12 March 2010

TO: **Mark Norton, SAWPA**

FROM: **Tim Moore**

RE: **Declaration of Conformance**

I prepared the following summary to facilitate our discussions regarding the Declaration of Conformance (Doc) next Wednesday morning. It describes my understanding of the relationship between the DoC and the work previously prepared by the NTDS Task Force.

1) The SWRCB's Recycled Water Policy requires Regional Boards to do three things: (i) develop a salt and nitrate management plan for the region, (ii) establish a water quality monitoring program to implement that management plan, and (iii) take steps to streamline the permitting process for recycled water projects.

2) The Declaration of Conformance is intended to demonstrate that the Santa Ana Regional Board has complied with all three provisions. The Basin Plan amendment adopted in January of 2004 instituted the salt and nitrate management plan for the region.

3) The collective groundwater monitoring and modeling efforts performed by the POTWs through the Basin Monitoring Program Task Force and by the local water agencies through a Cooperative Agreement meet the water quality monitoring requirements of the Recycled Water Policy.

4) The Regional Board sought to streamline the permitting process for recycled water projects by working with local stakeholders to prepare a reclamation guidance document (RGD) for the Santa Ana region. Final adoption of the document was suspended pending the SWRCB's development of the Recycled Water Policy.

5) Some elements of the draft regional guidance document were made obsolete by the new Recycled Water Policy and other elements became redundant. These elements were not discussed in the Declaration of Conformance.

6) The new state policy is focused exclusively on Recycled Water. Therefore, any discussion of how the Regional Board might address other sources of discharge (e.g. State Project Water, Colorado River Water, etc.) previously found in the draft RGD were deliberately omitted from the Declaration of Conformance.

7) In order to streamline the permitting process, the Regional Board worked with local stakeholders to describe, in detail, how the state antidegradation policy (SWRCB Res. No. 68-16) would be applied to recharge projects using recycled water.

8) Consistent with the new Recycled Water Policy, the Regional Board declared that any groundwater recharge project using recycled water could comply with the state antidegradation policy by demonstrating that water quality objectives would be achieved by meeting the approved wasteload allocation.

9) In the rare case where a proposed recycled water recharge project was unable to meet the wasteload allocation, the Regional Board would consider raising the water quality objective provided that all designated beneficial uses remained fully protected and that doing so would provide maximum benefit to the people of California (as required by 68-16).

10) To streamline the permitting process, where a project sponsor was petitioning to increase a water quality objective, the Regional Board worked with local stakeholders to identify examples for what constituted "maximum benefit to the people of California." And, consistent with the new Recycled Water Policy, increasing the use of recycled water was deemed one of many possible justifications for allowing lower water quality.

11) A project proponent is not required to demonstrate that a recharge project would increase the use of recycled water. The Declaration of Conformance describes other ways to justify lowering water quality by showing that a recycled water project would provide maximum benefit to the people of California.

12) Only when a recycled water project cannot comply with the wasteload allocation, and only when the Regional Board is asked to increase water quality objectives to accommodate that project, and only when the project sponsor is claiming that lower water quality is justified because it increases the use of recycled water does the Board expect the project sponsor to show that any such increase would be over and above that which is already occurring.

13) The question of whether the proposed recharge project produces a net increase in the use of recycled water is not relevant where the project sponsor can (i) demonstrate compliance with the approved wasteload allocation, or (ii) does not petition the Regional Board to adopt less stringent water quality objectives, or (iii) demonstrates the project provides maximum benefit to the people of California other than by increasing the use of recycled water.

14) None of the examples used illustrate the concept of "Maximum Benefit" in the RGD or the Declaration of Conformance were intended to serve as generalized review criteria for evaluating the merits of all recycled water projects. The Maximum Benefit examples are only relevant when the Regional Board is deciding whether to approve less stringent water quality objectives and must consider Res. No. 68-16.

15) There is no need to adopt less stringent water quality objectives where there is assimilative capacity in the management zone and the resulting groundwater quality will continue to be better than necessary to protect the use (i.e. meets the basin plan objectives) even after the recycled water recharge project is fully implemented. Hence, no need to determine whether the project increases the use of recycled water in order to make a maximum benefit demonstration. The DoC was revised to accurately reflect the NTDS Task Force's common understanding that the Max-Benefit test applied only when revising water quality objectives not when allocating existing assimilative capacity.

Declaration of Conformance with Recycled Water Policy

Background

On February 3, 2009, the State Water Resources Control Board (State Board) approved Resolution No. 2009-1, adopting a Recycled Water Policy (RWP). Recognizing the statewide benefits of reusing water, the State Board set a goal to increase the use of recycled water by at least one million acre-feet in the next 10 years and two million acre-feet by 2030. That goal is consistent with the 20x2020 Water Conservation Plan, which identified recycled water as a key element of the strategy to reduce per capita water consumption by 20% over the next decade. The Santa Ana Regional Water Quality Control Board (Regional Board) supports the State Board's call "to increase the use of recycled water in a manner that protects water quality as required by state and federal law."

To ensure attainment of water quality objectives and protection of beneficial uses, it is the stated intent of the RWP that "salts and nutrients from all sources be managed on a basin-wide or watershed-wide basis"[1]. To that end, the RWP requires all Regional Water Quality Control Boards to take the following actions:

1) Develop and enact a Salt and Nutrient Management Plan through a locally-driven and controlled collaborative process.[2]

2) Establish an appropriate water quality monitoring program to implement the Salt and Nutrient Management Plan.[3]

3) Streamline the permitting process to facilitate increased use of recycled water wherever possible[4] and especially for landscape irrigation projects.[5]

The Regional Board has adopted plans and programs that fully conform to the requirements set forth in the RWP.

[1] RWP, Section 6-a-2
[2] RWP, Sec. 6-b-1 and 6-b-2
[3] RWP, Sec. 6-b-3-a
[4] RWP, Sec. 2-c
[5] RWP, Sec. 7-b and 7-c

Salt and Nutrient Management Plan

In January, 2004 the Regional Board approved Resolution No. R8-2004-0001, adopting a Basin Plan amendment to incorporate a Salt and Nutrient Management Plan for the entire Santa Ana River watershed (SAR-SNMP). The SAR-SNMP relied on the best available scientific information to identify discrete groundwater management zones (aka "basins" or "sub-basins") and to establish appropriate water quality objectives for total dissolved solids (TDS) and nitrate-nitrogen for each management zone.

