State of California
California Regional Water Quality Control Board, Los Angeles Region

RESOLUTION NO. 03-011
August 7, 2003

Amendment to the Water Quality Control Plan for the Los Angeles Region to include a TMDL for Nitrogen Compounds in the Santa Clara River

WHEREAS, the California Regional Water Quality Control Board, Los Angeles Region, finds that:

1. The federal Clean Water Act (CWA) requires the California Regional Water Quality Control Board (Regional Board) to develop water quality standards which include beneficial use designations and criteria to protect beneficial uses for each water body found within its region.

2. The Regional Board carries out its CWA responsibilities through California's Porter-Cologne Water Quality Control Act and establishes water quality objectives designed to protect beneficial uses contained in the Water Quality Control Plan for the Los Angeles Region (Basin Plan).

3. Regional Board Resolution No. 2002-011 amended the Basin Plan on April 25, 2002 to update the ammonia objectives for inland surface waters, including the Santa Clara River. The revised ammonia objectives are based on 1991 U.S. Environmental Protection Agency (USEPA) guidance documents.

4. Section 303(d) of the CWA requires states to identify and to prepare a list of water bodies that do not meet water quality standards. The Santa Clara River was listed on California's 202 section 303(d) list, due to impairment for nitrogen compounds.

5. A consent decree between the U.S. Environmental Protection Agency (USEPA), Heal the Bay, Inc., and BayKeeper, Inc. was approved on March 22, 1999. The court order directs the USEPA to complete TMDLs for all the Los Angeles Region's impaired waters within 13 years.

6. The elements of a TMDL are described in 40 CFR sections 130.2 and 130.7 and section 303(d) of the CWA, as well as in USEPA guidance documents (e.g., USEPA, 1991). A TMDL is defined as "the sum of the individual waste load allocations for point sources and load allocations for nonpoint sources and natural background." (40 CFR § 130.2.) Regulations further stipulate that TMDLs must be set at "levels necessary to attain and maintain the applicable narrative and numeric water quality standards with seasonal variations and a margin of safety that takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality." (40 CFR § 130.7(c)(1).) The regulations in 40 CFR section 130.7 also state

that TMDLs shall take into account critical conditions for stream flow, loading and water quality parameters.

7. Upon establishment of TMDLs by the State or USEPA, the State is required to incorporate the TMDLs along with appropriate implementation measures into the State Water Quality Management Plan. (40 CFR §§ 130.6(c)(1), 130.7.) The Basin Plan, and applicable statewide plans serve as the State Water Quality Management Plans governing the watersheds under the jurisdiction of the Regional Board.

8. The Santa Clara River is located in Los Angeles and Ventura Counties and is the largest river system in the Los Angeles Region that remains in a relatively natural state. It drains from the east beginning in the Transverse Ranges below Soledad Pass through the Santa Clara River and its major tributaries, Castaic, Piru, Hopper, Sespe and Santa Paula Creeks to Pacific Ocean. The proposed TMDL addresses documented water quality impairments by nitrogen compounds.

9. The Regional Board's goal in establishing the above-mentioned TMDL is to maintain the warm freshwater and wildlife habitats (WARM, WILD), groundwater recharge (GWR) and others beneficial uses of Santa Clara River as established in the Basin Plan. Additionally, ammonia is known to cause toxicity to aquatic organisms.

10. Interested persons and the public have had reasonable opportunity to participate in review of the amendment to the Basin Plan. Efforts to solicit public review and comment include more than eighteen public workshops held between February 11, 2002 and June 12, 2003; public notification 45 days preceding the Board hearing; and responses from the Regional Board staff to oral and written comments received from the public.

11. The amendment is consistent with the State Antidegradation Policy (State Board Resolution No. 68-16), in that the changes to water quality objectives (i) consider maximum benefits to the people of the state, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies. Likewise, the amendment is consistent with the federal Antidegradation Policy. (See 40 CFR § 131.12.)

12. The basin planning process has been certified as functionally equivalent to the California Environmental Quality Act requirements for preparing environmental documents and is, therefore, exempt from those requirements (Public Resources Code, Section 21000 et seq.), and the required environmental documentation and CEQA environmental checklist have been prepared.

13. The Regional Board staff conducted a CEQA scoping meeting on June 12, 2003, to allow interested persons to comment on the environmental issues that should be addressed when considering the Basin Plan amendment.

