration by irrigated agricultural operations. The third-party may also consider other factors such as acute and chronic toxicity thresholds and chemical characteristics of the metals. The third-party shall evaluate the monitoring parameters listed in Table 2 to determine which metals warrant monitoring for each site subwatershed. Documentation of the evaluations must be provided to the Central Valley Water Board as part of the Monitoring Plan Update.

The third-party shall identify in the Monitoring Plan Update all parameters to be monitored and the proposed monitoring periods and frequency at selected sites by 1 August of the year in which monitoring begins (monitoring period begins 1 October). If there are no changes from the previous Executive Officer approved monitoring (i.e., approved MRPP, or previously approved Monitoring Plan Update), the third-party is not required to submit the Monitoring Plan Update. The Monitoring Plan Update shall be subject to Executive Officer review and approval prior to the initiation of changes in monitoring activities.

Table 2: Monitoring Parameters

	Measured Parameter	Matrix	Required
Field Measurements	Estimated Flow (cfs)	Water	x
	Photo Documentation	Site	x
	Conductivity (at 25 ºC) (µs/cm)	Water	x
	Temperature (ºC)	Water	x
	pH	Water	x
	Dissolved Oxygen (mg/L)	Water	x
Drinking Water	*E. ~~Coli~~coli*	Water	x
	Total Organic Carbon (TOC)	Water	x
Gen Phys	Hardness (as $CaCO_3$)	Water	TBD
	Total Suspended Solids (TSS)	Water	x
	Turbidity	Water	x
Metals	Arsenic (total)	Water	TBD
	Boron (total)	Water	TBD
	Cadmium (total and dissolved)**	Water	TBD
	Copper (total and dissolved)**	Water	TBD

B. Management Practice Evaluation Program

The goal of the Management Practice Evaluation Program (MPEP) is to determine the effects, if any, irrigated agricultural practices[11] have on ~~first encountered~~ groundwater quality. A MPEP is required in high vulnerability groundwater areas and must address the constituents of concern described in the GAR. This section provides the goals, objectives, and minimum reporting requirements for the MPEP. As specified in section IV.D of this MRP, the third-party is required to develop a workplan that will describe the methods that will be utilized to achieve the MPEP requirements.

1. *Objectives*. The objectives of the MPEP are to:
   - Identify whether existing site-specific and/or commodity-specific management practices are protective of groundwater quality within high vulnerability groundwater areas,
   - Determine if newly implemented management practices are improving or may result in improving groundwater quality.
   - Develop an ~~annual~~ estimate of the ~~potential mass loading~~effect of ~~nitrogen to~~Members' discharges of constituents of concern on groundwater quality in high vulnerability areas. A mass balance and ~~other~~conceptual model of the transport ~~and~~, storage, and degradation/chemical transformation mechanisms ~~(e.g., crop uptake, soil, air, etc.) in high vulnerability groundwater areas.~~for the constituents of concern must be provided.
   - Utilize the results of evaluated management practices to determine whether practices implemented at represented Member farms (i.e., those not specifically evaluated, but having similar site conditions), need to be improved.

   Given the wide range of management practices/commodities that are used within the third-party's boundaries, it is anticipated that the third-party will rank or prioritize its high vulnerability areas and commodities, and present a phased approach to implement the MPEP.

2. *Implementation*. Since management practices evaluation may transcend watershed or third-party boundaries, this Order allows developing a MPEP on a watershed or regional basis that involves participants in other areas or third-party groups, provided the evaluation studies are conducted in a manner representative of areas to which it will be applied. The MPEP may be conducted in one of the following ways:

   - By the third-party,
   - by watershed or commodity groups within an area with known groundwater impacts or vulnerability, or
   - by watershed or commodity groups that wish to determine the effects of regional or commodity driven management practices.

   A master schedule describing the rank or priority for the investigation(s) of the high vulnerability areas (or commodities within these areas) to be examined under the MPEP shall be prepared and submitted to the Executive Officer as detailed in the Management Practices Evaluation Program Workplan section IV.D below.

3. *Report.* Reports of the MPEP must be submitted to the Executive Officer as part of the third-party's Monitoring Report or in a separate report due on the same date as the Monitoring

[11] In evaluating management practices, the third-party is expected to focus on those practices that are most relevant to the Members' groundwater quality protection efforts.

the third-party must monitor any parameter in a watershed that lacks sufficient monitoring data (i.e., a data gap should be filled to assess irrigated agriculture's effects on water quality).

The third-party should incorporate pesticide use information, as needed, to assist in its data evaluation. Wherever possible, the third-party should utilize tables or graphs that illustrate and summarize the data evaluation.