As specified by the RWP, the SAR-SNMP takes into consideration a wide variety of site-specific factors including the size and complexity of each groundwater basin (aka "management zones" in the SAR-SNMP), source water quality, stormwater recharge, hydrogeology and water quality in each aquifer[6] In addition, the Regional Board established implementation measures to manage salt and nutrient loading in each basin[7] and performed a comprehensive antidegradation analysis that demonstrated full conformance with the requirements set forth in State Board Resolution No. 68-16.[8]

The SAR-SNMP was developed through an intensive collaborative effort that began in the spring of 1994 and culminated with a basin plan amendment. For nearly ten years, two dozen water and wastewater agencies met monthly in a public forum preparing the technical reports needed to develop and implement the SAR-SNMP. Quarterly progress reports were presented to the Regional Board throughout the long process. The final plan received overwhelming support from the stakeholder community and no negative public comments were submitted opposing its adoption. The SAR-SNMP was unanimously approved by both the Regional Board and the State Board.[9]

Therefore, the Regional Board finds that the SAR-SNMP enacted by Resolution No. R8-2004-0001 meets all of the requirements established in the RWP. Because the SAR-SNMP is "functionally-equivalent" to that required by the RWP, no other salt and nutrient management plan need be submitted for the Santa Ana Region.[10]

[6] RWP, Sec. 6-b-1-a
[7] RWP, Sec. 6-b-3-e
[8] RWP, Sec. 6-b-1-f
[9] SWRCB Resolution No. 2004-0060
[10] RWP, Sec. 6-b-1-e

Water Quality Monitoring Plan

The SAR-SNMP includes requirements to analyze and report salt and nitrate concentrations throughout the region on a regular schedule. Local water and wastewater agencies formed the Basin Monitoring Program Task Force (BMPTF) under the auspices of the Santa Ana Watershed Project Authority (SAWPA) to meet this obligation. Every three years the BMPTF re-estimates current groundwater quality using the best available data and the same scientific methods that were used to establish the original water quality objectives for each management zone established by Resolution No. R8-2004-0001.

In addition, every six years, the BMPTF recalculates the surface water wasteload allocations for TDS and nitrogen. The Regional Board relies on the wasteload allocations to derive appropriate discharge limits for NPDES permits and Waste Discharge Requirements (WDRs). The recalculation is needed to identify any changes needed to ensure continued compliance with the relevant water quality objectives, therefore discharge permits require similar reports to be submitted on a regular basis.

In January, 2008 the Regional Board entered into a Cooperative Agreement with several water and wastewater agencies to analyze and report the amount of salt and nitrates entering local groundwater aquifers as a consequence of recharging imported water in the region.[11] As with the BMPTF effort underwritten by local stakeholders, the Cooperative Agreement obligates signatories to assess current groundwater quality every three years.

In addition, every six years, the signatories have agreed to estimate the changes that are likely to occur in groundwater quality as a result of on-going and expected projects that recharge imported water. By emphasizing the use of "real-time" monitoring, rather than complex fate and transport models, the Regional Board is better able to evaluate the effects of recycled water projects.

The RWP requires all salt and nutrient monitoring plans to include a provision for annual monitoring of Constituents of Emerging Concerns (CECs) consistent with the recommendations of the California Department of Public Health and the State Board.[12]. The State Board established a Blue Ribbon Panel of Experts to make appropriate recommendations for such monitoring requirements.[13] The Panel's recommendations will be submitted in mid-2010 and the State Board is expected to act on them shortly thereafter.

[11] Regional Board Resolution R8-2008-0019 (Jan. 18, 2008)
[12] RWP, Sec. 6-b-3-b
[13] RWP, Sec. 10-b

In the meantime, stakeholders throughout the Santa Ana watershed established the Emerging Constituents Workgroup (ECW) to prepare and implement an interim plan to characterize CEC concentrations in recycled water (including both intentional and incidental recharge projects). In 2008 and 2009, samples collected from municipal effluent, receiving streams, state project water and Colorado River water were analyzed for dozens of different CECs.[14] The results were used to develop a plan for additional characterization studies beginning in 2010-11. The Regional Board approved the plan in December, 2009.[15] The plan will be revised annually and will integrate the State Board's recommendations when they become available.

Collectively, all of these different sampling efforts fulfill the reporting requirements specified in the RWP. The task forces responsible for implementing these water quality monitoring programs host regular public meetings to review the scope, methods, procedures and data. The results are submitted to the Regional Board in an annual report. And, all work products are regularly posted on SAWPA's website.[16]

Streamlining Permitting Process for Recycled Water Projects

To encourage greater use of recycled water, the RWP directs state authorities to streamline the permitting process for such projects. To that end, the Regional Board initiated four specific improvements. First, current ambient groundwater quality is reassessed every three years and projected groundwater quality is updated every six years. The Regional Board relies on these data to evaluate compliance with the water quality objectives and to revise the related wasteload allocations. Regularly-scheduled monitoring and modeling simplifies the permitting process by reducing the need for special technical studies in order to evaluate the probable water quality impact of each new recycled water project on underlying groundwaters.

Second, the Regional Board clarified the regulatory requirements for new recycled water recharge projects and prepared three flowcharts (attached) to guide stakeholders through the process. The single most important issue was to identify the salinity and nitrate concentrations that were required to protect designated beneficial uses. The results of that effort are summarized in Table A and Table B (attached).

[14] Guo, Y.C. et al, "Occurrence, Fate and Transport of PPCPs in Three California Watersheds." AWWA Water Quality Technology Conference, November, 2009. Seattle, WA (Research co-sponsored by Metropolitan Water District of Southern California, Orange County Water District, and National Water Research Institute).

[15] Regional Board Resolution No. R8-2009-0071 (Dec. 10, 2009)

[16] http://www.sawpa.org/roundtable-BMTF-new.html

In addition, it was necessary to adopt consistent methods for evaluating and describing nitrate and TDS concentrations, accounting for spatial and temporal variability, in local groundwaters. Again, the Regional Board staff worked closely with local stakeholders to develop appropriate data quality objectives (DQOs), analytical procedures and interpretive models to guide this procedure. These tools are thoroughly described in the administrative record supporting approval of the SAR-SNMP.[17]

In adopting the SAR-SNMP, the Regional Board agreed to a standard approach for determining the most appropriate locations to assess compliance. In general, the decision as to whether groundwater quality protects the designated beneficial uses is best made within each management zone. However, the Board also recognizes that the use of surrogate points-of-compliance, more easily sampled at the surface, can streamline the permitting process while providing functionally-equivalent environmental protection. The wasteload allocations adopted for the Santa Ana Region are an example of this streamlined implementation strategy. The key principle supporting the success of this approach is the presumption (confirmed by modeling analysis) that meeting the wasteload allocation at the point of discharge assures compliance with all relevant water quality objectives including those in underlying and downgradient groundwater basins where recharge may occur.

