

**California Regional Water Quality Control Board
Santa Ana Region**

February 10, 2012

ITEM: _____

SUBJECT: Basin Plan Amendment to Incorporate Updates to Management Zone Boundaries and the Total Dissolved Solids (TDS) and Nitrogen Management Plan (Salt Management Plan) for the Santa Ana Region

EXECUTIVE SUMMARY

Federal law requires states to establish water quality standards (beneficial uses, water quality criteria, and an antidegradation policy) for all water bodies within the state's jurisdiction, and to review those standards at least once every three years. The Porter - Cologne Water Quality Control Act (Division 7, "Water Quality", of the California Water Code) establishes similar requirements in state law. For the Santa Ana Region, these standards were established initially in the 1975 Water Quality Control Plan, Santa Ana River Basin (Basin Plan) and revised and supplemented in subsequent Basin Plan amendments.

On January 22, 2004, the Santa Ana Regional Water Quality Control Board (Regional Water Board) adopted Resolution R8-2004-0001 to amend the Basin Plan for the Santa Ana River Basin. The amendment included revised boundaries for groundwater subbasins (renamed "groundwater management zones"), revised total dissolved solids (TDS) and nitrate-nitrogen objectives for the management zones, revised TDS and nitrogen wasteload allocations for discharges of recycled water to the Santa Ana River and its tributaries, and revised reach designations for certain surface waterbodies. To accommodate reclamation projects in the Region, alternative "maximum benefit" TDS and nitrate-nitrogen water quality objectives were also established for some groundwater management zones. The application of these less stringent objectives is contingent on specific commitments by those who requested the objectives. These include commitments to implement basin-wide water supply and water quality management programs, including salt removal projects, monitoring programs and conjunctive use programs – all developed to ensure that the beneficial uses of the groundwater management zones are protected. Resolution R8-2004-0001 also specified a revised implementation plan for salt management, known as the Salt Management Plan, for the Santa Ana Region. In part, this revised plan identified the strategies for implementation of "maximum benefit" objectives. The State Water Resources Control Board (State Water Board) and Office of Administrative Law (OAL) approved the amendment on September 30, 2004 and December 23, 2004, respectively. The surface water standards provisions of the amendment were approved by the U.S. Environmental Protection Agency on January 20, 2007.

Federal and state laws require the Regional Board to review and update the Basin Plan periodically. Further, Resolution No. R8-2004-0001 included requirements for data collection and analysis and periodic review of the Salt Management Plan based on those analyses. This includes basin boundaries, beneficial use designations and the related implementation requirements, taking into consideration the best available information and any new scientific data. As a result of recent review conducted by the Basin Monitoring Program Task Force, including Regional Board staff, there is a need to revise the Basin Plan to reflect updated information and to incorporate certain revised salt management strategies. This staff report describes the technical basis for the proposed changes to the Basin Plan, which include the following:

1. Update of Prado Basin Management Zone Boundary using best available data to date (Basin Plan Chapter 3);
2. Update of surface water monitoring program requirements annual report submittal date (Basin Plan Chapter 5. V.A2);
3. Deletion of the groundwater water monitoring program requirement to confirm the 50% nitrogen loss coefficient in Santa Ana River Reach 3 (Basin Plan Chapter 5. V.B.); and,
4. Revision of the Chino Basin Maximum Benefit Program Implementation Plan, including revisions to the ground and surface water monitoring program requirements (Basin Plan Chapter 5. VI.A).

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1.0 Introduction

Federal law and implementing regulations¹ require states to establish water quality standards for all water bodies within the state's jurisdiction. A water quality standard is composed of three parts: 1) the beneficial uses that apply to the waterbody; 2) the water quality criteria (or "objectives", in California terminology) needed to protect those uses; and 3) an antidegradation policy to protect water quality that is already better than the applicable criteria. The Porter-Cologne Water Quality Control Act (Division 7, "Water Quality", of the California Water Code, the "Porter-Cologne Act") establishes similar requirements in state law.

In California, Regional Water Quality Control Boards enact water quality standards through a formal basin planning process. Each Regional Board publishes a Basin Plan that identifies individual water bodies within its jurisdiction, designates the beneficial uses that apply to each waterbody and specifies the water quality objectives for those water bodies. Although the federal Clean Water Act applies only to surface waters, the Porter-Cologne Act applies to both the ground and surface waters of California.

Historically, as discussed in the 1975, 1983 and 1994 Basin Plans, the most serious problem in the Santa Ana basin was the build up of dissolved minerals, or salts, in the ground and surface waters. Sampling and computer modeling of groundwaters showed that the levels of dissolved minerals, generally expressed as total dissolved solids (TDS) or total filterable residue (TFR), were exceeding water quality objectives, or would do so in the future, unless appropriate controls were implemented. Nitrogen levels in the Santa Ana River, largely in the form of nitrate, were likewise projected to exceed water quality objectives. High levels of TDS and nitrate adversely affect the beneficial uses of ground and surface waters. The mineralization of the Region's waters, and its impact on beneficial uses, remains a significant problem.

Each use of water adds an increment of dissolved minerals. Significant increments of salts are added by municipal and industrial use, and the reuse and recycling of the wastewater generated as it moves from the hydrologically higher areas of the Region to the ocean. Wastewater and recycled water percolated into groundwater management zones is typically pumped and reused a number of times before reaching the ocean, resulting in increased salt concentrations. The concentration of dissolved minerals can also be increased by evaporation or evapotranspiration. One of the principal causes of the mineralization problem in the Region is historic irrigated agriculture, particularly citrus, which, in the past, required large applications of water to land, causing large losses by evaporation and evapotranspiration. TDS and nitrate concentrations are increased both by this reduction in the total volume of return water and by the direct application of these salts in fertilizers. Dairy operations, which began in the Region in the 1950's and continue today, also contribute large amounts of salts to the basin.

In the mid 1990s, a Santa Ana Region-wide effort was initiated to perform certain investigations on the boundaries and the TDS and nitrate-nitrogen water quality objectives for the groundwater subbasins in the Santa Ana River Watershed. A TIN/TDS Task Force was formed to conduct the necessary studies that led to the establishment of revised groundwater subbasin boundaries and TDS and nitrate-nitrogen objectives for the revised groundwater subbasins (now termed "management zones"). Regional Board staff, water supply, water-recycling and wastewater agencies, as well as other agencies including the US Geological Survey, participated in the

¹ 40 Code of Federal Regulations (CFR) 131 Water Quality Standards Regulation

Task Force. This effort resulted in significant changes to the salt management plan in the Basin Plan in 2004 (Resolution No. R8-2004-0001).

1.1 Summary of the 2004 Salt Management Plan Basin Plan Amendment

Based on the technical investigations and recommendations from the TIN/TDS Task Force, the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan) was revised in 2004 (Resolution No. R8-2004-0001) to establish new groundwater management zones and TDS and nitrate-nitrogen water quality objectives to protect designated beneficial uses in the management zones. The revised objectives were based on a statistical analysis of well water quality data for the period of 1954 to 1973, with the resulting well statistics volumetrically averaged to yield a new statistic for each groundwater management zone (defined as the “historical ambient” water quality). This approach was consistent with the State’s antidegradation policy, Resolution No. 68-16. Because these objectives represent historical ambient quality consistent with the antidegradation policy, they are termed “antidegradation” objectives.

In addition to the antidegradation objectives established in the 2004 Basin Plan Amendment, an alternative set of “maximum benefit” TDS and nitrate-nitrogen objectives was established for specific groundwater management zones. These “maximum benefit objectives”, which are less stringent than the applicable antidegradation objectives, were developed and approved to accommodate water resource management plans formulated by specific agencies and parties. These plans incorporated, in part, the expanded use and recharge of recycled water. Adoption of these less stringent objectives required the demonstration of conformance with the antidegradation policy, *i.e.*, that the beneficial uses of the affected waters would continue to be protected, that waste discharges would be required to achieve best practicable treatment or control, and that water quality consistent with maximum benefit to the people of the state would be maintained. The proponents of the “maximum benefit” objectives made these demonstrations. The “maximum benefit” demonstrations were based on commitments by the proponents of the objectives to implement specific programs and projects, which were then incorporated in the Basin Plan as well. The Basin Plan specifies that if these programs and projects are not implemented to the Regional Board’s satisfaction, then the alternative “antidegradation” objectives apply to the affected waters for regulatory purposes. Further, in this situation, the Basin Plan requires mitigation for discharges in excess of those allowed pursuant to the antidegradation objectives.

