A REVIEW OF THE ADMINISTRATIVE RECORD FOR THE CENTRAL VALLEY'S WATER QUALITY CONTROL PLAN 1975 – 1994

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ABOUT THE INSTITUTE

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ABOUT THE FIRM

Larry Walker Associates, Inc. (LWA) is a unique environmental engineering and consulting firm headquartered in Davis, CA. With branch offices in Thousand Oaks, CA and Lafayette, CA, LWA provides water quality-related services to clients throughout California. LWA has over 23 years of experience in the field, developing expertise with projects ranging from NPDES permit reissuance and water quality regulatory assistance to stormwater management and source control/pollution prevention. LWA has also worked on cutting edge projects such as the development of site specific objectives and total maximum daily loads.

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EXECUTIVE SUMMARY

The Water Quality Control Plan for the Central Valley's Sacramento River, San Joaquin River and Sacramento-San Joaquin Delta covers one-fourth of the total area of California. The area covered by the plan furnishes over 50% of the state's water supply. The Water Quality Control Plan, commonly referred to as the Basin Plan, is the core-regulatory document for water quality as it incorporates both federal and state legal requirements.

The federal and state legal requirements contained in the basin plan derive from the Clean Water Act and Porter-Cologne Water Quality Control Act (Porter-Cologne) respectively. The Clean Water Act, which was adopted in 1972, first focuses its efforts on the treatment capabilities of industrial and municipal dischargers by requiring permits that limit discharges of pollutants into the nation's waters based on specified levels of treatment. Under the Act, if available treatment methods are unable to protect the nation's water ways and their uses, then state-developed water quality standards are used to control the level of pollutants allowed to be discharged into designated waterways.

In general, water quality standards are supposed to reflect the level of water quality necessary to maintain uses (i.e. drinking water, fishing, irrigation) for the state's waterways. Because of this function, water quality standards are often characterized as the back stop for the protection of the state's waters. In California, the state's development and adoption of water quality standards is governed by the Porter-Cologne. Under Porter-Cologne, water quality standards consist of the uses designated for protection (i.e. beneficial uses) and the quality of water necessary to protect those uses (i.e. water quality objectives). When adopting water quality standards, the state must consider the significant policy directives contained within Porter-Cologne. First and foremost, the state must regulate activities to attain the highest-quality of water that is reasonable considering all demands placed upon the water. Second, the nine Regional Boards, which are responsible for establishing water quality objectives must consider a number of factors, including economics, housing, and the ability to achieve the identified level of water quality, when objectives are established. Additionally, the Porter-Cologne Act requires the Regional Board to adopt a program of implementation to achieve adopted objectives. The implementation program must include a description of the actions which are necessary to achieve water quality objectives; a time schedule for the actions to be taken; and, a description of the monitoring to be undertaken to determine compliance with the objectives.

Under this combined federal and state regulatory scheme, water quality standards become the basis for permit conditions and discharge allocations for dischargers subject to federal and state water quality laws. In the real world, this means that dischargers (i.e. businesses, cities, farmers and others) can not discharge used water, treated or otherwise, into the state's waterways if the discharge will negatively impact water quality levels set forth in the adopted standards. If the standards are not appropriate or achievable for the water body in question, conditions placed upon dischargers may be impossible to achieve or may only be achievable at a cost too high for consumers to bear. For example, an unreasonable standard could require a city to raise its sewer rates to a level unaffordable for most residents. Since water quality standards are such an integral part of the conditions placed upon those regulated under the federal and state laws, the development of such standards must be reasonable, sound and adhere to all tenets of the law.

As already mentioned the Basin Plan is the core regulatory document and/or mechanism that contains the state developed water quality standards (i.e. beneficial uses and water quality objectives). Besides the substantive legal requirements directly related to the adoption of water quality standards into the Basin Plan, the Basin Plan as a whole is subject to specified procedural requirements. This Report details the results of a review of the Administrative Record for the Basin Plan and examines whether water quality standards were adopted in accordance with the applicable laws. To some extent, where appropriate, the Report also assesses whether to see if the Administrative Record supports the process requirements that pertain to adoption of Basin Plans.

To accomplish this purpose, the authors of this Report reviewed the Administrative Records from 1975 to 1994 for the Central Valley Basin Plan for the Sacramento River, San Joaquin River and Sacramento-San Joaquin Delta that were available through the Central Valley Regional Board office in Sacramento and the U.S. Environmental Protection Agency, Region IX office in San Francisco.* The time period, 1975-1994, reflects the timing of the original development of the Basin Plan (1975) through the last major update to the plan (1994).

The review of the records, as documented by this Report, revealed a significant amount of information regarding the Regional Board's compliance, or lack thereof, with federal and state laws that govern the adoption of water quality standards. In short, the Regional Board's process for adopting water quality standards in 1975 failed to include a number of considerations and an appropriate program of implementation as required by state law. The record indicates that this may have been due to a lack of a thorough understanding regarding the true significance of water quality standards rather than an intentional omission. For example, water quality standards adopted in the early years were portrayed by staff as "goals" -- not regulations. This portrayal shows that staff did not fully recognize the regulatory nature of such standards and the future use of such standards for deriving strict discharge requirements.

In addition, the Administrative Record documents the Regional Board's recognition that very limited data and information regarding appropriate standards was available in 1975 when the Basin Plan was first developed. As such, the Basin Plan built-in flexibility for future changes and determinations. Unfortunately, a lack of time and resources devoted to basin planning efforts, including the development and refinement of water quality standards has apparently prevented the Regional Board from following through on its original intent.

* The authors requested all similar records from the State Water Resources Control Board. However, the State Water Resources Control Board was unable to provide any records for the Central Valley's basin planning efforts for the specified time frame. According to officials from the agency, the records were probably destroyed under the agency's normal record retention practices.

When amendments to water quality standards have occurred, the Record indicates that compliance with federal and state legal requirements continues to be deficient. In some cases, there is no explanation or documentation for significant amendments to some of the standards. The Report details some of these significant amendments and the deficiencies related to the amendments.

Overall, many of the standards adopted in 1975 are still in effect today. In most cases, the original standards have not been reviewed to determine if they are still appropriate and applicable. As a result, discharge conditions and other regulatory controls are being imposed pursuant to standards that were adopted almost thirty years ago with little information and without compliance with the laws applicable at the time.

OVERVIEW

The current structure of the federal Clean Water Act was adopted by Congress through the override of a presidential veto in October of 1972.[1] The primary focus of the Act was technology-based controls. Such controls were considered to be the "major innovation" of the 1972 Act.[2] To implement technology based controls, effluent limitations were placed in NPDES permits that were tied to a specific level of treatment. However, when Congress adopted the technology based controls, it did not abandon the concept of water quality standards and in fact extended such standards to all surface waters instead of just interstate waters.[3] According to federal EPA, "Congress maintained the concept of water quality standards both as a mechanism to establish goals for the Nation's waters and as a regulatory requirement when standardized technology controls for point source discharges and/or nonpoint source controls were inadequate."[4]

While water quality standards were retained in the 1972 Act, implementation efforts for the next 25 years were focused primarily on permitting technology based controls. Within the last 5 to 10 years, federal EPA and the states have reinvigorated the use of water quality-based controls in various regulatory processes. In particular, water quality standards are being used to establish permit limitations in NPDES permits and targets for total maximum daily loads (TMDLs).

In California, the water quality standards are the beneficial uses and water quality objectives established within the Water Quality Control Plans (hereinafter "Basin Plans") adopted by the Regional Water Quality Control Boards.[5] Most of the contemporary beneficial uses and water quality objectives were adopted into the Basin Plans in the early 1970's, and many still remain as adopted at that time. Some have been amended or updated during triennial review processes and other amendment activities.

Since the water quality standards (i.e. beneficial uses and water quality objectives) developed in the 1970's are now being used to set permit limits and establish TMDLs, it is appropriate, and perhaps imperative, that the standards be reviewed. This study reviews the water quality standards in light of the laws and regulations at the time of adoption, guidance issued by the federal Environmental Protection Agency and the State Water Resources Control Board, and the administrative record created from the adoption of the Central Valley Board's 1975 Basin Plan for the Sacramento River Basin, Sacramento-San Joaquin Delta Basin and the San Joaquin Basin and subsequent amendments to that plan.