14. In developing the Basin Plan amendment, staff considered alternatives to the Basin Plan amendment considered by the Regional Board. Among the alternatives

considered were (1) a no action alternative, (2) an implementation program that would be shorter than that prescribed by the Basin Plan amendment, and (3) an implementation program that would be longer than that prescribed by the Basin Plan amendment. Staff also considered alternatives proposed by interested persons. These alternatives are set forth in the administrative record, staff proposal, and the response to comments.

15. The expression of the wasteload allocations as concentrations does not limit the Regional Board's discretion in translating the wasteload allocations into NPDES permit effluent limitations.

16. The proposed amendment results in no potential for adverse effect (de minimis finding), either individually or cumulatively, on wildlife.

17. The regulatory action meets the "Necessity" standard of the Administrative Procedures Act, Government Code, section 11353, subdivision (b).

18. The Basin Plan amendment incorporating a TMDL for nitrogen compounds for the Santa Clara River must be submitted for review and approval by the State Water Resources Control Board (State Board), the State Office of Administrative Law (OAL), and the US Environmental Protection Agency (USEPA). The Basin Plan amendment will become effective upon approval by OAL and USEPA. A Notice of Decision will be filed.

THEREFORE, be it resolved that pursuant to Section 13240 and 13242 of the Water Code, the Regional Board hereby amends the Basin Plan as follows:

1. Pursuant to sections 13240 and 13242 of the California Water Code, the Regional Board, after considering the entire record, including oral testimony at the hearing, hereby adopts the amendment to Chapter 7 the Water Quality Control Plan for the Los Angeles Region to incorporate the elements of the Santa Clara River Nitrogen Compounds TMDL as set forth in Attachment A hereto.

2. The Executive Officer is directed to forward copies of the Basin Plan amendment to the State Board in accordance with the requirements of section 13245 of the California Water Code.

3. The Regional Board requests that the State Board approve the Basin Plan amendment in accordance with the requirements of sections 13245 and 13246 of the California Water Code and forward it to OAL and the USEPA.

4. If during its approval process the SWRCB or OAL determines that minor, non-substantive corrections to the language of the amendment are needed for clarity or consistency, the Executive Officer may make such changes, and shall inform the Board of any such changes.

5. The Executive Officer is authorized to sign a Certificate of Fee Exemption.

6. Amend the text in the Basin Plan, Plans and Policies (Chapter 5) to add:

   "Resolution No. 03-011. Adopted [August 7, 2003].
   'Amendment to include a TMDL for Nitrogen Compounds for Santa Clara River'
   The resolution proposes a TMDL for nitrogen compounds in the Santa Clara River."

I, Dennis A. Dickerson, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a resolution adopted by the California Regional Water Quality Control Board, Los Angeles Region, on August 7, 2003.

Original Signed By

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Dennis A. Dickerson
Executive Officer

Attachment A to Resolution No. 03-011

Amendment to the Water Quality Control Plan – Los Angeles Region

to Incorporate the

Santa Clara River Nitrogen Compounds TMDL

Proposed for adoption by the California Regional Water Quality Control Board, Los Angeles Region on August 7, 2003.

Amendments

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Chapter 7. Total Maximum Daily Loads (TMDLs)
Santa Clara River Nitrogen Compounds TMDL

This TMDL was adopted by:

The Regional Water Quality Control Board on [August 7, 2003].

This TMDL was approved by:

The State Water Resources Control Board on [Insert Date].
The Office of Administrative Law on [Insert Date].
The U.S. Environmental Protection Agency on [Insert Date].

The following table describes the key elements of this TMDL.