The 2004 Basin Plan Amendment also included updated wasteload allocations for regulating discharges of TDS and total inorganic nitrogen (TIN) to the Santa Ana River and its tributaries, and thence to groundwater management zones recharged by these surface waters. The Santa Ana River and tributaries are a significant source of recharge to underlying groundwater management zones in the Upper Santa Ana River Basin and, below Prado Dam, to the Orange County groundwater basin. The quality of the river and its tributaries thus has a significant effect on the quality of the Region’s groundwater, which is used by more than 5 million people. Control of surface water quality is appropriately one of the Regional Board’s highest priorities. The wasteload allocations distribute a share of the total TDS and TIN wasteloads to each of the discharges to the river or its tributaries. The allocations are implemented principally through TDS and nitrogen limits in waste discharge requirements issued to municipal wastewater treatment

facilities (Publicly Owned Treatment Works or POTWs) that discharge to the Santa Ana River, either directly or indirectly.

Lastly, the 2004 Basin Plan Amendment contained provisions that required dischargers to develop and implement long-term groundwater and surface water monitoring and reporting programs. The purpose of these programs is to collect real-time data to assess the status and trends of nitrogen and TDS concentrations throughout the watershed. These data serve as a basis for review and/or update of the Salt Management Plan. Annual reporting of the surface water quality data and triennial reporting of ambient groundwater quality are required.

1.2 Basin Monitoring Program Task Force (BMPTF)

To implement requirements specified in the 2004 Salt Management Plan, in 2005 local stakeholders formed the Basin Monitoring Program Task Force (BMPTF), administered by the Santa Ana Watershed Project Authority (SAWPA). Like its predecessor, the TIN/TDS Task Force, the BMPTF is comprised of approximately 22 water supply and wastewater agencies in the region. Working closely with Regional Board staff, the BMPTF has utilized consultants to recalculate the ambient concentration of TDS and nitrate-nitrogen in each groundwater management zone and also to perform the update to the TDS and nitrogen wasteload allocations. Review of the wasteload allocations is based on the monitoring data and ambient groundwater quality determination. The BMPTF has also been instrumental in reviewing provisions of the existing Salt Management Plan to ensure that the Basin Plan reflects current knowledge and science. These BMPTF studies and recommendations serve as the basis for the proposed amendments to the Salt Management Plan.

1.3 Proposed Amendments to the Basin Plan

The proposed amendments to the Basin Plan are shown in the Attachment to Resolution No. R8-2012-0002 and include the following:

Minor Updates (See Section 2, below)

- Update of the Prado Basin Management Zone boundary
- Revision to the annual report submittal date for the Salt Management Plan
- Deletion of certain obsolete monitoring requirements to confirm the 50% nitrogen loss coefficient specified in the Salt Management Plan

Modification of the Chino Basin Maximum Benefit Program (See Section 3, below)

2.0 Proposed Minor Amendments to the Basin Plan

Since 2005, in coordination with Regional Board staff, various wastewater and water supply agencies of the BMPTF have worked to implement the Salt Management Plan provisions and requirements specified in the Basin Plan for the Santa Ana Region. One of the foundational principles of the Salt Management Plan approved in 2004 is that it would be dynamic, with

commitments by the Regional Board and watershed stakeholders to collect and evaluate new data and information, and to review and update the Plan accordingly. This includes modification of the Salt Management Plan as needed to update information regarding agency water resource management plans and priorities and relevant new regulations or guidance.

The BMPTF study results are being reflected in the proposed amendments to the Basin Plan. For the most part, the proposed modifications are minor, reflecting new data or updated practices and approaches that have been implemented since the 2004 Basin Plan amendments were approved. These minor changes have no substantive regulatory effect. The proposed revisions are discussed below.

2.1 Update of the Prado Basin Management Zone (PBMZ) Boundary

The 2004 Basin Plan Amendment recognized that the flood plain behind Prado Dam has unique hydraulic characteristics that justified special consideration. Chino Creek, Mill-Cucamonga Creek and Temescal Creek join the Santa Ana River behind the dam. Flood control operations at the dam, coupled with an extremely shallow groundwater table and unusually thin aquifer, significantly affect these surface flows, as well as subsurface flows in the area. Depending on how the dam is operated, surface waters may or may not percolate behind the dam. There is little or no groundwater storage in the flood plain behind the dam. Any groundwater in storage is forced to the surface because the foot of Prado Dam extends to bedrock and subsurface flows cannot pass through the impermeable barrier created by the dam and the surrounding hills. Given these characteristics, in the 2004 Basin Plan amendment, the Prado Basin Management Zone (PBMZ) was identified and designated as a surface water management zone, rather than a groundwater management zone. The PBMZ is generally defined by the 566-foot elevation above mean sea level².

At the time the 2004 Basin Plan Amendment was adopted, the PBMZ boundary was delineated based on the elevation contours on the USGS 7.5-minute Corona North Quadrangle (1967). However, in 2007, high-resolution elevation data were acquired by Airborne 1 Corporation (El Segundo, CA) across the Prado Basin using airborne Light Detection and Ranging (LiDAR) technology. This data set is being used to support groundwater-level elevation mapping for the Maximum Benefit Monitoring Program being implemented by Inland Empire Utilities Agency and the Chino Basin Watermaster (Watermaster) as part of the Watermaster's Maximum Benefit commitments and, more specifically, their Hydraulic Control Monitoring Program (see Section 3.0).

Airborne 1 used the LiDAR data to construct a Digital Terrain Model (DTM) of the bald earth across the Prado Basin, and provided the DTM to Wildermuth Environmental, Inc. (WEI). WEI imported the DTM to ArcGIS and delineated a revised boundary for the PBMZ at the 566-ft elevation contour (WEI, 2011a, 2011b). Figure 1 depicts the PBMZ with the proposed boundary change. The narrative description of the PBMZ would remain unchanged.

² The PBMZ encompasses the flood plain as managed by the Army Corps of Engineers. The PBMZ extends from Prado Dam up the channel of Chino Creek to the concrete lining near the road crossing at Old Central Avenue, up the channel of Mill Creek (Prado Area) to Cucamonga Creek at the concrete lining near the crossing at Hellman Road, up the channel of Temescal Creek to the crossing at Lincoln Avenue, and up the Santa Ana River to the 566 foot elevation just west of Hamner Avenue.

The proposed modification of the PBMZ boundary does not change any of the applicable beneficial use designations, nor the applicable water quality objectives. In short, the change would have no substantive regulatory effect. It would merely provide greater accuracy in accordance with more accurate topographical information.

A revised map delineating the proposed revised PBMZ boundaries is included in the draft Basin Plan amendment (Attachment to Resolution No. R8-2012-0002, page 1, Chapter 3, Beneficial Uses).

