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TO: File

FROM: Elizabeth Erickson
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DATE: April 7, 2003

SUBJECT: OPTIONS CONSIDERED FOR REVISION OF REMANDED UPPER SANTA CLARA RIVER CHLORIDE TMDL

On October 24, 2002, the California Regional Water Quality Control Board (Regional Board) adopted Resolution No. 02-18, an amendment to the *Water Quality Control Plan for the Los Angeles Region* (Basin Plan) to incorporate a Total Maximum Daily Load (TMDL) to reduce chloride loading to the Upper Santa Clara River. On February 19, 2003, the California State Water Resource Control Board (State Board) remanded the TMDL to the Regional Board for revisions of the implementation plan which "may not allow adequate time for the appropriate level of consideration of the results of the preceding task"(see attachment, page 2). Regional Board staff has completed revisions to the TMDL implementation plan, as recommended by the State Board and prepared a tentative resolution for the Regional Board to reconsider the TMDL on June 5, 2003. State Board's recommendation and the options considered by Regional Board staff in preparing the revised implementation plan are presented here.

Background

The Regional Board's goal in directing preparation of the TMDL is to reduce chloride levels in the Upper Santa Clara River so that the river can continue to be used for Agricultural Supply and to eliminate the risk of future impairments that may be associated with aquatic life and rare and endangered species habitat. Chloride has been associated with reduced crop yields for salt-sensitive crops such as avocados and strawberries which are grown in the Santa Clara River watershed and irrigated with water from the Santa Clara River. Chloride concentrations above 230 mg/L have been shown in experimental studies to cause reduced viability in freshwater aquatic species.

Analysis of the extensive chloride monitoring data collected from POTW effluent and within the Upper Santa Clara River has consistently shown that chloride concentrations exceed the water quality objective. The Regional Board adopted the TMDL for chloride in the Upper Santa Clara River to address the documented chloride water quality impairments in two reaches of the Santa Clara River near the Los Angeles/Ventura County line on October 24, 2002.

In consideration of the State Board's remand, Regional Board staff revised the implementation plan adopted by the Regional Board in Resolution No. 02-18. This tentative resolution amends

the Basin Plan to include a TMDL to reduce chloride loading to the Upper Santa Clara River in consideration of the State Board's remand.

The TMDL establishes a phased plan for reducing the loading of chloride to the Santa Clara River. It also sets forth a number of studies, including one to consider a site-specific objective for chloride in the Upper Santa Clara River, if appropriate. The purpose of this TMDL is to remove the chloride water quality impairments that prevents Upper Santa Clara River from supporting the agricultural beneficial use by reducing the sources of chloride from households and industries that are discharged and, if necessary, by constructing a chloride removal system to treat WRP effluent before discharge to the Santa Clara River.

State Board Recommendations

The State Board directed the Regional Board to consider specific modifications to the implementation plan of the Upper Santa Clara River Chloride TMDL. These recommendations are (1) extend the implementation plan to make the tasks sequential and completed within 13 years and consider extending the implementation plan to acknowledge events beyond County Sanitation Districts of Los Angeles County's (Discharger's) control; (2) extend the interim limits beyond 2 ½ years; (3) include the study of the long term provision of alternative agricultural water supply, modify the trigger for alternative agricultural water supply, and include the study of the impact of the quality of imported water on beneficial uses in drought; and (4) prepare a single TMDL for the watershed. The response to each of these recommendations is described below along with a summary of the proposed modification to the implementation plan and other options considered by Regional Board staff.

(1) Extend the Implementation Plan to make the Tasks Sequential to be completed within 13 years and consider extending the implementation plan to acknowledge events beyond the Discharger's control.

(1a) The State Board directed the Regional Board to consider "expansion of the current-phased TMDL…to complete…implementation tasks sequentially within 13 years (page 3)."

Proposed Modification to the Implementation Plan

Regional Board staff modified the trigger for the alternative agricultural water supply. The trigger now applies only after a diverter had documented the amount and frequency of the diversions, the use on sensitive crops, and the existence of a water right for two years after the effective date of the TMDL. Further, the requirement of documentation by a diverter is to be followed by negotiations concerning the remedy with the participation of the Regional Board, a process that will take additional time. The cumulative effect of these changes in the trigger allows for the scheduled completion of studies on the appropriate water quality objective to protect agricultural uses (Task 5 of Table 7-6.2), on the impact of imported water chloride concentrations on the effluent concentrations (Task 4 of Table 7-6.2) and on the dilution of that effluent by ground and surface

waters (Task 3 of Table 7-6.2) to occur within 3 years after the effective date of the TMDL. As a result, the pertinent studies will be completed before the alternative water must be supplied, even if the trigger is exceeded within the study period.

