CVCWA
Central Valley Clean Water Association
Representing Over Fifty Wastewater Agencies

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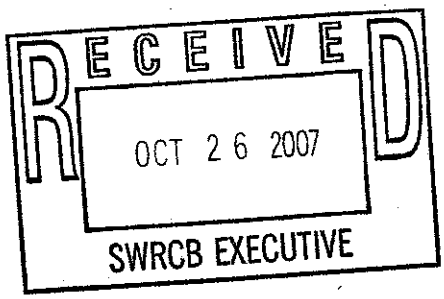
12/4/07 Bd. Mtg.
Water Recycling Policy
Deadline: 10/26/07 Noon

October 26, 2007



Jeanine Townsend, Acting Clerk to the Board
Executive Office
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100

Electronic Mail: commentletters@waterboards.ca.gov

Subject: Comment Letter – Statewide Water Recycling Policy

Dear Ms. Townsend,

The Central Valley Clean Water Association (CVCWA) appreciates the opportunity to comment on the State Water Resources Control Board's (State Board) draft Statewide Water Recycling Policy (Draft Policy) and draft Staff Report and Certified Regulatory Program Environmental Analysis – water recycling policy (draft Staff Report). CVCWA is a consortium of 59 publicly owned treatment works (POTWs) in the Central Valley. CVCWA's primary purpose is to exchange information and to provide a unified voice on regulatory issues impacting POTWs throughout the Central Valley.

CVCWA members heartily support the State's goal of increasing water recycling. We thank the State Board for its leadership in undertaking the Water Recycling Policy to promote the use of recycled water within California. We support the State Board's efforts to achieve consistency in water recycling permitting and regulation.

Although we strongly support a Recycled Water Policy that promotes the use of recycled water as a valuable resource in California, we are concerned that aspects of the draft Policy, as proposed, will have the opposite of its intended effect -- discouraging the use of recycled water and making future projects unattractive or infeasible.

The attached document describes our recommendations for changes to the draft Policy. Our concerns center on the following areas:

1. The draft policy needs to more clearly and emphatically recognize the State Board's support of water recycling and acknowledge that recycled water is a resource, not a waste.

2. Land discharge projects should be clearly excluded from the Policy.

3. The Policy should recognize recycled water, used in a manner consistent with Title 22, represent best practicable treatment or control (BPTC) and meets the State's Antidegradation Requirements.

4. The draft policy should be modified to reflect the commonality in irrigation use among various water sources.

5. The draft Policy should be modified to in several areas with regards to salts and nutrients. Most importantly, CVCWA believes that the proposed TDS limitation needs to be revised.

6. The draft Policy should be modified to address incidental runoff and recycled water storage.

7. The draft policy should be revised to defer to the California Department of Public Health (CDPH) with regards to groundwater recharge reuse projects.

8. Other modifications.

CVCWA appreciates the effort the State Board is making to promote the use of recycled water. If you have any questions or would like to discuss our comments further, please feel free to call me at (530) 268-1338.

Sincerely,

Debbie Webster

Debbie Webster
Executive Officer

c: Bobbi Larson, CASA (electronic copy)
Mary Grace Pawson, WateReuse (electronic copy)

Central Valley Clean Water Associations
Comments on Draft Recycled Water Policy
October 2007

1. The State Board's Commitment to Promoting Recycled Water Should be More Clearly and Emphatically Stated

Recycled water is a key component of California's water future. Water Code section 461 reads: "It is hereby declared that the primary interest of the people of the state in the conservation of all available water resources requires the maximum reuse of reclaimed water in the satisfaction of requirements for beneficial uses of water." In light of the water supply emergencies in the State, promoting the use of recycled water is to the maximum benefit of the people of the State of California.

Although the first few findings of the draft policy recognize some of the benefits of recycled water, the language in the findings could be strengthened. CVCWA is aware that California WateReuse Association will be submitting a proposed revised policy that contains specific language regarding Resolution 77-1, the State's existing recycled water policy and legislative actions promoting water recycling

Recommendation: CVCWA recommends the draft Policy state even more clearly and emphatically the State Board's support for recycled water use. CVCWA supports inclusion into the draft policy, the proposed paragraphs 1-3 in the WHEREAS section of WateReuse's proposed revised policy, and paragraph 1, General Policies, under the RESOLVED section of WateReuse's proposed revised policy which describe aspects of California's existing water recycling policy and legislative mandates regarding recycled water and promote the use of recycled water as a valuable resource for the State of California.

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CVCWA believes that the Policy should allow some flexibility for potential recycled water projects that cannot meet the stated requirements of the draft policy, but are otherwise viable projects.