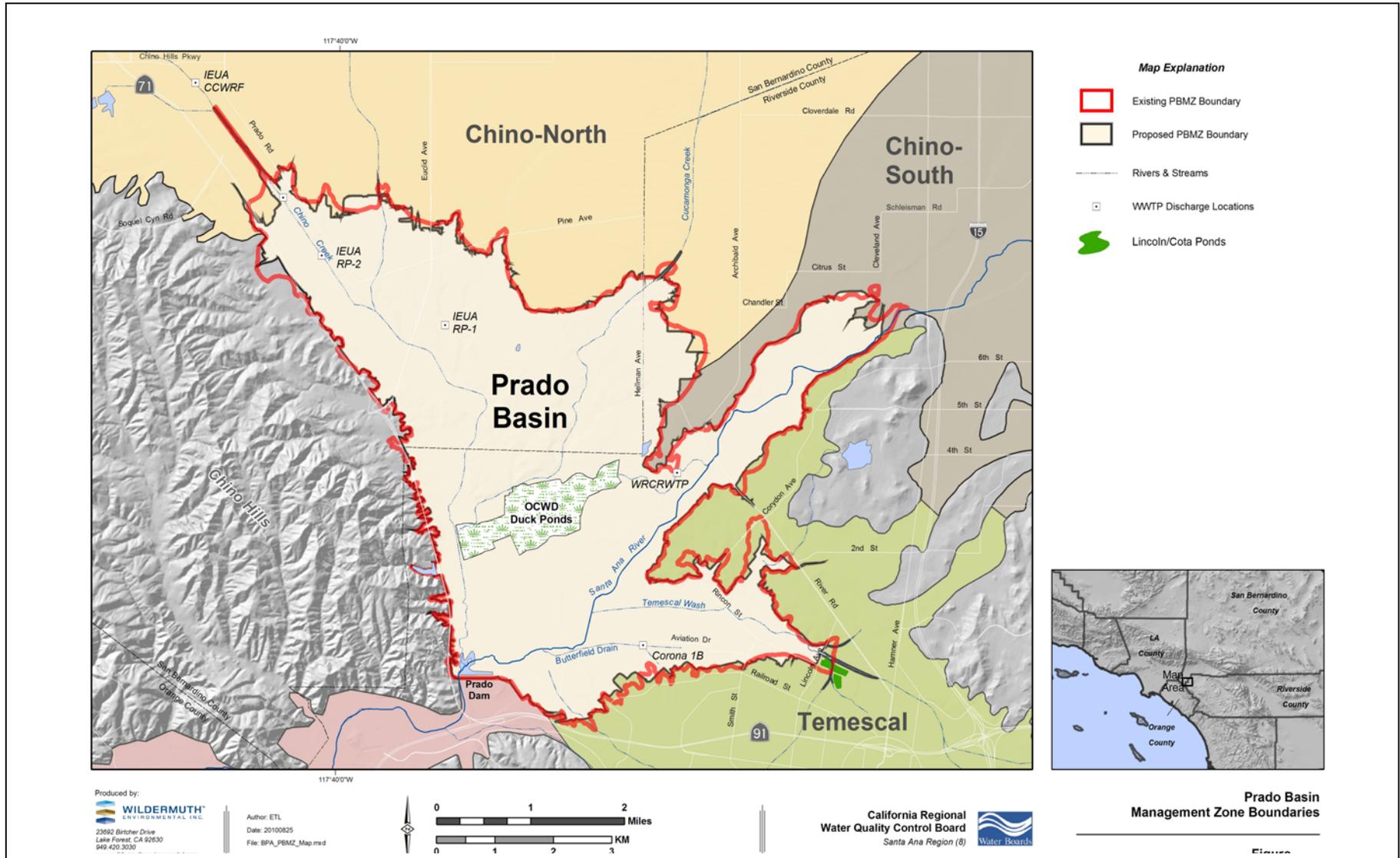
2.2 Revise the Annual Report Submittal Date for the Surface Water Monitoring Program

Pursuant to the approved 2004 Basin Plan Salt Management Plan, in order to determine compliance with the nitrogen and TDS objectives specified for Reaches 2, 3 and 4 of the Santa Ana River, and thereby, to determine the efficacy of the wasteload allocations and other salt management actions to protect both underlying and downstream groundwater management zones, the Basin Plan currently requires dischargers to provide to the Regional Board by April 15th of each year an annual summary of the data collected, including an evaluation of compliance with relevant water quality objectives. This annual report is typically prepared by the Santa Ana Watershed Project Authority (SAWPA) on behalf of all of the POTW dischargers. SAWPA and the dischargers have requested that the annual report due date be changed from April 15th to August 15th of each year in order to allow time to obtain Santa Ana River water quality and streamflow data from USGS and other sources. These data are not typically available until April or May of each year. Regional Water Board staff agree that modification of the annual report due date is appropriate. Regional Water Board staff also recommends deletion of the reference to the San Timoteo Watershed Management Authority in the Basin Plan description of the surface water monitoring requirement since the San Timoteo Watershed Management Authority no longer exists.

These changes would not result in a substantive change to existing regulation.

The proposed changes to the Surface Water Monitoring Program are shown in the Attachment to Resolution No. R8-2012-0002, p. 2, Chapter 5, Implementation, Section V.A.2.

Figure 1 – Prado Basin Management Zone - Proposed Revised Basin Boundary



2.3 Revise the Groundwater Monitoring Program for TDS and Nitrogen: Delete the Requirement for 50% Nitrogen Loss Coefficient Determination

Historically, nitrate-nitrogen was considered a conservative constituent, not subject to significant subsurface transformation or loss, and such losses were not identified or assumed for regulatory purposes. As part of development of the 2004 Salt Management Plan updates, quantification of nitrogen loss through subsurface transformation was evaluated. The focus was to determine whether POTW dischargers might be required to incur costs for additional treatment to meet the proposed groundwater management zone objectives, or whether natural, subsurface nitrogen losses could achieve any requisite reductions. The intent was to specify in the Basin Plan a nitrogen loss coefficient that could be used with certainty to develop waste discharge limits for nitrogen discharges throughout the Region that would protect the quality of affected groundwater.

The nitrogen loss studies conducted as part of the 2004 Salt Management Plan update process resulted in the incorporation in the Basin Plan of a default nitrogen loss coefficient of 25% for the loss of nitrogen in the Region through subsurface transformation for all discharges that affect groundwater in the Santa Ana River watershed, including discharges that percolate to ground but are not discharged directly to the river system. This nitrogen loss coefficient is incorporated into the wasteload allocation and is applied to discharges that affect groundwater management zones with and without nitrate-nitrogen assimilative capacity.

When the updates to the Salt Management Plan were being considered, the City of Riverside indicated that nitrogen losses in the lower portion of Reach 3 of the Santa Ana River that overlies the Chino South Management Zone can be greater than 25% and even up to 90%. Based on this information, the Regional Board adopted a nitrogen loss coefficient of 50% to be applied to Reach 3 of the river that overlies the Chino South Management Zone. However, because the data supporting the 50% nitrogen loss coefficient were limited and so varied, the Regional Board also incorporated into the Basin Plan a requirement for additional, confirmatory follow-up studies to verify the 50% nitrogen loss coefficient. WEI conducted the studies and the 50% nitrogen loss in this portion of the Santa Ana River was confirmed (WEI, 2005). Therefore, since this task has been completed, staff recommends that the nitrogen loss confirmatory monitoring requirement be deleted from the Basin Plan.

This change would have no substantive regulatory effect.

The proposed change to the Groundwater Monitoring Program is shown in the Attachment to Resolution No. R8-2012-0002, p. 2, Chapter 5, Implementation, Section V.B.2.

3.0 Modification of the Chino Basin Maximum Benefit Program

As part of the development of the 2004 Salt Management Plan, several agencies proposed alternative, less stringent TDS and nitrate-nitrogen objectives for specific groundwater management zones. These proposals were based on the requirements of the State’s antidegradation policy (State Board Resolution No. 68-16) and on consideration of the factors specified in Water Code Section 13241, including economics, the need to use recycled water, and the need to develop housing in the area. Because the less stringent objectives would allow for a lowering of water quality, the agencies recommending them were required to demonstrate that their proposed objectives would protect beneficial uses and that water quality consistent with the maximum benefit of the people of the state would be maintained. Thus, the objectives were termed “maximum benefit” water quality objectives. Among the agencies who proposed “maximum benefit” objectives for their underlying management zones were the Chino Basin Watermaster (Watermaster) and the Inland Empire Utilities Agency (IEUA). Watermaster and the IEUA prepared a proposal for maximum benefit objectives for the Chino North and Cucamonga Management Zones. These objectives were incorporated into the Basin Plan in 2004, together with specific implementation commitments designed to comply with the antidegradation policy requirements.

3.1 Overview of the Chino Basin “Maximum Benefit” Program

As shown in Table 1, the Basin Plan specifies alternative, “maximum benefit” objectives for TDS and nitrate-nitrogen for the Chino North and Cucamonga groundwater management zones and antidegradation objectives for the Chino 1, 2, and 3 and Cucamonga Management Zones. (The Chino North Management Zone encompasses the Chino 1, 2, and 3 Management Zones, which are recognized independently, in lieu of the Chino North Management Zone, when and if antidegradation objectives apply.)