Where there is assimilative capacity available in a given groundwater basin, it is possible to discharge/recharge nitrate and/or TDS concentrations greater than the objective for that basin provided that the wasteload allocation is revised to account for the new loads. The water quality monitoring data and trend projections described earlier are used to assess the prudence of permitting such discharges and recharge projects. And, the thresholds identified in Table A and Table B provide a strong indication as to how the Regional Board will perform such evaluations. Such an approach provides the higher level of regulatory certainty needed to streamline permit issuance. In addition, it establishes an incentive to implement projects that increase assimilative capacity, and protects the investment of those who do so, by ensuring that the resulting assimilative capacity will not be reallocated to an unrelated agency or project.

Where there is no assimilative capacity available in a given groundwater management zone, the SAR-SNMP describes the conditions under which the Regional Board will consider increasing the water quality objective in that management zone to accommodate new recycled water projects. The project sponsor must demonstrate that the provisions of Resolution No. 68-16 are satisfied; specifically, that beneficial uses will continue to be protected (usually by referencing the expected effects in relation to the threshold values in Table A and/or Table B) and that the resulting water quality would be consistent with "maximum benefit to the people of California."

17 http://www.waterboards.ca.gov/santaana/board_decisions/adopted_orders/orders/2004/04_001.pdf

The question of what constitutes, or does not constitute, "maximum benefit" is one of the regulatory uncertainties that had the potential to slow the permitting process for new recycled water projects. Therefore, Region 8 identified some specific situations where allowing lower water quality may be acceptable in order to encourage greater use of recycled water.

The California legislature has declared that using potable domestic water to irrigate cemeteries, golf courses, parks and highway medians is unreasonable and a waste of water if suitable recycled water is available.[18] Therefore, recycled water projects that displace the use of potable water for landscape and agricultural irrigation are likely to provide maximum benefit to the people of the state.

The fact that recycled water is deemed a “suitable” substitute for potable water does not waive the obligation to comply with the applicable water quality objectives. Where substitution is likely to degrade groundwater quality, and there is no assimilative capacity available, the Regional Board must require the recharge project to comply with existing water quality objectives or revise those objectives to accommodate the recycled water project. The latter alternative requires a basin plan amendment through the normal public participation process.

While recycling water is believed to be intrinsically advantageous, such projects are not equally beneficial. If a project proposes to justify lower water quality based on the benefits of increased water recycling, then the sponsor must demonstrate that the reclamation would not otherwise occur unless the degradation is allowed, or that the project is likely to increase the total cumulative number of uses of the water before it is discharged to the ocean.

State regulations require that “maximum benefit” be assessed on a state-wide basis. If a proposed project would increase water recycling upstream, then it is essential to determine whether the new reclamation adds an additional use to the water or if the proposed project merely shifts the location for water recycling that is already occurring elsewhere.

Shifting the location at which water recycling occurs is not illegal, particularly if there is no adverse impact on water quality. However, it is unlikely that the Board would allocate assimilative capacity or revise water quality objectives to allow degradation, if the proposed project merely displaces water recycling that is already occurring downstream unless there it produces a net increase in the total use and reuse of water in the affected areas.

Lower water quality may also be allowed to occur where doing so would result in a net improvement to public health and safety. For example, some groundwater management zones in the Santa Ana Region are contaminated by pollutants (e.g. TCE, PCE, MTBE, perchlorate) that preclude beneficial use of the water.

[18] California Water Code §13550(a)(1-4)

Many efforts are underway to remediate the legacy of groundwater contamination. However, the technology used to eliminate toxic pollutants may result in incidental and non-harmful increases in TDS. Because, by definition, the state antidegradation policy is intended to protect beneficial uses, it would be counterproductive if that policy were interpreted so as to forestall groundwater remediation projects. Removing TCE or PCE would help restore an aquifer to full attainment status. Even if TDS concentrations are increased, the net impact on groundwater quality would be beneficial to the people of California.

Similar consideration will be given where the use of recycled water is proposed as a means of protecting areas of higher water quality from being contaminated by areas of lower water quality. Examples include preventing seawater intrusion in freshwater aquifers or redirecting known plumes to minimize groundwater pollution. Lower water quality may also be allowed where doing so is necessary to protect aquatic habitat or provide other net environmental benefits.

The fact that a proposed cleanup project or habitat enhancement project provides substantial public benefit does not waive requirements to comply with the basin plan. Rather, it provides a reasonable justification for revising groundwater objectives in order to allow such projects to be permitted provided beneficial uses remain fully protected.

Third, the Regional Board streamlined the permitting process, in cases where there is no assimilative capacity in the management zone and no realistic possibility of revising relevant groundwater objectives, by allowing the use of offset mitigation to assure compliance with the basin plan. Whether a project sponsor develops offset credits themselves or purchases them from another agency, the Regional Board must first approve the use of such mitigation strategies within the project permit.

In general, offsets should occur in the same groundwater basin where water quality is most directly degraded by the proposed water recycling project. In addition, offsets should be implemented in a manner that maintains the overall water quality balance with the receiving groundwater basin. The planned offset must ensure that the net concentration of pollutants is not increased as a result of the project. An exception may be made where the resulting groundwater quality will continue to fully protect beneficial uses throughout the life of the proposed project and off-site mitigation serves to restore or enhance beneficial use protection in a separate groundwater basin not currently meeting water quality standards.

Finally, the Regional Board streamlined the permitting process by focusing the antidegradation review on TDS as a whole rather than analyzing each and every salt ion separately. However, where a water quality objective has been established to protect certain beneficial uses from the adverse effects of specific salt compounds (e.g. chloride, boron or nitrate), the Regional Board will continue to adopt waste discharge requirements designed to assure compliance with these objectives.

Summary

The Santa Ana Regional Water Quality Control Board has adopted a Salt and Nutrient Management Plan through a collaborative local process. The same process was used to establish long-term water quality monitoring and modeling programs to implement the SAR-SNMP. The Regional Board streamlined the permitting process for new recycled water projects by standardizing the analytical methods, defining requirements to protect beneficial uses and establishing an offset mitigation policy for the watershed. In addition, the Regional Board identified outcomes that are likely to provide "maximum benefit" to the people of the state and has already revised some local groundwater objectives to encourage greater use of recycled water without adversely affecting beneficial uses. Collectively, these changes resulted in accelerated implementation of several large-scale projects to recharge recycled water in the region.

The aforementioned regulatory improvements were enacted through a comprehensive Basin Plan amendment that was approved through an extensive public hearing process. The amendment took effect after State Board and EPA reviewed and endorsed the proposed changes. Therefore, the Santa Ana Regional Board hereby finds that the SAR-SNMP, water quality monitoring programs and streamlined permitting procedures described above meet all of the specific requirements set forth in the State Board's Recycled Water Policy.