Recommendations: CVCWA recommends the following paragraph be added to the draft policy in the THEREFORE section:

> In the event that an irrigation project cannot comply with all of the requirements set forth in paragraph 7, a Regional Water Board may allow the project to be implemented and may establish other appropriate requirements for the project, including a requirement for groundwater monitoring, if the Regional Water Board determines that site conditions such as shallow groundwater could cause an increased potential for the irrigated site to adversely affect beneficial uses or surface water quality.

2. Land Discharge Projects Should Clearly Be Excluded from the Policy

CVCWA strongly urges the State Board to clarify various portions of the draft policy so that the application of this policy is very clear in its intended coverage. The draft staff report on page 3 refers to the various permitting options for recycled water projects, including waste discharge requirements (WDRs), water reclamation requirements (WRRs), and master reclamation permits. In the Central Valley, many of CVCWA members use land discharge as a means of disposal. Land discharge disposal often includes irrigation above agronomic rates as a means of effluent disposal. Such disposal projects are operated to avoid runoff. Since effluent can be applied above agronomic rates, effluent may percolate to groundwater, although such discharge projects are not planned groundwater recharge reuse projects. These land discharge projects are appropriately issued waste discharge requirements, as the protection of receiving waters (groundwater) is of primary concern.

For recycled water irrigation projects, the draft policy will limit recycled water discharges to agronomic rates. Therefore, as recognized in paragraph 13 in the WHEREAS section of the draft policy, impacts of recycled water irrigation are not anticipated to impact groundwater beyond what would occur under conventional irrigation using surface or groundwater as source water. In the same way, planned recharge reuse projects are designed and approved for later extraction and use for municipal supplies or salt-water barriers. The draft policy contains specific policies for both these recycled water applications.

Recommendation: CVCWA recommends several changes be made to the draft policy to specifically exclude land discharge projects from this policy. Our recommendations include permitting recycled water irrigation projects using WRRs and master reclamation permits, rather than WDRs, because the impacts of irrigation with recycled water are anticipated to be the same as irrigation with other water sources. We also recommend that language be added to specifically exclude land discharge projects.

> Irrigation with recycled water consistent with this policy constitutes a beneficial use of water and is not a "discharge of waste" requiring waste discharge requirements.

3. The Policy Should Treat Recycled Water as a Resource, Not a Waste.

CVCWA recognizes and supports the need for a Recycled Water Policy that articulates a balanced approach to water supply in its safety, quality and reliability. Title 22 requirements and the plant application requirements within the draft policy described in the policy ensure that the recycled water supply is safe and protects groundwater and human health. The processes for review and approval of groundwater recharge reuse projects that are implemented through an agreement between the State and Regional Boards and the California Department of Public Health (CPDH) are designed to protect public health.

CVCWA is concerned that the tone and some requirements contained in several paragraphs of the draft policy portray recycled water as a waste, rather than a resource. This type of portrayal is not consistent with state policy and legislative directives.

Paragraph 19 in the WHEREAS section, the draft policy refers to recycled water as a waste and then does not accurately portray the CDPH process in Water Code section 13540. This section of the Water Code states:

"... and when the State Department of Health Services, following a public hearing, finds the proposed recharge will not degrade the quality of water in the receiving aquifer as a source of water supply for domestic purposes, recycled water may be injected by a well into the stratum. The State Department of Health Services may make and enforce any regulations pertaining to this subdivision as it deems proper."

Recommendation: CVCWA recommends this paragraph in the draft policy be modified to more accurately reflect the Water Code requirements and eliminate the reference of recycled water as a "waste".

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Paragraph 20 of the WHEREAS section describes the ability of the Regional Board to issue cleanup and abatement orders. CVCWA is not sure why it is necessary to highlight this aspect of the Water Code in this policy, which gives the perception that recycled water is not safe, and its use will lead to large clean-up expenses in the future.

Recommendation: CVCWA recommends that paragraph 20 be removed. It is not necessary to include the cleanup and abatement provisions from the water code in the draft Policy, as the requirements of the Water Code will always be in force.

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Paragraphs 17 and 18 of the THEREFORE section prescribe liability requirements. These provisions to address future responsibility and liability are overbroad. CVCWA does not believe it is reasonable to hold a discharger liable for actions taken that are in compliance with all laws, regulations, and policies in effect at the time of discharge activities. The purpose of such laws, regulations, and policies is to be protective of groundwater quality. Recycled water is not a waste and should not be treated as such for purposes of liability.

The financial means test in Resolution Paragraph 18 is vague; it is not clear what kind of test this would be or how complicated it would be to get approved by a Regional Board. CVCWA does not believe that having the Regional Board assess financial capability of local agencies is necessary or appropriate. The capital requirements and nature of recharge projects is such that agencies without adequate financial means will not be in a position to undertake such projects. Section 60320(b) of the draft groundwater recharge regulations requires project proponents to have a plan for providing water or well-head treatment should a recharge project adversely impact a well so that it cannot be used as a source of drinking water. This provision should adequately address these concerns.

