STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

STAFF REPORT FOR REGULAR MEETING OF NOVEMBER 19-20, 2015
Prepared on October 27, 2015

ITEM NUMBER: **12**

SUBJECT: **Adopting Total Maximum Daily Loads for Nitrate in Streams of the San Antonio Creek Watershed in Santa Barbara County, California, Resolution No. R3-2015-0032.**

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THIS ACTION: **Adopt Resolution No. R3-2015-0032**

SUMMARY

Staff recommends adoption of the proposed total maximum daily loads (TMDLs) for nitrate in streams of the San Antonio Creek watershed.

San Antonio Creek is on the 2008-2010 Clean Water Act Section 303(d) List of impaired waters due to excessive levels of un-ionized ammonia and nitrite, as well as low dissolved oxygen levels. The 2008-2010 303(d) List of impaired waters is based on an assessment of water quality data that was available up through December 2006. Central Coast Regional Water Quality Control Board (Central Coast Water Board) staff obtained more recent water quality data and staff analysis of this data indicates that San Antonio Creek is no longer impaired due to exceedances of un-ionized ammonia and nitrite water quality objectives. As such, staff will propose delisting San Antonio Creek for un-ionized ammonia and nitrite in accordance with the California 303(d) Listing Policy during the next listing cycle. In addition, the recent water quality data indicates that the upper portion of San Antonio Creek is impaired due to high nitrate concentrations. San Antonio Creek is not listed for nitrate impairment and, as a result, the proposed TMDLs will address the newfound nitrate impairment. It is important to note that, during development of this TMDL project, staff identified a high nitrate discharge into San Antonio Creek via an agricultural subsurface drainage system. Nitrate concentrations within this subsurface drainage discharge, as well as close proximity to the nearest downstream water quality monitoring site, has led staff to conclude that this discharge is most likely the only source responsible for the nitrate impairment. Staff and the cooperative agricultural operator have since coordinated and the high nitrate subsurface drainage discharge has been eliminated. This resolution proposes TMDLs and associated allocations for nitrate in the event that other sources from agricultural operations contribute to the nitrate impairment, while also protecting unimpaired waters from degradation by reiterating provisions of the anti-degradation policy.

Staff evaluated potential biostimulatory conditions that may lead to low dissolved oxygen conditions within San Antonio Creek, such as nutrient enrichment and resulting elevated algal biomass (chlorophyll *a,* excessive algae). Staff concluded that low dissolved oxygen conditions are most likely due to natural conditions rather than nutrient enrichment. San Antonio Creek will remain on the 2008-2010 303(d) List of impaired waters due to low dissolved oxygen and staff will evaluate this impairment in a future TMDL or water quality standards action.

The geographic scope of this TMDL (the project area) includes the San Antonio Creek Watershed (Hydrologic Unit Code 1806000901), which encompasses approximately 152.6 square miles (97,651 acres) in northern Santa Barbara County. The San Antonio Creek watershed is a narrow, east-west trending drainage that lies between the Santa Maria River watershed to the north and the Santa Ynez watershed to the south. Nearly one quarter of the westernmost portion of the watershed lies within Vandenberg Air Force Base where San Antonio Creek enters the Pacific Ocean just north of Purisima Point.

The proposed TMDLs, numeric targets, and load allocations for nitrate will result in meeting water quality objectives for the municipal and domestic supply (MUN) beneficial use. Central Coast Water Board staff has identified sources of nitrate that are causing or contributing to water quality impairment, has identified parties responsible for these sources, and has proposed load allocations necessary to achieve the TMDLs.

Staff has identified the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands in the Central Coast Region (Agricultural Order) as the existing regulatory mechanism to achieve the TMDLs. No new regulatory mechanism is being proposed to implement and achieve the TMDLs.

