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IN THE COURT OF APPEAL OF THE STATE OF CALIFORNIA

THIRD APPELLATE DISTRICT

(Sacramento)

ASOCIACION DE GENTE UNIDA POR EL AGUA et al., Plaintiffs and Appellants, v. CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD, Defendant and Respondent; COMMUNITY ALLIANCE FOR RESPONSIBLE ENVIRONMENTAL STEWARDSHIP, Intervener and Respondent.	C066410 (Super. Ct. No. 34-2008-00003604CU-WM-GDS)

APPEAL from a judgment of the Superior Court of Sacramento County, Patrick Marlette, Judge. Reversed with directions.

Laurel Firestone, Rose Francis, for Plaintiff and Appellant Asociacion de Gente Unida por el Agua; James Wheaton, Danielle Fugere, Lynne Renee Saxton, and Jennifer A. Maier, for Plaintiff and Appellant Environmental Law Foundation.

Kamala D. Harris, Attorney General, Kathleen A. Kenealy, Senior Assistant Attorney General, Denise Ferkich Hoffman, Supervising Deputy Attorney General, Teri H. Ashby, Deputy Attorney General, for Defendant and Respondent.

Bird, Marella, Boxer, Wolpert, Nessim, Drooks & Lincenberg, Thomas R. Freeman, and Eric E. Bronson, for Intervener and Respondent.

In 2007, after decades of allowing most dairies to operate without any waste discharge requirements, defendant Central Valley Regional Water Quality Control Board (Regional Board) issued a general waste discharge order (Order)[1] for the purpose of regulating the waste from existing milk cow dairies. The Order purports to prohibit the further degradation of groundwater, as is required by the state's antidegradation policy. However, the Order does not prohibit the discharge of waste to groundwater. Assuming that some dairy waste will reach the groundwater, the Order relies on groundwater monitoring to insure that the groundwater is not further degraded. We shall conclude that the uncontradicted evidence in the record before the Regional Board indicated that the Order's monitoring system of taking samples from domestic and agricultural supply wells is insufficient to detect groundwater degradation in a timely manner. Additionally, the Order contains no remediation measures in the event groundwater monitoring determines degradation has occurred.

It is the policy of the state (the antidegradation policy)[2] to regulate the disposal of wastes into the waters of the state so as to achieve the "highest water quality consistent with

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[1] The Regional Board issued Order No. R5-2007-0035 Waste Discharge Requirements General Order For Existing Milk Cow Dairies on May 3, 2007.

[2] The State Water Resources Control Board adopted Resolution No. 68-16 on October 28, 1968, commonly referred to as the antidegradation policy.

maximum benefit to the people of the State . . . ." To this end, existing high quality water must be maintained unless any change will be consistent with the maximum benefit to the people of the state, will not unreasonably affect the beneficial use, and will not result in water quality that is below that prescribed by water policies. High quality water is the best water quality achieved since the adoption of the antidegradation policy by the State Water Resources Control Board (State Board) in 1968. The State Board's authority to adopt the policy was confirmed in 1969 in the Porter-Cologne Water Quality Control Act (Water Quality Act), which continued the provisions of prior law, granting the State Water Pollution Control Board authority to enact state policy for water quality control. The Water Quality Act also continued the authority of the nine regional water quality control boards (formerly the Regional Water Pollution Control Boards) to implement the policy. (Wat. Code, § 13020; Stats 1949, c. 1549, § 1 p. 2785.)[3]

One of the regional water quality control boards is the defendant Regional Board. In 2007 it issued the Order, which applies to the discharge of waste from existing milk cow dairies. The Order prohibits the collection, treatment, storage, discharge or disposal of waste that could cause further degradation of groundwater, except as allowed by the Order. Some 1,600 dairies are subject to the Order, involving herd

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[3] References to a statutory section are to the Water Code unless otherwise indicated.

sizes ranging from 30 to 10,000 mature dairy cows. A single dairy cow produces approximately 120 pounds of manure and 36 pounds of urine daily. As a result the smallest dairies produce thousands of pounds of manure every day and the largest produce more than one million pounds daily.

Appellants Asociacion de Gente Unida por el Agua and Environmental Law Foundation challenge the Order by writ of mandate as violating the antidegradation policy because the Order does not require the best practicable method for regulating the discharge of waste.[4]

The Order purports to prohibit the further degradation of groundwater, but does not prohibit the discharge of waste into the groundwater. Adverse impacts to groundwater due to discharges from existing cow dairies have been detected in areas where groundwater is relatively deep below ground surface and in areas that provide natural filtration. The principal means of storing the discharge of waste from a dairy's milk parlors and corral areas is the collection and retention of waste and wastewater in holding ponds.

The Order imposes stringent requirements for new and reconstructed ponds, but does not require that existing ponds meet these requirements unless groundwater monitoring demonstrates that a pond has adversely impacted groundwater quality. The Order recognizes that groundwater monitoring is

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[4] The Community Alliance for Responsible Environmental Stewardship is an intervener.

the most direct way to determine whether groundwater degradation is occurring. However, the Order does not require the construction of groundwater monitoring wells unless a "domestic" or "agricultural" supply well shows an adverse impact. The evidence shows that monitoring from a supply well is ineffective to accomplish the timely detection of a change in groundwater quality.

Where, as here, the Regional Board is permitting an activity that may produce waste that will discharge into existing high quality waters, it may permit such activity only if it makes certain findings. The Regional Board must find that the activity (1) is consistent with the maximum benefit to the people of the state, (2) will not unreasonably affect beneficial uses, and (3) will not violate water quality standards. It must also find that any discharge to high quality water will be required to undergo the best practicable treatment or control of the discharge necessary to assure that no pollution or nuisance will occur, and the highest water quality consistent with the maximum benefit to the people of the state will be maintained.

The Regional Board has failed to make any such findings. Rather, it argues that the antidegradation policy is inapplicable because the Order states that it "does not authorize any further degradation to groundwater[.]" We disagree.

The wish is not father to the action. The Order finds that the beneficial domestic, agricultural, and other uses of the groundwater underlying the dairies will be protected by the

Order, but the finding wholly depends upon the Order's prohibition of the further degrading of groundwater without requiring the means (monitoring wells) by which that could be determined. Because the monitoring plan upon which the Order relies to enforce its no degradation directive is inadequate, there is not substantial evidence to support the findings.

The trial court denied writ relief under the judicial review provisions of the Water Code (§ 13330, subd. (e)) on the ground, inter alia, that the antidegradation policy was not applicable because the Regional Board's action did not involve high quality waters. It reasoned that the quality of the groundwater underlying many, if not most, of the dairies had already degraded to a significant degree since 1968, when the antidegradation policy was adopted. The trial court's reading would make the state's antidegradation policy inapplicable and thus ineffective whenever a proposal is made to discharge waste or pollutants into water that has been degraded since 1968, no matter how good the quality is of such receiving water.

The trial court has applied the wrong measure of high quality water. High quality water, as defined by the State Board, is "waters with existing background quality unaffected by the discharge of waste and of better quality than that necessary to protect beneficial uses." So defined, the antidegradation policy applies to the Regional Board's Order because the groundwater in the Central Valley is of high quality, and because the Order allows activities that will result in a release of waste into the groundwater.