Recommendation: CVCWA recommends that paragraphs 17 and 18 be removed from the draft policy and replaced with the following paragraph:

Compliance with requirements based on this Policy and all other discharge requirements in effect at the time of discharge exempt a discharger from liability for contamination of groundwater associated with a water recycling irrigation project or groundwater recharge reuse project.

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Emerging chemicals of concern are not unique to recycled water. All waters may contain unregulated constituents and emerging chemicals or microbiological agents as a result of atmospheric deposition, non-point discharges, agricultural practices and wastewater discharges.

CVCWA believes that it is appropriate that the Regional Water Board defer to CDPH regarding human health issues.

Recommendation: Remove Paragraph 16 in the WHEREAS section.

4. **Recycled Water used in a manner consistent with Title 22 should be recognized in the draft Policy as representing best practicable treatment or control (BPTC) and meeting the State's Antidegradation Requirements.**

There are several places in the draft policy where an aspect of the recycled water policy is considered BPTC. CVCWA supports these findings.

Recommendation: CVCWA recommends that for both groundwater recharge reuse and irrigation projects, compliance with the provisions of the Water Recycling Policy and Title 22 of the California Code of Regulations constitutes best practicable treatment and control for purposes of the anti-degradation policy. We recommend the following language be added to the policy:

> Irrigation with recycled water in an amount or manner needed by landscaping or crops in systems designed, permitted and operated pursuant to Title 22 represents best practicable treatment or control and ensures prevention of pollution and nuisances for the purposes of State Water Board Resolution 68-16.

5. **The language in the draft Policy should be modified to reflect the commonality in irrigation use among various water sources.**

The impacts of recycled water irrigation are comparable to conventional irrigation. As described in the draft staff report, in climates where evaporation exceeds precipitation, all irrigation will concentrate salts because the plants evapotranspire pure water leaving the salts in the plant tissue, root zone or percolating water. Excessive irrigation with any water source, including recycled water, can adversely impact groundwater.

Recommendation: CVCWA recommends that the draft policy be modified in several areas to more strongly recognize that irrigation water can impact groundwater and surface water quality, regardless of its source. CVCWA recommends the following paragraph be added to the draft policy:

> Groundwater and surface water quality may be impacted by irrigation, whether the source of irrigation water is recycled water, surface water or groundwater.

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Nutrients are salts. Beneficial salts (micro and macro-nutrients) for plant growth, such as potassium, calcium, magnesium, nitrogen, sulfur, and phosphorus, are taken up to varying

degrees by plants and can be removed in the harvested crop. Nutrient uptake and soil assimilation of some nutrients is also dependent on the mode of application of the irrigation water. Best management practices (BMPs), for both irrigation and fertilization, can be implemented to address water quality and salt concerns. However, the use of a specific BMP, such as nutrient management plan, needs to be site specific, and not driven solely by the use of recycled water.

As discussed earlier, emerging chemicals of concern are also not unique to recycled water. All waters may contain unregulated constituents and emerging chemicals or microbiological agents as a result of atmospheric deposition, non-point discharges, agricultural practices and wastewater discharges.

Recommendation: CVCWA recommends that the following paragraphs be modified to reflect salt uptake and assimilation:

Paragraph 5 in the WHEREAS section:

When discharged to groundwater, salts are persistent and difficult to remove, resulting in increasing concentrations in groundwater over time. These salts include those containing the cations sodium, boron, calcium, magnesium, and potassium and the anions bicarbonate, carbonate, chloride, nitrate, phosphate, sulfate, and fluoride. Beneficial salts (nutrients) for plant growth, such as potassium, calcium, magnesium, nitrogen, sulfur, and phosphorus, are taken up into the plant by varying degrees and can be removed in the harvested crop. Salts are commonly measured by water quality parameters that measure combinations of ions, such as total dissolved solids (TDS), electrical conductivity (EC) ~~electroconductivity~~, and hardness.

Paragraph 11 in the WHEREAS section:

Overapplication of ~~recycled~~ irrigation water unnecessarily increases the amount of salt that flows to groundwater. This increase can be prevented by applying ~~recycled~~ irrigation water in an amount or manner that does not exceed the ~~amount~~ quantity needed for the landscape or crops, taking into account the salt content of the irrigation water and the nutrient uptake of the crop, the evapotranspirative demand, the distribution uniformity of the irrigation system, and leaching needed to prevent the buildup of salts in the soil root zone. Best management practices can reduce impacts of irrigation.

Paragraph 13 in the WHEREAS section:

Irrigation in amounts ~~that do not exceed the amount~~ needed for landscapes or crops - taking into account evapotranspirative demand, the distribution uniformity of the irrigation system, the mode of application of the irrigation water, the nutrient uptake of the crop, and leaching needed to prevent the buildup of salts in soil - creates a substantial delay in pollutants reaching groundwater, limiting the effectiveness of groundwater monitoring. Furthermore, it is usually unreasonable to require groundwater monitoring for irrigation projects using recycled water because these projects generally pose no greater ~~a~~ threat to water quality ~~similar to~~ than irrigation projects using surface water or groundwater, for which groundwater monitoring is not required.

