California Regional Water Quality Control Board

Los Angeles Region

Over 50 Years Serving Coastal Los Angeles and Ventura Counties

Recipient of the 2001 *Environmental Leadership Award* from Keep California Beautiful

Winston H. Hickox
Secretary for Environmental Protection

Gray Davis
Governor

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: http://www.swrcb.ca.gov/rwqcb4

TO: Stan Martinson, Chief
Division of Water Quality
State Water Resources Control Board

DWQ Received
Chief's Office
SEP 26 2003
(by Gax Sep 23, 03)

FROM: Dennis A. Dickerson
Executive Officer

DATE: September 19, 2003

SUBJECT: MINOR, NON-SUBSTANTIVE CORRECTIONS TO THE LANGUAGE OF THE BASIN PLAN AMENDMENT ADOPTED IN RESOLUTION NO. 03-009, AMENDING THE WATER QUALITY CONTROL PLAN, LOS ANGELES REGION (BASIN PLAN) TO INCLUDE A TOTAL MAXIMUM DAILY LOAD (TMDL) FOR NITROGEN COMPOUNDS AND RELATED EFFECTS IN LOS ANGELES RIVER

At the Regional Board hearing on July 10, 2003, the Regional Board voted to amend the Basin Plan to include a TMDL for nitrogen compounds and related effects in Los Angeles River and its tributaries. The subject Basin Plan amendment sets numeric targets and wasteload and load allocations for ammonia and nitrogen (nitrate-nitrogen, nitrite-nitrogen, and nitrate-nitrogen + nitrite-nitrogen). It also sets forth an implementation plan to achieve these allocations, and monitor and evaluate the effect of nitrogen load reductions on related water quality effects such as algae. The Basin Plan amendment will address impairments of Los Angeles River so that water quality standards are attained.

Resolution No. 03-009 permits the Regional Board Executive Officer to make minor, non-substantive corrections to the language of the Basin Plan amendment if the Office of Administrative Law (OAL) or State Water Resources Control Board (SWRCB) determines during the approval process that the corrections are needed for clarity or consistency.

The SWRCB has determined that the corrections set forth below are necessary for clarity. These corrections were transmitted in a memorandum from Stan Martinson of the State Board Division of Water Quality to me on September 12, 2003. Based on Mr. Martinson's correspondence I hereby make the following minor, non-substantive corrections to the language of the Basin Plan Amendment:

1) Page 6, Table 7-8.1, Problem Statement: Replace the existing wording with the following for clarification:
"Reaches of the Los Angeles River and its tributaries were listed as impaired for nitrogen compounds (ammonia, nitrate, and nitrate) and related effects such as algae, pH, odor, and scum on the 2002 303(d) list. These reaches were listed because numeric and narrative water

quality objectives for nitrogen compounds and related effects were exceeded, thereby impairing warm, freshwater, and wildlife habitats, and recreation beneficial uses."

2) Page 6, Table 7-8.1, Numeric Targets:
   a) Numeric Targets for ammonia for the Los Angeles River reaches where the major POTWs discharge are defined as follows for clarification:

      "Numeric targets are dependent on temperature and pH of receiving water. Based on the last three years of temperature and pH data, the ammonia numeric targets for receiving waters correspondent to major discharge points are provided below:

      Receiving water correspondent to major discharge point
      One-hour average
      Thirty-day average

      Los Angeles River Reach 5 (within Sepulveda Basin) - Donald C. Tillman WRP
      4.7 mg/L
      1.6 mg/L

      Los Angeles River Reach 3 (Riverside Dr. to Figueroa St.) - Los Angeles/ Glendale WRP
      8.7 mg/L
      2.4 mg/L

      Burbank Western Channel - Burbank WRP
      10.1 mg/L
      2.3 mg/L

      These numeric targets are intended to implement the water quality objectives in the Los Angeles River reaches impaired by ammonia."
   b) Revise the last paragraph to read, "The numeric targets are intended to implement narrative objectives required to protect warm fresh water and wildlife habitats and may be revised based on the results of monitoring and studies conducted pursuant to the implementation plan."

3) Page 7, Table 7-8.1, Source Analysis:
   a) Delete the words "ammonia and" from the sentence, "The principal source of ammonia and nitrogen compounds to the Los Angeles River is...."
   b) Delete the word "Dry weather" from the sentence, "Dry weather urban runoff, stormwater, and groundwater discharge may also contribute nitrate loads."