Table 7-9.1. Santa Clara River Nitrogen Compounds TMDL: Elements

Element	Santa Clara River Nitrogen Compounds TMDL
Problem Statement	Discharge of wastes containing nitrite, nitrate and ammonia to the Santa Clara River causes exceedances of water quality objectives for ammonia, nitrate and nitrite established in the Basin Plan. The Santa Clara River is listed as impaired by ammonia in Reach 3 and by nitrate plus nitrite in Reach 7 on the 2002 303(d) list of impaired water bodies. Reach 8 of the Santa Clara River is included on the State Monitoring List for organic enrichment/dissolved oxygen, which may be caused by excessive nitrogen. Nitrate and nitrate are biostimulatory substances that can cause eutrophic effects such as low dissolved oxygen and algae growth. Excessive ammonia can cause aquatic life toxicity.
Numeric Target (Interpretation of the numeric water quality objective, used to calculate the load allocations)	• Total ammonia as nitrogen (NH_3-N) Reach / One-hour (mg-N/L) / Thirty-day (mg-N/L) Reach 8 / 14.8 / 3.2 Reach 7 above Valencia / 4.8 / 2.0 Reach 7 below Valencia / 5.5 / 2.0 Reach 7 at County Line / 3.4 / 1.2 Reach 3 above Santa Paula / 2.4 / 1.9 Reach 3 at Santa Paula / 2.4 / 1.9 Reach 3 below Santa Paula / 2.2 / 1.7 • Nitrate plus Nitrite as Nitrogen (NO_3-N + NO_2-N) Thirty-day average 9.0 mg-N/L in Reach 8 4.5 mg-N/L in Reaches 3 and 7 Narrative objectives for biostimulatory substances and toxicity are based on the Basin Plan. The TMDL analysis indicates that the numeric targets will implement the narrative objectives. The Implementation Plan includes monitoring and special studies to verify that the TMDL will implement the narrative objectives.
Source Analysis	The principal source of ammonia, nitrite, and nitrate to the Santa Clara River is discharges from the Saugus and Valencia Water Reclamation Plants (WRPs) and the Fillmore and Santa Paula Publicly Owned Treatment Works (POTWs). Agricultural runoff, stormwater discharge and groundwater discharge may also contribute nitrate loads. Further evaluation of these sources is set forth in the Implementation Plan.
Linkage Analysis	Linkage between nitrogen sources and the in-stream water quality was established through hydrodynamic and water quality models. The Watershed Analysis Risk Management Framework was used to model the hydrodynamic characteristics and water quality of the Santa Clara River. The analysis demonstrated that major point sources (WRPs and POTWs)

Element	Santa Clara River Nitrogen Compounds TMDL
	were the primary contributors to in-stream ammonia and nitrate plus nitrite loads. Nonpoint sources and minor point sources contributed a much smaller fraction of these loads.
Wasteload Allocations (for point sources)	Major point sources: Concentration-based wasteloads are allocated to major point sources of ammonia in Reach 3, which include the Fillmore and Santa Paula POTWs; concentration-based wasteloads are allocated to major point sources of nitrite + nitrate in Reaches 7 and 8 , which include the Valencia and Saugus WRPs. The Implementation Plan provides reconsideration of the WLAs by the Regional Board based on water effect ratio (WER) studies and updated data 5 years after the effective date of the TMDL. • Total ammonia as nitrogen (NH_3-N): POTW — One-hour average — Thirty-day average Saugus WRP — 5.6 mg/L — 2.0 mg/L Valencia WRP — 5.2 mg/L — 1.75 mg/L Fillmore POTW — 4.2 mg/L — 2.0 mg/L Santa Paula POTW — 4.2 mg/L — 2.0 mg/L • Nitrate-nitrogen (NO_3-N), Nitrite-nitrogen (NO_2-N), and Nitrate plus Nitrite as nitrogen (NO2-N+NO3-N): Thirty-day average WLA* POTW — NO_2-N — NO_3-N — NO2-N+NO3-N Saugus WRP — 0.9 mg/L — 7.1 mg/L — 7.1 mg/L Valencia WRP — 0.9 mg/L — 6.8 mg/L — 6.8 mg/L Fillmore POTW — 0.9 mg/L — 8.0 mg/L — 8.0 mg/L Santa Paula POTW — 0.9 mg/L — 8.0 mg/L — 8.0 mg/L *Receiving water monitoring is required on a weekly basis to ensure compliance with the water quality objectives for nitrite, nitrate, nitrite + nitrate, and dissolved oxygen. Minor Point Sources: Concentration-based wasteloads are allocated to minor discharges enrolled under NPDES or WDR permits. The allocations for minor point sources are based on the water quality objectives for ammonia, nitrite, nitrate and nitrite plus nitrate. For minor dischargers discharging into Reach 7, the thirty-day average WLA for ammonia as nitrogen is 1.75, the one-hour WLA for ammonia as nitrogen is 5.2, and the thirty-day average WLA for nitrate plus nitrite as nitrogen is 6.8 mg/L. For minor dischargers discharging into Reach 3, the thirty-day WLA for ammonia as nitrogen is 2.0 mg/L and the one hour WLA for ammonia as nitrogen is 4.2 mg/L, and