We shall reverse the trial court's denial of the writ of mandate. We conclude that the antidegradation policy applies and that the relevant findings are insufficient to comply with the policy.

FACTUAL AND PROCEDURAL BACKGROUND

A. Statutory and Regulatory Framework

1. The Antidegradation Policy

The State Board adopted the antidegradation policy, Resolution No. 68-16, on October 28, 1968, in response to a directive from the United States Department of the Interior that called for the adoption of state antidegradation policies. The policy applies to both groundwater and surface water although the U.S. Environmental Protection Agency's (USEPA) antidegradation policy applies only to surface water.

Resolution No. 68-16 states that it is the policy of the state to regulate, inter alia, the granting of permits and licenses for the disposal of wastes into the waters of the state so as to achieve the "highest water quality consistent with maximum benefit to the people of the State" and "so as to promote the peace, health, safety and welfare of the people of the State[.]" The resolution states that where the quality of water is higher than that established by adopted policies, the higher quality must be maintained "to the maximum extent possible consistent with the declaration of the Legislature[.]"

For purposes of this case, there are two important operative clauses in the resolution.

First: "Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies."

Second: "Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained."

2. State Board Regulations

The State Board has promulgated regulations establishing "statewide minimum standards for discharges of animal waste at confined animal facilities." (Cal. Code. Regs., tit. 27, § 22560, subd. (a).) The regional water quality control boards are directed to "impose additional requirements, if such additional requirements are necessary to prevent degradation of water quality or impairment of beneficial uses of waters of the state." (Cal. Code. Regs., tit. 27, § 22560, subd. (c).)

3. Porter-Cologne Water Quality Control Act

The Legislature enacted the Water Quality Act in 1969. (§ 13020.) It provides that the State Board and the regional water quality control boards are the "principal state agencies with primary responsibility for the coordination and control of water quality." (§ 13001.) It vests the State Board with authority to formulate and adopt state policy for water quality control. (§ 13140.) It continues provisions of the prior law, which created nine regional agencies. (Stats 1949, ch. 1549, § 1, p. 2785.)

The Regional Board is one of nine regional water quality control boards in the state. (§ 13200.) The Water Quality Act requires each regional water quality control board to adopt water quality control plans (referred to as basin plans) for the areas within its region, which must conform to the policies set forth by the Legislature and the State Board.[5] (§ 13240.) As part of a basin plan, the Regional Board must establish water quality objectives that assure the reasonable protection of beneficial uses and the prevention of nuisance. (§ 13241.)

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[5] The Legislature's water quality policy statement is set forth in section 13000, which states in pertinent part: "[T]he quality of all the waters of the state shall be protected for use and enjoyment by the people of the state. [¶] . . . [A]ctivities and factors which may affect the quality of the waters of the state shall be regulated to attain the highest water quality which is reasonable, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible."

Water quality objectives are the limits or levels of constituents allowed in the water to protect the quality of the water. (§ 13050, subd. (h).) Basin plans are not effective until approved by the State Board. (§ 13245.)

Any person discharging or proposing to discharge waste (other than into a community sewer system) that could affect water quality is required to file a report with the appropriate regional water quality control board. (§ 13260, subd. (a)(1).) The board implements its basin plan through requirements for any proposed discharge, existing discharge, or material change in an existing discharge. (§ 13263, subd. (a).) It may do this even if no discharge report has been filed. (§ 13263, subd. (d).) A regional water quality control board may also prescribe general waste discharge requirements for a category of discharges. (§ 13263, subd. (i).)

In prescribing waste discharge requirements, a regional water quality control board must take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, past present, and probable future beneficial uses, environmental characteristics, water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area, economic considerations, the need for developing housing, and the need to develop and use recycled water. (§§ 13263, subd. (a), 13241.) Since a waste discharge requirement implements a basin plan, it must conform to the

state policy for water quality control, which includes the state antidegradation policy. (§§ 13140, 13240.)

With this framework in mind, we turn to the facts.

B. Order No. R5-2007-0035

Since 1982 most dairies under the authority of the Regional Board operated under a waiver program that allowed them to operate without waste discharge requirements if they were in compliance with title 27 of the California Code of Regulations (Title 27).[6] The expiration of the waiver program and the promulgation of new regulations for concentrated animal feeding operations by the USEPA prompted the Regional Board to draft new waste discharge requirements.

In 2007, the Regional Board enacted the Order. It took into consideration: (1) the comments received on drafts of the Order, (2) the historical compliance of dairies with the state and federal regulations, (3) the requirements of the California Water Code, (4) the requirements of the basin plans, and (5) Title 27. The Regional Board approved the Order in May 2007.

The Order applies to existing milk cow dairies that submitted a report of waste discharge and have not been expanded since October 2005. Other dischargers are covered under separate requirements. Approximately 1,600 dairies are subject to the Order, with herd sizes ranging from 30 to 10,000 mature

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[6] The Order recognizes that "Title 27 design standards for ponds have been determined to not be protective of groundwater quality . . . ."

dairy cows. A dairy cow produces approximately 120 pounds of manure and 36 1/2 pounds of urine daily. This means that even the smallest dairies produce thousands of pounds of manure every day, and the largest produce more than one million pounds daily.

The Order states that it "implements" the requirements of Resolution No. 68-16, and "does not authorize any further degradation to groundwater[.]" The Order addresses future discharges of waste, but does not address the cleanup of existing degraded groundwater from past dairy operations. Any such cleanup would be handled under separate authority of the Water Code.

With respect to Resolution No. 68-16, the Order finds that it: "does not authorize degradation of waters of the State. It requires actions to be taken to assure that degradation does not occur, that water quality objectives are not exceeded, and that nuisance does not occur." The Order contains a finding that it "requires use of best practicable treatment or control, specifically that new ponds or reconstructed existing ponds be designed and constructed to comply with the groundwater limitations in the Order."

The Order prohibits the collection, treatment, storage, discharge, or disposal of waste that results in the discharge of waste constituents in a manner which could cause degradation of groundwater "except as allowed by this Order[.]" The Order provides the following groundwater limitations:

> "Discharge of waste at existing milk cow dairies shall not cause the underlying

> groundwater to be further degraded, to exceed water quality objectives, unreasonably affect beneficial uses, or cause a condition of pollution or nuisance. The appropriate water quality objectives are summarized in the Information Sheet, which is attached to and part of this Order, and can be found in the Central Valley Water Board's Water Quality Control Plan for the Sacramento and San Joaquin River Basins (4th Ed.) and the Water Quality Control Plan for the Tulare Lake Basin (2nd Ed.)."

The Order addresses groundwater protection in three ways. First, it addresses ponds. The Order requires dairies to provide an engineering evaluation for any existing waste pond, and to propose and implement remedial measures if groundwater monitoring demonstrates that the pond has adversely impacted groundwater quality. The designs for newly installed or reconstructed ponds must be approved by the Executive Officer of the Regional Board prior to installation or construction.

Second, the Order addresses drainage. Precipitation must be diverted away from manured areas, unless fully contained. Milk parlors, animal confinement areas, and manure and feed storage areas must be designed and maintained to convey all water to the waste retention system and to minimize infiltration of water into the underlying soil.