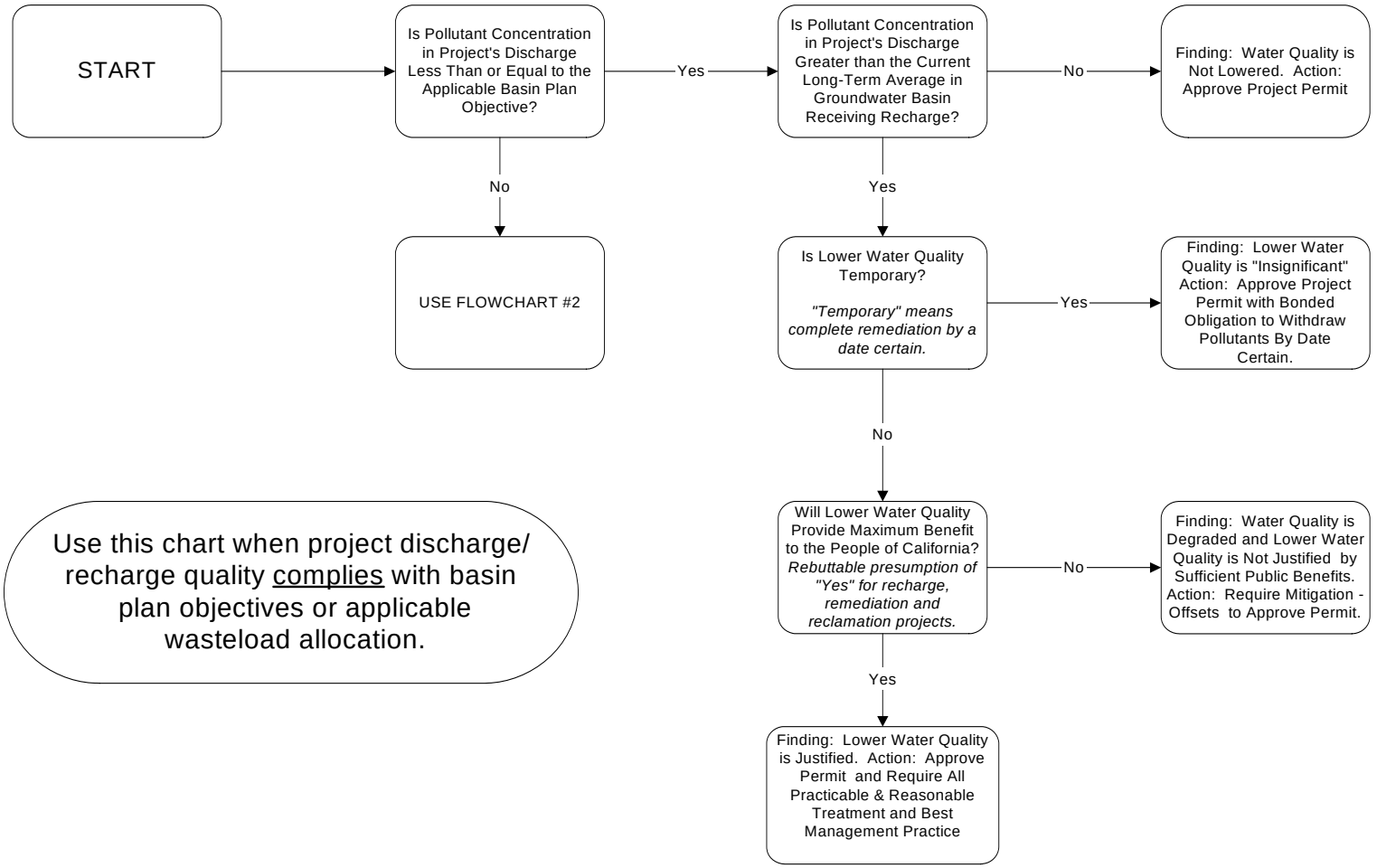
TABLE A: NITRATE-NITROGEN OBJECTIVES AND BENEFICIAL USE PROTECTION

	Use Protection	Burden of Proof	Approvable Outcome
≤5 mg/L	MUN use fully protected; preferred by water agencies for managing drinking water supplies because it provides maximum resource flexibility with minimal need for blending.	Rebuttable presumption of MUN protection; substantial evidence required to sustain argument that beneficial uses are impaired by recycled water provided that the cumulative effect of all recharge projects does not increase groundwater concentrations above 5 mg/L.	Existing NN objectives <5 mg/L can be raised to a concentration less than or equal to 5 mg/L to encourage greater use of recycled water provided that beneficial uses remain fully protected in all downgradient management zones.
>5-8 mg/L	MUN use protected but operational flexibility and public confidience in water supplies diminishes as NN concentration increases.	Burden-of-proof is on sponsors and proponents of recycling projects throughout the review process to demonstrate beneficial uses remain fully protected in all affected receiving waters, including those downgradient from the point of discharge/recharge. Project sponsors must demonstrate compelling state interest. The burden-of-proof is proportionate to the change in water quality; increasing as the resulting nitrate-nitrogen concentration changes from 5 mg/L to 8 mg/L.	Established groundwater objectives are not likely to be revised above 5 mg/L unless there is a compelling state interest (such as drought-induced water shortages or significant reduction in State Project Water supplies) to justify lowering water quality.
>8-10 mg/L	MUN use protected but public confidence and flexibility in managing water supplies significantly diminished in this range. Very limited operational safety factor to prevent exceedance of USEPA/CDHS drinking water standards.	Burden-of-proof is on sponsors and proponents of recycling projects throughout the review process to demonstrate beneficial uses remain fully protected in all affected receiving waters, including those downgradient from the point of discharge/recharge. Project sponsors must demonstrate compelling state interest. High level of proof required.	Established objectives in this range for groundwater management zones are based on historic water quality. The increment between 8 mg/L and 10 mg/L provides a safety factor to minimize the possibility that the EPA/CDHS criteria will be exceeded, even temporarily, thereby triggering significant reporting requirements and undermining public confidence in water supplies. Therefore, objectives are not likely to be raised above 8 mg/L in order to maintain this safety factor.
>10 mg/L	MUN use impaired	Non-rebuttable presumption that the MUN use is when NN concentrations are greater than 10 mg/L.	Regional Board cannot approve NN objectives greater than 10 mg/L for groundwaters designated MUN.

