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STATE OF CALIFORNIA  
STATE WATER RESOURCES CONTROL BOARD

In the Matter of the Petition of )  
the County of San Diego for Review )  
of Inaction of San Diego Regional )  
Water Quality Control Board )  
Regarding Implementation of Water )  
Reclamation Goals. Our File No. )  
A-231. )

Order No. WQ 80-7

BY THE BOARD:

On April 20, 1978 this Board adopted Resolution No. 78-15, which approved amendments to the Water Quality Control Plan, San Diego Basin, and which requested the Regional Water Quality Control Board, San Diego Region (Regional Board), to take certain actions concerning wastewater reclamation in the San Diego Basin. On March 1, 1979, the County of San Diego, on behalf of the Buena Sanitation District, submitted a report of waste discharge for the Shadow Ridge Development (Buena Project), a development from which treated wastewater would be reclaimed for golf course and other landscape irrigation use. The Regional Board staff responded to the report by requesting the submittal of a considerable amount of additional technical information to complete the report.

On April 20, 1979, the State Board received a petition from the County of San Diego for review of the Regional Board's alleged failure to implement Resolution No. 78-15 and for review of the Regional Board's failure to adopt waste discharge requirements for the Buena project. The County's petition was amended on May 29, 1979.

On July 30, 1979, the State Board held a public hearing in San Diego regarding implementation of Resolution No. 78-15; and on October 1, 1979, the State Board held another public hearing in San Diego regarding waste discharge requirements for the Buena Project. Subsequent to our hearing of October 1, 1979, additional evidence in the form of submittal of the Buena Project Final EIR was submitted by Western Land and Development Company on October 22, 1979. No comments from the Regional Board or the County were received in response to this submittal. The Western Land and Development Company submittal is made a part of the record.

The Regional Board on November 26, 1979, adopted Order No. 79-76, waste discharge requirements for the Buena Project.<sup>1/</sup> The order was issued for the County of San Diego, Buena Sanitation District.

This petition presents the Board with a significant policy issue in the San Diego Basin, that of balancing the need to protect the quality of groundwater from degradation and the need to encourage wastewater reclamation and conserve the valuable water resources of the State. In this matter, water quality objectives, beneficial uses, and waste discharge effluent limitations for total dissolved solids (TDS) are the focal point for this analysis.

<sup>1/</sup> We take official notice of this action of the Regional Board which occurred after the hearing record was closed in this matter. This action is based upon the submittal of a subsequent report of waste discharge by the County.

Background

In January, 1977, we adopted the Policy and Action Plan for Water Reclamation in California (Reclamation Policy) in conformance with the Legislature's intent to encourage water reclamation. In doing so, we established the following principles: the State and Regional Boards shall (1) encourage reclamation and reuse of water in water-short areas of the State; (2) encourage water conservation measures which further extend the water resources of the State; and (3) encourage other agencies, in particular the Department of Water Resources, to assist in implementing the Reclamation Policy. Use of reclaimed water must, of course, be consistent with the principles set out in this Board's Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality of Waters in California (Non-Degradation Policy). The Non-Degradation Policy provides that high water quality will be maintained and that any change in quality must be consistent with maximum benefit to people of the State, must not unreasonably affect present and anticipated beneficial uses of waters and must not result in water quality less than that prescribed in the policies.

A high percentage of the water used in the San Diego Basin is imported from outside the Basin. The area is semi-arid and, as stated in the San Diego Water Reuse Study Work Plan of September 1978, the County must reduce its dependence on imported water. Water resources must be better managed to provide adequate water supplies for domestic and agricultural use and for wildlife resources.

The designated 208 study area identified in the Areawide Water Quality Management Plan for the San Diego Region includes all of San Diego County plus the approximately 500 square miles of Riverside County which lies within the boundaries of the Santa Margarita-San Luis Rey Watershed Planning Agency. The 208 Management Plan adopted by the Comprehensive Planning Organization Board of Directors on June 19, 1978, recommends that 20 Category 1<sup>2/</sup> water reclamation projects be implemented immediately so that they can be completed prior to 1983. These projects could reclaim approximately 50 million gallons per day of wastewater if fully implemented. The San Diego Water Reuse Study is a Clean Water Grant project being undertaken jointly by the City of San Diego and the County of San Diego to implement as many water reclamation projects as practicable which were identified in the 208 Management Plan.