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[1] The Clean Water Act 25th Anniversary Edition, Water Environment Federation, 1997 at page 11.
[2] Water Quality Standards Handbook, Second Edition, Introduction at page INT-1, (9/15/93).
[3] Id.
[4] Id.
[5] In addition to the water quality objectives contained within the Central Valley Basin Plan, the federal EPA has promulgated two rules, the California Toxics Rule (40 CFR 131.38) and the National Toxics Rule (40 CFR 131.36), which contain criteria that are applied depending on the beneficial uses designated in the basin plan.

The purpose of the review is to determine the basis for, and validity of, the water quality standards currently being used by the State Water Board and the Regional Board to establish effluent limitations, TMDLs, and compliance conditions for waivers and storm water permits. The Report is structured to first outline and describe the federal and state laws applicable to the adoption of water quality standards and the adoption of Basin Plans in general. It then reviews the relevance of the Interim Basin Plan from 1971, the 1975 adoption process for the Basin Plan, and some of the significant water quality standards and policies contained therein. After exploring the creation of the original Basin Plan, the Report discusses subsequent Basin Plan reviews and major updates to the Basin Plan. The next chapter discusses amendments to specific objectives and policies. In the conclusion, the Report summarizes the findings from the review.

Chapter I. Federal and State Laws

A. Federal Laws and Basin Plans

Congress first passed water pollution legislation in 1948.[6] Subsequent federal legislation included the Federal Water Pollution Control Act (FWPCA) of 1956[7] and the Water Quality Act of 1965. However, it was the amendments to the FWPCA in 1972[8] that created a discharge permit system, extended water quality standards requirements to intrastate waters, required such standards to be implemented through discharge permits and required states to prepare Basin Plans. In California, the Basin Plans prepared pursuant to federal law in conjunction with state law became the core regulatory document for water quality control.

In general, the amendments to the FWPCA in 1972 (commonly referred to as the "Clean Water Act," or CWA) created a comprehensive planning scheme through four interconnected provisions in the law.

> Section 201, often referred to as 'facilities planning,' set out the requirements for a specific plan. Section 208 set up an ongoing regional or areawide waste treatment management process intended to embrace all industrial, municipal, and nonpoint sources. Section 303(e) provided for Basin Planning within a state and Section 209 authorized interstate river basin planning.[9]

For our purposes, the relevant section is section 303(e), which was designed for basin planning within a state. The basin planning process (officially titled the Continuing Planning Process) of section 303(e) required Basin Plans to include at a minimum the following: (1) effluent limitations and schedules of compliance; (2) the elements of applicable area-wide waste management plans and applicable Basin Plans prepared pursuant to sections 208 and 209, respectively; (3) total maximum daily loads under section 303(d); (4) procedures for revision; (5) adequate authority for intergovernmental cooperation; (6) implementation plans, including schedules of compliance, for revised or new water quality standards adopted pursuant to section 303(c); (7) controls over the disposition of residual waste from water treatment processing; and, (8) an inventory and ranking, in order of priority, of construction needs for water treatment facilities.[10] In other words, the Basin Plans were to incorporate all of the primary elements of the Clean Water Act into one comprehensive planning document.

To implement the provisions of section 303(e), the federal EPA adopted regulations for the submission and approval of state continuing planning processes[11] and regulations for

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[6] Public Law 845, 80th Congress
[7] Public Law 660, 84th Congress
[8] Public Law 92-500
[9] *The Clean Water Act, 25th Anniversary Edition*, Water Environment Federation (1997), pages 13 and 14.
[10] 33 U.S.C. §1313(e); Federal Water Pollution Control Act §303(e), PL 92-500.
[11] Federal Register, Vol. 39, No. 107, June 3, 1974; 40 CFR §130.1 (1974).

the preparation of Basin Plans pursuant to the continuing planning process.[12] The federal regulations reiterated the requirements of section 303(e).[13] To meet these new federal statutory and regulatory requirements, the State of California utilized the water quality control planning process that already existed within state law.[14]

B. State Laws and Basin Plans

California's comprehensive water quality control law, the Porter-Cologne Water Quality Control Act (Porter-Cologne), was adopted in 1969. While California had other water quality laws prior to the 1969 Act, the previous laws were primarily planning tools and generally considered unenforceable. Even before Congress required Basin Plans pursuant to the CWA, California required each region[15] to "formulate and adopt water quality control plans for all areas within the region."[16] Prior to the adoption of the federal CWA in 1972, the Regional Boards embarked on a process to develop water quality control plans pursuant to state law. After the federal law was changed in 1972, federal EPA approved California's request to use the existing state water quality control plan development process to meet the requirements of section 303 of the CWA.[17] To accept such plans, however, as meeting the provisions of the CWA, federal EPA required revisions to and restructuring of the state's water quality standards.[18] The Basin Plan for the Central Valley Region (1975 Basin Plan) that met the CWA requirements, and in particular the requirements for new or revised water quality standards, is the plan that was adopted by the State Water Resources Control Board ("State Water Board") on August 21, 1975[19] and approved by the federal EPA on December 30, 1975.[20]

Before discussing the specific elements in the 1975 Basin Plan, there are key provisions in California law that must be identified in order to provide the legal context for Basin Plans and the content therein. First and foremost, Basin Plans must conform to the policies established by the California Legislature in the adoption of Porter-Cologne and any other state policy for water quality control.[21] Incorporated into this provision are the legislative findings of section 13000.[22] Section 13000 sets forth a reasonableness standard and a balancing requirement that Regional Boards and the State Water Board must consider when adopting Basin Plans and the provisions therein.

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[12] Federal Register, Vol. 39, No. 107, June 3, 1974; 40 CFR §131.100 (1974).
[13] 40 CFR 131.300 – 131.400, as adopted May 24, 1974.
[14] State Water Board Resolution No. 75-80, Approval of Water Quality Control Plans for the Sacramento River, Sacramento-San Joaquin Delta, San Joaquin River and Tulare Lake Basins, August 21, 1975.
[15] For purposes of the Porter-Cologne Water Quality Control Act, California is divided into nine hydrologic regions with a separate regional board for each region. CA Water Code §§13200 et seq.
[16] CA Water Code §13240.
[17] Memorandum to Assistant Administrator for Air & Water Programs, EPA, Washington, D.C. from Paul De Falco, Regional Administrator, EPA, Region IX, July 10, 1973.
[18] Id.
[19] SWRCB Resolution No. 75-80, August 21, 1975.
[20] Letter to Governor Brown, Governor, State of California, from Paul De Falco, Administrator, U.S. EPA, Region IX, December 30, 1975.
[21] CA Water Code §13240.
[22] CA Water Code§13000.

Section 13000 states that

> [t]he Legislature further finds and declares that activities 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.[23]

The legislative history of section 13000 emphasizes the balancing requirements that must be part of each and every Regional Board decision regarding Basin Plans and the implementation of water quality objectives. As a precursor to adoption of Porter-Cologne, the State Water Board issued a Final Report from a Study Panel ("Final Report") for the California Legislature.[24] The Final Report includes recommended legislative changes, which are now the primary provisions of Porter-Cologne.[25] In its discussion regarding section 13000, the Final Report states, "[t]he key to the proper balancing of these interests lies only partly in established statewide policy. The regional and state boards which, in their decisions in which policy is applied to specific cases, weigh the benefits and costs to society, are the ones who actually determine this judgment."[26] Furthermore, the Legislature specifically directed the State and Regional Boards to incorporate the policies of section 13000 in their exercise of any power under Porter-Cologne.[27] In other words, the Regional Boards must consider and balance the regulation of water quality with economic and social demands on the water in all of its decisions.