These TMDLs are being adopted not through a basin plan amendment, but through the Central Coast Water Board's approval of the resolution associated with this agenda item, which includes findings that the Agricultural Order will implement the TMDLs. According to state policy, the Board is encouraged to take this approach of TMDL approval when the impairments can be addressed through a single action by the Board; the approach conserves valuable state resources and avoids regulatory redundancy.

For this agenda item, staff recommends the Central Coast Water Board approve the resolution (Attachment 1 to this staff report) that establishes TMDLs for nitrate in streams of the San Antonio Creek watershed.

Staff developed the technical basis for the TMDLs and associated allocations, which is provided in the Final TMDL Report (Attachment 2 to this staff report). The Final TMDL Report is provided on the Central Coast Water Board's website:

http://www.waterboards.ca.gov/centralcoast/water_issues/programs/tmdl/docs/san_antonio/nutrients/index.shtml

DISCUSSION

Project Development for the TMDLs

Staff developed the TMDLs using data and information from the Central Coast Ambient Monitoring Program (CCAMP).

Numeric Targets

The Water Quality Control Plan for the Central Coastal Basin (Basin Plan) contains specific water quality objectives that apply to all inland surface waters, enclosed bays and estuaries.

Relevant water quality objectives for this project include the Basin Plan water quality objective for municipal and domestic supply (MUN), which states:

> *Waters shall not contain concentrations of chemical constituents in excess of the limits specified in California Code of Regulations, Title 22, Article 4, Chapter 15, Section 64435, Tables 2 and 3 as listed in Table 3-2 (Region 3 Basin Plan, p III-3). In Table 3-2, the maximum contaminant level (MCL) for Nitrate (as NO_3) in Domestic or Municipal Supply is 45 milligrams per liter (mg/L).*

The MUN water quality objective of 45 mg/L nitrate as nitrate (NO_3 as NO_3) is equivalent to 10 mg/L nitrate as nitrogen (NO_3 as N).

The Basin Plan contains general water quality objectives for all inland surface waters, enclosed bays, and estuaries. The narrative water quality objective for toxicity states, in part:

> *All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in human, plant, animal, or aquatic life.*

Staff selected water column numeric target values for nitrate as a direct measure of water quality conditions for the protection of the municipal and domestic supply (MUN) beneficial use. The Basin Plan numeric water quality objective for nitrate (as nitrogen) is 10 mg/L; therefore, the nitrate target is set at the Basin Plan water quality objective as follows:

> *Receiving water column nitrate (as nitrogen) concentrations must not exceed 10 mg/L.*

Source Analysis

Discharges from irrigated agriculture in the project area are the single controllable source causing impairment due to nitrate. Staff described sources of nitrate in the project area in Chapter 6 of the Final TMDL Report (Attachment 2 to this staff report).

TMDLs and Allocations

The nitrate TMDLs for streams in the San Antonio Creek watershed are concentration-based, equal to the numeric target as described in the numeric targets section above. Concentration-based TMDLs are an appropriate expression of TMDLs and meet USEPA requirements for TMDL approval.

Owners and operators of agricultural lands using nitrate are assigned load allocations equal to the TMDLs and numeric targets. Note that the TMDLs and allocations are receiving water concentrations equal to the existing water quality objective in place to protect the municipal and domestic supply (MUN) beneficial use.

Implementation and Monitoring

Owners and operators of irrigated agricultural land must comply with the Agricultural Order and accompanying monitoring and reporting programs in accordance with Orders R3-2012-0011-01, R3-2012-0011-02, and R3-2012-0011-03, or their renewals or replacements, to meet load allocations and achieve the TMDLs. The requirements in these orders, and their renewals or

replacements in the future, will implement the TMDLs and rectify the impairments addressed in the TMDLs.