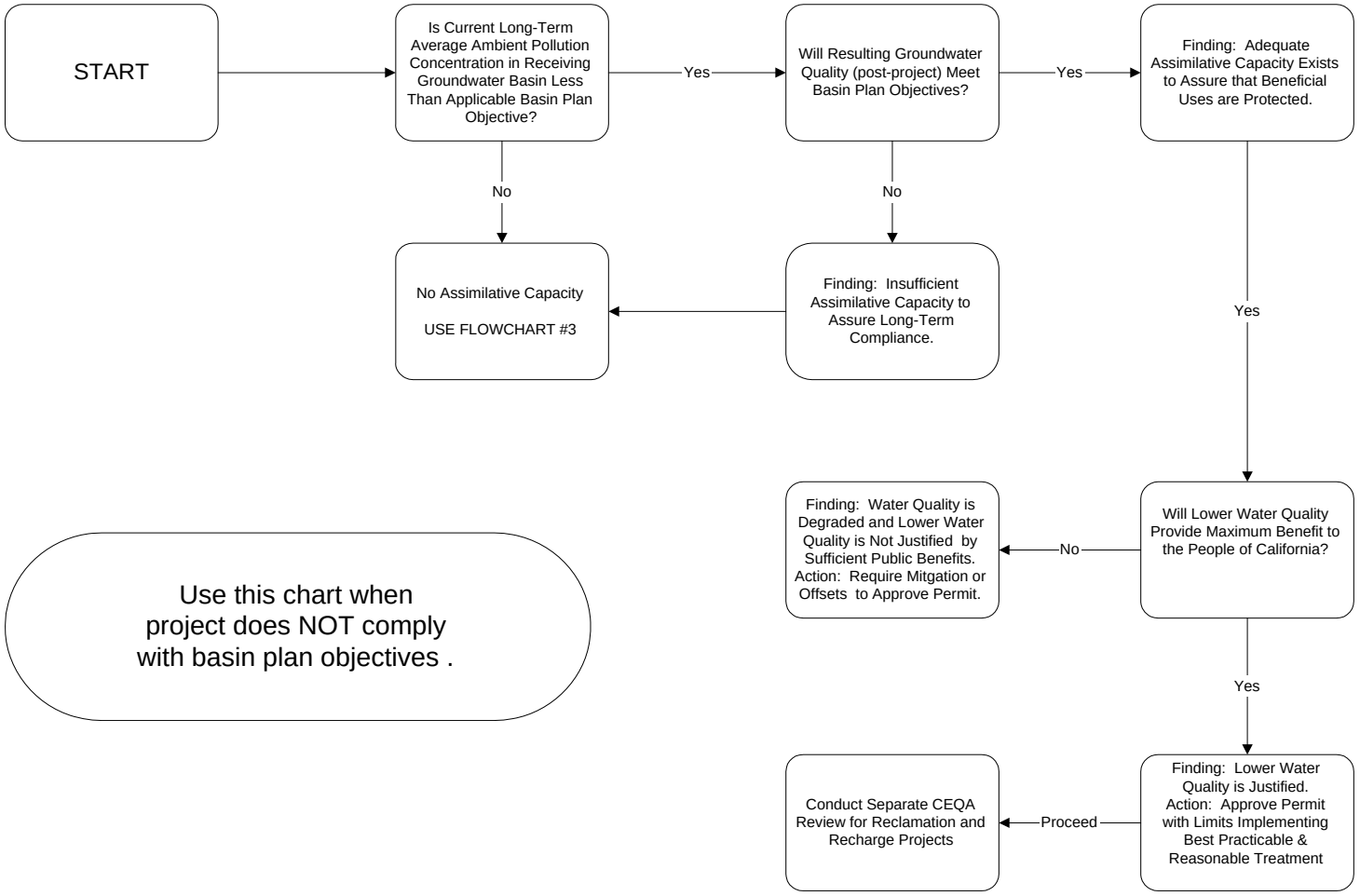
TABLE B: TOTAL DISSOLVED SOLIDS OBJECTIVES AND BENEFICIAL USE PROTECTION

	Use Protection	Burden of Proof	Approvable Outcome
≤500 mg/L	MUN use fully protected. Preferable for drinking water supply. Recommended EPA/DHS Criterion	Rebuttable presumption of MUN protection; substantial evidence required to sustain argument that recycled water impairs beneficial uses provided that the cumulative effect of all recharge projects does not raise groundwater concentrations above 500 mg/L.	Most established TDS objectives for groundwater management zones ≤ 500 mg/L, including maximum benefit objectives set to support water resource management (including recycled water). Established groundwater objectives not likely to be revised above 500 mg/L unless there is a compelling state interest (such as drought-induced water shortages or significant reduction in State Project Water supplies) to justify lowering water quality. Requirements for mitigation rather than revision of objectives likely.
≥500-750 mg/L	MUN use protected, but water quality less acceptable to consumers due to taste and odor. TDS at 750 mg/L is last practical use - highest concentration that allows for an additional increment of use (250 mg/L) before exceeding CDHS long-term maximum of 1000 mg/L	Burden-of-proof is on sponsors and proponents of recycling projects throughout the review process to demonstrate beneficial uses remain fully protected in all affected receiving waters, including those downgradient from the point of discharge/recharge. Project sponsors must demonstrate compelling state interest and that compliance with mitigation requirements would not be reasonably feasible. The burden-of-proof is proportionate to the change in water quality; increasing as the resulting TDS concentration changes from 500 mg/L to 750 mg/L.	Established objectives in this range for groundwater management zones are based on historic water quality. Further degradation strongly discouraged. Increases to established objectives unlikely. Mitigation requirements in lieu of revision of established objectives highly likely.
≥750-1000 mg/L	Beneficial uses presumed to be unreasonably affected at concentrations greater than 750 mg/L. Some crops (ex.: avocados) are adversely affected at TDS concentrations greater than 750 mg/L.) Concentrations ≤ 1000 mg/L meet CDHS long-term maximum for MUN use, but water quality becomes less acceptable to consumers due to taste and odor. TDS greater than 750 mg/L does not allow for additional use increment (250 mg/L) before exceeding CDHS long-term maximum (1000 mg/L)	N/A	Regional Board will not approve petitions to increase established objectives to any value greater than 750 mg/L. Mitigation of TDS discharges in lieu of revision of established objectives will be required.
≥1000-1500 mg/L	DHS temporary maximum is 1500 mg/L. Supplies in 1000-1500 mg/L range are acceptable only for short-term use where there are no practical alternatives for higher quality sources of supply.	N/A	Insufficient data were available to establish TDS objectives for certain management zones as part of the N/TDS Basin Plan amendments. Objectives for these management zones will be set based on quality conditions when and if sufficient data are available. Objectives higher than 1,000 mg/L, if appropriate, would only be approved when such high concentrations represent the best water quality attained since 1968.
3000 mg/L	Groundwater management zones less than 3000 mg/L TDS must be designated MUN per Sources of Drinking Water Policy; no practical use without treatment/significant blending that may constitute unreasonable use of water, in violation of California Constitution	N/A	Insufficient data were available to establish TDS objectives for certain management zones as part of the N/TDS Basin Plan amendments. Objectives for these management zones will be set based on quality conditions when and if sufficient data are available. Objectives higher than 1,500 mg/L will not be approved by the Regional Board.