On April 20, 1978, State Board Resolution No. 78-15 requested the Regional Board to take certain actions regarding water reclamation. We requested the Regional Board to:

- a. Adopt a resolution which clarifies its intent to protect, under the Non-Degradation Policy, those groundwater bodies where beneficial uses and water quality objectives have been entirely deleted.

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<sup>2/</sup>Category 1 projects are reclamation projects appearing to have enough favorable aspects to be the immediate subject of a Section 201 facilities study. Such studies precede construction grants from the Clean Water Grants Program.

- b. Identify, within thirty days, those areas where proposed reclamation projects would provide a water supply of comparable or better quality than existing supplies and those groundwater basins where existing water quality is degraded to the point where beneficial uses are marginal or do not exist; for such areas and basins, modify beneficial uses/ water quality objectives to foster wastewater reclamation.
- c. Review beneficial uses and water quality objectives for groundwater basins in all areas of potential wastewater reclamation as a part of the continuing planning process and in coordination with the 201 Regional Wastewater Reclamation Study. The Regional Board should work with the Department of Water Resources to reach near-term decisions based on existing data for those specific reclamation projects identified in the draft San Diego Area 208 Plan.
- d. Consider the elimination of all numerical objectives for groundwaters in favor of establishing a policy for protection of groundwaters consistent with the Non-Degradation Policy which does allow for a controlled rate of degradation where reasonable and consistent with maximum benefit to the people of the State.

The County contends that these requests have not been met.

One of the Category 1 water reclamation projects identified in the 208 Management Plan is the Buena Project. The Buena Project, or Shadow Ridge Development, is a planned community being developed by the Daon Corporation in the City of Vista, San Diego County. The project consists of a planned total of 3,590 single-family equivalent dwelling units to support an eventual total population of over 10,000 persons. Construction of the project is expected to take place over a 10-year period from 1979-1989. In addition to the dwelling units, the project will include an 18-hole golf course encompassing 148 acres and a 68-acre commercial area including a community shopping center.

The projected sewage flow from the project is estimated at 1 million gallons per day. The project involves the construction of a 1 MGD wastewater treatment plant to be owned and operated by the Buena Sanitation District with land application of the effluent for landscape and golf course irrigation. Treatment is proposed which includes screening for coarse solids removal, fixed film biological treatment, final sedimentation, coagulation, filtration, demineralization and disinfection. The tertiary treated effluent would be subjected to demineralization to lower the TDS to 400 mg/l. It should be noted that the County has maintained in the hearings before this Board that secondary treatment which would result in effluent TDS of 860 mg/l would be sufficient to meet water quality objectives. Demineralization to achieve 400 mg/l apparently is proposed by the County and project proponent to keep the Buena Project moving. This issue will be resolved in this order.

On March 1, 1979, the County submitted a report of waste discharge for the Buena Project. The Regional Board staff responded to the report by requesting the submittal of extensive additional data, and subsequently found the report to contain incorrect information. On May 30th, June 19th and October 16, 1979, additional information was submitted by the County. On October 11, 1979, the City of Vista accepted a Final Environmental Impact Report (EIR) for the project.

The proposed reuse areas for the Buena Project lie within the Agua Hedionda and Buena Hydrologic Subareas of the Agua Hedionda Hydrologic Subunit of the Carlsbad Hydrologic Unit. The Water Quality Control Plan for the San Diego Region (Basin Plan) provides water quality objectives for the Agua Hedionda Hydrologic Subunit. The Basin Plan provides that groundwater for the Subunit shall not contain a TDS concentration of more than 1,200 mg/l (not to be exceeded more than 10% of the time).

The Agua Hedionda Subunit is approximately 19,000 acres; slope is generally 5-30 percent with some areas 60-65 percent or more; elevation is sea level to near 700 feet; soils are predominately sandy loams and clays with alluvial deposits in the valleys; and the soils have slow to very slow infiltration rates. The TDS range of groundwater quality in the Subunit is generally 750-1,900 mg/l with an average TDS of about 1,320 mg/l according to the Buena Project groundwater report of January 1979. Thus, groundwater TDS quality slightly exceeds Basin Plan water quality objectives according to these figures.