Element	Santa Clara River Nitrogen Compounds TMDL
	the thirty-day average WLA for nitrate plus nitrite as nitrogen is 8.1 mg/L. <u>MS4 and Stormwater Sources</u>: Concentration-based wasteloads are allocated to municipal, industrial and construction stormwater sources regulated under NPDES permits. For stormwater permittees discharging into Reach 7, the thirty-day WLA for ammonia as nitrogen is 1.75 mg/L and the one-hour WLA for ammonia as nitrogen is 5.2 mg/L; the thirty-day average WLA for nitrate plus nitrite as nitrogen is 6.8 mg/L. For stormwater permittees discharging into Reach 3, the thirty-day WLA for ammonia as nitrogen is 2.0 mg/L and the one-hour WLA for ammonia as nitrogen is 4.2 mg/L; the thirty-day average WLA for nitrate plus nitrite nitrogen is 8.1 mg/L.
Load Allocation (for nonpoint sources)	Concentration-based loads for nitrogen compounds are allocated for nonpoint sources. For nonpoint sources discharging to Reach 7, the combined ammonia, nitrate, nitrite (NH_3-N + NO_2-N + NO_3-N) load as nitrogen is 8.5 mg-N/L. For non-point sources discharging into other reaches of the Santa Clara River, Mint Canyon Reach 1, Wheeler Canyon/Todd Barranca, and Brown Barranca/Long Canyon, the combined ammonia, nitrate, nitrite (NH_3-N + NO_2-N + NO_3-N) loads as nitrogen is 10 mg-N/L. Monitoring is established in the TMDL Implementation Plan to verify the nitrogen nonpoint source contributions from agricultural and urban runoff and groundwater discharge.
Implementation	• Ammonia, nitrite, and nitrate reductions will be regulated through effluent limits prescribed in POTW and minor point source NPDES Permits, Best Management Practices required in NPDES MS4 Permits, and SWRCB Management Measures for non point source discharges. • At the Regional Board's discretion, the following interim effluent limits will be allowed for a period not to exceed five years from the effective date of the TMDL: <u>Interim Limits for Nitrite, Nitrate, and Nitrite plus Nitrate as nitrogen</u> Thirty-day Average Interim Limits POTW — NO_2-N — NO_3-N — NO_2-N + NO_3-N Saugus WRP — 1mg/L — 10 mg/L — 10 mg/L Valencia WRP — 1mg/L — 10 mg/L — 10 mg/L <u>Interim Limits for combined Ammonia, Nitrate, and Nitrite as nitrogen</u> POTW — Thirty-day Average — Daily Maximum Fillmore WRP — 32.8 mg-N/L — 38.9 mg-N/L Santa Paula WRP — 41.8 mg-N/L — 49.0 mg-N/L The Implementation Plan also includes special studies and monitoring for ammonia, nitrite, and nitrate to evaluate the effectiveness of nitrogen

Element	Santa Clara River Nitrogen Compounds TMDL
	reductions. The Implementation Plan also includes special studies to address issues regarding water quality standards and site-specific objectives and a reconsideration of waste load allocations based on monitoring data and special studies.
Margin of Safety	An explicit margin of safety of 10 percent of the nitrogen loads is allocated to address uncertainty in the source and linkage analyses. In addition, an implicit margin of safety is incorporated through conservative model assumptions and statistical analysis.
Future Growth	Urban growth in the upper watershed is predicted to require the expansion of the Valencia Water Reclamation Plan, construction of an additional water reclamation plant, and increased use of reclaimed water. Wasteload and load allocations will be developed for these new sources as required to implement appropriate water quality objectives for ammonia, nitrite, and nitrate
Seasonal Variations and Critical Conditions	The critical condition identified for this TMDL is based on the low flow condition defined as the 7Q10. In addition, the driest six months of the year are identified as a more critical condition for nitrogen compounds because less surface flow is available to dilute effluent discharge. The model result also indicates a critical condition during the first major storm event after a dry period. The implementation plan includes monitoring to verify this potential critical condition.