FLOWCHART #1:
Antidegradation Review for Water Recharge & Wastewater Reclamation Permitting



FLOWCHART #2:
Antidegradation Review for Water Recharge & Wastewater Reclamation Permitting



FLOWCHART #3:
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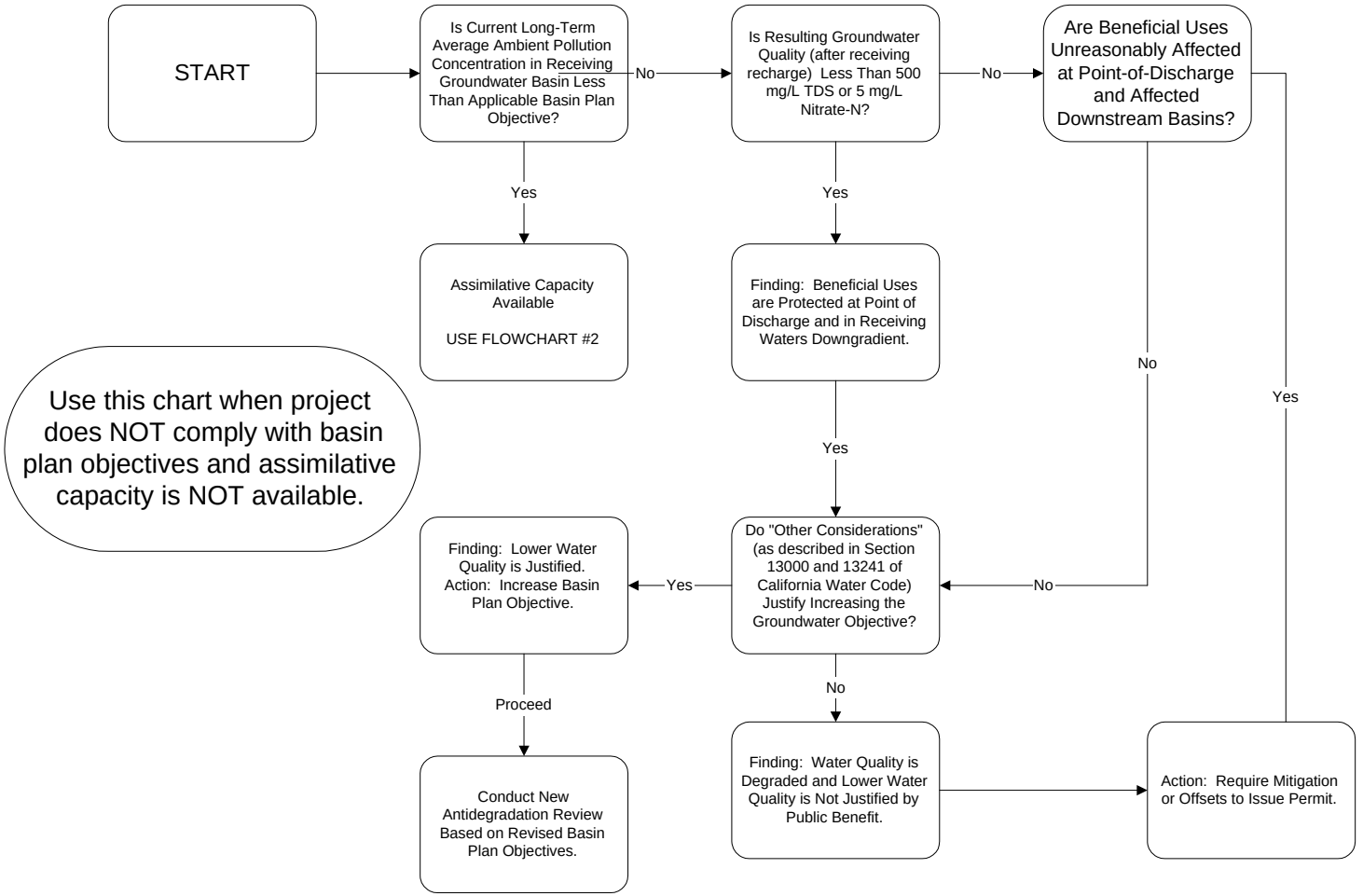

Declaration of Conformance with Recycled Water Policy

Background

On February 3, 2009, the State Water Resources Control Board (State Board) approved Resolution No. 2009-1, adopting a Recycled Water Policy (RWP). Recognizing the statewide benefits of reusing water, the State Board set a goal to increase the use of recycled water by at least one million acre-feet in the next 10 years and two million acre-feet by 2030. That goal is consistent with the 20x2020 Water Conservation Plan, which identified recycled water as a key element of the strategy to reduce per capita water consumption by 20% over the next decade. The Santa Ana Regional Water Quality Control Board (Regional Board) supports the State Board's call "to increase the use of recycled water in a manner that protects water quality as required by state and federal law."

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1) Develop and enact a Salt and Nutrient Management Plan through a locally-driven and controlled collaborative process.[2]

2) Establish an appropriate water quality monitoring program to implement the Salt and Nutrient Management Plan.[3]

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In addition, every six years, the BMPTF recalculates the surface water wasteload allocations for TDS and nitrogen. The Regional Board relies on the wasteload allocations to derive appropriate discharge limits for NPDES permits and Waste Discharge Requirements (WDRs). The recalculation is needed to identify any changes needed to ensure continued compliance with the relevant water quality objectives, therefore discharge permits require similar reports to be submitted on a regular basis.

In January, 2008 the Regional Board entered into a Cooperative Agreement with several water and wastewater agencies to analyze and report the amount of salt and nitrates entering local groundwater aquifers as a consequence of recharging imported water in the region.[11] As with the BMPTF effort underwritten by local stakeholders, the Cooperative Agreement obligates signatories to assess current groundwater quality every three years.

In addition, every six years, the signatories have agreed to estimate the changes that are likely to occur in groundwater quality as a result of on-going and expected projects that recharge imported water. By emphasizing the use of "real-time" monitoring, rather than complex fate and transport models, the Regional Board is better able to evaluate the effects of recycled water projects.