The final EIR for the Buena project notes that land elevation in the project area is 350-500 feet with ground slopes from 5-15 percent, with 20 percent having slopes greater than 25 percent; that the project overlies areas that are predominately bedrock weathered near the surface to decomposed granite and cretaceous sediments which consist chiefly of grey-green silt stone and clay stone intrabedded with brown sandstone, while some of the project area consists of alluvium deposits; and that the project area is located outside of the coastal lowland area and receives average annual precipitation of 14.05 inches. Percolation in the project area is slow to very slow.

Discussion of the beneficial uses of these areas will be considered later in this order.

#### CONTENTIONS AND FINDINGS

1. Contention: The County contends in their April 20, 1979, petition that the Regional Board staff's request for further information to complete the Buena Project report of waste discharge was unreasonable and that the Regional Board should be directed to provide tentative waste discharge requirements for the project based on the information submitted.

Findings: As indicated earlier, the Regional Board adopted waste discharge requirements for the Buena Project in Order No. 79-76. Thus, the question now becomes whether the limits contained in Order No. 79-76 are reasonable and appropriate. Based on the evidence presented at the October 1 hearing, it is



clear that the report of waste discharge was not accurate and complete at the time the petition was filed; however, to examine this issue in detail would not be productive since requirements have been adopted. The record before the State Board contains sufficient information to determine appropriate TDS limitations.

Order No. 79-76, discharge specification #5, provides limitations as follows:

"Concentrations of mineral constituents in the discharge to irrigation areas shall not exceed the following for an irrigation efficiency of 66 2/3 percent:

Constituent	Concentration	
Total dissolved solids	400	mg/l
Fluoride	0.3	mg/l
Chloride	165	mg/l
Sulfate	165	mg/l
Boron	0.15	mg/l
Percent sodium	60	

Utilization of a higher irrigation efficiency on any area will require a commensurately lower level of constituents."

The 400 mg/l limit for TDS contained in Order No. 79-76 appears to be based on application of the so-called "one-third rule" for establishing effluent limits that will protect groundwater quality objectives<sup>3/</sup>. This rule presumes that two-thirds of applied irrigation water evapotranspirates before reaching the groundwater table, resulting in a three-fold mineral increase

<sup>3/</sup> Although the County's subsequent report of waste discharge which is the basis for Order No. 79-76, proposes demineralization that would achieve 400 mg/l TDS, we understand that this was proposed to keep the project moving.

in the mineral concentration which reaches the groundwater. Therefore, waste discharge requirements are set at one-third the value of the basin plan objective for any particular basin, e.g., a basin with an objective of 1,200 mg/l TDS would result in a waste discharge effluent limitation of 400 mg/l TDS.

Testimony at the public hearings indicated that while the "one-third rule" is not a rule of the Regional Board, it provides a starting point for assessing the effects of reclaimed water on groundwater quality. If a project proponent cannot demonstrate by factual data that groundwater quality will be protected, the Regional Board staff has applied the "one-third rule". The rule was developed from research oriented toward crop production. This research was concerned with the effects of irrigation water on salt accumulations in the soil.

Based on testimony received at the public hearings, we have considerable doubt regarding the accuracy in a particular case of the "one-third rule". While it is clear that some increase of mineral concentrations occur as evaporation and plant transpiration consumes most of the water, the rule as applied does not consider the following significant factors as they apply in the Buena project area: plant uptake of minerals, soil uptake of minerals, dilution of percolating wastewater by percolating rainfall or subsurface inflow of groundwater; the extent and characteristics of the groundwater aquifer; that a higher percentage of salts may precipitate out of solution in wastewater high in TDS than wastewater low in TDS; and that irrigation management practices can affect the percent of concentration.

While the "one-third rule" has some general validity, it should be considered along with other factors in a particular situation. Its application to the Buena Project as the sole determinative factor in determining appropriate TDS concentration is inappropriate. The County contends that TDS concentration based on secondary treatment (860 mg/l in this case) is appropriate and that demineralization to achieve 400 mg/l TDS concentration is unreasonable. Presuming that some increase in TDS concentration occurs as wastewater percolates, both the 400 mg/l and 860 mg/l level to some extent allow for increased concentration; and we must, therefore, additionally look to other factors in order to determine what wastewater effluent levels will protect groundwater quality objectives. Compliance with water quality objectives is of primary importance in accordance with our decision in Order No. 73-4 (Rancho-Caballero). Application of the "one-third rule" by itself does not determine whether water quality objectives will be met or at what levels limitations should be set.