Paragraph 24 in the WHEREAS section:

For recycled water irrigation projects, where there is a concern for salt buildup, discharges of salts to groundwater can be reasonably controlled by implementing (a) ~~a~~ nutrient management ~~plan~~ practices, (b) applying recycled water in an amount or manner that does not exceed the ~~amount~~ quantity needed for the landscape or crops, and (c)

~~controlling salt discharges to collection systems from industrial facilities and self regenerating water softeners~~ implementing salt reduction strategies. These actions represent best practicable treatment or control for controlling salts for recycled water irrigation projects.

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CVCWA supports the draft Policy's efforts in highlighting this issue and the decision to forgo groundwater monitoring in most cases. CVCWA believes that given the other requirements of the policy (i.e. irrigating at plant requirements), these cases should only be very exceptional circumstances, since irrigation will be limited in its impacts. Furthermore, assessing groundwater impacts by means of conventional upgradient/downgradient monitoring wells is often very complex or not appropriate due impacts from previous activities or the nature of the subsurface geology, particularly in the case of the foothill areas of the Central Valley.

Recommendation: Paragraph 8 under THEREFORE should be removed or revised to reflect the exceptional circumstances under which groundwater monitoring may be required.

6. <u>The draft Policy should be modified in several areas with regard to salts and nutrients.</u>

CVCWA commends the State Board for acknowledging that salt accumulation in groundwater is an issue that can only be effectively addressed by regional salt management and not by case-by-case regulation of recycled water projects. We also think it is critical to distinguish between irrigation, which is a use of water with only incidental effects, and recharge projects, which are designed to augment groundwater.

Recommendation: CVCWA recommends that the following two paragraphs be modified as follows:

Paragraph 8 in the WHEREAS section

Ambient levels of salts in many ~~Many~~ groundwater basins in California exceed ~~have groundwater that violates~~ or threatens to ~~violate~~ exceed water quality objectives for salts including nitrate established in Basin Plans, and the Basin Plans ~~do not have~~ may lack adequate implementation procedures for achieving or ensuring ~~compliance with the~~ attainment of water quality objectives. Regulation of salts in recycled water alone will not achieve these objectives. Regulation of salts in recycled water alone will not achieve these objectives.

Paragraph 9 in the THEREFORE section

A Regional Water Board shall not require for recycled water irrigation projects salt management measures other than those listed in paragraph No. 9 prior to January 1, 2018, unless such measures are part of a salt implementation plan adopted pursuant to paragraph No. 6 or a regional salt management plan already in place at the time of adoption of this Policy.

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CVCWA supports the use of an interim salt management strategy. However, the proposed criterion for irrigation projects of 300 mg/L increase in TDS over source water is a one-size-fits-

all solution that is excessively stringent, will not facilitate recycled water use, and, in fact may preclude many projects in the Central Valley.

Attachment 1 to this document is a probability plot of differential TDS data (effluent TDS – water supply TDS) developed from average annual data provided by POTW dischargers in the Central Valley. The vertical axis data reflects the differential in TDS from source water based on average annual. The graph indicates that if the State Board adopted a 300 mg/L increase in TDS over source water on an *annual* basis, less than 50 percent of those in the survey would be able to meet the proposed requirements in the policy. At a differential TDS of 500 mg/L, the percentage of POTWs that would produce recycled water meeting this criteria would be in the range of 90 to 95 percent. It is important to note that this graph is based on annual average data. Monthly data were not readily available from this survey, but are expected to be much more variable than annual data. The percentage of compliance with the 300 mg/L differential that would be calculated from monthly data are expected to be lower than that from annual data.

CVCWA does not believe it is reasonable to limit the incremental increase of TDS over supply sources to 300 mg/L. Widely accepted literature shows that the incremental increase in TDS from domestic use alone can vary from 150 to 380 mg/L (Source: Table 3-11, page 105 in Water Reuse: Issues, Technologies, and Applications, Asano, et al., Metcalf & Eddy, McGraw-Hill, 2007.) Commercial, industrial and residential sources, including self-regenerating water softeners (not included in the range above) can add additional TDS loads, only some of which can be controlled by POTWs.

Currently, considerable effort and expense are required to address or prohibit residential water softeners. Although now with the passage of SB 1006 (Costa) in 1999 and AB 334 (Goldberg) in 2003, POTWs can adopt ordinances prospectively prohibiting residential water softeners, the process is still very burdensome and only two agencies have been able to successfully satisfy the statutory conditions. CVCWA encourages the State Board to continue to work with the legislature to ease this process as a way of addressing the larger salt issue. However, given the statutory requirements of today, we are concerned that the language regarding source control efforts for water softeners in the draft policy along with the proposed TDS incremental increase would discourage water recycling in our region, and certainly delay implementation of recycled water projects as this form of source control is being addressed.