Besides the incorporation of the policies espoused in section 13000, Basin Plans are required to contain water quality objectives and implementation plans to achieve water quality objectives.[28] Procedurally, there must be a public hearing prior to adoption by the Regional Board,[29] the Basin Plan must be approved by the State Water Board[30] and the Office of Administrative Law, and adoption of the Basin Plan must comply with the California Environmental Quality Act.[31]

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[23] CA Water Code §13000.
[24] Final Report of the Study Panel to the State Water Resources Control Board, Recommended Changes in Water Quality Control, March 1969.
[25] To recognize the tension between economic development and protection of the environment, the Study Panel recommended the language of §13000, paragraph 2. Final Report at page 7.
[26] Final Report at page 7.
[27] CA Water Code §13001.
[28] CA Water Code §§13241 and 13242.
[29] CA Water Code §13244.
[30] CA Water Code §13245.
[31] CA Govt. Code §11353.

C. Water Quality Standards and Objectives

The Key components of Basin Plans, which are the focus of this review, are the water quality standards (i.e. beneficial uses and water quality objectives).[32] The CWA requires states to adopt water quality standards and to submit such standards to EPA.[33] Under the CWA, the key elements regarding water quality standards are as follows:

(1) A water quality standard is defined as the designated beneficial uses of a water segment and the water quality criteria necessary to support those uses;

(2) The minimum beneficial uses to be considered by states in establishing water quality standards are specified as public water supplies, propagation of fish and wildlife, recreation, agricultural uses, industrial uses, and navigation;

(3) State standards must protect public health or welfare, enhance the quality of water, and serve the purposes of the Clean Water Act;

(4) States must review their standards at least once each 3-year period using a process that includes public participation;

(5) Federal EPA review of state standards might result in the promulgation of a superseding Federal rule where a state's standards are found not to be consistent with the applicable requirements of the CWA, or in situations where the Agency determines that Federal standards are necessary to meet the requirements of the Act.[34]

In addition to, and in interpretation of, the statutory requirements, federal EPA promulgated regulations regarding the establishment of water quality standards.[35] Regulations were first published in 1975 and amended in 1983. In designating uses, the regulations state "[e]ach state must specify appropriate water uses to be achieved and protected. The classification of the waters of the state must take into consideration the use and value of water for public water supplies, protection and propagation of fish, shellfish and wildlife, recreation in and on the water, agricultural, industrial, and other purposes including navigation."[36] Besides considering the use and value, designated uses may be removed if not attainable for a number of different reasons, including if the controls necessary to protect the beneficial use require substantial and widespread economic and social impact.[37]

According to the regulations, for federal EPA to approve a state's water quality standards, the state must include in its submittal: Use designations consistent with the

[32] CA Water Code §13241; 33 U.S.C. §1313 subd. (e)(3)(F).
[33] 33 U.S.C. §1313(a); FWPCA §303 (a), PL 92-500.
[34] Water Quality Standards Handbook at pages INT 1 through INT 2.
[35] 40 CFR 131.10 through 131.13.
[36] 40 CFR 131.10 (a).
[37] 40 CFR 131.10 (g)(6).

CWA; methods and analyses used for the standard revision; water quality criteria sufficient to protect the designated uses; an antidegradation policy; certification by the State Attorney General or other appropriate legal authority that the standards were adopted in accordance with state law; and, other information to aid federal EPA's review.[38]

California's water quality standards consist of the state's beneficial use designations and water quality objectives. The state's basin planning process is used to address other federal regulatory requirements.[39]

When establishing water quality objectives under state law, the Regional Board shall, "in its judgment [] 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."[40] In addition, the Regional Board must at a minimum include the consideration of the following factors as required by section 13241:

> (a) Past, present, and probable future beneficial uses of water.
> (b) Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.
> (c) Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.
> (d) Economic Considerations.
> (e) The need for developing housing within the region.
> (f) The need to develop and use recycled water.[41]

The Regional Board is also required to prepare an implementation plan for the achievement of water quality objectives.[42] The implementation plan must include, "a description of the nature of actions which are necessary to achieve the objectives," "a time schedule for the actions taken," and "a description of surveillance to be undertaken to determine compliance with objectives."[43]

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[38] 40 CFR 131.6.
[39] California law defines beneficial uses as, "waters of the state that may be protected against quality degradation include, but are not necessarily limited to, 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." CA Water Code §13050 (f). Water quality objectives are defined as, "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." CA Water Code §13050(h).
[40] CA Water Code §13241.

[41] CA Water Code §13241. In 1975, only the first four factors (subdivisions (a) – (d)) were required for consideration. The law was amended in 1979 to add subdivision (e) and was amended in 1991 to add subdivision (f).
[42] CA Water Code §13242.
[43] CA Water Code §13242/

The establishment of water quality objectives was not new to the Regional Boards at the time that Porter-Cologne was adopted into law. In fact, one of the reasons for Porter-Cologne was to address the inability of Regional Boards to enforce the water quality objectives that were adopted prior to Porter-Cologne. The Final Report reveals that Regional Boards were establishing objectives to ensure very high quality water and that the objectives were not enforceable under the constraints of the law prior to 1969.[44] To correct the problem, the Study Panel recommended (and the Legislature adopted) revisions to the applicable definitions and procedures for establishing and enforcing water quality objectives. With the changes, the Final Report notes, "[i]t is expected that objectives will be tailored on the high quality side of needs of the present and future beneficial uses. But at the level where established, it is intended that these objectives shall be reasonable, enforceable and enforced."[45] The Final Report further states, "[i]t is recognized that in establishing water quality plans and waste discharge requirements, the quality of water may be changed to some degree without unreasonably affecting beneficial uses. Clearly, the very continuance of society depends upon some utilization of the waste assimilative capacity of the waters of the state."[46]

In other words, water quality objectives must be enforceable, reasonable and attainable. To determine if water quality objectives are reasonable and attainable, the Regional Board must utilize the section 13241 factors. With regard to the section 13241 factors, the Final Report states, "[t]he regional boards must balance environmental characteristics, past, present and future beneficial uses, and economic considerations (both the cost of providing treatment facilities and the economic value of development) in establishing plans to achieve the highest water quality which is reasonable."[47] Lastly, the Final Report advised that all previously adopted water quality control policies needed to be reevaluated and amended to comply with the new legislative mandates.[48]

The application of water quality objectives to waste discharge requirements (i.e. permits) are required pursuant to section 13263. The provisions of section 13263 explicitly require waste discharge requirements to "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, and the provisions of section 13241."[49]

In summary, Regional Boards must prepare Basin Plans pursuant to state law that also meet the requirements of the federal CWA. Basin Plans contain the water quality standards required pursuant to section 303(c) of the federal CWA. In California, water quality standards are the combination of beneficial use designations and water quality objectives. The adoption of water quality objectives into California's Basin Plans must comply with all applicable provisions within the state's Porter-Cologne Act, including sections 13000, 13001, 13241, and 13242. All four sections pertaining to the adoption

[44] Final Report at 12.
[45] Final Report at 12.
[46] Final Report at 12.
[47] Final Report at 13.
[48] Final Report at 13.
[49] CA Water Code §13263.

and implementation of water quality objectives include a reasonableness standard. The reasonableness standard is to be applied through "judicious action by the regional boards, based on the facts of different cases and different areas…."[50]

Compliance with state law and policies for the development of water quality standards is not inconsistent with federal law. Federal regulations require certification by an appropriate legal authority in the state to certify compliance with state law. As such, federal law clearly anticipates an independent state process before review and approval by the federal EPA.

[50] Final Report at 13.

Chapter II. The 1975 Central Valley Basin Plan

A. Interim Water Quality Control Plan - 1971

Before the 1975 Central Valley Basin Plan was developed, the Regional Board adopted an Interim Water Quality Control Plan for compliance with the federal construction grant program and the state's water quality control plan requirement. Since the 1975 Basin Plan indicates that many of the objectives and beneficial uses in the plan derived from the 1971 Plan, the substance of the 1971 Plan must be reviewed briefly. The *Foreward* for the Interim Plan states that it "will serve as a guide for water quality management and for waste treatment plant construction in the next two years, until completion of comprehensive basin and regional plans which are now under preparation."[51] The *Foreward* also indicates that the plan complied with the requirements of Porter-Cologne. However, there is nothing in the Interim Plan that indicates the Regional Board complied with section 13241 and section 13242 when adopting the beneficial uses and the water quality objectives contained within the Interim Plan.