The County contends that the computer modeling study, presented by Dr. William Jury in the County's behalf, demonstrates that TDS limits less stringent than those indicated by the "one-third rule" are appropriate for the Buena Project. Dr. Jury applied a modeling method developed by researchers at the University of California at Riverside, which is intended to calculate salt movement as well as modeling relevant chemical reactions. The Reuse Study contemplated that computer modeling will be used to predict the impacts of reclaimed water on groundwater quality in the San Diego Basin.

While Dr. Jury's model is subject to criticism that it predicts average discharge and sacrifices accuracy at any given point in the field and that it assumes vertical movement of percolation, it appears to be more accurate than an arbitrary "one-third rule" in predicting concentration of salts with depth. However, Dr. Jury's model does not provide sufficient data to determine the impacts of reclaimed water on groundwater. Such a determination necessitates examination of groundwater characteristics such as the extent and nature of the aquifer, groundwater velocities, groundwater replenishment from other irrigation sources and rainfall, and location of down-gradient wells. While the modeling approach may be a significant indicator of appropriate TDS limitations to protect groundwater when utilized in conjunction with the above-mentioned groundwater characteristics, this was not done for the Buena Project.

A critical factor to consider in determining appropriate TDS limitations for reclaimed water for the Buena project is the maintenance and protection of beneficial uses of groundwater in the area. Groundwaters in the Agua Hedionda Hydrologic Subunit are beneficially used for municipal and domestic supply, agricultural supply and industrial supply. The record contains considerable evidence regarding these beneficial uses.

The closest known well down-gradient of the project is located about 500 feet downstream. This well is used for

agricultural irrigation and the TDS is about 1,850 mgd/1.<sup>4/</sup> Two other wells are in use and are located within one mile downgradient of the project boundary. The Dawson well, which is about 2,000 feet downgradient, is used for domestic and agricultural purposes. The TDS of this well is about 1,120 mg/1. Mrs. Dawson presented testimony at the October 1st hearing and expressed concern regarding the further degradation of this supply. The second well is also on the Dawson property and is located adjacent to the first Dawson well.

Regional Board Order No. 79-76 finds that there are at least seven other known active wells within three miles downgradient of the project area as well as a standby municipal well field for the City of Carlsbad. One of the users of these downgradient wells is the Rancho Carlsbad Mobile Home Park (Rancho Carlsbad), owned and operated by the Western Land and Development Company, which presented extensive evidence at the public hearings. Rancho Carlsbad is a mobile home community of about 106 acres, has more than 900 residents and is located about 2 1/2 miles downgradient from the Buena project area. Rancho Carlsbad uses about 300,000 gallons of groundwater per day during summer months to irrigate the mobile home park, a golf course and equestrian park. The TDS of the groundwater from the Rancho Carlsbad wells averages 1,340 mg/

In addition to these seven wells, several wells exist in the Buena project area. However, these wells have been abandoned apparently due to poor quality and yield. Consequently, if

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<sup>4/</sup> Well TDS levels and locations are taken from the most recent County submittals unless otherwise noted.

reclaimed water is not used to irrigate the Buena project, the record indicates that the probable irrigation supply would be a blend of Colorado River and Northern California water with a TDS of 550 mg/l.

While the average TDS (1,320 mg/l) in the groundwater of the Subunit exceeds water quality objectives (1,200 mg/l), the groundwater needs protection or it will suffer further degradation. The Regional Board staff testified that downgradient groundwater used for irrigation alone could more than double in the next few years. County submittals indicate that approximately 6,400 acre-feet of water per year is used within the Subunit for agriculture, that 1,900 acre-feet is used for landscape irrigation and that most of the water used in the Subunit is imported. By 1985, the Buena project is expected to use about 1,100 acre-feet per year for irrigation. These comparative figures indicate that the reclaimed water proposed to be used in the Buena project will provide a contribution of significant quantity to the groundwaters of the Basin.