CVCWA is also concerned that the proposed incremental increase could have significant impacts on water recyclers during periods of water conservation, when volumes remain low, but overall mass loading of salts remains steady.

Storage of recycled water in open reservoirs can also increase the TDS due to evaporative losses. Thus it is important for the policy to define the point of compliance for any recycled water TDS measurement.

Recommendation: CVCWA recommends an incremental increase of TDS over the source water to be limited to no less than 500 mg/L. We encourage the State Board to consider the range of alternatives presented by WateReuse. We also recommend that paragraph 12 in the WHEREAS section be replaced with the following paragraph:

> Based on accepted literature, the incremental increase in TDS above the source water supply from domestic use (excluding commercial and industrial sources and residential self-regenerating water softeners) varies from 150 to 380 mg/L. It is unreasonable to limit

the incremental increase of TDS over the source water to less than 500 mg/L due to non-domestic inputs, evaporation from storage, and water conservation efforts.

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The draft policy is recommending that the incremental increase in TDS above source water be measured on a monthly basis. This timeframe is problematic for sampling and assessment and is not necessary. For example, existing regulations only required groundwater supplies to be monitored every three years.

Most water purveyors monitor for a salinity constituent (hardness, TDS) on an annual basis, sometime more frequently such as once a quarter, and for some, much less frequently (as little as once every 10 years). Many POTWs receive wastewater from communities with multiple water supply sources. Unless a water recycler is also the water purveyor, collecting the data and conducting an analysis will be difficult on a monthly basis, unless a vast amount of new potable water supply monitoring is done. The water recycling purveyor is often not the same as the potable water purveyor and therefore may not have the ability to carry out such monitoring. Furthermore, monthly monitoring will not necessarily provide additional information that is meaningful, since it is not clear what the level of variability of the increment is.

Recommendation: CVCWA recommends that the draft Policy be modified to measure the incremental increase in TDS based on an annual average, not a monthly average over source water supplies. We also recommend that the following paragraph be added with the other definitions in the THEREFORE section

For the purposes of this Policy, the "annual average TDS concentration of the source water supply" shall be the flow weighted average TDS concentration of the source water supply of the service area that generates wastewater from which the recycled water is produced.

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Salts can be measured multiple ways: TDS, hardness, EC etc. CVCWA supports that, for the purpose of this policy, TDS be used as the primary surrogate for regulating salts from recycled water irrigation projects. CVCWA believes that other means of measuring or monitoring salts from recycled water irrigation projects may be appropriate.

For example, several of our members measure salts using electrical conductivity (EC). They prefer EC measurements because they provide a more accurate accounting of the inorganic salts in various aqueous matrices compared to TDS testing. They have found EC testing is not biased high by dissolved organics such as sugars, which are commonly found in influent of their treatment facility and industrial samples. Further, EC testing is simpler for them and is less subject to laboratory error compared to TDS testing.

CVCWA is concerned that multiple limitations or monitoring requirements may be put on a water recycler that are not necessary, and therefore, recommends that the water recycler be given the option, with the concurrence of the Regional Board, of utilizing an alternative means to measure salts as a substitute for TDS.

Recommendation: CVCWA recommends that the following paragraph be added to the draft policy:

> For the purpose of this policy, TDS should be used as the primary surrogate for measuring salts in irrigation projects using recycled water. However, other means of measuring or monitoring salts from recycled water irrigation projects may be appropriate, using mutually acceptable conversion factors to implement an adjusted limit. At the request of the recycled water producer, an alternate measurement for salts may be used with approval by the Regional Board.

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Nutrient management plans are not necessary or appropriate for every project. Rather, nutrient management plans should only be required where needed to protect groundwater or surface water. Nutrient management plans and practices can also be developed for specific regions or basins, or crops.

Recommendation: The Policy should emphasize nutrient best management practices and limit the requirement for a nutrient management plan where needed to protect groundwater or surface water. When required, collective efforts to develop more regional plans or practices should be encouraged when possible. The following two paragraphs should also be modified as shown:

Paragraph 4 of the THEREFORE section:

For the purpose of this Policy, "nutrient management practices" ~~is the act of managing~~ are measures implemented to manage the amount, source, placement, form and timing of the application of plant nutrients and soil amendments~~. It is done~~, to budget and supply nutrients for plant production, properly use manure or organic by-products as a plant nutrient source, minimize degradation of surface and ground water resources, protect air quality by reducing nitrogen emissions (ammonia and NOx compounds) and the formation of atmospheric particulates, and maintain or improve the physical, chemical and biological condition of soil.