In fact, the Interim Plan was not intended to be used as the basis for beneficial use designations. Table 3 of the Interim Plan states that "[d]uring the interim period an intensive study will be made to better catalog all present uses of the water in both basins."[52] Instead, the Interim Plan defers preparation of a more detailed list of beneficial uses and location of such uses to development of the comprehensive plan effort. Consequently, the 1971 Interim Plan did not consider the past, present, and probable future beneficial uses of water in this Region.

Similarly, the water quality objectives contained in the Interim Plan do not appear to have been adopted pursuant to all provisions of Porter-Cologne. In the Interim Plan, the objectives were developed to implement four specified goals. The goals relate to wastewater treatment and do not respond directly to the over-arching policy of Porter-Cologne as expressed in section 13000, or take into consideration all of the applicable factors of section 13241.[53] The objectives were in most cases general and applied to all named water bodies in the Sacramento River Basin and the Sacramento-San Joaquin Delta Basin.[54] Because of the general nature of the objectives, the Regional Board could not have considered the four factors applicable under section 13241 of the Water Code

[51] Interim Water Quality Control Plan, Central Valley Region, Sacramento River Basin and Sacramento-San Joaquin Delta, June 1971.
[52] Id. at page 30.
[53] The Interim Plan states that the water quality objectives of the Plan were developed toward implementing the following four goals: Protect and enhance all basin waters, surface and underground, fresh and saline, for present and anticipated beneficial uses; Maximize the use of municipal and industrial wastewaters as part of an integral system of fresh-water supplies to achieve maximum benefit of fresh-water resources; Review waste treatment systems to assure that effective treatment and adequate capacity are available at all times; and, develop a planned system for water use and waste discharges to assure protection of aquatic resources for future beneficial uses, in order to achieve harmony with the natural environment. Interim Plan at page 33.
[54] Interim Plan at page 41.

(i.e. beneficial uses, environmental characteristics of the hydrographic unit under consideration, water quality conditions and economic considerations).

Furthermore*,* the Regional Board was already planning for the preparation of a more comprehensive "Fully Developed Water Quality Control Plan," even though the 1972 CWA amendments were not yet a reality.[55] To conduct this comprehensive planning effort, the State Water Board hired various consulting firms under contract. Once the 1972 amendments became a reality, California shifted the comprehensive basin planning process to include water quality standards as required in the amended federal law.[56]

B. State Policy for Development of 1975 Plan

The proposed scope of the 1975 Basin Plan was to develop a program that would "preserve and enhance water quality, and protect beneficial uses of water, for the maximum benefit of the people of California for the next 25 to 30 years."[57] Because the scope of the planning effort was so broad, the Regional Board developed (as directed by the State Water Board) a summary of the comprehensive plan known as the *Abstract* for broad public dissemination. The unabridged plan consists of two parts: Part I, the Board adopted and EPA approved water quality control plan (i.e. Basin Plan); and, Part II, the supporting information for development of Part I. In addition to Parts I and II, the Regional Board also developed five appendices in two separate reports.[58]

Part I consists of the beneficial uses of water, water quality objectives, an implementation plan, an environmental assessment of the implementation plan, and a surveillance program to monitor the effectiveness of the plan. Part II consists of the information, assumptions, and alternatives considered in arriving at the implementation plan.[59] The preparation of all parts of the comprehensive plan was conducted with considerable guidance from the State Water Board.

In order to provide consistency to the nine regional boards and the various consulting firms ("Basin Contractors"), the State Water Board issued a total of 27 management memoranda and a number of other memoranda related to the preparation of the comprehensive Basin Plans.[60] The management memoranda covered a host of issues

[55] Interim Water Quality Control Plan, Central Valley Region, Sacramento River Basin and Sacramento-San Joaquin Delta, June 1971.
[56] Memorandum to Assistant Administrator for Air & Water Programs, EPA, Washington, D.C., from Paul De Falco, Jr., Administrator, U.S. EPA, Region IX, July 10, 1973.
[57] Water Quality Control Plan Report, Abstract, at page 1.
[58] These appendices are: A – Project List; B – Changes in Water Quality Obectives; C – Public Participation; D – Surveillance and Monitoring; and, E – Models and Computations.
[59] Water Quality Control Plan Report, Central Valley Region, Basins 5A, 5B, & 5C, Volume I, (1975) at page i (forward).
[60] The Administrative Record maintained by the Central Valley Regional Board included the 27 management memos and a few other related memos. Several other memos have been discovered through records maintained by the federal EPA. It is possible that there were other related memos not maintained by either entity. The State Water Board claims that they have no records retained for the early Basin Planning process.

related to process, form and content that the comprehensive plans were supposed to consider and include. The memoranda did not specifically identify what information was necessary for compliance with the specific provisions of Porter-Cologne, such as the section 13241 factors. Therefore, the memoranda and information prepared pursuant to the memoranda must be reviewed individually and collectively to determine if the Regional Board met all of the required elements applicable in law.

The memoranda of particular interest for this report include:

- Management Memorandum #5, *Population, Industrial and Land Use Projections Plan Selection and Staging*: This memorandum was designed to provide a policy framework for the aspects of the planning process that dealt with population, economic development, land use and alternative considerations. In general, the memorandum advised the Regional Board to anticipate policy directions, incorporate best judgment, include non-engineering alternatives in the implementation program analysis and avoid simplistic responses to difficult considerations. More specifically, the memorandum provided the Regional Board with guidance on population and land use projections, and plan selection.

  The plan selection portion of the memorandum recognized the policy values expressed in section 13000. In its interpretation of section 13000, the State Water Board directed Regional Boards to select plans based on a consideration of benefits and detriments. The State Water Board further advised Regional Boards to select plans based on the extent to which the plan meets a list of specified objectives. The list of objectives include: (1) Greatest public acceptance; (2) Most effective means of meeting water quality standards; (3) Minimum detrimental effect upon the environment or, conversely, most beneficial impact upon the environment; (4) Least cost; (5) Most easily implemented including financial feasibility and institutional arrangements; (6) Conformity to regional planning policies, goals and objectives; and, (7) Most flexible plan from the standpoint of commitment of resources and additions or deletions of facilities over time. [61]

- Management Memorandum #15, *Guidelines for Defining Quality Characteristics in Sacramento-San Joaquin Delta*: This memorandum provides background information to Basin Contractors for the multitude of policies and pronouncements concerning the Delta. A primary factor in Delta water quality is the amount of water available for passage through the Delta and water extracted from the Delta through the State Water Project and the Central Valley Project. In order to estimate base case water quality conditions, the State Water Board made a number of general assumptions regarding the management of water. One of the key assumptions was the construction of the Peripheral Canal.[62] In other words,

[61] State Water Resources Control Board, Management Memorandum No. 5, *Population, Industrial and Land Use Projections Plan selection and Staging*, at page 4.
[62] Management Memorandum #15, *Guidelines for Defining Quality Characteristics in Sacramento-San Joaquin Delta*, at page 1.

the base case considerations in the Central Valley Plan are all predicated upon the Peripheral Canal becoming a reality. The base case is the reasonable estimate of what would occur with regard to a projection of water quality and water supply if present plans were continued over 30 years without any major institutional changes.[63] The memorandum also includes a projection of Delta outflow requirements for the protection of designated beneficial uses.