The RWP requires all salt and nutrient monitoring plans to include a provision for annual monitoring of Constituents of Emerging Concerns (CECs) consistent with the recommendations of the California Department of Public Health and the State Board.[12]. The State Board established a Blue Ribbon Panel of Experts to make appropriate recommendations for such monitoring requirements.[13] The Panel's recommendations will be submitted in mid-2010 and the State Board is expected to act on them shortly thereafter.

[11] Regional Board Resolution R8-2008-0019 (Jan. 18, 2008)
[12] RWP, Sec. 6-b-3-b
[13] RWP, Sec. 10-b

In the meantime, stakeholders throughout the Santa Ana watershed established the Emerging Constituents Workgroup (ECW) to prepare and implement an interim plan to characterize CEC concentrations in recycled water (including both intentional and incidental recharge projects). In 2008 and 2009, samples collected from municipal effluent, receiving streams, state project water and Colorado River water were analyzed for dozens of different CECs.[14] The results were used to develop a plan for additional characterization studies beginning in 2010-11. The Regional Board approved the plan in December, 2009.[15] The plan will be revised annually and will integrate the State Board's recommendations when they become available.

Collectively, all of these different sampling efforts fulfill the reporting requirements specified in the RWP. The task forces responsible for implementing these water quality monitoring programs host regular public meetings to review the scope, methods, procedures and data. The results are submitted to the Regional Board in an annual report. And, all work products are regularly posted on SAWPA's website.[16]

Streamlining Permitting Process for Recycled Water Projects

To encourage greater use of recycled water, the RWP directs state authorities to streamline the permitting process for such projects. To that end, the Regional Board initiated four specific improvements. First, current ambient groundwater quality is reassessed every three years and projected groundwater quality is updated every six years. The Regional Board relies on these data to evaluate compliance with the water quality objectives and to revise the related wasteload allocations. Regularly-scheduled monitoring and modeling simplifies the permitting process by reducing the need for special technical studies in order to evaluate the probable water quality impact of each new recycled water project on underlying groundwaters.

Second, the Regional Board clarified the regulatory requirements for new recycled water recharge projects and prepared three flowcharts (attached) to guide stakeholders through the process. The single most important issue was to identify the salinity and nitrate concentrations that were required to protect designated beneficial uses. The results of that effort are summarized in Table A and Table B (attached).

[14] Guo, Y.C. et al, "Occurrence, Fate and Transport of PPCPs in Three California Watersheds." AWWA Water Quality Technology Conference, November, 2009. Seattle, WA (Research co-sponsored by Metropolitan Water District of Southern California, Orange County Water District, and National Water Research Institute).

[15] Regional Board Resolution No. R8-2009-0071 (Dec. 10, 2009)

[16] http://www.sawpa.org/roundtable-BMTF-new.html

In addition, it was necessary to adopt consistent methods for evaluating and describing nitrate and TDS concentrations, accounting for spatial and temporal variability, in local groundwaters. Again, the Regional Board staff worked closely with local stakeholders to develop appropriate data quality objectives (DQOs), analytical procedures and interpretive models to guide this procedure. These tools are thoroughly described in the administrative record supporting approval of the SAR-SNMP.[17]

In adopting the SAR-SNMP, the Regional Board agreed to a standard approach for determining the most appropriate locations to assess compliance. In general, the decision as to whether groundwater quality protects the designated beneficial uses is best made within each management zone. However, the Board also recognizes that the use of surrogate points-of-compliance, more easily sampled at the surface, can streamline the permitting process while providing functionally-equivalent environmental protection. The wasteload allocations adopted for the Santa Ana Region are an example of this streamlined implementation strategy. The key principle supporting the success of this approach is the presumption (confirmed by modeling analysis) that meeting the wasteload allocation at the point of discharge assures compliance with all relevant water quality objectives including those in underlying and downgradient groundwater basins where recharge may occur.

Where there is assimilative capacity available in a given groundwater basin, it is possible to discharge/recharge nitrate and/or TDS concentrations greater than the objective for that basin provided that the wasteload allocation is revised to account for the new loads. The water quality monitoring data and trend projections described earlier are used to assess the prudence of permitting such discharges and recharge projects. And, the thresholds identified in Table A and Table B provide a strong indication as to how the Regional Board will perform such evaluations. Such an approach provides the higher level of regulatory certainty needed to streamline permit issuance. In addition, it establishes an incentive to implement projects that increase assimilative capacity, and protects the investment of those who do so, by ensuring that the resulting assimilative capacity will not be reallocated to an unrelated agency or project.

Where there is no assimilative capacity available in a given groundwater management zone, the SAR-SNMP describes the conditions under which the Regional Board will consider increasing the water quality objective in that management zone to accommodate new recycled water projects. The project sponsor must demonstrate that the provisions of Resolution No. 68-16 are satisfied; specifically, that beneficial uses will continue to be protected (usually by referencing the expected effects in relation to the threshold values in Table A and/or Table B) and that the resulting water quality would be consistent with "maximum benefit to the people of California."

17 http://www.waterboards.ca.gov/santaana/board_decisions/adopted_orders/orders/2004/04_001.pdf

The question of what constitutes, or does not constitute, "maximum benefit" is one of the regulatory uncertainties that had the potential to slow the permitting process for new recycled water projects. Therefore, Region 8 identified some specific situations where allowing lower water quality may be acceptable in order to encourage greater use of recycled water.

The California legislature has declared that using potable domestic water to irrigate cemeteries, golf courses, parks and highway medians is unreasonable and a waste of water if suitable recycled water is available.[18] Therefore, recycled water projects that displace the use of potable water for landscape and agricultural irrigation are likely to provide maximum benefit to the people of the state.

The fact that recycled water is deemed a "suitable" substitute for potable water does not waive the obligation to comply with the applicable water quality objectives. Where substitution is likely to degrade groundwater quality, and there is no assimilative capacity available, the Regional Board must require the recharge project to comply with existing water quality objectives or revise those objectives to accommodate the recycled water project. The latter alternative requires a basin plan amendment through the normal public participation process.

While recycling water is believed to be intrinsically desirable, such projects are not all equally beneficial. If a project proposes to revise water quality objectives in order to increase the use of recycled water, then the sponsor must demonstrate that the reclamation would not otherwise occur unless the degradation is allowed, or that the project is likely to increase the total cumulative number of uses of the water before it is discharged to the ocean.

State regulations require that "maximum benefit" be assessed on a state-wide basis. If a proposed project would increase water recycling upstream, then it is essential to determine whether the new reclamation adds an additional use to the water or if the proposed project merely changes the location for water recycling that is already occurring elsewhere.

Shifting the location at which water recycling occurs is permissable, particularly if downstream water quality continues to meet the approved wasteload allocation. However, it is unlikely that the Board would revise water quality objectives to encourage greater use of recycled water unless doing so would facilitate a net increase in the total reuse of water in the affected areas.