In addition, the revised language bases the chloride level that triggers action on a 12-month average, as opposed to the instantaneous measure required to establish impairment for the 303(d) list. The effect of this change is likely to be additional time before the trigger applies.

Finally, the Regional Board staff has delayed the implementation task considering the long-term supply of agricultural water until after completion of the implementation tasks considering the review of the chloride water quality objective before the Regional Board. This change prevents the implementation plan from requiring the Discharger to provide a long-term supply of alternative water when the quality of that water is still under evaluation. Task 9 of Table 7-6.2 has been modified to reflect this change.

These modification were made because the alternate agricultural water supply trigger in the original implementation plan may have required immediate delivery of alternate water supply. In the absence of an analysis of the amount or quality of water required and verification of the diversion and the water rights to divert, the requirement could be difficult for the Discharger to meet as the chloride concentrations have continued to increase at the first diversion point since the TMDL was first approved by the Regional Board.

Other Options Considered

Regional Board staff considered (a) extending the implementation plan to make all the tasks sequential and (b) revising the task descriptions. These options were not selected because the implementation plan is already 13 years and the technical studies not in sequence can be completed in parallel without duplicating effort.

(1b) Consider Extending the Implementation Plan for Events Beyond Discharger's Control

The State Board directed the Regional Board to consider "extending the implementation schedule …to account for events beyond the control of the Discharger. (page 3)"

Proposed Modification to the Implementation Plan

Regional Board staff made specific notation of alternatives to be considered for events beyond the Discharger's control. Task 12 of Table 7-6.2 has been revised to reflect this change.

This modification was made to acknowledge the magnitude of the public works project required to comply with the treatment option, should it need to be implemented.

(2) Extend the Interim Effluent Limits beyond 2.5 years

The State Board directed the Regional Board to consider "extension of the interim effluent limits beyond the currently proposed 2 ½ years (page 3)."

Proposed Modification to the Implementation Plan

Regional Board staff extended the interim limits to the end of the implementation plan at 13 years. The Implementation Plan in Table 7-6.1 has been modified to reflect this change.

This modification was made because (1) the Discharger reports that the expense to attain interim limits lower than the existing discharge is high, (2) the Regional Board always has the option to revise the interim limits if insufficient progress is made on the TMDL implementation plan and language highlighting this authority might be considered contra-productive, and (3) if source reductions are successful effluent concentrations should drop before the end of the implementation period.

Other Options Considered

Regional Board staff considered (a) retaining the interim limits and timing proposed in the original implementation plan. This option was not selected because (1)the Regional Board retains the option to reconsider the interim limits at any time, and (2) the Discharger implementing the TMDL wrote the original description and timing for the tasks, and was given time to provide a revised interim limit recommendation.

(3)Include the Study of the Long Term Provision of Alternative Agricultural Water Supply, Modify the Trigger for Alternative Agricultural Water Supply, and Include the Study of the Impact of the Quality of Imported Water on Beneficial Uses in Drought

<u>(3a)Include the Study of the Long-Term Provision of Alternative Agricultural Water Supply</u>

The State Board directed the Regional Board to consider "whether provision of a long-term alternative water supply to agricultural diverters of surface water by the (Discharger) would be appropriate (page 3)."

Proposed Modification to the Implementation Plan

Regional Board staff added the study of a long-term remedy of alternative agricultural water supply to the implementation task evaluating the supply of agricultural water. Further, Regional Board staff delayed the completion of this task until implementation tasks assessing the requirements of agricultural supply and the water quality objective were completed. Task 9 of Table 7-6.2 has been modified to reflect this change.

This modification was made because (1) the remedy may be less expensive to ratepayers, yet protective of beneficial uses, and (2) Regional Board staff has consistently supported further study of the long-term supply option that currently conflicts with the beneficial use, water quality objective requirements and other regulatory provisions.

(3b) Modify the Trigger for Alternative Agricultural Water Supply

The State Board directed the Regional Board to consider "re-examining and modifying the trigger and compliance schedule for providing the alternative water supply(page 3)."

Proposed Modification to the Implementation Plan

Regional Board staff modified the trigger and compliance schedule for providing the alternative water supply. Specifically, the trigger has been modified so that the agricultural diverters are responsible for providing evidence of a water right and a diversion, and use of the water on salt-sensitive crops. Task 1 of Table 7-6.2 has been modified to reflect this revised trigger.

This modification was made because (1) the costs to deliver the alternative water supply by the Discharger would be high, and (2) the agricultural diverter has a responsibility to provide documentation on the water quality impact and to participate in the potential resolution of the conflict.