4) Page 7, Table 7-8.1, Wasteload Allocations:
   a) Delete the introductory paragraph: "Concentration-based wasteloads are allocated to major point sources of ammonia and nitrogen compounds to the Los Angeles River, which include the Donald C. Tillman WRP, the Los Angeles-Glendale WRP, and the

Burbank WRP. Based on the last two years of temperature and pH data, the ammonia WLAs for the major POTWs are provided below:"

b) Delete the following paragraph "The implementation plan provides reconsideration of the WLAs by the Regional Board based on WER studies and updated data. The Regional Board will consider the WER report and a site specific objective for ammonia no later than 3.5 years from the effective date of the TMDL."

5) Page 8, Table 7-8.1, Minor point sources:
   a) Replace the word "minor discharges" with "minor point sources"
   b) Add "by receiving water" to the end of the sentence "Ammonia wasteload allocations (WLAs) for minor point sources are listed below."
   c) "LAG" is referenced as "Los Angeles-Glendale WRP"

6) Page 9, Table 7-8.1, Load Allocation:
   a) Replace the word "insignificant" with the phase "negligible compared to loading from point sources."
   b) Replace the second and third sentence with the following "Consequently, load allocations will not be developed unless it is determined they are necessary after load reductions are effected through implementation of the wasteload allocations."

7) Page 9, Table 7-8.1, Implementation:
   a) Replace the following sentences "To allow time for completion of the nitrification/denitrification facilities which are integral to this TMDL, the amendment to the Basin Plan made by this TMDL allows for higher interim loads which translate as interim effluent limits for a period not to exceed 3.5 years from the effective date of the TMDL (at the discretion of the Regional Board). The following interim limits will apply to NH_3-N, and NO_3-N + NO_2-N" with the sentence "At the discretion of the Regional Board, the following interim limits for ammonia, and nitrate plus nitrite will be allowed for major point sources for a period not to exceed 3.5 years from the effective date of this TMDL."
   b) Delete the words "depressed oxygen" from the last paragraph since Los Angeles River is not listed for low dissolved oxygen.

8) Page 9, Table 7-8.1, Margin of Safety: Remove the last two sentences, "Impairment is typically based on exceeding the single sample objective in more than 10% of the samples. By incorporating an implicit margin of safety, the number of samples exceeding the water quality objective will be less than 10% of the samples measured in-stream."

9) Page 10, Table 7-8.1, Seasonal Variations: The paragraph is revised to read, "The critical condition identified for this TMDL is based on low flow condition. The driest six months of

the year are the most critical condition for nutrients because less surface flow is available to dilute effluent discharge"

10) Page 11, Table 7-8.2, Implementation Schedule:

This Implementation Schedule was established to allow the dischargers to propose the most expeditious schedule for completing the tasks within the Workplans. These Workplans will contain a schedule to complete the work that will be subject to approval of the Executive Officer of the Regional Board. Therefore, there are no changes to the language regarding the time frame for Workplan initiation and results submission in Table 7-8.2.

However, in accordance with your memorandum, the following changes have been made to the Implementation Schedule:

a) Task 3: Add the words "Begin to" at the start of the sentence
b) Task 4: Delete the words "ammonia and" from the first sentence
c) Task 5:
   - Add the word "pH" to the monitoring program (second sentence)
   - Delete the sentence "A key objective of these studies will be to determine the effectiveness of nitrogen reductions on removing impairments related to algae, foam, odor, scum and pH."
   - Replace the words "development of appropriate numeric targets for nutrients and algae" with " refining numeric targets for nitrogen compounds and related effects such as excessive algae."
d) Task 6: Remove the following words at the end of task 6 "and revision of the water quality objectives for nitrate and nitrite based on averaging of the numeric objective" since the thirty-day average numeric targets and WLAs are already given.
e) Task 7: Replace the paragraph "Submission of results from water effects ratio study for ammonia and special studies by the City of Los Angeles including pH and temperature distribution downstream of D.C. Tillman WRP" with "Submission of all results from Task 6, and results from water effects ratio study for ammonia which has been performed by the City of Los Angeles." for clarification.
f) Task 8:
   - Second sentence is revised to read: "The Regional Board will consider factors such as seasonal variation, averaging periods, and water effects ratios when determining whether it is appropriate to adopt site-specific objectives for ammonia."
   - Revise the last sentence to read "If a site specific objective is adopted by the Regional Board, and approved by relevant approving agencies, this TMDL will need to be revised, readopted, and reapproved to reflect the revised water quality objectives."
g) Task 9: Replace the word "POTWs" with "major point sources" for clarification.