Another critical factor to consider in determining appropriate TDS limits is the effect on public health. Mr. Sam Kalichman from the State Department of Health Services, testified that while the Department does not set standards which control individual use of wells, they are concerned with ingestion of water heavily augmented with reclaimed water. Mr. Kalichman indicated that the Department would specifically comment on the Buena project proposal when draft requirements are prepared and

that dilution is an important consideration in the Department's evaluation. The Department's chief concern appears to be with stable organics, and not specifically with TDS.<sup>5/</sup> Regional Board Order No. 79-76 indicates that the Department made detailed comments in the adoption process, and in the absence of communications from the Department to the contrary, we presume that the Department is satisfied with the TDS limit as adopted by the Regional Board.

Another factor for consideration in determining appropriate TDS limitations is a comparison of salt loadings that would be discharged to the Subunit by Buena project irrigation water with a TDS of 860 mg/l (reclaimed water with secondary treatment), 400 mg/l (reclaimed water with proposed demineralization) and 550 mg/l (imported water if reclaimed water is not used). While salt loading comparison is useful, we realize that it does not consider further replenishment of groundwater that would result from addition of the irrigation water.

Our calculations are based primarily upon data submitted by the County in their Groundwater Report, with consideration of rainfall percolation data submitted by Dr. David Huntley, a hydrogeologist who testified in behalf of Rancho Carlsbad. This

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<sup>5/</sup> The Department's Domestic Water Quality Regulations indicate the following maximum TDS contaminant levels:

500 mg/l	Recommended
1,000 mg/l	Upper
1,500 mg/l	Short-term

salt loading comparison takes into account existing irrigation<sup>6/</sup> and percolation from precipitation<sup>7/</sup> throughout the Subunit. While the record is not clear regarding the TDS quality of irrigation water used in the Subunit, the evidence indicates that most irrigation occurs with imported water. However, in order to provide a meaningful salt loading discussion, we include a comparison of TDS levels with both imported water and groundwater irrigation use in the Subunit. The actual irrigation TDS levels in the Subunit falls somewhere between these two levels of comparison.

First, presuming use of imported irrigation water throughout the Subunit, irrigation of the Buena project area at different TDS concentrations, would increase TDS salt loading to the Subunit by the following percentages:

400 mg/l (proposed demineralization)	- 8%
550 mg/l (imported water)	- 11%
860 mg/l (secondary treatment)	- 16%

Second, presuming use of groundwater for irrigation throughout the Subunit, the Buena project at different TDS concentrations would increase TDS salt loadings to the Subunit

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<sup>6/</sup> Existing irrigation in the Subunit is approximately 8,260 acre-feet per year. Anticipated irrigation on the Buena project area will be about 1,100 acre-feet per year.

<sup>7/</sup> Dr. Huntley questioned the rate of recharge, the effective leaching factor and the TDS used for precipitation by the County. However, the salt loading due to precipitation is extremely small when compared with irrigation loading, and use of Dr. Huntley's figures for precipitation result in very little difference in total salt loading to the Subunit.



by the following percentages:

400 mg/l (proposed demineralization)	-	4%
550 mg/l (imported water)	-	5%
860 mg/l (secondary treatment)	-	8%

We find that the above percentage increases in salt loading that will result from Buena project irrigation with secondarily treated wastewater, are significant in terms of groundwater degradation. A considerably higher percentage of degradation would occur if secondarily treated water is used for irrigation than would occur with a demineralized discharge. We believe that such threatened degradation should be minimized. Looking at the salt loading concentration alone, the 400 mg/l limitation is most desirable. However, we find that it would be unreasonable to set the limitation lower than the 550 mg/l quality imported water that would be used for irrigation in the absence of a reclamation project. Such lower limits would conflict with our policy of encouraging reclamation which we believe is of primary importance in the San Diego Basin. Furthermore, presuming that the project will proceed, treatment to 550 mg/l would not increase salt loading to the Subunit when compared to irrigation of the area with imported water if reclaimed water is not used. Finally, as discussed more fully below, a higher limitation may be appropriate in cases where the reclaimed water can be used as a substitute for high TDS groundwater.

Ideally, any waste discharge requirement limitation on salt loading should be derived from a complete, detailed technical analysis of the entire basin, to include actual and potential uses of the basin, replenishment rates, volume of groundwater, soil types, and groundwater movement. Similar data would also be required on a more localized basis to fully judge the impact of the discharge on immediately adjacent groundwater users. We realize that such detailed hydrological data is often not available and is very expensive to develop both on a basin-wide and localized basis. Absent such information we feel it is the responsibility of both the project proponent and the Regional Board to exercise sound and reasoned judgment in evaluating the effects of proposed projects. Available trade-offs, alternative water supplies, water use reductions, and water conservation should be explored as potential mitigating measures. We have attempted to accomplish such a balancing in this order. We wish to underscore the need to develop the factual data necessary to intelligently engage in such balancing in future projects.