- Management Memorandum #18, *Setting Water Quality Objectives to Implement Board's Nondegradation Policy*: The State Water Board adopted its "Non-degradation Policy" in 1968. This major policy was to be considered in the 1975 Basin Plan. The memorandum expresses the State Water Board's concern that a strict, or literal, interpretation of the Nondegradation policy "could mean expenditure of vast sums of money, without benefits consonant with such an expense."[64] As such, the State Water Board issued this memorandum "to explain the manner in which the Board's policy is to be interpreted and to provide guidelines for use in setting water quality objectives in various situations."[65]

  According to this memorandum, it was the State Water Board's intent that waters of the state not be degraded beyond present quality by waste discharges; however, some change is allowed through the three exceptions contained in Provision 1 of the policy. Through this memorandum, the State Water Board requires the Basin Contractors to use these exceptions in interpreting the policy and in recommending water quality objectives.[66] A change in water quality was allowed if it is consistent with the maximum benefit to the people of the state; if it does not unreasonably affect beneficial uses of water; and it does not result in water quality less than that prescribed in the Board's plans and policies.[67]

  The memorandum provided further explanation to the Basin Contractors on the meaning of the exceptions to the state's anti-degradation policy. For example, the memorandum directed the Basin Contractors to assume that the first exception -- change in water quality must be consistent with the maximum benefit to the people of the state -- had social and economic meaning. In other words, "maintaining water quality at a level that does not cause measurable change in beneficial uses may be an economic benefit and would not be a social detriment."[68] The second exception-- change in water quality can not unreasonably affect beneficial use of the water--was clarified as "a judgment of reasonableness" that is supported by a rigorous analysis on the possible effect to the beneficial uses. "An unreasonable affect would be any detrimental change in

[63] Central Valley Basin Plan (1975) at page I-5-6.
[64] Management Memorandum #18, *Setting Water Quality Objectives to Implement Board's Nondegradation Policy*, at page 1.
[65] Management Memorandum #18, at page 1.
[66] Management Memorandum #18, at page 2.
[67] Management Memorandum #18, at page 2.
[68] Management Memorandum #18, at page 2.

or a measurable reduction of beneficial uses."[69] The third exception -- "a change must not result in water quality less than that prescribed in the Board's plans and policies" -- required the Basin Contractor to consider the numeric limits established in the "Ocean Plan" and the "Thermal Plan" as required objectives.

The memorandum specifically stated that all other objectives "contained in the Interim Water Quality Control Plans and those submitted in 1967 and amended in 1968 as Federal-State Interstate Standards [were] not to be constraints on recommending water quality standards in the comprehensive plans."[70] In fact, the management memorandum concluded that changes were most likely to occur to standards that were established with insufficient ambient quality data and "where existing standards are not readily susceptible to measurement or enforcement."[71]

Overall, the State Water Board advised that the Basin Plans should state that the overall water quality goal "is to maintain or enhance existing water quality in all cases where it is feasible, where it is necessary to protect beneficial uses, and to comply with water quality control policies."[72] Furthermore, the memorandum stresses that the setting of water quality objectives is "sensitive to the feasibility of implementing a management plan to meet the objective."[73]

- Management Memorandum #20, *Water Quality Objectives*: Management memorandum #20 is critical to the adoption of water quality objectives in the 1975 Basin Plan. It is the primary directive regarding the establishment of water quality objectives given to the Basin Contractors and the Regional Boards. The purpose of the memorandum was to set forth a planning strategy to: (1) define water quality objectives (standards) consistent with the local beneficial uses of water and (2) develop alternative water quality management plans that will achieve those objectives.[74]

  In the transmittal memorandum, the State Water Board clearly advises the Regional Boards that the "management memorandum guidelines for evaluating the quality of water required for various beneficial uses should be assessed on a case by case basis and not selected arbitrarily as a particular water quality objective."[75] Furthermore, the transmittal clearly states that the only givens are the Ocean Plan and the Thermal Plan and that "all other existing standards and

[69] Management Memorandum #18, at page 2.
[70] Management Memorandum #18 at page 2.
[71] Management Memorandum #18 at page 2.
[72] Management Memorandum #18, at page 3.
[73] Management Memorandum #18, at page 3.
[74] Memorandum to Contact List that was mailed Management Memorandum No. 20 without a transmittal, from Thomas E. Bailey, Assistant Chief for Planning, Division of Planning and Research, State Water Resources Control Board, (March 21, 1973).
[75] Memorandum to Contact List, from Thomas Bailey.

objectives should be independently analyzed on the basis of all new information derived from the planning activity."[76]

Management Memorandum #20 includes a set of water quality guidelines that correspond to the standard beneficial uses outlined within the memorandum. The guidelines describe water quality parameters and concentrations that are needed to protect the beneficial uses.[77] In many ways the guidelines look like water quality objectives and in many instances the guidelines were used by the Regional Board for water quality objectives contained in the 1975 Basin Plan. For example, the tentative guidelines for evaluating the quality of water in various fresh-water habitats recommends that pH should be greater then 6.5 and less then 8.5.[78] The water quality objective contained in the Basin Plan states that "pH shall not be depressed below 6.5 nor raised above 8.5."[79] According to the transmittal memorandum, the use of these guidelines as objectives required an independent, case-by-case analysis. However, the record does not provide any evidence to indicate that the Regional Board conducted an independent analysis of the water quality guidelines pursuant to state law before selecting the guideline number as the water quality objective. The transmittal memorandum required an independent, case-by-case analysis to be conducted, especially since the water quality guidelines were developed from "water quality criteria" that were not subject to the provisions of Porter-Cologne.

Management memorandum #20 also divides the development of the Basin Plans into four general steps. The four steps are: (1) establish the beneficial uses; (2) establish the water quality objectives; (3) classify segments of water into water quality or effluent limitation classes; and, (4) develop alternative water quality management plans to a recommended management and facilities plan. With regards to step two, the State Water Board advised the Basin Contractors to develop a set of water quality guidelines that would protect selected beneficial uses. The guidelines were then to be evaluated against existing State Water Board policies and plans, taking into consideration the nondegradation policy as was described in management memorandum #18. Finally, the Basin Contractor was to determine which of the three was the strictest--the guideline to protect beneficial uses, the existing State Water Board plan or policy, or the nondegradation policy. The most strict of the three was to be selected as the water quality objective for that segment. Other than the direction to conduct an independent, case-by-case analysis, the memorandum does not advise or remind the Basin Contractors and Regional Boards to consider the factors identified in section 13241 of the Water Code when establishing water quality objectives.

[76] Memorandum to Contact List, from Thomas Bailey.
[77] Management Memorandum No. 20, *Water Quality Objectives*, at page 2.
[78] Management Memorandum No., 20, attachment Tentative Guidelines for Evaluating the Quality of Water in Various Fresh-Water Habitats, at page 1.
[79] 1975 Basin Plan at page I-4-8, Table 4-1.

- Management Memorandum #22, *Socio-Economic Planning Objectives*: The purpose of this memorandum is to provide a philosophy of planning related to socio-economic issues that were to be maintained throughout the planning process. It was not intended to be all inclusive or eliminate further discussion of socio-economic issues. The socio-economic planning objectives referred to in this memorandum were intended to assist Basin Contractors and the Regional Board in finding the most cost-effective method for protecting beneficial uses while considering social and environmental factors.[80] In other words, the memorandum focuses on the use of socio-economic objectives in selecting alternative water quality management plans that are designed to protect beneficial uses – not on using socio-economic objectives to determine if proposed water quality objectives are feasible.[81]

- Management Memorandum #27, *Policy on Institutional and Financial Aspects of Basin Planning*: The State Water Board issued this memorandum to the Basin Contractors and Regional Boards on August 13, 1973. The memorandum provided guidance to the Basin Contractors regarding the preparation of Chapters 10, 12, 13, and 14. In general, the information was related to the financial aspects of implementing the wastewater elements in the plans and the cost of the alternative plans, including the cost to industry. As a follow-up to this management memorandum, the State Water Board issued a subsequent memorandum to the Basin Contractors that superseded this memorandum and the instruction for the preparation of Chapters 10, 12, 13 and 14.[82] The new memorandum directed that information regarding Institutional and Financial Aspects of Basin Planning be included in Chapter 5, Program of Implementation, within the Point Source Measures category. However, instead of preparing an institutional and financial analysis as directed, the 1975 Basin Plan defers this task and instead discusses the planning effort that will be established to address the institutional and financial arrangements for subregional planning.[83]