Lower water quality may also be allowed to occur where doing so would result in a net improvement to public health and safety. For example, some groundwater management zones in the Santa Ana Region are contaminated by pollutants (e.g. TCE, PCE, MTBE, perchlorate) that preclude beneficial use of the water.

[18] California Water Code §13550(a)(1-4)

Many efforts are underway to remediate the legacy of groundwater contamination. However, the technology used to eliminate toxic pollutants may result in incidental and non-harmful increases in TDS. Because, by definition, the state antidegradation policy is intended to protect beneficial uses, it would be counterproductive if that policy were interpreted so as to forestall groundwater remediation projects. Removing TCE or PCE would help restore an aquifer to full attainment status. Even if TDS concentrations are increased, the net impact on groundwater quality would be beneficial to the people of California.

Similar consideration will be given where the use of recycled water is proposed as a means of protecting areas of higher water quality from being contaminated by areas of lower water quality. Examples include preventing seawater intrusion in freshwater aquifers or redirecting known plumes to minimize groundwater pollution. Lower water quality may also be allowed where doing so is necessary to protect aquatic habitat or provide other net environmental benefits.

The fact that a proposed cleanup project or habitat enhancement project provides substantial public benefit does not waive requirements to comply with the basin plan. Rather, it provides a reasonable justification for revising groundwater objectives in order to allow such projects to be permitted provided beneficial uses remain fully protected.

Third, the Regional Board streamlined the permitting process, in cases where there is no assimilative capacity in the management zone and no realistic possibility of revising relevant groundwater objectives, by allowing the use of offset mitigation to assure compliance with the basin plan. Whether a project sponsor develops offset credits themselves or purchases them from another agency, the Regional Board must first approve the use of such mitigation strategies within the project permit.

In general, offsets should occur in the same groundwater basin where water quality is most directly degraded by the proposed water recycling project. In addition, offsets should be implemented in a manner that maintains the overall water quality balance with the receiving groundwater basin. The planned offset must ensure that the net concentration of pollutants is not increased as a result of the project. An exception may be made where the resulting groundwater quality will continue to fully protect beneficial uses throughout the life of the proposed project and off-site mitigation serves to restore or enhance beneficial use protection in a separate groundwater basin not currently meeting water quality standards.

Finally, the Regional Board streamlined the permitting process by focusing the antidegradation review on TDS as a whole rather than analyzing each and every salt ion separately. However, where a water quality objective has been established to protect certain beneficial uses from the adverse effects of specific salt compounds (e.g. chloride, boron or nitrate), the Regional Board will continue to adopt waste discharge requirements designed to assure compliance with these objectives.

Summary

The Santa Ana Regional Water Quality Control Board has adopted a Salt and Nutrient Management Plan through a collaborative local process. The same process was used to establish long-term water quality monitoring and modeling programs to implement the SAR-SNMP. The Regional Board streamlined the permitting process for new recycled water projects by standardizing the analytical methods, defining requirements to protect beneficial uses and establishing an offset mitigation policy for the watershed. In addition, the Regional Board identified outcomes that are likely to provide "maximum benefit" to the people of the state and has already revised some local groundwater objectives to encourage greater use of recycled water without adversely affecting beneficial uses. Collectively, these changes resulted in accelerated implementation of several large-scale projects to recharge recycled water in the region.

The aforementioned regulatory improvements were enacted through a comprehensive Basin Plan amendment that was approved through an extensive public hearing process. The amendment took effect after State Board and EPA reviewed and endorsed the proposed changes. Therefore, the Santa Ana Regional Board hereby finds that the SAR-SNMP, water quality monitoring programs and streamlined permitting procedures described above meet all of the specific requirements set forth in the State Board's Recycled Water Policy.

In such cases, the Regional Board will continue to require that project managers implement best reasonable and practical treatment to minimize the anticipated water quality degradation. However, the degradation may be allowed provided that beneficial uses remain fully protected. If necessary, water quality objectives may be revised to permit the public works project.

Example E: ***Projects that generate a net increase in the use of recycled water in the region or the state provide a maximum benefit.***

The Legislature has already established a statewide commitment to maximize the use and reuse of water. Sustained growth in the Santa Ana Region requires increased reliance on recycled water. There are already considerable recycled water activities occurring in the Santa Ana watershed, particularly Orange County.

While water recycling is believed to be intrinsically advantageous, all recycling projects are not equally beneficial. If a project proponent proposes to justify lower water quality based on the benefits of increased reclamation, then the sponsor must demonstrate that the reclamation would not otherwise occur unless the degradation is allowed. To meet this condition, there must be a net increase in the total number of uses made of the water. For example, the T-levees operated by Orange County Water District capture and recharge river water that would otherwise be wasted to the ocean.

Resolution No. 68-16 requires that "maximum benefit" be assessed on a state-wide basis. If a proposed project would increase water recycling upstream, then it is essential to know whether the new recycling adds an additional use to the water or if the proposed project merely shifts the location for recycling that is already occurring elsewhere.

Shifting the location at which water recycling occurs is not illegal, particularly if there is no adverse impact on water quality. However, it is unlikely that the Board would allocate assimilative capacity or revise water quality objectives to allow degradation, if the proposed project merely displaces recycling that is already occurring downstream, unless there is also a net increase in the total water recycling that can occur in the watershed.

<u>Example E</u>: ***Projects that generate a net increase in the use of reclaimed water in the region or the state provide a maximum benefit.***

The Legislature has already established a statewide commitment to maximize the use and reuse of water. Sustained growth in the region requires increased reliance on reclaimed water. There are already considerable reclamation activities occurring in the Santa Ana watershed, particularly Orange County.

While reclamation is believed to be intrinsically advantageous, all reclamation projects are not equally beneficial. If a project proposes to justify lower water quality based on the benefits of increased reclamation, then the sponsor must demonstrate that the reclamation would not otherwise occur unless the degradation is allowed. To meet this condition, there must be a net increase in the total number of uses made of the water. For example, the T-levees operated by Orange County Water District capture and recharge river water that would otherwise be wasted to the ocean.

State regulations require that "maximum benefit" be assessed on a state-wide basis. If a proposed project would increase reclamation upstream, then it is essential to know whether the new reclamation adds an additional use to the water or if the proposed project merely shifts the location for reclamation that is already occurring elsewhere.

Shifting the location at which reclamation occurs is not illegal, particularly if there is no adverse impact on water quality. However, it is unlikely that the Board would allocate assimilative capacity or revise water quality objectives to allow degradation, if the proposed project merely displaces reclamation that is already occurring downstream unless there is also a net increase in the total reclamation that can occur in the watershed.