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In this order we have considered the following factors in determining the appropriate TDS limitation for the Buena project: the "one-third rule"; computer modeling; protection of existing and future beneficial uses of groundwater; effects on public health; and percentage salt loading increases that will result from irrigation of the Buena project area. Based upon these factors, for the reasons cited above, we find that a TDS limitation of 550 mg/l is appropriate for this project.

The record contains considerable discussion of our Rancho-Caballero order cited previously. In this proceeding we have found that it is impossible to accurately predict the effect on groundwater of reclaimed water discharged for irrigation without conducting expensive and unreasonably costly testing, monitoring, and accumulation of data on a case-by-case basis. Based upon the record and the reasons stated in this order, we find that the 550 mg/l TDS limitation will best achieve protection of water quality objectives in this Subunit consistent with our Rancho-Caballero order.

2. Contention: The County contends in their petition for review that the Regional Board has not implemented or complied with directives contained in State Board Resolution No. 78-15.

Findings: The provisions of Resolution No. 78-15 at issue in this petition have been set forth in the Background section of this order. That Resolution was adopted to encourage and facilitate water reclamation while protecting surface and groundwater from significant degradation.

On July 24, 1978, the Regional Board adopted Resolution No. 78-34, a resolution to clarify the intent of the Regional Board to protect groundwater bodies where beneficial use designations and water quality objectives have been entirely deleted. This Resolution is consistent with the Nondegradation Policy, and we find that it implements paragraph 3a of Resolution No. 78-15.

Paragraph 3b of Resolution No. 78-15, in part requested the Regional Board to identify areas where proposed reclamation projects would provide a water supply of comparable or better quality than existing supplies. By Memorandum dated July 25, 1978, the Regional Board submitted a status report in response to Resolution No. 78-15. This Memorandum provides the requested analysis for basins within the Region where Category 1 and 2 reclamation projects were identified in the 208 Management Plan adopted by the Comprehensive Planning Organization. The Regional Board staff compared the anticipated reclaimed water quality with quality of the water supply being used in the area where reclamation is proposed. This analysis indicated that where local water supplies would consist of 100% Colorado River water, 7 of the 50 proposed reclamation projects would provide equal or

better quality than existing supplies, and, that where local water supplies would consist of a blend of Colorado River water and Northern California water, 10 of the 50 proposed reclamation projects would provide equal or better quality water than existing supplies (in other words, 17 of the 50 proposed projects would provide reclaimed water of better quality than existing supply). In these areas, reclamation is strongly encouraged. It should be encouraged even more in situations where reclaimed water can act as a substitute for poorer quality groundwater.

The County submitted a similar analysis; however, rather than using the existing supply figures as used by the Regional Board, the County used groundwater quality for comparative purposes. While the County's information is useful, the Regional Board analysis more accurately represents the intent of paragraph 3b of Resolution No. 78-15. We have some question, however, with current accuracy of the water supply TDS levels indicated by the Regional Board, e.g., the Regional Board Memorandum states TDS levels of 1180 mg/l as the water supply for the Buena Project while the hearing record indicates TDS levels around 550 mg/l.<sup>8/</sup> Consequently, as reclamation is examined on a project-by-project basis, careful consideration should be given to actual water supply TDS levels and water supply availability. We find that the Regional Board has fulfilled the intent of the first part of paragraph 3b of Resolution No. 78-15.

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<sup>8/</sup> These TDS levels are based upon 208 Management Plan data. We understand that the water supply has changed since these figures were provided.