Besides the management memoranda, the State Water Board developed planning principles for comprehensive plans. The planning principles were developed at the same time the State Water Board developed the request for proposals for hiring the Basin Contractors.[84] The first guiding principle was that "[t]he overriding objective of the planning effort should be to provide the basis for arriving at a program of waste disposal and water quality control in the respective basins which promises the greatest possible net economic and social returns to the people of each basin and the State." Other principles applicable to this review included: New concepts, laws, regulations, approaches, and policies were to be considered in the development of comprehensive plans; Wastewaters

[80] Management Memorandum No. 22, *Socio-Economic Planning Considerations*, at page 2.
[81] Management Memorandum No. 22, at page 5.
[82] Memorandum to All Basin Contractors, from Thomas E. Bailey, Assistant Chief, Division of Planning and Research, State Water Resources Control Board, (October 11, 1973) at page 1.
[83] 1975 Central Valley Plan at page I-5-28.
[84] Management Memorandum No. 22, at page 3; *Planning Principles for the Development of Comprehensive Water Quality Control Plans.*

were to be considered a part of the total water resources within the state; Appropriate methods were to be developed and utilized to review with other organizations those findings of the plan that are relevant to planning goals and programs of the organizations; and the formulation of the plans, the needs and desires of local entities were to be considered.[85]

In summary, the State Water Board's policies regarding development of the 1975 Basin Plans and the water quality standards contained therein is as follows:

- Water quality objectives adopted pursuant to state law must be reasonable, enforceable and enforced.

- To determine what is reasonable, the Regional Board must balance environmental characteristics, past, present and future beneficial uses, and economic considerations.

- Waters of the state were not to be degraded beyond their present level of quality unless it was consistent with the maximum benefit to the people of the state; the degradation does not unreasonably affect beneficial uses of water; and, it does not result in water quality less than that prescribed by the state's Ocean Plan and Thermal Plan.

- Objectives contained in the Interim 1971 Water Quality Control Plan and objectives that were part of the Federal-State Interstate Standards were not to be considered as givens. All existing standards and objectives, except for those contained in the Ocean Plan and the Thermal Plan were to be independently analyzed.

- The establishment of water quality objectives must be sensitive to the feasibility of a management plan.

In light of the State Water Board's directives and policies, the Basin Contractor for the Central Valley prepared the 1975 Basin Plan. When the Regional Board, and subsequently the State Water Board, adopted the 1975 Basin Plan, they were in essence certifying the document as meeting all applicable laws and regulations in effect at the time. This report reviews the Administrative Record to determine if the Basin Plan did indeed comply with the laws and regulations.

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[85] *Planning Principles* at pages 2 thru 5.

C. Consideration of CA Water Code section 13241

As previously mentioned, Porter-Cologne added new requirements for consideration when a Regional Board established water quality objectives. The minimum factors required for consideration in 1975 were, (a) past, present, and probable future beneficial uses of water; (b) environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto; (c) water quality conditions that could be reasonably achieved through the coordinated control of all factors which affect water quality in the area; and (d) economic considerations.[86]

(a) Past, present, and probable future beneficial uses of water - The 1975 Basin Plan contains two chapters relative to the issue of beneficial uses. Chapter 1 identifies and discusses the historical beneficial uses while Chapter 2 identifies the present and potential beneficial uses. The historical beneficial uses were superseded by the beneficial uses designated in Chapter 2 and were included only as background information.[87] Before discussing the Regional Board's consideration of past, present and probable future beneficial uses when establishing water quality objectives, the Regional Board's designation of potential beneficial uses must first be explored. First of all, Chapter 2 is titled "Present and Potential Beneficial uses." The title of the Chapter, and therefore the designation of beneficial uses, is inconsistent with section 13241 of Porter-Cologne. Under Porter-Cologne, beneficial uses are to be identified as past, present and **probable**. The statute does not use the word "potential."[88] There is a distinct difference between the terms "probable" and "potential." Probable is defined as likely to occur[89] while "potential" means capable of coming into actuality.[90] In other words, the term probable is less speculative then the term potential. In determining what future beneficial uses to protect and the objectives necessary to protect such uses, the distinction between the two terms can be very significant.

Management memorandum #20 provided the Basin Contractors and the Regional Boards with a standard set of beneficial uses with definitions. The State Water Board instructed the Basin Contractors and the Regional Boards to identify beneficial uses from the standard set.[91] The Board further advised that the stated national goal was to provide for the protection and propagation of fish, shellfish and wildlife, and for recreation in and on the water.[92] With the national goal in mind, the State Water Board instructed the Basin Contractors to recognize these uses wherever feasible and where recognized, protect these uses.[93] Once the Regional Board selected the beneficial use for a segment or body of water, with input from the Basin Contractor and the public, the Basin Contractor was

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[86] CA Water Code §13241; Chapter 482, Statutes of 1969.
[87] 1975 Basin Plan, I-1-1.
[88] CA Water Code §13241(a).
[89] The Random House Dictionary
[90] The Random House Dictionary.
[91] Management Memorandum #20, at page 2.
[92] Id.
[93] Id.

to go through a specified process for ultimately selecting a water quality objective for that segment.[94]

The language of Management Memorandum #20 suggests that the Basin Contractors were supposed to consider the beneficial uses of each segment and consider those beneficial uses when selecting water quality objectives for identified segments. There are no documents in the administrative record to indicate that the process envisioned by Management Memorandum #20 was carried out, and the structure of the 1975 Basin Plan provides evidence to the contrary. The water quality objectives are divided into three categories:[95] Inland Surface Waters, the Delta and groundwater. For the most part, the objectives are general and apply to all waters within the specified category. The objectives do not apply to individual segments as directed by Management Memorandum #20. Due to the general nature of the objectives, the Regional Board could not have considered the past, present and probable future beneficial uses for each segment when adopting the general water quality objectives.

Instead of following the process outlined within Management Memorandum #20, the Regional Board appears to have relied primarily on other general information contained in Management Memorandum #20, subsequent State Water Board memoranda, or previously adopted plans and policies for appropriate water quality objectives. Management memorandum #20 includes a set of water quality guidelines that corresponded to each of the standard beneficial uses. The relevant standard beneficial uses included were municipal supplies (MUN), water-contact recreation (REC1), non-contact recreation (REC2), fresh water habitats (WARM, COLD, SPWN, MIGR & WILD), and agricultural (AGR) supply.[96] The State Water Board's memorandum describes the guidelines as "the water quality parameters and concentrations that are needed to protect the beneficial use…."[97] The guidelines were developed from the National Technical Advisory Committee Report (1968) (NTAC) and a study referred to as McKee and Wolf (1963).[98] In addition, the State Water Board qualified the use of the water quality guidelines in Management Memorandum #20 in a memorandum dated March 21, 1973. The State Water Board instructed the Basin Contractors and the Regional Boards not to arbitrarily select the information from the water quality guidelines as a particular water quality objective without conducting a case by case assessment.[99]

A comparison of the tentative guidelines and the objectives reviewed in detail in conjunction with this study indicate that some of the objectives were selected from the tentative guidelines in Management Memorandum #20. Contrary to the instruction provided in the March 21, 1973 memorandum, there is no evidence in the record to suggest that a case by case assessment was conducted for objectives selected from the

[94] Id. at page 3.
[95] 1975 Basin Plan, Chapter 4, I-4-1.
[96] Management Memorandum #20, Attachment 2.
[97] Management Memorandum #20, page 2.
[98] Id. at page 2.
[99] Memorandum to Contact List that was mailed Management Memorandum No. 20 without a transmittal, from Thomas E. Bailey, Assistant Chief for Planning, Division of Planning and Research, March 21, 1973.

tentative guidelines. For objectives not taken from the guidelines, the record indicates that the objectives came from previously adopted plans and/or were specifically proposed by the State Water Board. The record does not contain the memorandum that apparently advised the Regional Boards to use certain suggested language, except in the case of the narrative toxicity objective. In addition, objectives taken from previously adopted plans prior to 1975 did not undergo the necessary analysis as required by Porter-Cologne.