Table 1

“Antidegradation” and “Maximum Benefit” Objectives for the Chino and Cucamonga Management Zones

| Management Zone | “Antidegradation” WQO | | Current (2006) Ambient Quality | | Management Zone | “Maximum Benefit” WQO | | Current (2006) Ambient Quality | |
|-----------------|-----------------------|-------------------------|--------------------------------|-------------------------|-----------------|-----------------------|-------------------------|--------------------------------|-------------------------|
| | TDS mg/L | NO ₃ -N mg/L | TDS mg/L | NO ₃ -N mg/L | | TDS mg/L | NO ₃ -N mg/L | TDS mg/L | NO ₃ -N mg/L |
| Chino 1 | 280 | 5.0 | 310 | 8.4 | Chino North | 420 | 5.0 | 340 | 9.7 |
| Chino 2 | 250 | 2.9 | 300 | 7.2 | | | | | |
| Chino 3 | 260 | 3.5 | 280 | 6.3 | | | | | |
| Cucamonga | 210 | 2.4 | 260 | 4.4 | Cucamonga | 380 | 5.0 | 260 | 4.4 |

The application of the “maximum benefit” objectives is contingent upon the implementation of a series of projects and programs by Watermaster and the IEUA that will ensure and demonstrate that (i) beneficial uses are being protected and (ii) water quality consistent with the maximum benefit to the people of the state is being maintained. Table 5-8a of the Basin Plan identifies the projects and requirements (the “maximum benefit commitments”) that must be implemented to demonstrate that water quality consistent with the maximum benefit to the people of the state will be maintained. Table 2 below provides a summary of each commitment specified in the Basin Plan and the status of compliance with those requirements by IEUA and the Watermaster.

It is assumed that maximum benefit is demonstrated and that the “maximum benefit” objectives apply to the Chino North and Cucamonga Management Zones as long as the schedule specified in Table 5-8a is being met and the commitments are satisfied. If the Regional Board determines that the maximum benefit program is not being implemented effectively in accordance with the schedule shown in Table 5-8a, then maximum benefit is not demonstrated, and the antidegradation objectives for TDS and nitrate-nitrogen for the Chino 1, Chino 2, Chino 3, and Cucamonga Management Zones apply. In this case, the Basin Plan requires that any TDS and nitrate-nitrogen discharges to these management zones in excess of the antidegradation water quality objectives would need to be mitigated. The finding that the “maximum benefit” commitments are not being met and that mitigation is subsequently required is subject to Regional Water Board approval at a duly noticed public meeting.

As can be seen in Table 2, the Watermaster and IEUA have demonstrated compliance with all of the maximum benefit commitments, with the exception of achievement of full hydraulic control. Several reports produced for Watermaster have demonstrated that hydraulic control has not yet been fully achieved in the area between the Chino Hills and Chino-I Desalter well 5 (WEI, 2006a; 2006b; 2006c; 2007a; 2007b; 2008a; 2008b; 2009a; 2009c; 2010; 2011). As a result, in 2010, the Regional Board Executive Officer issued an Administrative Civil Liability complaint (ACLC) for the failure of Watermaster and the IEUA to maintain hydraulic control (RWQCB, 2010a). In response to the complaint, IEUA, the Watermaster and the Regional Board entered into a settlement agreement whereby the Chino Desalter Authority (on behalf of Watermaster and the IEUA) is constructing the Chino Creek Well Field, which is designed to achieve hydraulic control (RWQCB, 2010b). Regional Water Board staff believes it is important to continue to grant these agencies the ability to recharge recycled water afforded through application of the “maximum benefit” objectives even though complete hydraulic control has not been fully demonstrated, provided that the Watermaster and IEUA continue to develop and implement measures to achieve hydraulic control in a timely manner, pursuant to the settlement agreement.

**Table 2
Chino Basin Maximum Benefit Program -- Summary of Maximum Benefit Commitments,
Deliverable Dates and Status of Compliance**

| Description of Commitment | Compliance Date – as soon as possible, but no later than | Status of Compliance |
|---|---|---|
| <p>1. Surface Water Monitoring Program</p> <ul style="list-style-type: none"> a. Submit Draft Monitoring program to Regional Board b. Implement Monitoring Program c. Quarterly data report submittal d. Annual data report submittal | <ul style="list-style-type: none"> a. January 23, 2005 b. Within 30 days from the date of Regional Board approval of the monitoring plan c. April 15, July 15, October 15, and January 15 d. February 15th | <ul style="list-style-type: none"> a. Draft Monitoring Program submitted to Regional Board on January 23, 2005. b. Monitoring Plan initiated prior to Regional Board approval. c. All data reports have been submitted on time. d. All annual reports submitted by April 15 of each year. (Prior to the submittal of the first annual report in 2006, Regional Board staff agreed to extend the annual report due date to April 15 to allow more time for laboratory analysis of December samples and the subsequent analysis/documentation of results). |
| <p>2. Groundwater Monitoring Program</p> <ul style="list-style-type: none"> a. Submit Draft Monitoring program to Regional Board b. Implement Monitoring Program c. Annual data report submittal | <ul style="list-style-type: none"> a. January 23, 2005 b. Within 30 days from the date of Regional Board approval of the monitoring plan c. February 15th | <ul style="list-style-type: none"> a. Draft Monitoring Program submitted to Regional Board on January 23, 2005. b. Monitoring Plan initiated prior to Regional Board approval. c. All annual reports submitted by April 15 of each year. (Prior to the submittal of the first annual report in 2006, Regional Board staff agreed to extend the annual report due date to April 15 to allow more time for laboratory analysis of December samples and the subsequent analysis/documentation of results). |
| <p>3. Chino Desalter</p> <ul style="list-style-type: none"> a. Chino I desalter expansion to 10 mgd b. Chino II desalter at 10 mgd | <ul style="list-style-type: none"> a. Prior to the recharge of recycled water b. Recharge of recycled water allowed once award of contract and notice to proceed issued for construction of desalter | <ul style="list-style-type: none"> a. Desalter I was expanded to about 14 mgd. Expansion completed in April 2005; recharge began July 2005. b. Contract for Chino II Desalter awarded October 2003. |

**Table 2
 Chino Basin Maximum Benefit Program -- Summary of Maximum Benefit Commitments,
 Deliverable Dates and Status of Compliance (cont.)**

| Description of Commitment | Compliance Date – as soon as possible, but no later than | Status of Compliance |
|--|---|---|
| 4. Future desalters plan and schedule submittal | October 1, 2005 Implement plan and schedule upon Regional Board approval | The Chino Desalter Phase 3 Expansion Project activities include expansion of the Chino I Desalter Well Field (the Chino Creek Well Field) and expansion of the Chino II Desalter treatment capacity. The Chino Desalter Authority is constructing the Chino Creek Well Field, which is designed to achieve hydraulic control west of Chino-I Desalter Well No. 5. The first two wells (Well I-16 and Well I-18) are in the process of being drilled, constructed, and tested. The project schedule has the Desalter Expansions fully on-line in 2014. |
| 5. Recharge facilities (17) built and in operation | June 30, 2005 | The subject recharge facilities were completed and in operation by June 30, 2005. The supplemental water recharge capacity of some of these basins is being expanded beyond the original commitments by the Watermaster/IEUA. Further expansion will occur in the near future. |
| 6. IEUA wastewater quality improvement plan and schedule submittal | 60 days after agency-wide 12-month running average effluent TDS quality equals or exceeds 545 mg/L for 3 consecutive months or agency-wide 12-month running average TIN equals or exceeds 8 mg/L in any month. Implement plan and schedule upon approval by Regional Board | These threshold events have not yet occurred and therefore the IEUA wastewater quality improvement plan has not been developed. |