Paragraph 3b of Resolution No. 78-15 further requests the Regional Board to identify groundwater basins where existing water quality is degraded to the point where beneficial uses are marginal or do not exist. Paragraph 3c of Resolution No. 78-15 requests the Regional Board to review beneficial uses and water quality objectives for groundwater basins in potential reclamation areas as part of the continuing planning process and in coordination with the 201 Regional Wastewater Reclamation Study. These two requests and Regional Board and County responses, are closely related. The record indicates and we find that the Regional Board has not implemented these provisions of Resolution No. 78-15. The Regional Board, by Memorandum dated September 19, 1978, in response to Resolution No. 78-15, indicates that due to the lack of current data on groundwater quality<sup>9/</sup> levels and physical characteristics, extensive additional assessment is necessary to provide the information necessary to comply with the noted requests of paragraphs 3b and 3c. DWR estimates the cost of such assessment at \$470,000. The Regional Board has consistently contended that such necessary data can only be gathered with further funding in addition to that provided in previous years. The County recognizes the limitations imposed by the lack of further funding, but urges that reclamation projects should proceed with the best data available.

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<sup>9/</sup> Pre-1965 DWR data and limited Regional Board existing information is the best information available.

We understand the Regional Board's concern that the current lack of necessary data regarding groundwater quality and beneficial uses prevents the Regional Board from modifying water quality objectives and beneficial uses in the Basin Plan. We also recognize that the extensive groundwater study expenditures estimated in the Regional Board September 19, 1978, submittal are not feasible. However, we do not believe that the absence of this data on a region-wide basis should prevent most reclamation projects from proceeding in a timely manner. These projects should move forward as project proponents submit information indicated in this order.

Paragraph 3b of Resolution No. 78-15 further requests the Regional Board to modify beneficial uses and water quality objectives to foster reclamation based upon the information gathered as requested in the first part of Paragraph 3b. This request was also not implemented by the Regional Board.

Paragraph 3c further calls for the Regional Board to work with the Department of Water Resources to reach near-term decisions based on existing data for the projects identified in the 208 Management Plan. The record indicates that while some near-term decisions (other than adoption of waste discharge requirements) have been made, other decisions regarding remaining Category 1 reclamation projects have not been made. Regardless of whether the failure to make the latter decisions is caused by the Regional Board's reluctance to act in the absence of further data or the County's reluctance to diligently pursue such projects, it is our intent that such decisions should proceed more expeditious

Paragraph 3d of Resolution No. 78-15 requests the Regional Board to consider the elimination of all numerical objectives for groundwater in favor of a groundwater policy consistent with the Nondegradation Policy. The Regional Board staff has apparently considered this request and determined that implementation is unreasonable or inappropriate due to the lack of current available data. However, this question was not considered by the Regional Board itself in a public hearing as we had anticipated. Although the staff of the Regional Board consulted with the Board on this matter, formal action by the Board itself, after a public hearing, would have been a more appropriate procedure.

The hearing record discloses considerable information about the 20 Category 1 projects identified in the 208 Management Plan. Seven are currently being implemented and one was dropped for reasons unrelated to water quality. Discussions at the public hearings indicated that four (Bonsall, Valley Center, Encinitas, and Escondido-Hall Avenue) of the remaining twelve projects can proceed with limited available data and that two (San Diego County Estates and part of Santee No. 4) of the remaining eight "might" be able to so proceed. We strongly urge the County, Regional Board and the project proponents to expedite these reclamation projects. Of the remaining five projects (six minus the Buena Project), it appears that more difficult water quality problems may be encountered. We further urge the Regional Board and



the County to cooperatively identify the problems in these five projects in order that their feasibility can be determined. We hope that the hearings and this order contribute to a better working relationship between the Regional Board and the County.

It is our intent that reclamation projects in the San Diego Basin should proceed in a more timely manner than is indicated by the record. In our analysis of appropriate TDS limitations for the Buena project, we considered the "one-third rule", computer modeling,<sup>10/</sup> protection of existing and future beneficial uses of groundwater, effects on public health, and percentage salt loading increases that would result from irrigation of the Buena project area.

TDS limits for reclamation projects should not be set at a level lower than the quality of the imported supply that would be available in the absence of use of reclaimed water for irrigation. Where reclaimed water can serve as a substitute for use of poor quality groundwater, further relaxations may be appropriate. Once the alternative supply is identified for a particular project, the above factors should be examined on a case-by-case basis to determine whether the TDS limit can be further relaxed. In the Buena case, we found that based upon current groundwater quality, and the need to protect public health and beneficial

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<sup>10/</sup> Computer modeling is, of course, at the option of the project proponent on a case-by-case basis if the need arises.

uses, the TDS limits could not be less stringent than the alternative supply level. However, in the remaining Category 1 projects this may not be the case, and TDS limits may be further relaxed. In the absence of a detailed groundwater management plan as exists in the Santa Ana Region, this case-by-case approach must be followed.