Third, the Order addresses the land application of waste. Such application must be conducted in accordance with a certified nutrient management plan, which must be modified within 90 days if monitoring shows that discharge from the land application fails to comply with the groundwater limitations of the Order. The Order states that the application of wastes to

the land "shall not cause the underlying groundwater to contain any waste constituent, degradation product, or any constituent of soil mobilized by the interactions between applied wastes and soil or soil biota, to exceed the groundwater limitations set forth in this Order."

In addition to the nutrient management plan, the Order requires dairies to follow a waste management plan and a monitoring program. We discuss the monitoring program in more detail later in our opinion. The waste management plan requires that each dairy provide an engineering report demonstrating that the facility has adequate waste containment capacity and flood protection, and a report assessing the design and construction of the confinement, housing, and manure and feed storage areas. It also requires an operation and maintenance plan.

Following the Regional Board's approval of the Order, appellants filed a petition for review with the State Board pursuant to section 13320 and California Code of Regulations, title 23, section 2050.

The State Board dismissed the petition, concluding pursuant to section 2052, subdivision (a)(1), of title 23 of the California Code of Regulations that the petition failed to raise substantial issues appropriate for review.

C. Judicial Review

Appellants filed a petition for writ of mandate in the trial court. They argued that the Order violated Resolution No. 68-16 because it failed to require the best practical treatment or control of the discharge, and that the Regional

Board's finding that the Order required the best practical treatment or control and would not result in groundwater degradation was not supported by the administrative record. Appellants also argued that the Order set an inappropriate baseline water quality in establishing its compliance with the California Environmental Quality Act (CEQA).

The trial court denied the petition for writ of mandate. It found that appellants did not demonstrate that the Order involved high quality waters or that the Order would cause the quality of such water to decline. Alternatively, the trial court found that the Regional Board "complied with the spirit of the anti-degradation policy" when it engaged in a process of weighing the various interests involved and finding that some minor continued degradation of groundwater was consistent with the maximum benefit to the people of the state.

DISCUSSION

I
Standard of Review

We review this action pursuant to Code of Civil Procedure section 1094.5, as directed by the Water Code. (§ 13330, subd. (e).) Our inquiry extends to "whether the respondent has proceeded without, or in excess of, jurisdiction; whether there was a fair trial; and whether there was any prejudicial abuse of discretion." (Code Civ. Proc., § 1094.5, subd. (b).) "Abuse of discretion is established if the respondent has not proceeded in the manner required by law, the order or decision is not

supported by the findings, or the findings are not supported by the evidence." (*Ibid.*)

In the ordinary Code of Civil Procedure section 1094.5 case the facts contained in the administrative record are subject to substantial evidence review. (Code Civ. Proc., § 1094.5, subd.(c).) In cases in which the court is authorized to exercise its independent judgment on the evidence, "abuse of discretion is established if the court determines that the findings are not supported by the weight of the evidence." (Code Civ. Proc., § 1094.5, subd. (c).) This provision applies to the trial court because the Water Code (§ 13330, subd. (e)), incorporates the provisions of subdivision (d) of section 1094.5 of the Code of Civil Procedure. Subdivision (d) of the Code of Civil Procedure section 1094.5 provides that the "the court shall exercise its independent judgment on the evidence . . . ."[7] However, on appeal from the decision of a trial court that exercises its independent judgment on the evidence, review of the factual determinations of the trial court is limited to substantial evidence. (*Bixby v. Pierno* (1971) 4 Cal.3d 130, 149, fn 22.)

The substantial evidence rule marks the line between law and facts. With respect to review of the facts, the principal

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[7] Code of Civil Procedure section 1094.5, subdivision (c), provides in relevant part: "[I]n cases in which the court is authorized by law to exercise its independent judgment on the evidence, abuse of discretion is established if the court determines that the findings are not supported by the weight of the evidence."

element of the rule is the conflicting inferences doctrine. If more than one inference of an ultimate or intermediate fact can be drawn, the matter must be resolved on the basis of the inference which sustains the judgment of the trier of fact. If not, the matter is one of law for resolution by the appellate court. That is the case here as we shall explain.

The crucial question of fact in this case is whether the monitoring system prescribed in the Order is adequate to ensure the Order's directive that no further degradation of groundwater shall occur. Appellants point to evidence in the record indicating the Order's monitoring method is inadequate. Regional Board cites no contrary evidence. Thus, there are no facts from which any court could determine the monitoring system is adequate to detect and prevent further groundwater degradation. The interpretation of the antidegradation policy and the Order are generally matters of law.

Two broad issues are presented for our review: (1) does the antidegradation policy apply to the Order, and (2), if so, does the Order comply with the antidegradation policy.

In interpreting administrative regulations on appeal we exercise our independent judgment. (*Margolin v. Shemaria* (2000) 85 Cal.App.4th 891, 895.) It is the court, rather than the agency, that has "'final responsibility for the interpretation of the law[.]'" (*Yamaha Corp. of America v. State Bd. of Equalization* (1998) 19 Cal.4th 1, 11, fn. 4. (*Yamaha*).) We accord considerable weight to the administrative construction of an agency only where the administrative agency has an

interpretive advantage over the court because of the scientific and technical nature of the issues. (*Id.* at p. 12.) In this case, the question whether the antidegradation policy applies to the Regional Board's Order does not implicate any particular scientific or technical expertise.

The second issue is whether the Order implemented the antidegradation policy in the manner required by law. This, too, is an issue we review de novo. (*Yamaha, supra*, 19 Cal.4th at p. 12.) Although we determine that the antidegradation policy applies, the Order may still comply with the policy if the Regional Board made the requisite findings. In reviewing the findings we must determine both whether the weight of the evidence supports the findings, and whether the findings support the decision. (*Topanga Assn. for a Scenic Community v. County of Los Angeles* (1974) 11 Cal.3d 506, 514-515.)

II
The Order Must Comply with
The Antidegradation Policy

A. High Quality Water

As is relevant here, the State Board's antidegradation policy applies whenever: (a) there is existing high quality water, and (b) an activity which produces or may produce waste or an increased volume or concentration of waste that will discharge into such high quality water.[8]

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[8] Resolution No. 68-16 provides in pertinent part: "Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained

The trial court based its determination on the first prong -- that there is no existing high quality water.

The State Board's antidegradation policy defines high quality water as existing "[w]henever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective . . . ." If such high quality water exists, the antidegradation policy is triggered if any activity will or may produce a waste or increased volume or concentration of waste that will discharge into the high quality water.

The State Board has defined high quality water as follows:

> "Existing high quality waters are waters with existing background quality unaffected by the discharge of waste and of better quality than that necessary to protect beneficial uses. The [Water Code] directs the [State Board] and the [regional water quality control boards] to establish beneficial uses of waters of the State and to establish water quality objectives, which are the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of the beneficial uses. ([Water Code] Section 13050(h).) Where the waters contain levels of water quality constituents or characteristics that are better than the established water quality objectives, such waters are considered high quality waters. High quality waters are determined based on

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. . . . [¶] . . . Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge . . . ."