Table 7-9.2. Implementation Schedule

Implementation Tasks, Milestones and Provisions	Responsible Party	Completion Date
1. Apply interim limits for ammonia, nitrite, and nitrate to Fillmore and Santa Paula POTWs. 2. Apply interim limits for Nitrate to Saugus and Valencia WRPs. 3. Apply WLAs to minor point source dischargers and MS4 permittees. 4. Include monitoring for nitrogen compounds in NPDES and WDR permits for minor dischargers as permits are renewed.	Fillmore and Santa Paula POTWs; NPDES and WDR permittees	Effective Date of TMDL
5. Submittal of a Work Plan by Los Angeles County and Ventura County MS4 permittees to estimate ammonia and nitrogen loadings associated with runoff loads from the storm drain system for approval by the Executive Officer of the Regional Board. The Work Plan will include monitoring for ammonia, nitrate, and nitrite. The Work Plan may include a phased approach wherein the first phase is based on monitoring from the existing mass emission station in the Santa Clara River. If the monitoring studies reflect a higher average concentration in stormwater than originally considered, then the linkage analysis would be refined to consider the increased loading. The Work Plan will also contain protocol and a schedule for implementing additional monitoring if necessary. The Work Plan will also propose triggers for conducting source identification and implementing BMPs, if necessary. Source identification and BMPs will be in accordance with the requirements of MS4 permits.	Los Angeles and Ventura Counties MS4 Permittees	1 year after the Effective Date of TMDL
6. Submittal of Work Plan by major NPDES permittees to asses and monitor the surface water quality, including, without limitation, monthly measurement of dissolved oxygen on an hourly basis, pH and instream denitrification processes, and groundwater where appropriate, for aquatic life impacts,	Cities of Fillmore and Santa Paula, and County Sanitation Districts of Los Angeles County	1 year after Effective Date of TMDL

Implementation Tasks, Milestones and Provisions	Responsible Party	Completion Date
macroinvertebrate diversity, algal mass, and nutrient species in the Santa Clara River for approval by the Regional Board's Executive Officer. The Work Plan will include evaluation of the effectiveness of the POTW in meeting WLAs. Submittal of a work plan that demonstrates compliance with final wasteload allocations or demonstrates a schedule for compliance with final wasteload allocations is as short as possible.		
7. Submittal of special studies Work Plan by County Sanitation Districts of Los Angeles County to evaluate site-specific objectives (SSOs) for nitrate for approval by the Regional Board's Executive Officer.	County Sanitation Districts of Los Angeles County	1 year after Effective Date of TMDL
8. Submittal of results from water effects ratio study for ammonia by County Sanitation Districts of Los Angeles County.	County Sanitation Districts of Los Angeles County	Effective Date of TMDL
9. Evaluation of feasibility of including stakeholders in the Upper Santa Clara River watershed in the Regional Board Septic Tank task force.	Regional Board	3.5 year after Effective Date of TMDL
10. Regional Board considers a Basin Plan Amendment for site-specific objectives for ammonia and nitrite plus nitrate based on results of Tasks 7 and 8.	Regional Board	1 year after Effective Date of TMDL for ammonia; 4 years after the Effective Date of the TMDL for nitrite plus nitrate
11. Based on the results Task 5-10 and NPDES Monitoring, complete implementation of advanced treatment or additional treatment modifications to achieve WLAs for POTWs, if necessaryin as short a period of time as possible, as determined during NPDES permit issuance or modification, but not later than eight years after the effective date of the TMDL; if advanced treatment is not required, interim limits will expire in as short a period of time as possible, as determined during NPDES permit reissuance or modification, no later than five years after the effective date of the TMDL. The wasteload allocation compliance date will be	POTW Permittees	8 years after Effective Date of TMDL

Implementation Tasks, Milestones and Provisions	Responsible Party	Completion Date
synchronized with the expiration date of interim limits specified in Task 13.		
12. Interim limits for ammonia and nitrate expire and WLAs apply to WRPs and POTWs. The Regional Board will consider extending the duration of the remaining schedule and re-evaluating interim limits if WLAs for WRPs and POTWs are reduced after SSO considerations.	POTW Permittees Regional Board	Based on results of Tasks 6 and 10: if additional modifications or advanced nitrification/denitrification facilities are required, interim limits will expire in as short a period of time as possible, as determined during NPDES permit issuance or modification interim limits, but not later than eight years after the effective date of the TMDL; if advanced treatment is not required, interim limits will expire in as short a period of time as possible, as determined during NPDES permit issuance or modification, but not later than 5 years after the Effective Date of the TMDL.
13. Annual progress reports on the Implementation Plan shall be provided to the Regional Board by the responsible parties or their representatives.	➢ NPDES permitees, ➢ Board staff ➢ MS-4 permittees. ➢ Newhall Land and Farming ➢ United Water Conservation District ➢ Friends of the Santa Clara River ➢ Ventura Coast Keeper and Heal the Bay.	Annually after Effective Date of TMDL.