Another alternative that the County and project proponent may wish to pursue to further modify applicable TDS limits is a trade-off involving the replacement of groundwater irrigation with reclaimed water of better TDS quality. In other words, if existing groundwater needs and supplies can be replaced by better TDS quality reclaimed water, effluent TDS limits should be appropriately relaxed by the Regional Board to encourage reclamation. In this regard we urge the County to consider the development of a groundwater management plan that could assess available tradeoffs and impacts on an areawide basis. If the Buena Project proponents had reached contractual agreement with Rancho Carlsbad or other large groundwater users to irrigate with Buena reclaimed water, instead of groundwater, the 550 mg/l limit could have been appropriately modified for these sites. We urge the County and project proponents to seek such innovative trade-offs. If groundwater users in the area are unwilling to accept reclaimed water as a substitute for continued use of groundwater, we could be placed in a position of addressing the issue of whether such groundwater use would be a waste

or unreasonable use of water within the meaning of Section 2 of Article X of the California Constitution<sup>11/</sup>.

In view of our concern for reclamation in the San Diego Basin and the lack of progress of certain Category 1 projects, the Regional Board and the County shall submit a Status Report(s) to this Board within 90 days of the date of adoption of this order. If the Regional Board and the County are unable to agree on the comments of the Status Report(s) in its entirety, certain parts of the Status Report(s) should be submitted separately. This Status Report(s) shall report the status of each Category 1 project, with emphasis on the twelve projects not progressing at the time of the hearings; shall identify problems and specify what steps within their respective authority, the Regional Board and the County have and are taking to resolve these problems and expedite these projects; shall specify what further assistance is needed from the State Board to encourage these projects; and shall generally outline planning efforts for Category 2 projects. With respect to problem identification and specific steps to resolve the problems, for each Category 1 project, the report shall also identify what additional data would be desirable, if any, in order to adopt requirements and identify what additional data is absolutely necessary in order for requirements to be adopted.

Paragraph 3e of Resolution 78-15 requests the Regional Board to review certain numerical water quality objectives it has

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<sup>11/</sup> Water Code Sections 13550-1 prohibit, under certain circumstances, the use of potable water for irrigation of greenbelt areas when reclaimed water is available for such use.

established for nitrogen and phosphorus. These objectives relate to surface waters, particularly to coastal lagoons where potential for replenishment with reclaimed water has been identified. While this issue was not specifically addressed at the public hearings, we understand that the County wishes to pursue the Regional Board's alleged failure to implement this request. This matter will not be addressed in this order but will be the subject of a separate Board order.

#### CONCLUSIONS

Based on the reasons set forth herein, we conclude that the appropriate effluent TDS limitations for the Buena Project is the level of the alternative supply, 550 mg/l. The Regional Board should so amend Order No. 79-76. Such an amendment does not preclude the possibility of a higher TDS limitations should "substitute" agreements be reached as discussed above.

We also conclude that the Regional Board has only partially complied with our requests contained in Resolution No. 78-15. We understand the County's concern and frustration with the lack of progress on Category 1 projects. We hope that the guidance contained in this order and the cooperative efforts on the Status Report, and work to follow, will expedite these reclamation projects. At this time we do not direct the Regional Board to fully comply with Resolution No. 78-15 as it is our hope that reclamation can now proceed more promptly in the San Diego Basin. If, however, upon submission of the Status Report it appears that

further State Board action is necessary, we will not hesitate to reopen this matter.

ORDER

IT IS HEREBY ORDERED that:

1. The Regional Board amend Order No. 79-76 to change the TDS effluent limitation to 550 mg/l at this time.
2. All other contentions in the petition are hereby dismissed.
3. The Regional Board shall submit the above-described Status Report(s) within 90 days of the date of adoption of this order.

Dated: APRIL 3, 1980

/s/Carla M. Bard  
Carla M. Bard, Chairwoman

V O T E D    N O  
William J. Miller, Vice-Chairman

/s/L. L. Mitchell  
L. L. Mitchell, Member

/s/Jill B. Dunlap  
Jill B. Dunlap, Member

/s/F. K. Aljibury  
F. K. Aljibury, Member