Other Options Considered

Regional Board staff considered (a) requiring the diverters to submit a complaint to the Water Rights Division citing the problem of deteriorating water quality, (b) removing the trigger, and (c) allowing more than two years for study before the trigger applies. The option to require, in the implementation plan, that the diverters submit a complaint to the Water Rights Division was not selected because the Regional Board retains the responsibility and authority to resolve stakeholder concerns on water quality. However, the diverters were informed of this process, which was recommended to them by Regional Board staff, because it triggers an investigation by the Water Rights Division of the veracity of the water right and full documentation of the water quality problem. Preparation of these materials by the diverter and an opinion by the Water Rights Division on the water rights are consistent with providing a higher level of documentation to assist the evaluation of alternative agricultural water supply. The option to remove the trigger was not selected because the continuing protection of the water supply for agricultural beneficial use during completion of the TMDL was reaffirmed by the Regional Board in December 2000 and again in October 2002 and by the State Board Planning and Legal staff in 2000.

The option to allow more than 2 years for study before the trigger applies was not selected because adoption of the TMDL will take an estimated 1 year and 2 years of diversion data are required in the new implementation plan after adoption of the revised TMDL implementation plan before the trigger can apply, resulting in at least 3 years for design and construction of a

remedy or pipeline, which the Regional Board first directed the Discharger to provide in October 2002. The total period of study and construction for the remedy, given approval by the Regional Board in June 2003, is considered adequate at approximately 4 years.

(3c) Study the Impact of the Quality of Imported Water on the Beneficial Uses in Drought

The State Board directed the Regional Board to consider "re-evaluating…the quality of the imported water supply… and the impact in period of drought or low rainfall (page 4.)"

Proposed Modification to the Implementation Plan

Regional Board staff included the impact of imported water and drought in the descriptions of the existing implementation task assessing the assimilative capacity of the waterbody, the sources of chloride to the waterbody and protection of agricultural beneficial uses. Task 3, 4 and 5 of Table 7-6.2 has been modified to reflect this change.

This modification was made because the (1) impact of imported water was acknowledged and modeled in the staff report using historic data, but continuing growth is consistent with the development of a specific plan to protect the surface and groundwater resources of the Upper Santa Clara River, especially as the groundwater supplies are increasingly utilized and the Discharger's 2002 source study reported (admin record pg 8-523) that groundwater supplies ceased being sufficient to dilute drought chloride concentrations in the imported water in November 2001. Further, (2)the Regional Board staff agrees that additional studies of the impact of imported water on beneficial uses under drought conditions are desirable and should be completed by the Discharger. Although the Discharger has stated since 1990 that imported water chloride increases are beyond their control, they retain the option to limit the number of connections to their system. As a result, a study by the Discharger on the impact of imported water on beneficial uses would be useful addition to their long range plans to handle increased sewage volumes generated by additional imported water from new residences. For example, such a study could quantify charges to new residents, and not all ratepayers, for the environmental impacts of the additional imported load.

Other Options Considered

Regional Board staff considered (a) directing the Discharger to collaborate with the Upper Santa Clara Water Purveyors (MOA committee) to utilize that committee's existing surface and groundwater model and expertise to estimate the technical and fiscal options for lowering the chloride concentration in the delivered imported water through dilution and blending with groundwater supplies. The Castaic Lake Water Agency, a member of the MOA committee, was required to prepare an Urban Water Management Plan in 2002 which qualitatively described the potential for future salt loading and water quality impacts in ground and surface water. This document represents initial efforts at planning for imported water impacts by water suppliers. This option was not selected because it is beyond the authority of the Regional Board to

recommend specific technical solutions, such as water supply planning. Instead the remedy was recommended to the parties involved and an initial meeting was held at Regional Board staff's request on December 16, 2002.

(4) Prepare a Single TMDL for the Watershed

The State Board directed the Regional Board to consider "an integrated solution, which may be a single comprehensive TMDL, for all water quality pollutants in the…basin (page 4)."

Proposed Modification to the Implementation Plan

Regional Board staff did not modify the implementation plan nor make specific changes as per this recommendation.

This modification was not made because there are only two major TMDLs planned for the Santa Clara River: the chloride and nitrogen TMDLs. Regional Board staff has completed extensive work on both TMDLs and the nitrogen TMDL is scheduled to be heard before the Regional Board this year. The remedies for each TMDL are unrelated so there is little likelihood of an inefficient expenditure of resources to comply with both TMDLs. Furthermore, the nitrogen TMDL will likely contain an implementation plan shorter than that for the chloride TMDL.