In summary, the Regional Board did not consider the beneficial uses for each water body segment when establishing water quality objectives. Nor did the Regional Board consider the strict application of the objectives to unidentified effluent dominated water ways or agricultural drains with beneficial uses derived solely from the tributary rule.

(b) Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto – Chapters 11 and 14 appear to address this factor for identified water ways. Chapter 11 is the *Basin Description* for the water bodies included in the Sacramento-San Joaquin River Basin. In addition to fairly extensive narrative text, the chapter includes a table titled "Physical and Hydrologic Characteristics."[100] Between the text and the table, Chapter 11 addresses the environmental characteristics of the hydrographic unit for identified water ways. Chapters 11 and 14 do not address the environmental characteristics for water bodies that are not identified in the Basin Plan such as effluent dominated water ways, and unnamed agricultural drains.The Regional Board's failure to consider the environmental characteristics of such unnamed water bodies is significant considering the Board's practice of applying water quality objectives to named and unnamed water bodies. Chapter 14 is titled *Water Quality and Quantity Problems*. Within the chapter, the Regional Board summarizes the existing water quality of the surface water within the applicable basins. To obtain the information regarding water quality, the Regional Board and the basin contractor reviewed data from multiple sources and compiled the data in a data management system. Specific water quality problems and identified impaired beneficial uses were tabulated in table 14-8 for specified water bodies.[101] However, neither Chapter 11 nor Chapter 14 provides evidence that the Regional Board took the next step in using this information in relationship to establishing water quality objectives.

Section 13241 requires the Regional Board to consider this information when establishing water quality objectives. While the information is presented, it was apparently not considered in direct relationship to the objectives. For example, Table 14-8 lists the water body, the impaired beneficial use, evidence of the impairment and the probable cause. It does not consider if the applicable water quality objective will protect the beneficial use for the identified water body or correct the problem identified.

Consequently, Chapters 11 and 14 combined do not fully satisfy the requirements of section 13241, subsection (b). The 1975 Basin Plan did not consider the environmental characteristics and water quality of effluent dominated waterbodies, agricultural drains

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[100] 1975 Basin Plan, page II-11-11, table 11-1.

[101] 1975 Basin Plan, page II-14-29 through 11-14-33, Table 14-8.

and other unidentified waters. Chapter 14 discusses agricultural drains in the context of discharges having an impact on receiving water quality, but not in the context of discharges having an impact on the agricultural drain. In other words, the drain itself was not considered a receiving water. In short, there is no information to support the Regional Board's application of adopted water quality objectives to unidentified water bodies as conforming to the requirements of Porter-Cologne.

(c) Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area – This consideration must be distinguished from the implementation plan requirement of section 13242. Section 13242, which is discussed in further detail below, establishes requirements for an implementation plan for achieving the water quality objectives, once established. Subsection (c) of section 13241 requires the consideration of what water quality conditions could be achieved through an implementation plan developed pursuant to section 13242.

In addition to the beneficial use and water quality objective chapters, a key part of the Basin Plan is the *Implementation Plan* chapter, Chapter 5. Within Chapter 5, the Regional Board identifies a number of control actions for various pollutant sources within the basin. The control actions are summarized at table 5-8.[102] The text of the Chapter provides some information regarding the water quality condition that the proposed control action is intended to address. However, it is unclear from the Basin Plan and the administrative record if the Regional Board ultimately considered what water quality conditions could be reasonably achieved through the implementation of all of the recommended control actions. Nor does the Basin Plan clearly connect those control actions that are necessary for obtaining specific objectives.

(d) Economic Considerations – There are two significant management memoranda that address economic considerations in the basin planning process. As described above, management memorandum #5 was designed to establish a policy framework for the parts of the process that dealt with population, economic development, land use and alternative considerations. Overall, the primary purpose for this information was to determine the potential growth in the Central Valley in order to anticipate future waste loads.[103] By estimating future waste loads through population, industrial and land use projections, it was anticipated that the Basin Contractors and the Regional Boards could better determine what actions were necessary to maintain certain water quality standards.[104] Management memorandum #5 did not direct the Basin Contractors and the Regional Boards to consider the costs associated with achieving objectives proposed for adoption. Instead, it instructed Basin Contractors and Regional Boards to select plans in light of the benefits and detriments, including cost, as expressed in section 13000 of Porter-Cologne.

[102] 1975 Basin Plan, page I-5-69.
[103] Management Memorandum #5 at page 1.
[104] Id.

The second relevant Management Memorandum, No. 22, dealt in general with socio-economic planning considerations. According to the Management Memorandum, the two major uses for socio-cultural and economic factors in the basin planning process were (1) the "need internally within the planning program to use the best possible information on population growth, land use, and economic development, so that the results of the planning program [were] related, as closely as possible, to actual development,"[105] and (2) "socio-cultural and economic factors that reflect community goals and the values of the people within the basins [needed] to be respected and supported by the basin planning program wherever possible, …."[106] Additionally, the memorandum states that "[s]ocial and economic factors should be considered in selecting alternative water quality management plans…."[107] The memorandum does not identify the necessity of considering economic factors when establishing water quality objectives. Consequently, the direction to the Basin Contractors and the Regional Boards did not reflect all of the considerations required under section 13241, with one limited exception. At the end of the memorandum there is a short discussion regarding tentative effluent limitations. When prescribing effluent limitations, the memorandum advises that if the tentative effluent limitation cannot achieve water quality criteria, then allowable emissions must be reduced and presumably shared by all classes of waste producers.[108] If the tentative effluent limitation is so restrictive that the environmental benefits are inconsistent with the cost then alternative water quality objectives need to be investigated.[109]

The application of the guidance provided in management memoranda Nos. 5 and 22 can be found in Chapters 12 and 16. Chapter 12 provides the population, land use and economy projections for determining future waste loads.[110] After going through a narrative discussion on such projections, the Chapter concludes that "to maintain the present water quality in the basins, considerable additional expenditure on water pollution control will be required to keep pace with the growing waste loads resulting from the expanding population and economic activity in the basins."[111] This conclusion is general and does not include estimating economic impacts associated with achieving the specified water quality objectives contained within the Plan.

Chapter 16 evaluates alternative control measures, including cost considerations. The alternatives analyzed in Chapter 16 are alternatives to the "Base Case" – not alternatives to the control actions identified in the implementation plan chapter.[112] The "Base Case" was "a general estimate of the conditions that can be expected to occur in the future if no major changes from present conditions and plans are undertaken."[113] After reviewing the "Base Case" and the alternative control actions, the Basin Contractor and the Regional

[105] Management Memorandum No. 22 at page 1.
[106] Management Memorandum No. 22 at page 1.
[107] Id. at page 5.
[108] Id. at page 7.
[109] Id.
[110] 1975 Basin Plan, Chapter 12, at page II-12-1.
[111] Id. at page II-12-38.
[112] 1975 Basin Plan, Chapter 16, Figure 16-1 at page II-16-11.
[113] 1975 Basin Plan, Chapter 16, at page II-16-2.

Board selected the various recommended control actions which, taken as a whole, made up the recommended plan.[114]

The Chapter summarizes the 19 major control actions analyzed through the basin planning process. The actions ranged from constructing an East San Joaquin Valley Conveyance Facility to limiting nitrogen fertilizers to not constructing the peripheral canal.[115] The cost considerations associated with the 19 control actions ranged from providing specific cost estimates for construction activities to general statements that some costs might occur.[116] The Chapter also summarizes the water quality and water supply benefits and/or detriments associated with the control action. It does not directly tie the control action to specific water quality objectives or costs associated with achieving specific water quality objectives.

In short, a review of the record maintained by the Central Valley Board shows that while some of the factors may have been considered in general for the water quality control plan, the four factors were not individually considered for each adopted objective or for each objective as it applied to the various designated water bodies.