**Table 2
Chino Basin Maximum Benefit Program -- Summary of Maximum Benefit Commitments,
Deliverable Dates and Status of Compliance (cont.)**

| Description of Commitment | Compliance Date – as soon as possible, but no later than | Status of Compliance |
|--|--|---|
| <p>7. Recycled water will be blended with other recharge sources so that the 5-year running average TDS and nitrate concentrations of water recharge are equal to or less than the “maximum benefit” water quality objectives for the affected management zones (Chino North or Cucamonga)</p> <p>a. Submit a report that documents the location, amount of recharge, and TDS and nitrogen quality of stormwater recharge before the OBMP recharge improvements were constructed and what is projected to occur after the recharge improvements are completed.</p> <p>b. Submit documentation of amount, TDS and nitrogen quality of all sources of recharge and recharge locations. For stormwater recharge used for blending, submit documentation that the recharge is the result of CBW/IEUA enhanced recharge facilities.</p> | <p>Compliance must be achieved by the end of the 5th year after initiation of recycled water recharge operations.</p> <p>a. Prior to initiation of recycled water recharge</p> <p>b. Annually, by February 15th, after initiation of construction of basins/other facilities to support enhanced stormwater recharge</p> | <p>Recycled water recharge initiated in 2006. Compliance will be determined based upon data submitted with the 2012 annual report.</p> <p>a. No documentation of water quality data or quantity for stormwater prior to OBMP initiation exists. Stormwater is being monitored for flow, TDS and nitrogen since 2005.</p> <p>b. First 5 year report submitted June 2011.</p> |
| <p>8. Hydraulic Control Failure</p> <p>a. Plan and schedule to correct loss of hydraulic control</p> <p>b. Achievement and maintenance of hydraulic control</p> <p>c. Mitigation plan for temporary failure to achieve/maintain hydraulic control</p> | <p>a. 60 days from Regional Board finding that hydraulic control is not being maintained</p> <p>b. In accordance with plan and schedule approved by the Regional Board. The schedule shall assure that hydraulic control is achieved as soon as possible but no later than 180 days after loss of hydraulic control is identified.</p> <p>c. By January 23, 2005. Implement plan upon Regional Board determination that hydraulic control is not being maintained.</p> | <p>a. Loss of hydraulic control finding made in 2007. Plan/schedule for achieving hydraulic control submitted and approved in 2010.</p> <p>b. Hydraulic control to be achieved by 2014 (see text on page 11).</p> <p>c. Submitted to Regional Board on March 3, 2005.</p> |
| <p>9. Ambient groundwater quality determination</p> | <p>July 1, 2005 and every three years thereafter</p> | <p>Watermaster and the IEUA have participated in the ambient water quality determination as requested by SAWPA. Watermaster and the IEUA provided their fair share of funds and substantial groundwater data for this effort.</p> |

3.2 Proposed Chino Basin Maximum Benefit Program Modifications

3.2.1. Surface Water Monitoring Program

As noted above, one of the Chino Basin Maximum Benefit Program commitments made by the Watermaster and IEUA and included in the Basin Plan is to implement a surface water monitoring program. The purpose of the surface water monitoring program is to evaluate the water quality effects of implementation of the “maximum benefit” nitrate-nitrogen and TDS objectives on Santa Ana River water quality, primarily to ensure that hydraulic control is maintained and that poor water quality is not being delivered downstream to the Orange County Management Zone.

The 2004 Basin Plan Amendment required that a draft surface water monitoring program be submitted by January 23, 2005 and implemented within 30 days of Regional Board approval of the proposal. These requirements have been fulfilled.

To provide direction to the development of the draft program, specific surface water monitoring requirements, including monitoring locations and sampling frequencies, are explicitly identified in the Basin Plan (Table 5-8b). These specific requirements cannot be modified without an additional Basin Plan amendment. Based on experience gained from implementing the approved program, Watermaster and the IEUA have determined that modifications to the program would be appropriate and have requested that the Basin Plan be amended to delete Table 5-8b. This would provide greater flexibility for future modifications of the surface water monitoring program without the need for a Basin Plan amendment. Their recommended alternative, which is reflected in the amendments now proposed, is to require the submittal of a proposed revised monitoring plan for approval by the Regional Board. The program would be implemented upon Regional Board approval. Again, this approach would provide flexibility to make needed changes efficiently, while providing the opportunity for public comment on the proposal. (Watermaster, 2008; Watermaster 2009; WEI, 2009a; WEI, 2010). Watermaster and the IEUA have already proposed a revised surface water monitoring program for Regional Board consideration (see Item XX, February 10, 2012).

The proposed amendments to the surface water monitoring requirements also recognize that further modification of the surface water monitoring program may be appropriate in the future. The proposed amendments specify that the Watermaster/IEUA must submit a proposed revised monitoring program when directed to do so by the Regional Board’s Executive Officer and in accordance with the schedule prescribed by the Executive Officer. Of course, provided that Table 5-8b is removed and that the Basin Plan no longer dictates monitoring specifics, the Watermaster/IEUA may independently request review and Regional Board approval of a revised surface water monitoring program as the need arises.

Watermaster and the IEUA have also requested modifications to the reporting schedule, including deletion of the quarterly reporting requirements and extension of the deadline for the annual monitoring report from February 15th to April 15th of each year to allow more time for laboratory analysis and processing of monitoring data collected in December. Regional Water Board staff supports these revisions. (In fact, as indicated in Table 2, Board staff approved the requested change in the annual report due date to April 15th, given that the change would allow for more complete data and analyses.)

The proposed changes to the surface water monitoring requirements would not have a substantial regulatory effect. Rather, the changes would merely improve the efficiency and effectiveness of established monitoring requirements.

The proposed changes to the Chino Basin Maximum Benefit Program surface water monitoring program are shown in the Attachment to Resolution No. R8-2012-0002, p.5, Chapter 5, Implementation, Section VI.A.2.Chino Basin Maximum Benefit Program requirements, including: requiring the submittal of a revised surface water monitoring program within 15 days of the approval of the Basin Plan amendment and, thereafter, as directed by the Regional Board's Executive Officer; requiring implementation of the revised monitoring program(s) upon Regional Board approval; eliminating the quarterly monitoring reporting requirement; extending the deadline of the annual monitoring report to April 15th; update of Table 5-8a; and deletion of Table 5-8b.

3.2.2. Groundwater Monitoring Program

In addition to the surface water monitoring program commitments, the Chino Basin Maximum Benefit Program commitments made by the Watermaster and IEUA and included in the Basin Plan also include a groundwater monitoring program component. In conjunction with surface water monitoring, the purpose of the groundwater monitoring program is to evaluate the water quality effects of implementation of the "maximum benefit" nitrate-nitrogen and TDS objectives on underlying and downstream groundwater quality and to ensure that hydraulic control is maintained.

The 2004 Basin Plan Amendment required that a draft groundwater monitoring program be submitted by January 23, 2005 and implemented within 30 days of Regional Board approval of the proposal. These requirements have been fulfilled.

The proposed amendments to the groundwater monitoring requirements recognize that modifications of the groundwater monitoring program are needed in the future based on the hydraulic control findings (see discussion in section 3.1). Because of the failure of hydraulic control in the western area of the basin, and the requirement for the Watermaster/IEUA to construct the Chino Creek Well Field to intercept groundwater flow, an updated groundwater monitoring program is needed to verify that hydraulic control is being achieved. The proposed amendments specify that the Watermaster/IEUA must submit a proposed revised groundwater monitoring program by the end of 2013 in anticipation of completion of the Chino Creek Well Field in 2014. Further, the proposed amendments also specify that additional groundwater monitoring program submittals are required when directed to do so by the Regional Board's Executive Officer and in accordance with the schedule prescribed by the Executive Officer. Again, as with the surface water monitoring program, the Watermaster/IEUA may independently request review and Regional Board approval of a revised groundwater monitoring program as the need arises.

The proposed changes to the groundwater monitoring requirements would not have a substantial regulatory effect. Rather, the changes would update current activities related to

groundwater monitoring and improve the efficiency and effectiveness of these monitoring requirements.

The proposed changes to the Chino Basin Maximum Benefit Program groundwater monitoring program are shown in the Attachment to Resolution No. R8-2012-0002, p. 5, Chapter 5, Implementation, Section VI.A.2. Chino Basin Maximum Benefit Program requirements, including: requiring the submittal of a revised groundwater monitoring program by December 31, 2013 and, thereafter, as directed by the Regional Board's Executive Officer; requiring implementation of the revised monitoring program(s) upon Regional Board approval; eliminating the quarterly monitoring reporting requirement; extending the deadline of the annual monitoring report to April 15th; and update of Table 5-8a.

4.0 Antidegradation Analysis

Pursuant to the State Board's antidegradation policy (Resolution No. 68-16), it is necessary to consider whether the proposed changes to the Basin Plan would result in a lowering of water quality and, if so, whether (i) beneficial uses would continue to be protected; (ii) waste discharges would receive best practicable treatment or control; and, (iii) water quality consistent with maximum benefit to the people of the state would be maintained. There would be no lowering of water quality as the result of the proposed amendment; there would also be no change to the Regional Water Board's regulatory programs to manage salt in the Santa Ana basin. Therefore, no further antidegradation analysis is required.