> specific properties or characteristics. Therefore, waters can be of high quality for some constituents or beneficial uses, but not for others. . . .
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> "With respect to polluted ground water, a portion of the aquifer may be polluted with waste while another portion of the same aquifer may not be polluted with waste. The unpolluted portion is high quality water within the meaning of Resolution No. 68-16." (St. Water Res. Control Bd., Guidance Memorandum (Feb. 16, 1995) p. 4.)

The trial court found that the antidegradation policy was not applicable because the Regional Board's action did not involve high quality waters. It reasoned that the quality of the groundwater underlying many, if not most, of the dairies had already degraded to a significant degree *since* 1968, when the antidegradation policy was adopted.

The trial court also found that the Order would not cause any high quality waters to decline, "because in the absence of a showing that the General Order affects high quality waters, [appellants] cannot demonstrate that the General Order will cause the high quality of such waters to decline."

The trial court acknowledged appellants' "persuasive" argument that the groundwater would continue to be degraded because the Order would not stop all discharges of waste to groundwater, but found that such discharges would degrade only already degraded waters.

We disagree with the trial court's conclusion that the groundwater in this case is not high quality water because it has degraded from its quality in 1968. The Regional Board

suggests that the trial court's finding is incorrect because it sidesteps the issue, stating in its reply brief that "the trial court reached the correct result[,]" but that the question whether high quality groundwater exists today need not be resolved.

The State Board, which adopted Resolution No. 68-16, issued an Administrative Procedures Update in 1990 (APU-90-004) that provides guidance to regional water quality control boards in implementing Resolution No. 68-16 in the National Pollutant Discharge Elimination System (NPDES) permitting process. Although the Regional Board correctly notes that APU-90-004 is not binding in this case because it applies only to permitting actions under the Clean Water Act's NPDES program, it is nevertheless instructive on several issues.

As is relevant, APU-90-004 sets forth a procedure for determining whether the existing water quality is to be protected: "The baseline quality of the receiving water determines the level of water quality protection. Baseline quality is defined as the best quality of the receiving water that has existed since 1968 when considering Resolution No. 68-16, . . . unless subsequent lowering was due to regulatory action consistent with State and federal antidegradation policies."

When undertaking an antidegradation analysis, the Regional Board must compare the baseline water quality (the best quality that has existed since 1968) to the water quality objectives. If the baseline water quality is equal to or less than the

objectives, the objectives set forth the water quality that must be maintained or achieved. In that case the antidegradation policy is not triggered. However, if the baseline water quality is better than the water quality objectives, the baseline water quality must be maintained in the absence of findings required by the antidegradation policy.

We agree with this interpretation.[9] Resolution No. 68-16 states that it applies "[w]henever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective[.]" The antidegradation policy measures the baseline water quality as that existing in 1968 and defines high quality waters as the best quality achieved since that date.

The parties do not indicate when water quality standards were established for the groundwater in question or whether the existing water quality was better than those standards, but there is evidence in the record that for at least one constituent (nitrate), the baseline water quality in some areas was better than water quality objectives. Therefore, at least some of the water affected by the Order is high quality water.

A study of a site in Stanislaus County indicated that as of 1973 the concentrations of nitrate and dissolved solids were better than water quality objectives in most of the groundwater

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[9] Because the administrative interpretation is in accord with the court's interpretation there is no conflict which would tender an issue of deference to the administrative construction.

tested. The drinking water standard for nitrate is 10 milligrams per liter (mg/L). Twenty-three wells were tested in the eastern San Joaquin Valley during 1986-1987, and again in 1995. The median nitrate concentration in these wells increased from 2.4 mg/L during 1986-1987 to 4.8 mg/L in 1995. Nitrate concentrations in pre-1960 groundwater was less than 3 mg/L. The background concentration for nitrate (i.e., the concentration indicative of minimal influence by human sources) is believed to be 2 mg/L. Seventy-seven percent of the wells tested in 1993-1995 exceeded the background concentration.

The important point of these numbers is that the water quality objective for nitrate is 10 mg/L, and in 1986 the concentration was 2.4 mg/L. Although there is some evidence the concentration was even less in 1968, it is certain that the water quality of the existing groundwater is better than the water quality objective, making the groundwater high quality water for antidegradation purposes. Water can be considered high quality for purposes of the antidegradation policy if it is determined to be so for any one constituent, because the determination is made on a constituent by constituent basis.[10]

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[10] The State Board has explained: "High quality waters are determined based on specific properties or characteristics. Therefore, waters can be of high quality for some constituents or beneficial uses, but not for others. . . . [¶] With respect to polluted ground water, a portion of the aquifer may be polluted with waste while another portion of the same aquifer may not be polluted with waste. The unpolluted portion is high quality water within the meaning of Resolution No. 68-16."

B. The Prohibition of Further Degradation

The Regional Board asserts that it was not required to perform an analysis pursuant to Resolution No. 68-16 because the Order prohibits further degradation of groundwater.[11] It asserts that the degradation prohibition in the Order established compliance with Resolution No. 68-16, thus no detailed analysis was necessary.[12]

Water Res. Control Bd., Guidance Memorandum (Feb. 16, 1995) p. 4.)

[11] Appellants argue the Regional Board was required to make a finding that the discharge allowed by the Order would be to existing high quality waters. This finding was implied in the Order's statement that it implemented the requirements of the antidegradation policy, that it did not authorize further degradation of groundwater, that it would result in implementation of best practicable treatment or control, and that it would assure that pollution or nuisance would not occur and that the highest water quality consistent with maximum benefit to the people of the state would be maintained.

These statements are relevant only if Resolution No. 68-16 is applicable. The Order states that it is "consistent" with Resolution No. 68-16. But there would be no need to consider Resolution No. 68-16 or to make any of the findings the resolution requires if the discharges allowed by the Order were not to high quality water.

[12] The Regional Board asks us to take judicial notice of a flow chart which it claims is an authoritative administrative interpretation of the Resolution No. 68-16 to which we should show deference. The request for judicial notice is granted.

The Board necessarily claims the flow chart bears on the question whether a statement in the Order that further discharge is prohibited is dispositive of the question whether the degradation law applies. It does not.

The Board's interpretation requires more than the exercise of a little imagination. The flow chart is labeled a "Decision

Although the Order states that it does not allow the degradation of groundwater, it does not explain whether there will be no degradation because there will be no discharge of waste to groundwater or because any discharge would not degrade the quality of the groundwater.

The Order does not prohibit the discharge of dairy waste to groundwater. Rather, it prohibits the discharge of waste "*other than as defined in Finding 13*[.]" (Italics added.) Finding 13 "includes, but is not limited to manure, leachate, process wastewater and any water, precipitation or rainfall runoff that contacts raw materials, products, or byproducts such as manure, compost piles, feed, silage, milk, or bedding." Accordingly, the Order expressly does not prohibit the discharge of waste to groundwater.

As we interpret Resolution No. 68-16, all that is required for the antidegradation policy to apply is a determination that the receiving water is high quality water and that an activity will discharge waste into the receiving water. The policy

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Chart" as a general aid to application of the Order and poses a number of questions and answers whether discharge is allowed. First, is the "receiving water quality . . . better than water quality objectives in Water Quality Control Plans?" If "No" then discharge is allowed. Second, the interpretive question: "Will discharge degrade high quality?" If "No" then discharge is allowed.