Attached to this letter are the revised versions of the Basin Plan Amendment adopted in Resolution No. 03-009 containing the minor, non-substantive corrections described above. One version is a redline version for your staff's review. The other version is the resultant revised version of the Basin Plan Amendment. Please call Mr. Sam Unger (213) 576-6784 or Jon Bishop (213) 576-6622 if there are questions regarding the revised Basin Plan Amendment.

Attachments

Table 7-8.1. LOS ANGELES RIVER NITROGEN COMPOUNDS AND RELATED EFFECTS TMDL: Elements

Element	Los Angeles River Nitrogen Compounds and Related Effects TMDL
Problem Statement	Reaches of the Los Angeles River and its tributaries were listed as impaired for nitrogen compounds (ammonia, nitrate, and nitrate) and related effects such as algae, pH, odor, and scum on the 2002 303(d) list. These reaches were listed because numeric and narrative water quality objectives for nitrogen compounds and related effects were exceeded, thereby impairing warm, freshwater, and wildlife habitats, and recreation beneficial uses.~~Discharge of nutrients to the Los Angeles River, including ammonia, nitrite and nitrate, are causing exceedances of water quality objectives established in the *Basin Plan* for these compounds and impairments of recreation, and warm freshwater and wildlife habitats beneficial uses of the Los Angeles River. Additionally, the effects of excess nitrogen, such as algae, odors, and scums also impair the beneficial uses of the Los Angeles River. Ammonia, nutrients, and related effects are included on the 303(d) list of water quality limited segments of the Los Angeles River.~~
Numeric Target *(Interpretation of the numeric water quality objective, used to calculate the load allocations)*	Numeric targets for this TMDL are listed as follows: a) Total ammonia as nitrogen (NH_3-N) Numeric targets are dependent on temperature and pH of receiving water. Based on the last ~~two~~ three years of temperature and pH data, the ammonia numeric targets for receiving waters correspondent to ~~the~~ major ~~POTWs~~ discharge points are provided below: ***Receiving water correspondent to major discharge point~~POTWs~~*** ***One-hour average*** ***Thirty-day average*** Los Angeles River Reach 5 (within Sepulveda Basin) - Donald C. Tillman WRP 4.7 mg/L 1.6 mg/L Los Angeles River Reach 3 (Riverside Dr. to Figueroa St.) - Los Angeles - Glendale WRP 8.7 mg/L 2.4 mg/L Burbank Western Channel - Burbank WRP 10.1 mg/L 2.3 mg/L b) Nitrate-nitrogen and nitrite-nitrogen

Element	Los Angeles River Nitrogen Compounds and Related Effects TMDL
	Constituent ***Thirty-day average*** Nitrate-nitrogen (NO_3-N) 8 mg/L Nitrite-nitrogen (NO_2-N) 1 mg/L Nitrate-nitrogen plus nitrite-nitrogen (NO_3-N + NO_2-N) 8 mg/L Numeric targets to address narrative objectives required to protect warm freshwater and wildlife habitats are intended to implement the narrative objectives and may be revised based on the results of monitoring and studies conducted pursuant to the implementation plan.
Source Analysis	The principal source of ~~ammonia and~~ nitrogen compounds to the Los Angeles River is discharges from the Donald C. Tillman Water Reclamation Plant (WRP), the Los Angeles-Glendale WRP, and the Burbank WRP. During dry weather period, the major POTWs contribute 84.1% of the total dry weather nitrogen load. ~~Dry weather u~~Urban runoff, stormwater, and groundwater discharge may also contribute nitrate loads. Further evaluation of these sources is set forth in the Implementation Plan.
Linkage Analysis	Linkage between nutrient sources and the instream water quality was established through hydrodynamic and water quality models. The Environmental Fluid Dynamics Code 1-D was used to model the hydrodynamic characteristics of the Los Angeles River and the Water Quality Analysis Simulation Program was used to model water quality. Additional studies were conducted to develop the residence time and determine the nutrient uptake rates by algae.
Wasteload Allocations (for point sources)	1. Major point sources: ~~Concentration-based wasteloads are allocated to major point sources of ammonia and nitrogen compounds to the Los Angeles River, which include the Donald C. Tillman WRP, the Los Angeles-Glendale WRP, and the Burbank WRP. Based on the last two years of temperature and pH data, the ammonia WLAs for the major POTWs are provided below:~~ a) Total ammonia as nitrogen (NH_3-N): ***POTW*** ***One-hour average WLA*** ***Thirty-day average WLA***