5.0 California Environmental Quality Act

The Secretary of Resources has certified the Basin Planning process as functionally equivalent to the preparation of an Environmental Impact Report (EIR) or a Negative Declaration pursuant to the California Environmental Quality Act (CEQA). However, in lieu of these documents an environmental analysis is to be presented in a substitute document which includes at a minimum, a description of the proposed activities and either: 1) alternatives to the activities and mitigation measures to avoid or reduce any significant or potentially significant effects that the proposed project may have on the environment; or, 2) a statement that the proposed project would not have any significant or potentially significant effects on the environment, supported by a checklist or other documentation (California Code of Regulations, Title 14, Chapter 3, Section 15000 *et seq.* (CEQA Guidelines), Section 15252). This staff report describes the proposed Basin Plan amendments (i.e., the proposed project). The amendments entail minor modifications to the Salt Management Plan that was subjected to CEQA analysis as part of the 2004 consideration of amendment of the Basin Plan and staff has determined that this amendment is exempt from CEQA analysis.

6.0 Staff Recommendation

Board staff recommends the adoption of Resolution No. R8-2012-0002, adopting the amendment to the Basin Plan shown in the attachment to the Resolution to amend Chapter 3 of the Basin Plan (Prado Basin Management Zone boundary) and Chapter 5 of the Basin Plan (Implementation Plan – Salt Management Plan)

Attachments:

| | |
|--------------|--|
| Attachment A | Tentative Resolution No. R8-2012-0002, including the proposed Basin Plan Amendment |
|--------------|--|

7.0 References

- California Regional Water Quality Control Board, Santa Ana Region. (2004). Resolution No. R8-2004-0001 Resolution Amending the Water Quality Control Plan for the Santa Ana River Basin to Incorporate an Updated Total Dissolved Solids (TDS) and Nitrogen Management Plan for the Santa Ana Region.
- California Regional Water Quality Control Board, Santa Ana Region. (2005). Resolution No. R8-2005-0064 Resolution Approving the Chino Basin and Cucamonga Basin Maximum Benefit Surface Water and Groundwater Monitoring Program Proposals as Required in the Total Dissolved Solids and Nitrogen Management Plan Specified in the Water Quality Control Plan for the Santa Ana River Basin.
- California Regional Water Quality Control Board, Santa Ana Region. (2010). Resolution No. R8-2010-0012, Declaration of Conformance with the State Recycled Water Policy
- California Regional Water Quality Control Board, Santa Ana Region. (2010), Order No. R8-2010-0031, In the Matter of Chino Basin Watermaster and Inland Empire Utilities Agency, Settlement Agreement and Stipulation for Entry of Order.
- California State Water Resources Control Board, "Policy with Respect to Maintaining High Quality Waters, Resolution No. 68-16," October 1968.
- Chino Basin Watermaster. (2002). Chino Basin Watermaster Proposal for New Total Dissolved Solids (TDS) and Total Inorganic Nitrogen Water Quality Objectives for the Chino and Cucamonga Basins Based on Maximum Benefit. Letter to Gerard Thibeault, December 2002.
- Chino Basin Watermaster. (2008). Proposed Revisions to the Chino Basin Hydraulic Control Monitoring Program (Letter to Gerald Thibeault, October 30, 2008).
- Chino Basin Watermaster. (2009). Petition to Include an Amendment to the 2004 Basin Plan for Revisions to the Chino Basin Hydraulic Control Monitoring Program to the Triennial Review (Letter to Gerald Thibeault, January 29, 2009).
- Wildermuth Environmental, Inc. (1999). Optimum Basin Management Program. Phase I Report. Prepared for the Chino Basin Watermaster.
- Wildermuth Environmental, Inc. (2000). TIN/TDS Phase 2A: Tasks 1 through 5, TIN/TDS Study of the Santa Ana Watershed, Technical Memorandum.
- Wildermuth Environmental, Inc. (2004). Optimum Basin Management Program, Final Hydraulic Control Monitoring Program Work Plan. Prepared for the Chino Basin Watermaster and the Inland Empire Utilities Agency. May 2004.
- Wildermuth Environmental, Inc. (2006). Chino Basin Maximum Benefit Monitoring Program 2005 Annual Report. Prepared for the Chino Basin Watermaster and Inland Empire Utilities Agency. April 2006.

ATTACHMENT A

Resolution No. R8-2012-0002

To be submitted at a later date

draft

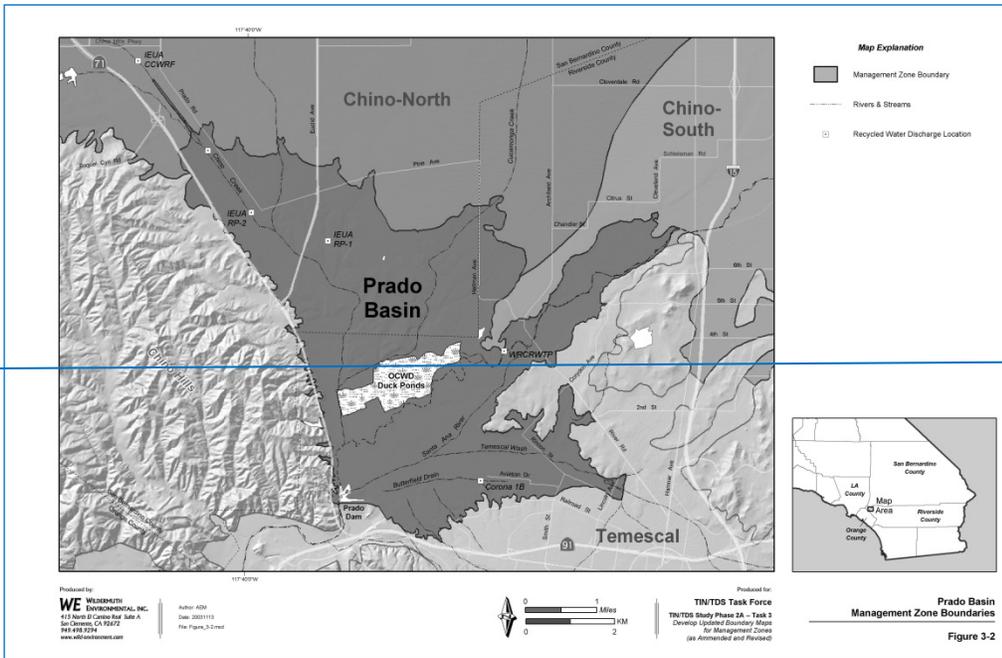
ATTACHMENT TO RESOLUTION NO. R8-2012-0002

(Proposed Basin Plan amendment changes are shown as **strikeout** for deletions and **underline** for additions

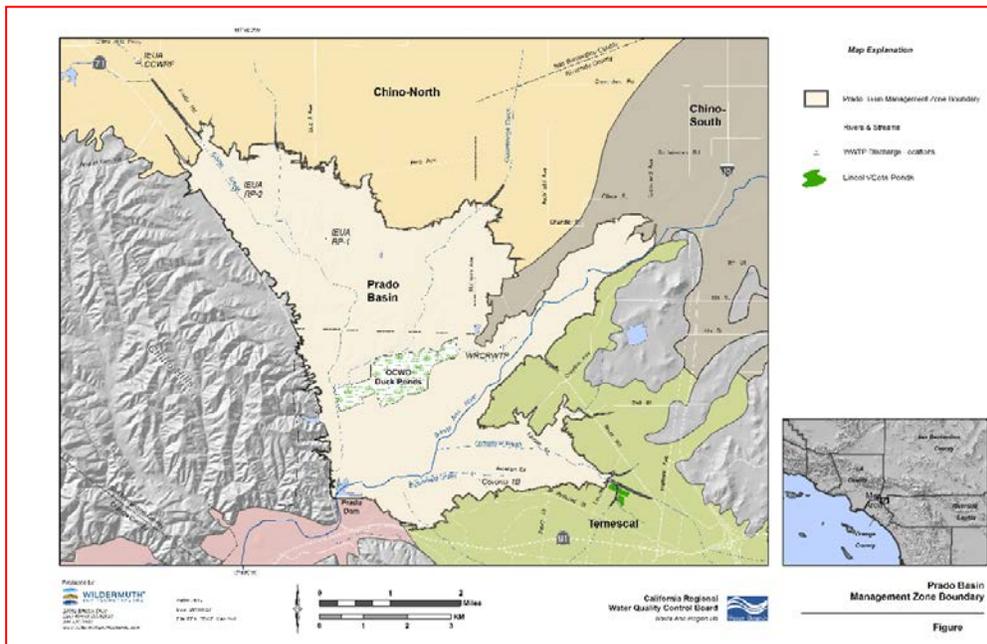
Chapter 3, "Beneficial Uses"

Page 3-11, Figure 3-2; Prado Basin Management Zone Boundaries

- Delete existing Basin Plan map



- Insert new map of Prado Basin Management Zone boundaries



Chapter 5, "Implementation"

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V. Salt Management Plan – Monitoring Program Requirements

A. Surface Water Monitoring Program Requirements for TDS and Nitrogen

- By ~~April 15th~~ August 1st of each year, the Orange County Water District, Inland Empire Utilities Agency, City of Riverside, City of Corona, Elsinore Valley Municipal Water District, Eastern Municipal Water District, Lee Lake Water District, City of Colton, City of San Bernardino Municipal Water Department, Jurupa Community Services District, Western Riverside County Wastewater Agency, Yucaipa Valley Water District, City of Beaumont, ~~the San Timoteo Watershed Management Authority~~ and the City of Rialto, shall submit an annual report of Santa Ana River, Reach 2, 4 and 5 water quality. Data evaluated shall include that collected by the Santa Ana River Watermaster, Orange County Water District, and the US Geologic Survey, at a minimum.