This says nothing about whether a statement of prohibition on discharge to groundwater in the Order is dispositive. It more likely asks whether the *actual* discharge will degrade high quality water. This is not a presumption that can be answered on the face of the Order.

presumes from these two facts that the quality of the receiving water will be degraded by the discharge of waste.

Nonetheless, we assume for purposes of this appeal that the antidegradation policy might not apply if it can be shown that the discharge of waste will not degrade the quality of the receiving water. This is precisely the argument the Regional Board makes when it insists that no antidegradation analysis is necessary because the Order does not allow degradation of groundwater.

Our problem with the Regional Board's reliance on the assertion that no groundwater degradation is allowed is twofold. First, as the order itself recognizes, the groundwater quality has degraded, and dairy operations are partly responsible. To the extent that the Order allows historic practices to continue without change, degradation will continue. Second, while the Order nominally prohibits groundwater degradation, its only provision for detecting groundwater degradation is through monitoring wells, and the record indicates the monitoring requirements of the Order are inadequate to detect groundwater degradation, much less prevent it.

The Order recognizes that dairy operations historically have caused groundwater degradation:

> "Groundwater monitoring shows that many dairies in the Region have impacted groundwater quality. A study of five dairies in a high-risk groundwater area in the Region found that groundwater beneath dairies that were thought to have good waste management and land application practices

> had elevated levels of salts and nitrates beneath the production and land application areas. The [Regional Board] requested monitoring at 80 dairies with poor waste management practices in the Tulare Lake Basin. This monitoring has also shown groundwater pollution under many of the dairies, including where groundwater is as deep as 120 feet and in areas underlain by fine-grained sediments.
>
> "[¶]. . . [¶] . . . The waste management systems at these existing dairies are commonly not capable of preventing adverse impacts on waters of the state either because of their outdated design or need for maintenance or both. Historic operation of these dairies has presumptively resulted in an adverse effect on the quality of waters of the state. Groundwater data are needed to determine the existence and magnitude of these impacts. If data document impacts, continued operation of dairies without waste management improvements will perpetuate the ongoing adverse water quality effects caused by the generation and disposal of dairy waste."

The Order cannot itself guarantee that the discharges allowed by it will not degrade the quality of the groundwater into which the discharges are made. Although the Order prohibits the degradation of groundwater from the collection, treatment, storage, discharge, or disposal of such wastes, the prohibition is expressly qualified by the phrase: "except as allowed by this Order[.]" The exception assumes that some groundwater degradation is *permitted* by the Order and that constitutes a recognition that the antidegradation clause applies to the Order.

There are several practices allowed by the Order that may result in the degradation of groundwater. For example, because the Order does not regulate existing storage ponds, they are a potential contributor to groundwater degradation. The Order recognizes that existing ponds contribute to the degradation of groundwater quality. Although they are required to comply with Title 27, which sets forth statewide minimum requirements, the Order recognizes that "Title 27 design standards for ponds have been determined to not be protective of groundwater quality . . . ."

The Order establishes more stringent requirements for new and reconstructed ponds, but does not require existing ponds to meet them. It provides that dairies need not implement remedial measures to improve existing ponds unless groundwater monitoring demonstrates the existing pond "has adversely impacted groundwater quality." Notwithstanding, the Order does not require monitoring wells to be installed to monitor the impact of the waste discharges upon the groundwater unless the Regional Board's Executive Officer orders monitoring wells be installed based upon an evaluation of the threat to water quality at the dairy.

The monitoring program relied upon in the Order is inadequate to ensure that no further groundwater degradation will occur. The Order relies on monitoring to determine whether a dairy is in compliance with the prohibition against "further" degradation of the groundwater. It states:

> "No set of waste management practices has been demonstrated to be protective of groundwater quality in all circumstances. Since groundwater monitoring is the most direct way to determine if management practices at a dairy are protective of groundwater, Monitoring and Reporting Program No. R5-2007-0035, which is attached to and made part of this Order, requires groundwater monitoring to determine if a dairy is in compliance with the groundwater limitations of this Order . . . ."

In order for the Regional Board to sustain its claim that no analysis pursuant to Resolution No. 68-16 is required because the Order simply declares that no degradation of groundwater is allowed, the Order's monitoring program must be sufficient to alert the Regional Board if a dairy is degrading the groundwater. Appellants point to evidence in the record indicating that monitoring of domestic and agricultural supply wells, which is the type of monitoring required by the Order, is inadequate to determine whether the groundwater is being degraded. Regional Board points to no contrary evidence. No contrary evidence having been presented, we must conclude as a matter of law that the monitoring program is inadequate.

The monitoring program set forth in the Order is inadequate to identify groundwater degradation because: (1) monitoring is from supply wells, which are not located in the proper areas to detect degradation, (2) monitoring does not show pollution until several years after its release, and (3) the monitoring required under the Order does not test for all constituents of concern. Although the monitoring program requires an annual sample of each domestic and agricultural supply well and subsurface

drainage system the samples are to be tested only for electrical conductivity, nitrate-nitrogen, and phosphorus.

The administrative record contains a comment from the department of Land, Air and Water Resources at the University of California, Davis. With regard to monitoring from supply wells, the comment stated:

> "Unlike monitoring wells, domestic/milkbarn supply wells and especially agricultural supply wells are typically screened well below the water table and across substantial vertical distances. The source area of these wells may extend over several thousand feet upgradient of the well location, depending on hydrogeologic conditions and well design. Water pumped from these wells is typically a mix of younger (shallower) and older (deeper) water. Numerous on-site and off-site sources typically exist within this source area. In many cases, it will be difficult to determine, whether elevated nitrate levels are due to on-site or off-site activities. In almost all cases, elevated nitrate levels will be due to activities that occurred several years or even decades ago. There is not necessarily a strong correlation between nitrate values in these wells and current management activities on a dairy, particularly if the dairy is newer (less than 10 years) or if there have been substantial changes in management in the last ten years."

This reveals that monitoring conducted from supply wells alone does not provide either an accurate or a timely indication of groundwater degradation.

The administrative record contains a report prepared by Brown, Vence & Associates (BVA) for the San Jose State

University Foundation, under agreement with the State Board. The BVA report identifies three performance goals which would constitute compliance with the state's antidegradation policy. The first goal is no release to the underlying geologic materials. The second is no change in groundwater quality. The third is some change in groundwater quality but no exceedance of water quality objectives.

The first two goals are in compliance with the antidegradation policy. The third goal is in compliance only if it can be demonstrated that the change in water quality is consistent with the maximum benefit to the people of the state and pollution or nuisance will not occur because best practicable treatment or control of the discharge has been implemented.

For the third goal, which is the least protective of groundwater quality, the BVA report recommended both groundwater and vadose zone monitoring of retention pond and corral areas.[13] The report recommended "(1) a sufficient number of background monitoring points installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer that represent the quality of groundwater that has not been affected by a release from the retention pond or corral; (2) a sufficient number of monitoring points installed at appropriate locations

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[13] The vadose zone is the unsaturated zone which occurs between the land surface and the water table. (Health & Saf. Code, §§ 25208.2, subd. (z), 25209.1, subd. (h).)

and depths to yield groundwater samples from the uppermost aquifer downgradient of the retention pond and corral[,] [a]nd to allow for the detection of a release from the retention pond or corral."