Element	Los Angeles River Nitrogen Compounds and Related Effects TMDL
	Donald C. Tillman WRP 4.2 mg/L 1.4 mg/L Los Angeles-Glendale WRP 7.8 mg/L 2.2 mg/L Burbank WRP 9.1 mg/L 2.1 mg/L b) Nitrate-nitrogen (NO_3-N), nitrite-nitrogen (NO_2-N), and Nitrate-nitrogen plus nitrite-nitrogen (NO_3-N + NO_2-N): ***Constituent*** ***Thirty-day average WLA**** NO_3-N 7.2 mg/L NO_2-N 0.9 mg/L NO_3-N + NO_2-N 7.2 mg/L *Receiving water monitoring is required on a weekly basis to ensure compliance with the water quality objective. ~~The implementation plan provides reconsideration of the WLAs by the Regional Board based on WER studies and updated data. The Regional Board will consider the WER report and a site specific objective for ammonia no later than 3.5 years from the effective date of the TMDL.~~ 2. Minor point sources: Waste loads are allocated to minor ~~discharges~~ point sources enrolled under NPDES or WDR permits including but not limited to Tapia WRP, Whittier Narrows WRP, Los Angeles Zoo WRP, industrial and construction stormwater, and municipal storm water and urban runoff from municipal separate storm sewer systems (MS4s): a) Ammonia wasteload allocations (WLAs) for minor point sources are listed below by receiving waters: ***Water Body*** ***One-hour average WLA*** ***Thirty-day average WLA*** Los Angeles River above Los Angeles-Glendale WRP (LAG)

Element	Los Angeles River Nitrogen Compounds and Related Effects TMDL
	4.7 mg/L 1.6 mg/L Los Angeles River below LAG 8.7 mg/L 2.4 mg/L Los AngelesTributaries 10.1 mg/L 2.3 mg/L b) WLAs for nitrate-nitrogen, nitrite-nitrogen, and nitrate-nitrogen plus nitrite-nitrogen for minor discharges are listed below: ***Constituent*** ***Thirty-day average WLA*** NO_3-N 8.0 mg/L NO_2-N 1.0 mg/L NO_3-N + NO_2-N 8.0 mg/L
Load Allocation *(for nonpoint sources)*	The Source Assessment indicates that nitrogen loads from nonpoint sources are negligible compared to loading from point sources~~insignificant~~. Consequently, load allocations will not be developed unless it is determined they are necessary after load reductions are effected through implementation of the wasteload allocations. ~~Consequently, load allocations will not be developed at this time. Load allocations may be developed if it is determined they are necessary after load reductions are effected through implementation of the waste load allocations.~~ Additional monitoring is included in the implementation plan to verify the nitrogen nonpoint source contributions.
Implementation	1. Refer to Table 7-8.2 2. The Implementation Plan includes upgrades to the WRPs discharging to Los Angeles River for removal of ammonia, nitrate, and nitrite. ~~To allow time for completion of the nitrification/denitrification facilities which are integral to this TMDL, the amendment to the Basin Plan made by this TMDL allows for higher interim loads which translate as interim effluent limits for a period not to exceed 3.5 years from the effective date of the TMDL (at the discretion of the Regional Board). The following interim limits will apply to NH_3-N, and NO_3-N + NO_2-N~~ At the discretion of the Regional Board, the following interim limits for ammonia, and nitrate plus nitrite will be allowed for major point sources for a period not to exceed 3.5 years from the effective date of

Element	Los Angeles River Nitrogen Compounds and Related Effects TMDL
	this TMDL. Effluent limits for the individual compounds NO_3-N, and NO_2-N are not required during the interim period. ***Interim Limits for NH_3-N and NO_3-N + NO_2-N*** ***Total ammonia as Nitrogen*** ***POTW*** ***Daily Maximum**** ***Monthly Average**** Donald C. Tillman WRP 21.7 mg/L 21.0 mg/L Los Angeles-Glendale WRP 19.4 mg/L 16.5 mg/L Burbank WRP 24.1 mg/L 22.7 mg/L *The monthly average and daily maximum interim limits are based on the 95th and 99th percentiles of effluent performance data reported by dischargers. ***Nitrite-nitrogen + Nitrate-nitrogen*** ***Monthly Average*** 8.0 mg/L The Implementation Plan also includes additional studies to evaluate the effectiveness of nitrogen reductions on related effects such as algae growth, ~~depressed oxygen,~~ odors and scum. Ammonia and nitrate reductions will be regulated through effluent limits prescribed in NPDES permits.
Margin of Safety	An explicit margin of safety of 10% of the ammonia, nitrate, nitrite and nitrate + nitrite loads is allocated to address uncertainty in the sources and linkage analyses. In addition, an implicit margin of safety is incorporated through conservative model assumptions and statistical analysis. ~~Impairment is typically based on exceeding the single sample objective in more than 10% of the samples. By incorporating an implicit margin of safety, the number of samples exceeding the water quality objective will be less than 10% of the samples measured in stream.~~
Seasonal Variations and Critical Conditions	The critical condition identified for this TMDL is based on ~~the~~ low flow condition ~~defined as the 7Q10.~~[1] –. The driest six months of the year are the ~~first~~ most critical condition for nutrients because less surface flow is available to dilute effluent discharge.