In lieu of this coordinated annual report, one or more of the parties identified in the preceding paragraph may submit an individual or group annual report. Any such individual or group report shall also be submitted by August 15th of each year.

Additional surface water monitoring programs may be specified by the Regional Board depending upon watershed conditions, waste discharge specifications and/or any special studies related to TDS and nitrogen.

B. Groundwater Monitoring Program for TDS and Nitrogen

Implementation of a watershed-wide TDS/nitrogen groundwater monitoring program is necessary to assess current water quality, to determine whether TDS and nitrate-nitrogen water quality objectives for management zones are being met or exceeded, and to update assimilative capacity findings. Groundwater monitoring is also needed to fill data gaps for those management zones with insufficient data to calculate TDS and nitrate-nitrogen historical quality and current quality. Finally, groundwater monitoring is needed to assess the effects of POTW discharges to surface waters on affected groundwater management zones. ~~In particular, monitoring is needed to confirm the 50% nitrogen loss coefficient for discharges to that part of the Santa Ana River, Reach 3 that affect the Chino South Management Zone.~~

Groundwater monitoring requirements for TDS and nitrogen are as follows:

- ~~No later than June 23, 2005, the City of Colton, City of San Bernardino Municipal Water Department, City of Riverside, Jurupa Community Services District and the City of Rialto, shall submit to the Regional Board for approval, a monitoring program that will be utilized to confirm the 50% Santa Ana River, Reach 3 nitrogen loss coefficient.~~

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~~In lieu of this coordinated monitoring plan, one or more of the parties identified in the preceding paragraph may submit an individual or group monitoring plan. Any such individual or group monitoring plan shall also be due no later than June 23, 2005.~~

~~Within 30 days of Regional Board approval of the monitoring plan, the monitoring program must be implemented.~~

Page 5-47ff

VI. Maximum Benefit Implementation Plans for Salt Management

A. Salt Management - Chino Basin and Cucamonga Basin

Table 5-8a
Chino Basin Maximum Benefit Commitments
(revised in 2012; see text)

| Description of Commitment | Compliance Date – as soon as possible, but no later than |
|--|---|
| <p>1. Surface Water Monitoring Program</p> <p>a. Submit Draft Monitoring Program to Regional Board</p> <p>b. Implement Monitoring Program</p> <p>b. Quarterly data report submittal</p> <p><u>c. Submit Draft Revised Monitoring Program to Regional Board</u></p> <p><u>d. Implement Revised Monitoring Program</u></p> <p><u>e. Submit Draft Revised Monitoring Program(s) (subsequent to that required in “c”, above) to Regional Board</u></p> <p><u>f. Implement Revised Monitoring Program (s)</u></p> <p>eg. Annual data report submittal</p> | <p>a. January 23, 2005</p> <p>b. Within 30 days from date of Regional Board approval of monitoring plan</p> <p>c. April 15, July 15, October 15, January 15</p> <p><u>c. (**15 days from BPA approval)</u></p> <p><u>d. Upon Regional Board approval</u></p> <p><u>e. Upon notification of the need to do so from the Regional Board Executive Officer and in accordance with the schedule prescribed by the Executive Officer</u></p> <p><u>f. Upon Regional Board approval</u></p> <p>eg. February April 15th</p> |
| <p>2. Groundwater Monitoring Program</p> <p>a. Submit Draft Monitoring Program to Regional Board</p> <p>b. Implement Monitoring Program</p> <p><u>c. Plan and schedule for demonstrating hydraulic control</u></p> <p><u>d. Implement hydraulic control demonstration plan and schedule</u></p> <p><u>e. Submit Draft Revised Monitoring Program(s) (subsequent to that required in “a”, above) to Regional Board</u></p> <p><u>f. Implement revised monitoring plan(s)</u></p> <p>eg. Annual data report submittal</p> | <p>a. January 23, 2005</p> <p>b. Within 30 days from date of Regional Board approval of monitoring plan</p> <p><u>c. By December 31, 2013.</u></p> <p><u>d. Upon Regional Board approval.</u></p> <p><u>e. Upon notification of the need to do so from the Regional Board Executive Officer and in accordance with the schedule prescribed by the Executive Officer</u></p> <p><u>f. Upon Regional Board approval</u></p> <p>eg. February April 15th</p> |
| <p>3. Chino Desalters</p> <p>a. Chino 1 desalter expansion to 10 MGD</p> <p>b. Chino 2 desalter at 10 MGD design</p> | <p>a. Prior to recharge of recycled water</p> <p>b. Recharge of recycled water allowed once award of contract and notice to proceed issued for construction of desalter treatment plant</p> |
| <p>4. Future desalters plan and schedule submittal</p> | <p>October 1, 2005</p> <p>Implement plan and schedule upon Regional Board approval</p> |

Table 5-8a
Chino Basin Maximum Benefit Commitments
(revised in 2012; see text)

| Description of Commitment | Compliance Date – as soon as possible, but no later than |
|---|--|
| 5. Recharge facilities (17) built and in operation | June 30, 2005 |
| 6. IEUA wastewater quality improvement plan and schedule submittal | 60 days after agency-wide 12 month running average effluent TDS quality equals or exceeds 545 mg/L for 3 consecutive months or agency-wide 12 month running average TIN equals or exceeds 8 mg/L in any month. Implement plan and schedule upon approval by Regional Board |
| <p>7. Recycled water will be blended with other recharge sources so that the 5-year running average TDS and nitrate-nitrogen concentrations of water recharged are equal to or less than the “maximum benefit” water quality objectives for the affected Management Zone (Chino North or Cucamonga).</p> <p>a. Submit a report that documents the location, amount of recharge, and TDS and nitrogen quality of stormwater recharge before the OBMP recharge improvements were constructed and what is projected to occur after the recharge improvements are completed</p> <p>b. Submit documentation of amount, TDS and nitrogen quality of all sources of recharge and recharge locations. For stormwater recharge used for blending, submit documentation that the recharge is the result of CBW/IEUA enhanced recharge facilities.</p> | <p>Compliance must be achieved by end of 5th year after initiation of recycled water recharge operations.</p> <p>a. Prior to initiation of recycled water recharge</p> <p>b. Annually, by February April 15th, after initiation of construction of basins/other facilities to support enhanced stormwater recharge.</p> |
| <p>8. Hydraulic Control Failure</p> <p>a. Plan and schedule to correct loss of hydraulic control</p> <p>b. Achievement and maintenance of hydraulic control</p> <p>c. Mitigation plan for temporary failure to achieve/maintain hydraulic control</p> | <p>a. 60 days from Regional Board finding that hydraulic control is not being maintained</p> <p>b. In accordance with plan and schedule approved by Regional Board. The schedule shall assure that hydraulic control is achieved as soon as possible but no later than 180 days after loss of hydraulic control is identified.</p> <p>c. By January 23, 2005. Implement plan upon Regional Board determination that hydraulic control is not being maintained (see text).</p> |
| 9. Ambient groundwater quality determination | July 1, 2005 and every 3 years thereafter |

Description of Chino Basin Watermaster and Inland Empire Utilities Agency Commitments

1. Surface Water Monitoring Program (Table 5-8a #1)

~~The Chino Basin Watermaster (Watermaster), in conjunction with staff of the Orange County Water District and Regional Board, has developed a proposed surface water monitoring program. By January 23, 2005 and prior to the discharge of recycled water to the Chino Basin, Watermaster shall submit the recommended surface water monitoring program to the Regional Board for approval. The monitoring program must be implemented within 30 days of Regional Board approval, and six months of data must be generated prior to the discharge of recycled water to the Chino Basin.~~

In conjunction with the Groundwater Monitoring Program (see #2, below), the purpose of the surface water monitoring program is to collect the data necessary to demonstrate whether hydraulic control of the Chino Basin (see #8, below) is being achieved and maintained. A surface water monitoring program was developed, approved and implemented in response to the maximum benefit commitments initially incorporated in the Basin Plan in 2004 (Resolution No. R8-2004-0001). The Regional Board approved the Surface Water Monitoring Program in 2005 (R8-2005-0064). Subsequently, the need to revise the monitoring program, and other elements of the maximum benefit commitments (see below), was recognized and appropriate amendments were adopted in 2012 (Resolution No. R8-2012-0002). These include the requirement that by (**15 days from approval of the BPA**), the Watermaster shall submit a revised surface water monitoring program to the Regional Board for approval. The monitoring program must be implemented upon Regional Board approval.