For the third goal, the report also recommended vadose zone monitoring of retention pond and corral areas and said it was "justified to provide a means to assess whether the retention pond or corral is meeting its overall objective of no release to the underlying geologic materials. Background monitoring is necessary to determine if a release to groundwater has occurred."

The Order requires no vadose zone monitoring, and sampling is to be taken only from existing supply wells, rather than monitoring wells "installed at appropriate locations and depths to yield groundwater samples" that are likely to detect releases of constituents into the groundwater.

The Information Sheet attached to the Order states that "[t]he primary waste constituents of concern due to discharges of waste from dairies are ammonia, nitrates, phosphorus, chloride, boron, salts, pathogens, and organic matter." The BVA report also stated that "the primary pollutants associated with animal wastes with potential to affect groundwater include nitrogen compounds, salts, organic matter, pathogens, and to a lesser extent, antibiotics, pesticides, and hormones." Despite the concern that these several pollutants pose to groundwater quality, the monitoring plan requires testing only for nitrate, electrical conductivity (which measures salts) and phosphorous.

It is true that the Executive Officer of the Regional Board has the authority to order further monitoring by requiring the installation of monitoring wells and testing for electrical conductivity, pH, nitrate, ammonia, and general minerals. However, the provision for such further monitoring is deficient in several respects. First, is not required of all dairies, and is required only at the discretion of the Executive Officer. Second, there are no mandatory standards governing the exercise of the Executive Officer's discretion. While the Executive Officer may consider nitrate contamination, groundwater flow, and background water quality, none of these factors will necessarily trigger a requirement for the installation of monitoring wells. Finally, to the extent the Executive Officer relies on nitrate contamination to order the installation of monitoring wells, such contamination must first be detected, and as discussed, the monitoring of supply wells is inadequate for this task.

We also note that the Executive Officer may order the installation of supply wells if the nitrate-nitrogen (from supply well monitoring) is detected at 10 mg/L or more. The drinking water limit for nitrate is 10 mg/L. This means some dairies may not be required to install monitoring wells until after the groundwater is contaminated beyond the limits prescribed by water quality policies, and after the beneficial use of the water has been unreasonably affected. This

discretionary authority does not insure that no further degradation of groundwater occurs.[14]

The Information Sheet states:

> "It is impractical to require all existing dairies to install monitoring wells within a short time period due to the limited number of professionals available to design and install groundwater monitoring systems and the limited staff to review Monitoring Well Installation and Sampling Plans. To determine the existing groundwater conditions at each dairy within the shortest time period requires establishment of priorities. This General Order requires each Discharger to immediately begin sampling of each domestic and agricultural well present at the dairy and discharges from any subsurface (tile) drains. The Executive Officer will issue monitoring and reporting program orders to install monitoring wells based on an evaluation of the threat to water quality at each site. It is anticipated that this will occur in phases of approximately 100 to 200 dairies per year."

A phased approach to the installation of monitoring wells is reasonable, and is authorized by section 13263, which allows the requirements imposed by a regional water quality control

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[14] Appellants' request that we take judicial notice of the Revised Monitoring and Reporting Program issued by the Regional Board, which no longer requires individual groundwater monitoring at each dairy, but allows dairies to participate in a representative monitoring program is denied. The February 23, 2011, revised program was issued by the Regional Board after the rendition of judgment in the trial court. We review the correctness of the judgment as of the time of its rendition, upon the record before the trial court. (*In re Zeth S.* (2003) 31 Cal.4th 396, 405.)

board to contain a time schedule. It is also reasonable to allow the Executive Officer to determine the order in which dairies will be required to install monitoring wells based on an evaluation of the threat to water quality at each site. However, the Order contains no timetable for the installation of monitoring wells, leaving open the possibility that some dairies may never be required to install the monitoring wells necessary to detect groundwater degradation.

Finally, the Order does not provide a sufficient enforcement mechanism to ensure that any groundwater contamination is stopped. The enforcement policy is set forth in the Information Sheet. Violations that are considered high priority violations, and which are subject to formal enforcement actions, are primarily applicable to surface water. No enforcement mechanism is set forth for a violation of the prohibition against groundwater degradation.

The Order is dependent on groundwater monitoring to ensure that no degradation occurs. However, as shown, the monitoring plan is insufficient to ensure no degradation will occur. Because the Order allows activities that have been known to degrade groundwater, degradation is almost certain to continue. If it does, the monitoring plan will be ineffective to stop the degradation in a timely fashion. This does not necessarily mean that the Order does not *comply* with the antidegradation policy, only that the antidegradation policy *applies* to the Order. We deal with compliance next.

III
The Order Does Not Comply With The Antidegradation Policy

When the state's antidegradation policy is triggered, as here, Resolution No. 68-16 provides that the Regional Board is authorized to allow the discharge of waste into high quality waters only if it makes specified findings. The State Board has described these findings as a two-step process.

> "The first step is if a discharge will degrade high quality water, the discharge may be allowed if any change in water quality (1) will be consistent with maximum benefit to the people of the State, (2) will not unreasonably affect present and anticipated beneficial use of such water, and (3) will not result in water quality less than that prescribed in state policies (e.g. water quality objectives in Water Quality Control Plans). The second step is that any activities that result in discharges to such high quality waters are required to use the best practicable treatment or control of the discharge necessary to avoid a pollution or nuisance and to maintain the highest water quality consistent with the maximum benefit to the people of the State." (St. Water Res. Control Bd., Guidance Memorandum (Feb. 16, 1995) p. 2.)

A. Step One

1. Maximum Benefit

The State Board's Guidance Memorandum defines the term "maximum benefit to the people of the State" as follows:

> "Before a discharge to high quality water may be allowed, it must be demonstrated that any change in water quality 'will be consistent with the maximum benefit to the people of the state.' This

> determination is made on a case-by-case basis and is based on considerations of reasonableness under the circumstances at the site. Factors to be considered include (1) past, present, and probable beneficial uses of the water (specified in Water Quality Control Plans); (2) economic and social costs, tangible and intangible, of the proposed discharge compared to the benefits, (3) environmental aspects of the proposed discharge; and (4) the implementation of feasible alternative treatment or control methods. With reference to economic costs, both costs to the discharger and the affected public must be considered. 'Cost savings to the discharger, standing alone, absent a demonstration of how these savings are necessary to accommodate "important social and economic development" are not adequate justification' for allowing degradation. See [State Board] Order No. WQ 86-17, at 22, n. 10. With respect to social costs, consideration must be given to whether a lower water quality can be abated through reasonable means. In other words, the lower water quality should not result from inappropriate treatment facilities or less-than-optimal operation of treatment facilities. Local ordinances concerning water quality or nuisance and the use of the water as a water supply may also be factors in determining maximum benefit to the people."(St. Water Res. Control Bd., Guidance Memorandum (Feb. 16, 1995) pp. 4-5.)

The Order states that it will "accommodate important economic activities in mostly rural areas of the Central Valley Region," and finds that is a benefit to the people of the state.