Element	Los Angeles River Nitrogen Compounds and Related Effects TMDL	

Table 7-8.2. IMPLEMENTATION SCHEDULE **Implementation Tasks**	**Completion Date**
1. Apply interim limits for NH_3-N and NO_3-N + NO_2-N to major Publicly Owned Treatment Works (POTWs). 2. Apply Waste Load Allocations (WLAs) to minor point source dischargers and MS4 permittees. 3. Begin to ~~I~~include monitoring for nitrogen compounds in NPDES permits for minor NPDES dischargers above 0.1 mgd as permits are renewed.	Effective Date of TMDL
4. Submittal of a Monitoring Work Plan by 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 Los Angeles River. The results will be used to calibrate the linkage analysis. 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.	1 year after the Effective Date of TMDL
5. Submittal of a Workplan by major NPDES permittees to evaluate the effectiveness of nitrogen reductions on removing impairments from algae odors, scums, and pH for approval by the Executive Officer of the Regional Board. The monitoring program will include instream monitoring of algae, foam, scum, pH, and odors in the Los Angeles River. ~~A key objective of these studies will be to determine the effectiveness of nitrogen reductions on removing impairments related to algae, foam, odor, scum and pH.~~ In addition, groundwater discharge to Los Angeles River will also be analyzed for nutrients to determine the magnitude of these loadings and the need for load allocations. The Workplan will include protocol and schedule for refining numeric targets for nitrogen compounds and related effects such as excessive algae~~development of appropriate numeric targets for nutrients and algae~~ in the Los Angeles River. The Workplan will also contain protocol and a schedule for identification of limiting nutrients.	1 year after the Effective Date of TMDL
6. Submission of a special studies Workplan by the City of Los Angeles to evaluate site-specific objectives for ammonia, nitrate, and nitrite, including the following issues: pH and temperature distribution downstream of the D.C. Tillman WRP to determine the point of compliance for ammonia, establishment of ammonia WLAs based on seasonality~~, and revision of the water quality objectives for nitrate and nitrite based on averaging of the numeric objective~~.	1 years after Effective Date of TMDL

Table 7-8.2. IMPLEMENTATION SCHEDULE **Implementation Tasks**	**Completion Date**
7. Submission of all results from Task 6, and results from water effects ratio study for ammonia which has been performed by the City of Los Angeles. ~~and special studies by the City of Los Angeles including pH and temperature distribution downstream of D.C. Tillman WRP.~~	No later than 2.5 years after Effective Date of TMDL.
8. Regional Board considers site-specific objectives for ammonia, nitrate, nitrite and nitrite + nitrate and revision of wasteload allocations based on results from Tasks 6 and 7. The Regional Board will consider factors such as seasonal variation, averaging periods, and water effects ratios when determining whether it is appropriate to adopt site-specific objectives for ammonia ~~The site specific objective will consider factors including but not limited to seasonality, averaging periods, and the WER for ammonia~~. If a site specific objective is adopted by the Regional Board, and approved by relevant approving agencies, this TMDL will need to be revised, readopted, and reapproved to reflect the revised water quality objectives ~~If a site specific objective is adopted by the Regional Board, approved by State Board and Office of Administrative Law and established by US EPA, for ammonia then the WQO are revised and as such the numeric target and waste load allocations would need to be revised to reflect the revised WQO~~.	No later than 3.5 years after Effective Date of TMDL.
9. Interim limits for ammonia and nitrate + nitrite expire and WLAs for ammonia, nitrate, nitrite, and nitrate + nitrite apply to ~~POTWs~~major point sources.	3.5 years after Effective Date of TMDL
10. Complete evaluation of monitoring for nutrient effects and determine need for revising wasteload allocations, including but not limited to establishing new WLAs for other nutrient and related effects such as algal growth	4 years after Effective Date of TMDL
11. Regional Board considers results of Tasks 5 and 10 and revises or establishes WLAs as appropriate.	5 years after Effective Date of TMDL