It is expected that the monitoring program will be reviewed as it is implemented over time, and that further updates may be necessary. Accordingly, the Basin Plan requires that draft revised monitoring programs be submitted upon notification by the Regional Board's Executive Officer of the need to do so. The schedule for the submittal will be prescribed by the Executive Officer. Any such revision to the monitoring program is subject to Regional Board approval at a duly noticed public hearing and is to be implemented upon Regional Board approval.

~~At a minimum, the surface water monitoring program shall include the collection of bi-weekly measurements of general minerals and nitrogen components at the locations listed in Table 5-8b. Data reports shall be submitted to the Regional Board Executive Officer by April 15, July 15, October 15 and January 15 each year. An annual report summarizing all data collected for the year and evaluating compliance with relevant surface water objectives shall be submitted by February-April 15th of each year.~~

2. Groundwater Monitoring Program (Table 5-8a, #2)

The purpose of the Groundwater Monitoring Program is to (1) identify potential impacts from implementation of the Chino Basin "maximum benefit" water quality objectives on water levels and water quality within the Chino Basin and in downgradient basins and (2) in conjunction with the surface water monitoring program, determine whether hydraulic control (see # 8, below) is being achieved and maintained. ~~By January 23, 2005 and prior to the discharge of recycled water to the Chino Basin, Watermaster shall submit to~~ In response to

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requirements established in 2004 (Resolution No. R80 2004-0001), a proposed groundwater monitoring program was submitted. In 2005, t~~The Regional Board for~~ approved a ~~proposed~~ groundwater monitoring program to determine hydraulic control and ambient water quality in the Chino North and Cucamonga Management Zones (Resolution No. R8-2005-0064). Within 30 days of Regional Board approval of the monitoring plan, the groundwater monitoring program must be implemented. The groundwater monitoring program has been ongoing since 2005.

As noted above, the maximum benefit requirements were revised in 2012. Pursuant to these revisions, no later than December 31, 2013, the Watermaster and IEUA shall prepare an updated proposed groundwater monitoring program that includes a proposed plan and schedule for demonstration of hydraulic control. This plan shall be implemented upon Regional Board approval.

It is expected that the monitoring program will be reviewed as it is implemented over time, and that further updates may be necessary. Accordingly, the Basin Plan requires that draft revised monitoring programs be submitted upon notification by the Regional Board's Executive Officer of the need to do so. The schedule for the submittal will be prescribed by the Executive Officer. Any such revision to the monitoring program is subject to Regional Board approval at a duly noticed public hearing and is to be implemented upon Regional Board approval.

An annual report, including all raw data and summarizing the results of the approved groundwater monitoring program, shall be submitted to the Regional Board by ~~February~~ April 15th of each year.

Table 5-8b

Surface Water Monitoring Sites for Monitoring of Surface Water and Groundwater Quality
Near the River to Determine the Presence and Source of Rising Groundwater

| Site Name | Discharge | Owner | Type | Discharge Monitoring | | Water Quality Monitoring | | |
|---------------------|----------------|-----------|-----------------|----------------------|---------|--------------------------|---------|----------------------|
| | | | | Frequency | Period | Frequency | Period | Analyses |
| 11066460 | Santa Ana Riv. | USGS | Total Discharge | Daily | Jan—Dec | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| 11072100 | Temescal Cr. | USGS | Total Discharge | Bi-weekly | Jan—Dec | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| 11073495 | Cucamonga Cr. | USGS | Total Discharge | Bi-weekly | Jan—Dec | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| 11073440 | Chino Cr. | USGS | Total Discharge | Bi-weekly | Jan—Dec | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| 11074000 | Santa Ana Riv. | USGS | Total Discharge | Bi-weekly | Jan—Dec | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| RWQCP Direct | Reeycled Water | Riverside | Reeycled Water | Daily | Jan—Dec | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| RWQCP Hidden Valley | Reeycled Water | Riverside | Reeycled Water | Daily | Jan—Dec | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| Corona RW | Reeycled Water | Corona | Reeycled Water | Daily | Jan—Dec | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| RP1 Cucamonga | Reeycled Water | IEUA | Reeycled Water | Daily | Jan—Dec | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| RP1 Prado | Reeycled Water | IEUA | Reeycled Water | Daily | Jan—Dec | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| RP2 | Reeycled Water | IEUA | Reeycled Water | Daily | Jan—Dec | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| Carbon Canyon | Reeycled Water | IEUA | Reeycled Water | Daily | Jan—Dec | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| RP5 | Reeycled Water | IEUA | Reeycled Water | Daily | Jan—Dec | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| WRQRWTP | Reeycled Water | WR JPA | Reeycled Water | Daily | Jan—Dec | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| SAR-MWDXING | Santa Ana Riv. | OCWD | Total Discharge | Daily | Jan—Dec | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| SAR-HOLELK-01 | Hole Lake | OCWD | Total Discharge | Bi-weekly | May-Sep | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| SAR-VANBUREN | Santa Ana Riv. | OCWD | Total Discharge | Bi-weekly | May-Sep | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| SAR-ETIWANDA-01 | Santa Ana Riv. | OCWD | Total Discharge | Bi-weekly | May-Sep | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| SAR-HAMNER-01 | Santa Ana Riv. | OCWD | Total Discharge | Bi-weekly | May-Sep | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| SAR-RIV.RD | Santa Ana Riv. | OCWD | Total Discharge | Daily | Jan—Dec | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| SAR-DIV- | Santa Ana Riv. | OCWD | Total Discharge | Daily | Jan—Dec | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| PRADOWTLNDS | | | | | | | | |
| SAR-BELOWDAM-01 | Santa Ana Riv. | OCWD | Total Discharge | Daily | Jan—Dec | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| CK-CHINO | Chino Cr. | OCWD | Total Discharge | Bi-weekly | May-Sep | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| CK-MILL | Cucamonga Cr. | OCWD | Total Discharge | Bi-weekly | May-Sep | Bi-weekly | Jan—Dec | Gen. Min. & Physical |
| CK-TEMESCAL | Temescal Cr. | OCWD | Total Discharge | Bi-weekly | May-Sep | Bi-weekly | Jan—Dec | Gen. Min. & Physical |

(Source: Ref. 10B)

8. Hydraulic Control (Table 5-8a, # 8)

“Hydraulic Control” is defined as eliminating groundwater discharge from the Chino Basin to the Santa Ana River, or controlling the discharge to *de minimis* levels. The surface water and groundwater monitoring programs described above are intended to demonstrate whether hydraulic control is achieved and maintained. In the event that the Regional Board finds that hydraulic control is not being accomplished, the Watermaster ~~shall~~ is required to submit to the Regional Board within 60 days of that finding a plan and time schedule to correct ~~(within 180 days from the Regional Board approval of the plan and schedule)~~ the failure to achieve and maintain hydraulic control. This plan must be implemented as soon as possible.

In response to a 2010 finding that hydraulic control was not being achieved, Watermaster and IEUA implemented an approved corrective action and mitigation plan and schedule. Additional plans and schedules to address hydraulic control deficiencies will be required if and as there are future Regional Board findings that hydraulic control is not being achieved or maintained.