We have no doubt that the operation of dairies is a benefit to the people of the state. However, the antidegradation policy requires findings: (1) that any change in water quality is

"consistent with maximum benefit to the people of the State[,]" and (2) that "the highest water quality consistent with maximum benefit to the people of the State will be maintained."

The Order does purport to find that "the highest water quality consistent with maximum benefit to the people of the State will be maintained." In support of this finding, and as is relevant to groundwater, the Order cites the following evidence: "the proposed order . . . prohibits discharges from land application areas unless, among other requirements, the dairy prepares and implements a Nutrient Management Plan. Any authorized discharge from the land application area must not cause or contribute to an exceedance of any applicable water quality objective or federal water quality criteria. The proposed order prohibits any further degradation of groundwater."

Thus, the basis for concluding that any degradation of groundwater will be of maximum benefit to the people of California is that the Order states that it prohibits any further degradation of groundwater. Not only is this reasoning circular, the mechanism for ensuring that groundwater will not be further degraded is the monitoring plan, which, as explained above, is inadequate.

2. Beneficial Uses

The State Board's Guidance Memorandum explains that beneficial uses are those uses specified as such for each body of water in the basin plans. They include "past, present, and probable future uses and include domestic, municipal,

agricultural and industrial supply, power generation, recreation, aesthetic enjoyment, navigation, and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves." (St. Water Res. Control Bd., Guidance Memorandum (Feb. 16, 1995) p. 6.)

The Information Sheet accompanying the Order states that the beneficial uses of groundwater as set forth in the basin plans are municipal and domestic water supply, agricultural supply, industrial service supply, industrial process supply, water contact recreation, and wildlife habitat. The Information Sheet states that "[t]hese beneficial uses are protected in this Order by, among other requirements, the specification that the discharge of waste at an existing milk cow dairy shall not cause a violation of water quality objectives, cause pollution or nuisance, or degrade the groundwater."

This finding, too, is insufficient. The Order protects the beneficial uses of groundwater by declaring that degrading groundwater is prohibited. However, as previously shown, the mechanism for ensuring the groundwater will not be degraded, the monitoring program, is insufficient for the task.

3. Prescribed Water Quality Objectives

Water quality objectives are "the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area." (§ 13050, subd. (h).) The regional water quality control boards must "establish such water quality objectives in water quality control plans as

in its judgment will ensure the reasonable protection of beneficial uses and the prevention of nuisance; however, it is recognized that it may be possible for the quality of water to be changed to some degree without unreasonably affecting beneficial uses." (§ 13241.)

The Information Sheet attached to the Order states: "The discharge of waste from dairies must not cause surface water or groundwater to exceed the applicable water quality objectives for those constituents." The Information Sheet finds that the Order is consistent with the state antidegradation policy as to groundwater because it: (1) prohibits the collection, treatment, storage, discharge or disposal of waste that results in contamination or pollution of groundwater or a condition of nuisance, and (2) contains groundwater limitations that, at a minimum, prohibit further degradation and adverse impacts to beneficial uses of groundwater or violations of water quality objectives specified in the basin plans.

Again, the Order relies on a prohibition of further degradation of groundwater to establish its compliance with the requirement that any discharge not cause the groundwater to exceed the limits established by the water quality objectives. Because the Order's method for ensuring the groundwater is not further degraded is flawed, its method for ensuring compliance with applicable water quality objectives is likewise flawed.

The Regional Board must ensure that sufficient evidence is analyzed to support its decision and that the evidence is summarized in an appropriate finding. (APU-90-004.) "[T]he

agency which renders the challenged decision must set forth findings to bridge the analytic gap between the raw evidence and ultimate decision or order." (*Environmental Protection Information Center v. California Dept. of Forestry & Fire Protection* (2008) 44 Cal.4th 459, 516 (*Environmental Protection*).) While the findings need not be "extensive or detailed[,]" "mere conclusory findings without reference to the record are inadequate." (*Id*. at p. 516-517.)

An administrative agency abuses its discretion where its order is not supported by the findings or where the findings are not supported by the evidence. (*Environmental Protection, supra,* 44 Cal.4th at p. 516.) Here, the crucial findings that would have allowed the Regional Board to authorize a discharge that would degrade the groundwater, i.e., that the discharge will be consistent with the maximum benefit to the people of the state, that it will not unreasonably affect beneficial uses, and that it will not violate water quality objectives, were all based upon the finding that the Order would not further degrade groundwater quality. That finding is not supported by the evidence in the record because the Order allows the continuation of some sources of groundwater degradation (i.e., existing retention ponds), but does not mandate the type of testing and monitoring program most likely to detect further groundwater degradation.

B. Step Two

The second step of Resolution No. 68-16's two-step process for determining whether a discharge into high quality waters is

permitted, is a finding that the discharge will be required to undergo the "best practicable treatment or control . . . necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained."

The State Board's Guidance Memorandum describes this process as follows:

> "To evaluate the best practicable treatment or control method, the discharger should compare the proposed method to existing proven technology; evaluate performance data, e.g., through treatability studies; compare alternative methods of treatment or control; and/or consider the method currently used by the discharger or similarly situated dischargers. . . . Promulgated requirements such as federal best available technology economically achievable (BAT) or other promulgated technologies may be appropriate for ground water discharges and would apply to surface water discharges. In certain situations, BAT would be considered 'best practicable treatment or control' under Resolution No. 68-16. The costs of the treatment or control should also be considered, and would be considered in determining the 'maximum benefit to the people of the State.'" (St. Water Res. Control Bd., Guidance Memorandum (Feb. 16, 1995) pp. 5-6.)

Thus, the agency should consider current technologies and cost and may, where appropriate, consider federal requirements setting forth the best available technology.

The record indicates that the principal sources for pollutant migration or leaching to the groundwater from dairies include "milk parlors, retention ponds, corral areas, and land

areas where manure or process wastewater may be applied." The BVA report states that "[c]orrals and dry manure storage areas represent potential threats resulting from waste constituents leaching into the soil and groundwater because of the large quantities of manure generated by confined animals and because of the relatively high concentration of waste constituents present in manure . . . . Corral areas may represent a particular threat because these areas are frequently open and exposed to precipitation."

Despite the evidence in the record that corrals and milk parlors pose a threat to groundwater, the Order makes no finding that the best practicable treatment or control is required for these potential pollution sources. Instead, the Order makes such a finding for new ponds and land application of waste only.

The Order makes the following general finding: "This Order will result in implementation of best practicable treatment or control as set forth in the Information Sheet." We therefore look to the Information Sheet for the evidence that supports this finding.