Paragraph 7 in the *THEREFORE* section (note that some changes shown in this paragraph are reflective of other comments made in this letter).

7. Regional Water Boards shall require the following in ~~waste discharge requirements and~~ water reclamation requirements for recycled water irrigation projects:

   (a) the development and implementation of nutrient management ~~plan~~ practices, where needed to protect groundwater or surface water;

   (b) compliance with the California Code of Regulations, Title 22, Division 4, Chapter 3, Recycling Criteria;

   (c) the recycled water to be applied in an amount or manner that does not exceed the ~~amount~~ quantity needed for the landscape or crops, taking into account evapotranspirative demand, the distribution uniformity of the irrigation system, and leaching needed to prevent the buildup of salts in soil;

(d) limitations on TDS concentrations in recycled water established as follows:

7.d.1. If the concentration of TDS in the recycled water is equivalent to or below the groundwater objective for TDS in a Basin Plan, the limitation shall be based on the groundwater objective; or

7.d.2. ~~the monthly~~ The annual average TDS concentration in the recycled water ~~to not exceed~~ shall be limited to the annual ~~monthly~~ average TDS concentration of the source water supply, plus ~~300~~ 500 mg/l. TDS in the recycled water shall be measured in the final effluent of the treatment system producing the recycled water prior to storage. ~~The monthly average TDS concentration of the source water supply shall be the flow weighted monthly average TDS concentration of the public water supply of the service area that generates sewage from which the recycled water is produced.~~

7.d.3. Site-specific limitations intended to protect groundwater from salt accumulation may be established when the recycled water does not meet either 7.d.1 and 7.d.2.

(e) ~~Compliance with the federal Code of Regulations, Chapter 40, Part 122, National Discharge Elimination System and~~ The use of recycled water shall not cause or contribute to ~~violations of water quality objectives~~ impairment of a designated beneficial use of groundwater or exceedances of groundwater quality objectives for non-salt related pollutants.

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In paragraph 7(e) of the draft policy, there is a reference to NPDES regulations. We think that this provision was probably added to address incidental runoff. As described below, CVCWA believes there are adequate existing regulatory schemes for managing irrigation runoff in compliance with the Clean Water Act.

Recommendation: Remove the reference to NPDES permitting in paragraph 7(e).

7. The draft Policy should be modified to address incidental runoff and recycled water storage.

The draft staff report states that the State Board intends to address incidental runoff most likely as part of a statewide NPDES permit. CVCWA strongly suggest that the Board include incidental runoff within the Policy. Incidental amounts of recycled water runoff that occur as the result of normal irrigation operations should be managed and permitted using existing mechanism in the same manner as other types of irrigation runoff, including, but not limited to, municipal separate storm sewer system permits, general permits, or master reclamation permits.

Recommendation: CVCWA recommends that the following paragraphs be added to the draft Policy

Incidental amounts of recycled water runoff that occur as the result of normal irrigation operations, including ornamental water features, should be managed and permitted using existing mechanism in the same manner as other types of irrigation runoff, including, but not

limited to, municipal separate storm sewer system permits, general permits, or master reclamation permits.

Irrigation in amounts needed for landscape or crops in systems designed, permitted or operated pursuant to the requirements of Title 22 generally will not result in discharges to surface waters.

8. The draft Policy should defer to CDPH with regards to groundwater recharge reuse projects

The policy describes conflict resolution in several areas. For direct recharge reuse projects, Paragraphs 14 and 15 in the THEREFORE section describe separate processes (spreading and direct injection) for conflict resolution for direct recharge and reuse projects. Paragraph 19 in the THEREFORE section applies more generally to recycled water projects.

For recommendations regarding the protection of public health, CVCWA believes the Regional Board should defer to the recommendations of CDPH. For other areas of disagreement, the Regional Water Board should follow the conflict resolution process prescribed in the 1996 "Memorandum of Agreement between the Department of Health Services and the State Water Resources Control Board on the Use of Reclaimed Water."

Recommendation: Combine Paragraphs 14 and 15 in the THEREFORE section and more accurately reflect the conflict resolution process. Revise the language in the combined paragraphs so that in recommendations regarding the protection of public health for recharge reuse projects, Regional Board is directed in the Policy to defer to the recommendations of CDPH. For other areas of disagreement, the Regional Water Board should be directed to follow the conflict resolution process prescribed in the 1996 "Memorandum of Agreement between the Department of Health Services and the State Water Resources Control Board on the Use of Reclaimed Water."

Modify Paragraph 19 in the THEREFORE section as follows:

The Regional Water Board shall defer to CDPH with regard to water recycling requirements for the protection of human health. If CDPH and the Regional Water Board disagree on proposed water reclamation requirements or waste discharge requirements for a water recycling project, the Regional Water Board shall follow the conflict resolution process prescribed in the 1996 "Memorandum of Agreement between the Department of Health Services and the State Water Resources Control Board on the Use of Reclaimed Water."