Current requirements in the Agricultural Order that will result in achieving the load allocations include:

- Implement, and update as necessary, management practices to reduce nutrient loading.
- Maintain existing, naturally occurring riparian vegetative cover in aquatic habitat areas.
- Develop/update and implement Farm Plans.
- Properly destroy abandoned groundwater wells.
- Develop and initiate implementation of an Irrigation and Nutrient Management Plan or alternative certified by a Professional Soil Scientist, Professional Agronomist, or Crop Advisor certified by the American Society of Agronomy, or similarly qualified professional.

The current Agricultural Order provides the requirements necessary to implement these TMDLs. Therefore, no new requirements are proposed as part of this TMDL project.

Central Coast Water Board staff will conduct a review of implementation activities as monitoring and reporting data are submitted as required by the Agricultural Order, or when other monitoring data and/or reporting data are submitted outside the requirements of the Agricultural Order. Central Coast Water Board staff will pursue modification of Agricultural Order conditions, or other regulatory means, if necessary, to address remaining impairments resulting from nitrate during the TMDL implementation phase.

The urban municipal separate storm sewer system (MS4) entities of the County of Santa Barbara and Vandenberg Air Force Base are in compliance with water quality objectives for nitrate. Therefore, TMDL waste load allocations for nitrate are not proposed for incorporation into the applicable MS4 storm water permits. To protect and maintain water quality, and to continue complying with water quality objectives for nitrate, these MS4 entities must continue to implement their stormwater permit.

Determination of Compliance with Load Allocations for Irrigated Lands

Demonstration of compliance with the load allocations is consistent with compliance with the Agricultural Order. Load allocations will be achieved through a combination of implementation of management practices and strategies to reduce nitrate loading, and water quality monitoring. Flexibility to allow owners/operators of irrigated lands to demonstrate compliance with load allocations is a consideration; additionally, staff is aware that not all implementing parties are necessarily contributing to or causing surface water impairment.

To allow for flexibility, Central Coast Water Board staff will assess compliance with load allocations using one or a combination of the following metrics:

- Attaining the load allocations in the receiving water.
- Demonstrating quantifiable receiving water mass load reductions.
- Implementing management practices that are capable of achieving load allocations identified in this TMDL project.
- Providing sufficient evidence to demonstrate that they are and will continue to be in compliance with the load allocations; such evidence could include documentation submitted by the owner/operator to the Executive Officer that the owner/operator is not causing waste

to be discharged to impaired waterbodies resulting or contributing to violations of the load allocations.

Time Schedule for Tracking Progress and Achieving the TMDLs

The target date to achieve the allocations, numeric targets, and TMDLs in streams of the San Antonio Creek watershed is November 2020. Staff concludes that the TMDLs are achievable by this date because the most likely source of nitrate impairment has been identified and eliminated, it provides enough time for other potential irrigated agricultural sources to control their discharges of nitrate, and CCAMP data will be available in 2020 to verify that no other sources are contributing to nitrate impairment.

ANTI-DEGRADATION

The proposed TMDLs are consistent with the provisions of the State Water Resources Control Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California" and 40 CFR 131.12. The adoption of the proposed TMDLs and the TMDL implementation strategy will not de-designate or limit beneficial use designations, will not relax any water quality standard, and will not result in lowering of water quality; therefore, state and federal anti-degradation analyses are not required.

PUBLIC INVOLVEMENT AND COMMENTS

Staff conducted stakeholder outreach efforts during TMDL development and engaged with local land owners and land operators, agricultural representatives, resource professionals, and public agencies. Staff conducted a public workshop on January 29, 2015. On September 4, 2015, prior to the formal written comment period, staff provided a project update via the stakeholder email subscription list.

The staff report, resolution, and TMDL report were made available for a 30-day public comment commencing on September 18, 2015.

No public comments were received.

RECOMMENDATION

Adopt Resolution No. R3-2015-0032 as proposed.

ATTACHMENTS

1. Resolution No. R3-2015-0032
2. Final TMDL Report: "Total Maximum Daily Loads for Nitrate in Streams of the San Antonio Creek Watershed, Santa Barbara County, California"