The Information Sheet sets forth the Title 27 requirements for retention ponds, as well as pond requirements from other authorities, both in state and out of state. Below the heading, "Best Practicable Treatment Or Control Measures For Retention Ponds[,]" the Information Sheet states:

> "[T]here are no known studies that evaluate the ability of any of these county, state, or [Natural Resources Conservation Service] pond liner requirements to protect

> groundwater quality. It would be impossible to determine if any proposed pond design would be protective of groundwater quality without an evaluation of site-specific information on depth to groundwater, existing groundwater quality beneath the facility, nature of the geologic material between the bottom of the retention pond and the first encountered groundwater, nature of the leachate from the retention pond, and proximity to existing supply wells. Any proposed pond design that does not include such an evaluation should be the most conservative possible to assure protection of groundwater under any conditions.
>
> "The most conservative pond design would include a double lined pond with a leachate collection and removal system between two geosynthetic liners. Such pond designs currently being approved by the Central Valley Water Board to contain landfill leachate.
>
> "Consistent with State Water Resources Control Board Resolution 68-16, this Order requires that new retention ponds or reconstructed existing ponds be designed and constructed to comply with the groundwater limitations in the Order. The Order provides a two-tiered approach that will allow the Discharger two options to retention pond design."

Under the heading, "Best Practicable Treatment or Control Measures for Land Application Areas[,]" the Information Sheet states that the USEPA has established the best practicable control technology for application of waste to land. It further states that the nutrient management plan attached to the order is consistent with the USEPA best practicable control technology; therefore, the Order represents the best practicable treatment or control for the purposes of Resolution No. 68-16.

The findings with respect to ponds and land application are sufficient to comply with Resolution No. 68-16's requirement that dairies use the best practicable treatment or control as to those potential sources of degradation. The land application requirements make use of the federal standard, which the State Board has indicated is an appropriate standard. The pond requirements consider current technology.

However, these are not sufficiently comprehensive to encompass all of the principal sources of groundwater degradation. The Order makes no finding with respect to the methods required for preventing contamination from milk parlors or corral areas.

Respondent argues that the Order's general finding that it will result in the implementation of best practicable treatment or control is sufficient. However, that finding references the Information Sheet. The Information Sheet contains no best practicable treatment or control finding for milk parlors or corral areas. Since these are identified in the record as principal sources of groundwater degradation, there must be some finding that the Regional Board has determined the methods set forth in the Order to control these possible sources of contamination is the best practicable treatment or control.

The Order also fails to consider the best practicable treatment or control for existing ponds. If, as Respondent argues, a requirement that retrofitting existing ponds would be so costly as to shut down many dairy facilities, the Regional Board is required to make a finding that it is necessary to

allow existing ponds to accommodate important economic or social development in the area, that the discharge will avoid a pollution or nuisance, and that the highest water quality consistent with the maximum benefit to the people of the state will be maintained. (APU-90-004.) However, as the State Board has explained in its Guidance Memorandum, "both costs to the discharger and the affected public must be considered. 'Cost savings to the discharger, standing alone, absent a demonstration of how these savings are necessary to accommodate "important social and economic development" are not adequate justification' for allowing degradation." (St. Water Res. Control Bd., Guidance Memorandum (Feb. 16, 1995) p. 5.)[15]

Appellants complain that the Order does not implement the best practicable treatment or control for two other sources of potential groundwater degradation. First, the Order does not require any control measures for off-site manure application.

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[15] "To evaluate the best practicable treatment or control method, the discharger should compare the proposed method to existing proven technology; evaluate performance data, e.g., through treatability studies; compare alternative methods of treatment or control; and/or consider the method currently used by the discharger or similarly situated dischargers. . . . Promulgated requirements such as federal best available technology economically achievable (BAT) or other promulgated technologies may be appropriate for ground water discharges and would apply to surface water discharges. In certain situations, BAT would be considered 'best practicable treatment or control' under Resolution No. 68-16. The costs of the treatment or control should also be considered, and would be considered in determining the 'maximum benefit to the people of the State.'" (St. Water Res. Control Bd., Guidance Memorandum (Feb. 16, 1995) pp. 5-6.)

Respondents argue that the Order requires dairies to maintain records of their off-site export of manure, and that the Regional Board implements controls of off-site discharges through other regulatory programs not at issue here. The record indicates that solid manure used off-site is treated as fertilizer for the purpose of regulation, and the regulation of manure application is outside the control of dairy operators and outside the scope of the Order.

This response is reasonable. The manure exported off-site may never impact groundwater, depending on its intended use and how widely it is distributed, and may not even be used within the state. Furthermore, section 13260 of the Water Code requires each person or entity discharging waste that could affect water quality to file a report of the discharge with the Regional Board. Such discharges are subject to requirements prescribed by the Regional Board. (§ 13263.)

Second, appellants complain that the Order contains no best practicable treatment or control finding for the closure of dairies. The BVA report indicates some data "show that the greatest risk to groundwater contamination may occur when a retention pond or corral is closed or removed from service because a significant amount of nitrogen and salt compounds can build up in the soil under these facilities even with low leakage rates." Appellants argue the Order allows dairies to submit at their discretion "'a closure plan that ensures protection of surface water and groundwater.'"

We disagree with appellants' characterization of the closure requirements as discretionary. The Order states:

> "The Discharger must maintain coverage under this Order or a subsequent revision to this Order until all manure, process waste, and animal waste impacted soil, including soil within the pond(s), is disposed of or utilized in a manner which does not pose a threat to surface water or groundwater quality or create a condition of nuisance. At least 90 days before desiring to terminate coverage under this Order, the Discharger shall submit to the Executive Officer a closure plan that ensures protection of surface water and groundwater. No more than 30 days after completion of site closure, the Discharger shall submit a closure report which documents that all closure activities were completed as proposed and approved in the closure plan. Coverage under this Order will not be terminated until cleanup is complete."

The language of this provision is mandatory, not discretionary. Nevertheless, because the record indicates pond and corral closures pose a significant risk to groundwater quality, the Regional Board must make a finding that its closure provisions comply with Resolution No. 68-16.

IV
Conclusion

We conclude that the state's antidegradation policy applies to the Regional Board's Order because there is evidence in the record that at least some of the groundwater affected is high quality groundwater and the Order allows the discharge of waste to groundwater.

Given that there will be some discharge of waste to groundwater, the Regional Board's decree that the Order does not permit further degradation of groundwater is meaningless without an effective method to determine whether the discharge has resulted in a degradation of groundwater quality.

Evidence in the record indicates that the Regional Board's reliance on the use of supply wells to monitor the groundwater is ineffective to accomplish the timely detection of a change in groundwater quality.

Even though the antidegradation policy applies to the Order, the operative terms of the Order would nevertheless pass muster under the antidegradation policy if it contained adequate findings. It does not.

The findings that the Order is consistent with maximum benefit to the people of the state, will not unreasonably affect the beneficial use of the water, and will not violate water quality standards are all based on the Order's directive that it does not allow further degradation of groundwater. Because the monitoring plan upon which the Order relies to enforce its no degradation directive is inadequate, there is not substantial evidence to support the findings.

The findings that the waste-discharging activities will be required to implement the best practicable treatment or control are sufficient with regard to new ponds and the land application of waste. However, the findings do not sufficiently cover all of the waste-discharging activities that threaten groundwater from the operation of dairies. At a minimum, the Order must

address the principal sources of groundwater degradation as shown by the evidence in the administrative record.

DISPOSITION

The judgment is reversed. The matter is remanded to the trial court with directions to grant the petition to require the Regional Board to comply with Resolution No. 68-16. Appellants are awarded their costs on appeal.

BLEASE, Acting P. J.

We concur:

ROBIE, J.

HOCH, J.