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Paragraph 16 in the WHEREAS section describes how recycled water has the potential to contain constituents not typically found in surface water or groundwater, because it is usually produced from sewage. The finding then goes on to describe how the Regional Boards may need to develop a limit to protect human health. Paragraphs 10 and 11 in the THEREFORE section provide for the Regional Board to develop limitations both when MCLs are available and when they are not.

CVCWA is concerned with these paragraphs for several reasons. First, concerning Paragraph 16, all waters (recycled water, groundwater and surface water) may contain unregulated constituents

and contaminants of emerging concern or microbiological agents as a result of anthropogenic sources, atmospheric deposition, non-point discharges, agricultural practices and treated wastewater discharges. These contaminants are not unique to recycled water.

The process for developing effluent limits described in paragraphs 10 and 11 is extremely subjective, and we question if, just due to its presence in recycled water, a limitation is warranted. CVCWA is concerned that the provisions detailed in these paragraphs allows a limit to be established without going through a rigorous standard setting process as is done for MCLs or water quality objectives. For groundwater recharge reuse projects, we support the Board's intent to rely on good science for requirements for constituents with no MCLs, but the details need more work.

Recommendation: CVCWA recommends paragraph 16 in the WHEREAS section be replaced with the following paragraph:

> All waters (recycled water, groundwater and surface water) may contain unregulated constituents and contaminants of emerging concern or microbiological agents as a result of anthropogenic sources, atmospheric deposition, non-point discharges, agricultural practices and treated wastewater discharges.

We also recommend that paragraphs 10 and 11 be deleted, or revised to reflect a rigorous review requirement, as presented in the comments of WateReuse on this subject.

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Paragraph 18 in the WHEREAS section, describes how proposed groundwater recharge reuse project may change the geochemical equilibrium in an aquifer, thereby causing the dissolution of constituents, such as arsenic, from the geologic formation into groundwater. This dissolution can cause an aquifer to become degraded and polluted. This condition is true of any type of water application and true of natural processes.

Recommendation: CVCWA recommends that this paragraph be deleted or that the paragraph recognizes that impacts could also be due natural processes, and that if a concern is noted, its cause should be investigated.

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Paragraph 12 in the THEREFORE section allows the Regional Board to set groundwater limitations and require groundwater monitoring for recharge reuse projects if it finds that a constituent is attenuated in soil, the vadose zone and groundwater. CVCWA is concerned as this provision, although well intended, could conflict with the draft CDPH groundwater recharge regulations, which allow for compliance to be determined in the vadose zone for some constituents. This is important for some projects where the groundwater table is very deep and compliance determinations are not possible or extremely difficult unless alternatives to measure compliance are available.

***Recommendation:* This paragraph should be deleted.**

9. Other Modifications

The draft policy makes several blanket statements that are not always true. These should be replaced with more general phrases:

Recommendation: Revise Paragraph 6 in WHEREAS section of the draft Policy as follows.

> When recycled water, surface water, or groundwater is used for irrigation, the salts in the water ~~are~~ may be concentrated in the percolate that flows from the surface of the irrigated site to groundwater because much of the water applied evapotranspires, thereby leaving most of the salt in the soil, where it may eventually leach~~es~~ to groundwater ~~in the percolate~~. In arid parts of the state where there is little precipitation available to dilute salts, this effect has caused or threatened to cause ~~violations~~ exceedances of groundwater quality objectives for salts in areas that are or were irrigated.

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The draft policy should use the terminology of "exceedance" rather than "violation", before a legal determination is made of whether the exceedance of the objective is violation, and concomitantly, what entity, if any, is responsible for the "violation".

Recommendation: Replace the term "violation" with the word "exceedance" throughout the document.

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Paragraph 10 in the WHEREAS section does not characterize Title 22 recycling criteria well as it implies that the recycling criteria are missing key segments that must be included in the draft Policy to protect public health. Title 22 recycling criteria depend on the quality of water needed for the specific beneficial use and for public health protection.

Recommendation: Revise Paragraph 10 as follows:

> The California Code of Regulations, Title 22, Division 4, Chapter 3, Recycling Criteria, specify treatment processes for ensuring proper disinfection of recycled water for the intended use~~. They also specify requirements for limiting public contact with recycled water~~ in order to protect public health.

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Once approved, Regional Boards should review and revise, as necessary, their Basin Plans to conform to the adopted policy.

Recommendation: Add the following paragraph to the draft Policy:

> Within two years from the effective date of this policy, Regional Water Boards shall review their Basin Plans and revise the Plans as necessary to conform to this Policy.

