
Central Valley Regional Water Quality Control Board

14 August 2015

David Guy, President
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CONDITIONAL APPROVAL OF SACRAMENTO VALLEY WATER QUALITY COALITION'S SEDIMENT DISCHARGE AND EROSION ASSESSMENT REPORT

Thank you for the 8 June 2015 submittal of Sacramento Valley Water Quality Coalition's (Coalition) Sediment Discharge and Erosion Assessment Report (SDEAR), as required by Waste Discharge Requirements General Order R5-2014-0030 (Order).

Based on the attached staff review, the SDEAR partially achieves the main objective to determine which irrigated agricultural areas within the Sacramento River Watershed are subject to erosion and have the potential to discharge sediment that may degrade surface waters. The SDEAR utilizes a modeling approach that relies on slope and rainfall-runoff information to assess the potential for erosion.

Proximity to surface waters was not considered in the SDEAR model. Prior to my issuing final approval of the SDEAR, proximity to surface waters must be considered as a factor that increases the potential for sediment discharge that may degrade surface waters. Therefore, I am conditionally approving the Coalition's SDEAR. For final approval, the Coalition must submit a work plan with a timeline to address proximity to surface waters by **1 January 2016**.

Growers with parcels within areas currently identified in the SDEAR (as conditionally approved) to have the potential for erosion and sediment discharge are required to prepare and certify a Sediment Erosion and Control Plan (SECP) using an approved template (section VII.C of the Order). Based on the date of this conditional approval, the deadline to complete and implement a SECP is 12 February 2016.

If you have any questions or comments regarding this letter, please contact Sue McConnell at Sue.McConnell@waterboards.ca.gov or by phone at 916-464-4798.

Original Signed By

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Central Valley Regional Water Quality Control Board

TO: Sue McConnell, P.E.
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FROM: Lynn Coster
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DATE: 14 August 2015

SUBJECT: REVIEW OF SACRAMENTO VALLEY WATER QUALITY COALITION'S
SEDIMENT DISCHARGE AND EROSION ASSESSMENT REPORT

On 8 June 2015, the Sacramento Valley Water Quality Coalition (Coalition) submitted the Sediment Discharge and Erosion Assessment Report (SDEAR) to the Central Valley Regional Water Quality Control Board (Central Valley Water Board), as required by Order No. R5-2014-0030, Waste Discharge Requirements General Order for Growers within the Sacramento River Watershed that are Members of a Third-Party Group (General Order), Section VIII.E.

As per the General Order, the goal of the report is to determine which irrigated agricultural areas within the Sacramento River Watershed are subject to erosion and have the potential to discharge sediment that may degrade surface waters. At a minimum, the report must provide a description of the sediment and erosion areas as a series of ArcGIS shapefiles with a discussion of the methodologies utilized to develop the report (Attachment B, Section VI). Members within such areas will be required to prepare and implement a Sediment and Erosion Control Plan (SECP) that details water quality management practices to be implemented to reduce or eliminate sediment in storm water and irrigation water discharges (General Order Section IV.B.7).

Review

The SDEAR approach submitted by the Coalition utilizes the Revised Universal Soil Loss Equation (RUSLE) to determine which parcels need a Sediment and Erosion Control Plan. The RUSLE model is a widely accepted and documented method to estimate soil loss. The model can be implemented in the Geographic Information System (GIS), using readily available data as input for the equation, such as rainfall-runoff erosivity, soil erodibility, slope, and slope length. The Coalition's modeling approach is conservative, as it assumes that bare ground conditions exist year-round and no soil protection measures have been implemented. The product of these factors gives a value of soil loss in tons/acre/year. The erosion estimates, rounded to the nearest whole ton, are compared to an erosion threshold of 5 tons/acre/year, the maximum

benchmark used by the Natural Resources Conservation Service to sustainably maintain soil for long-term agricultural use.¹ Parcels that have erosion below the threshold are considered low risk while those above it are considered high risk for erosion and sediment discharge. The RUSLE model of the Coalition's area is similar to the approach used in the State Water Resources Control Board's Construction Storm Water program, but is applied over a much broader area.

Staff agrees that the RUSLE equation is an effective method to estimate soil erosion potential and is one approach in identifying areas that require preparation of a SECP. However the approach is limited, as it is designed to estimate erosion potential from storm water events but does not account for erosion due to irrigation runoff and tailwater discharges.

Review of the shapefile provided with the SDEAR shows a large portion of the Sacramento Valley Watershed is considered to be low risk for erosion based on the RUSLE modeling results. Areas identified as "high-risk" are generally along large waterways in the Sacramento Valley and in the Sutter Buttes, largely due to the topography.

Recommendations

While the SDEAR identifies areas that have the potential for erosion and sediment discharge, additional evaluation is needed to comprehensively assess the Coalition area. Relying solely on the RUSLE modeling results does not provide an adequate assessment of the watershed. An approach to evaluate areas in close proximity to surface water for the potential for erosion and discharge of sediment is necessary in order to comprehensively assess the entire Coalition area and consider the potential for sediment discharge due to irrigation practices. Evaluating areas that are in close proximity to surface waters will ensure that potential erosion and sediment discharge due to irrigation practices that may affect surface waters (i.e., proximity to surface water body) are considered. Therefore, staff recommends conditional approval of the 8 June 2015 SDEAR, with a requirement for the Coalition to develop a plan to address proximity to surface water.

Also, staff agrees with the Coalition's plan to utilize Farm Evaluation Surveys, once they are compiled, as an additional method to identify which Members will be required to prepare and implement a SECP. Staff recommends using Farm Evaluations differently than the method proposed in the Coalition's SDEAR. Parcels where a grower self-reported a potential to discharge sediments to surface waters should complete a SECP, even if the parcels are in a "low-risk" area based on the RUSLE output. However, parcels determined by Farm Evaluations alone to have the potential to discharge sediment should not be included in the SDEAR as an area susceptible to erosion and sediment discharge based on the assessment of regional properties.

The most notable gap is that the SDEAR does not take into account proximity of farming operations to surface waters. The Coalition should develop an approach to evaluate areas in close proximity to surface water for the potential for sediment discharge. If a proximity buffer is

¹ USDA Natural Resources Conservation Service. 2010. From the Surface Down. An Introduction to Soil Surveys for Agronomic Use, Second Edition: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_053238.pdf

applied, reasoning should be provided for the selected buffer distance. Justification should be included for any areas adjacent to surface water but not included as a “high-risk” area, vulnerable to erosion and sediment discharge.