Report Component (17) – Summary of Reported Nitrogen Data
The third-party shall aggregate information from Members' Nitrogen Management Plan Summary Reports to characterize the input, uptake, and loss of nitrogen fertilizer applications by specific crops in the Eastern San Joaquin River Watershed. The third-party's assessment of Nitrogen Management Plan information must include, at a minimum, comparisons of farms with the same crops, similar soil conditions, and similar practices (e.g., irrigation management). This information will include a summary of nitrogen consumption ratios by crop or other equivalent reporting units and the estimated crop nitrogen needs for the different crop types. The nitrogen consumption ratio is the ratio of total nitrogen available for crop uptake (from sources including, but not limited to, fertilizers, manures, composts, nitrates in irrigation supply water and soil) to the estimated crop consumption of nitrogen. The third-party will also provide the data submitted by their Members that were used to develop this summary in an electronic format, compatible with ArcGIS, identified to at least the township level.[13]

Report Component (18) – Summary of Management Practice Information
The third-party will aggregate and summarize information collected from Farm Evaluations.[14] The third party will provide the data submitted by their Members to develop this summary in an electronic format, compatible with ArcGIS, identified to at least the township level.~~12~~13

Report Component (19) – Mitigation Monitoring
As part of the Monitoring Report, the third-party shall report on the CEQA mitigation measures reported by Members to meet the provisions of the Order and any mitigation measures the third-party has implemented on behalf of Members. The third-party is not responsible for submitting information that Members do not send them directly by the 1 March deadline (see section VII.E of the Order for individual Discharger mitigation monitoring requirements). The Mitigation Monitoring Report shall include information on the implementation of CEQA mitigation measures (mitigation measures are described in Attachment C of the Order), including the measure implemented, identified potential impact the measure addressed, location of the mitigation measure (township, range, section), and any steps taken to monitor the ongoing success of the measure.

D. Surface Water Exceedance Reports

The third-party shall provide surface water exceedance reports if monitoring results show exceedances of adopted numeric water quality objectives or trigger limits, which are based on interpretations of narrative water quality objectives. For each surface water quality objective exceeded at a monitoring location, the third-party shall submit an Exceedance Report to the Central Valley Water Board. The estimated flow at the monitoring location and photographs of the site must be submitted in addition to the exceedance report but do not need to be submitted more than once. The third-party shall evaluate all of its monitoring data and determine exceedances no later than five (5) business days after receiving the laboratory analytical reports for an event. Upon determining an exceedance, the third-party shall send the Exceedance Report by email to the third-party's designated Central Valley Water Board staff contact by the next business day. The

[13] The Member and their associated parcel need not be identified.
[14] Note that the evaluation of the reported management practices information is discussed in Appendix MRP-1 and will be part of the annual Management Plan Progress Report.

As part of its submittal for approval, the third-party must identify the entities that participated in the development of the Farm Evaluation Template.

B. Nitrogen Management Plan Template

Should the third-party choose to develop the Nitrogen Management Plan Template per the Group Option outlined in section VIII.C of the Order, the following provisions apply.

The Nitrogen Management Plan template must be developed by the third-party in consultation with the Central Valley Water Board, and as appropriate, the California Department of Food and Agriculture (CDFA), the University of California Extension, and the Natural Resource Conservation Services (NRCS). In developing the template, the third-party should consider, to the extent appropriate, the major criteria established in Code 590 of the NRCS Nutrient Management document, including soil and plant tissue testing, nitrogen application rates, nitrogen application timing, consideration of organic nitrogen fertilizer, consideration of irrigation water nitrogen levels.

In addition to the Nitrogen Management Plan Template, the third-party must provide a template for the Nitrogen Management Plan Summary Report. The Nitrogen Management Plan Summary Report Template must provide for reporting of the nitrogen consumption ratio for each crop grown for each parcel enrolled by the Member (this MRP requires reporting of this information to the board by township, Member/parcel need not be specified). The Nitrogen Management Plan Summary Report must also gather information required in the Monitoring Report and information needed for the Management Practices Evaluation Program.[15]

As part of its submittal for approval, the third-party must identify the entities that participated in the development of the Nitrogen Management Plan Template.

C. Sediment and Erosion Control Plan Template

Should the third-party choose to develop the Sediment and Erosion Control Plan Template per the Group Option outlined in section VIII.C of the Order, the following provisions apply.

The third-party will create a template to assist Members that must prepare a Sediment and Erosion Control Plan. The goal of the template shall be to assist Members in achieving the farm management performance standards of the Order, which include the requirement to minimize or eliminate the discharge of sediment above ~~natural~~ background levels. At a minimum, the template must be designed to facilitate Member consideration of the following.

- Identification of locations subject to erosion or locations subject to frequent water flow events that may mobilize sediment (sediment and erosion risk areas). Locations to be evaluated include the fields, roads or stream crossings within the enrolled parcel, and discharge points from the field.
- Identification of practices implemented at sediment and erosion risk areas to minimize or eliminate the discharge of sediment above ~~natural~~ background levels.

As part of its submittal for approval, the third-party must identify the entities that participated in the development of the Sediment and Erosion Control Plan Template.

[15] The Monitoring Report and MPEP will be developed by the third-party. This template is the mechanism by which the third-party will gather the information necessary to develop the Monitoring Report and conduct the MPEP. As such, this template will be a tool to facilitate Member reporting for third-party studies, analysis, and summary reporting to the board. Unless requested by the Executive Officer, Member completed templates will not be submitted directly to the board.