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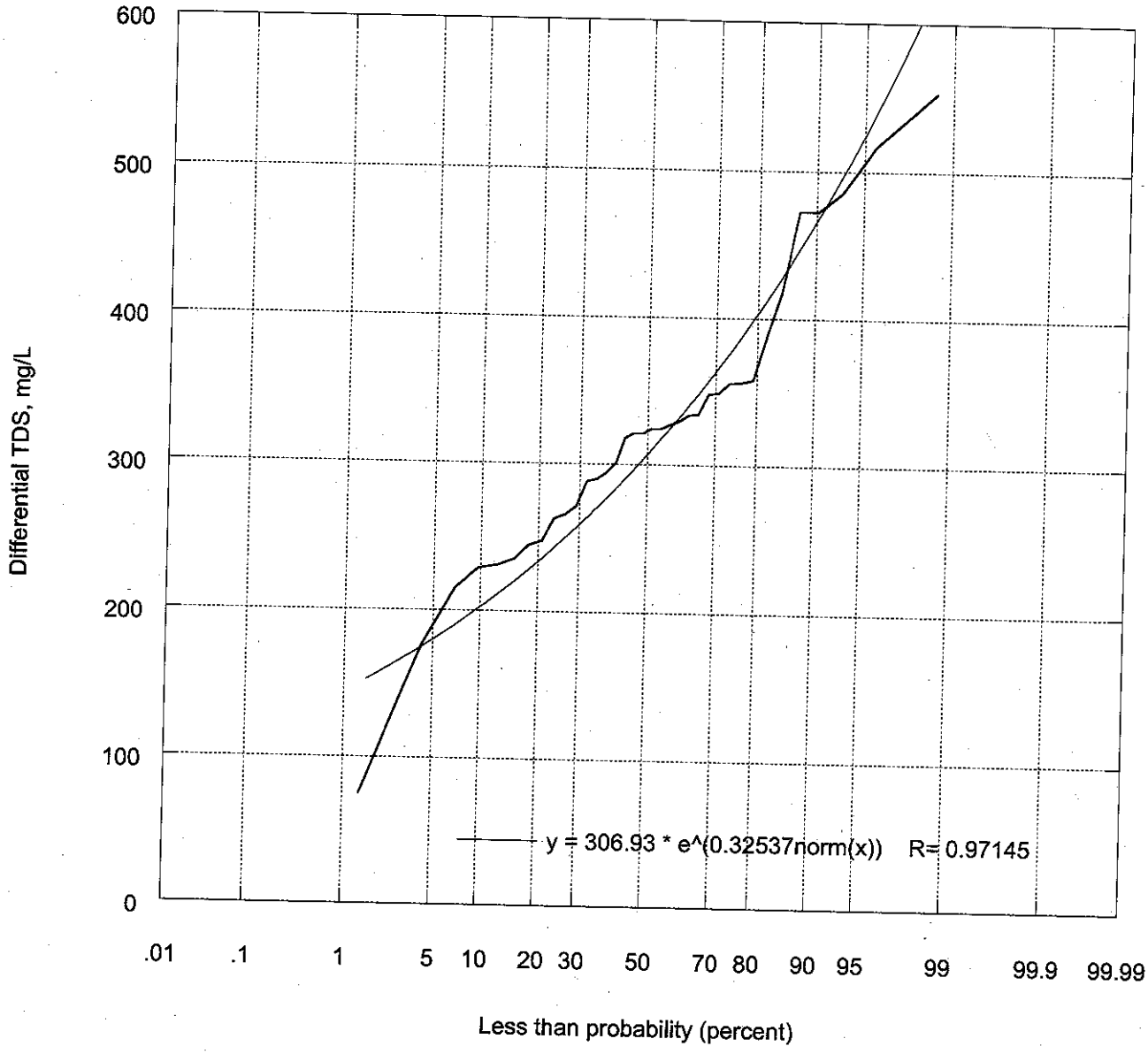
The draft policy defines distribution uniformity (Paragraph 1 of THEREFORE section). CVCWA is concerned that this definition is overly prescriptive and will be difficult to assess and determine compliance with, and therefore will offer little water quality protection.

For example, if a field receives a uniform amount of irrigation water but the water flows to one portion of the field where it percolates, based on the draft policy's definition, the distribution uniformity ratio would be 1. Another field with the same irrigation pattern but where the there is no flow to different quads would also have a ratio of 1, although the potential impact to groundwater quality, which the policy is trying to minimize, is not measured. CVCWA believes a more general definition will allow flexibility to meet the draft's policies goals without being overly burdensome.

Recommendation: Modify Paragraph 1 of THEREFORE section as follows:

For the purpose of this Policy, "distribution uniformity" ~~is the ratio of the average irrigation volume applied to the driest quarter of the field (or grid) and the average volume applied across a whole field (or grid). Distribution uniformity~~ measures how uniformly an irrigation system applies water to a crop or landscape.



Less than probablity of differential TDS based annual average data from Region 5 POTWs (n = 36)