D. Consideration of CA Water Code section 13242

In addition to the factors for consideration under section 13241, Porter-Cologne requires a program of implementation for achieving water quality objectives to include: (a) a description of the nature of actions which are necessary to achieve the objectives, including recommendations for appropriate action by any entity, public or private; (b) a time schedule for the actions to be taken; and, (c) a description of surveillance to be undertaken to determine compliance with objectives.[117]

Within the Basin Plan, the two relevant chapters for review are Chapter 5 and Chapter 7. Chapter 5 is the *Implementation Plan* for the Basin Plan. The preface describes the Chapter as "a comprehensive water quality control plan." As previously discussed, Chapter 5 includes a number of control actions that are considered necessary to achieve water quality objectives. Table 5-8 summarizes the control actions and categorizes the responsible party for the control action. According to this table, the Regional Board identified control actions for public entities only. The four categories are: control actions which the Regional Board has primary responsibility for implementing; recommended control actions which the State Water Board has primary responsibility for implementing; recommended control actions which other agencies have primary responsibility for implementing; and, recommended studies.[118] As shown by the table, the Regional Board did not identify or consider appropriate actions for private entities that may be necessary for achieving water quality objectives.

[114] 1975 Basin Plan, Chapter 16, Figure 16-1, at page II-16-11.
[115] 1975 Basin Plan, Chapter 16, pages II-16-85 through II-16-169.
[116] Id.
[117] CA Water Code §13242, Chapter 482, Stats. 1969.
[118] 1975 Basin Plan, Table 5-8, at page I-5-69 – I-5-74.

In addition, Chapter 5 focuses on achieving water quality objectives in general and does not look at achieving the individual objectives specified in the Plan. The Regional Board received comments from Sacramento County that criticized the "Base Case" and the "alternatives" as being more directed "toward the subject of water resources development in California."[119] The Regional Board's response was that the "Base Case" and the "alternatives" are not part of the Implementation Plan, and neither is their analysis.[120]

Chapter 5 and the rest of the Plan do not include a time schedule for achieving the objectives as required by subsection (b). Therefore, the Basin Plan does not comply with subsection (b) of section 13242.

Lastly, Chapter 7 of the 1975 Basin Plan outlines a program for surveillance and monitoring to determine the effectiveness of the water quality control program.[121] This Chapter is supported by further detail and information in Appendix D.[122] The combination of Chapter 7 and Appendix D proposes a fairly comprehensive but general monitoring program. It does not propose to monitor the various identified water bodies to determine if the individual objectives are being achieved.

The implementation plan portions of the Basin Plan do not fully meet the requirements contained in section 13242.

[119] Statement of Sacramento County and Sacramento Regional County Sanitation District, at page 15.
[120] Major Issues at page 24.
[121] 1975 Basin Plan, Chapter 7, at page I-7-1.
[122] 1975 Basin Plan, Appendix D at page D-1.

Chapter III. Adoption of Specific Objectives and Policies Contained in the 1975 Plan

The 1975 Basin Plan contains water quality objectives for inland surface waters, the Delta and groundwater. There are 17 general objectives that apply to all inland surface waters and most also apply to the Delta.[123] There are four general objectives for groundwater. For the purposes of this report, 9 general inland surface water objectives will be reviewed as well as the groundwater objectives. The report will also look at policies relating to mixing zones and the application of water quality objectives to tributaries of identified water bodies. Both policies derive from the Basin Plan. The nine objectives are Bacteria, Chemical, Dissolved Oxygen, pH, Pesticides, Salinity, Temperature, Toxicity and Turbidity. For each objective, the report will review the history of the objective as adopted, public comments contained in the record regarding the objective, the Regional Board summary and evaluation of comments received, application of the management memoranda to the adoption of the objective (i.e. management memorandum #20), application of legal requirements to adoption of the objective, and any other relevant documents contained in the record.

According to the Basin Plan, two general rules were followed in the development of water quality objectives contained in the Basin Plan. Under the first general rule, the Regional Board maintained all previously adopted objectives unless there were contradictions from conclusive technical information.[124] Under the second rule, the Regional Board stated that at least some water quality objectives should be an output of the planning process rather than a planning constraint early on.[125] Or, in other words, not all of the previously adopted objectives should be maintained, but should result from the basin planning process itself. The second rule was apparently used in recognition that some objectives could have a considerable effect on the development and operation of the state's water supply system and that they should be modified to reflect this need accordingly.[126]

The rules presented in the Basin Plan appear to conflict with the guidance and direction given by the State Water Board in management memorandum #20, inclusive of the after-the-fact clarifying memorandum regarding management memorandum #20, and the language and intent of section 13241. The after-the-fact memorandum states, "[t]he only 'givens' at this point in the planning process are the 'Ocean Plan' and 'Thermal Plan' criteria**. All other existing standards and objectives should be independently analyzed on the basis of all new information derived from the planning activity**."[127] (Emphasis added.) Additionally, the Final Report from the Study Panel recognized that all previous water quality control policies, including existing water quality objectives,

[123] 1975 Central Valley Basin Plan, Chapter 4.
[124] 1975 Central Valley Basin Plan, Chapter 4, at I-4-1.
[125] 1975 Central Valley Basin Plan, Chapter 4, at I-4-2.
[126] 1975 Central Valley Basin Plan, Chapter 4, at I-4-1.
[127] Memorandum to Contact List that was mailed Management Memorandum #20, from Thomas E. Bailey, Assistant Chief for Planning, Division of Planning and Research, State Water Resources Control Board, (March 21, 1973).

needed to be reviewed in order to comply with the new provisions of law (i.e. section 13241).[128]

Finally, and most importantly, the incorporation of water quality objectives adopted prior to Porter-Cologne does not exclude these objectives from the provisions of Porter-Cologne. Since the Basin Plan was a new water quality control plan, the adoption of water quality objectives within the Plan was considered a new administrative action and therefore subject to all relevant provisions of the California Water Code. As discussed previously, the 1969 amendments to the state's water quality law required a Regional Board to consider a number of factors when establishing water quality objectives--not after the objectives were established. The amendments also anticipated that the objectives would be reasonable, enforceable and enforced.[129] Consequently, on the face of the language in the 1975 Basin Plan, the water quality objectives contained therein were adopted without compliance with Porter-Cologne.

A. Bacteria Objective

Objective: In waters designated for contact recreation (REC1), the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than ten percent of the total number of samples taken during any 30-day period exceed 400/100 ml.

The bacteria water quality objective contained in the 1975 Basin Plan applies to all inland waters within the Sacramento-San Joaquin Central Valley Plan (excluding the Delta and Folsom Lake) that have a beneficial use designation for contact recreation (REC1).[130] According to Appendix B of the 1975 Basin Plan, which summarizes the changes and reasons for changes for water quality objectives, the bacteria objective was a new objective designed to conform to statewide uniformity.[131]

The Regional Board received several comments on the proposed bacteria objective. The Department of Water Resources and the State Department of Health both commented that the more stringent site specific objective for Folsom Lake should apply to other major reservoirs and mountain streams.[132] In response to the Agencies' comments, the Regional Board staff evaluation states that the bacteria objective is a "new objective, promulgated by the State Water Board for inclusion in all Basin Plans for fresh waters designated REC1 (contact recreation)."[133] The Regional Board also commented that there was insufficient data to establish numeric objectives.[134] With regard to the state's

[128] Final Report at page 13.
[129] Final Report at page 12.
[130] 1975 Central Valley Basin Plan, at page I-4-5.
[131] 1975 Basin Plan, Appendix B, Table B-1, at page B-2.
[132] Staff Report on Major Issues of Public Testimony, Water Quality Control Plan – Basins 5A, 5B, & 5C, at page 35.
[133] Id.
[134] Id.

promulgation of the bacteria objective for statewide uniformity, there is no evidence in the Regional Board's record that the State Water Board promulgated the bacteria objective pursuant to the applicable provisions of the Water Code. In particular, there is no evidence that the State Water Board or the Regional Board gave any thought to the factors required for consideration under section 13241 in establishing such an objective.[135]

Documents provided by the federal EPA include one memorandum that discusses uniform wording and presentation of water quality objectives in the Basin Plans.[136] The memorandum was issued in mid January of 1975, which was very late in the development process for the 1975 Basin Plans. According to the memorandum, the proposed revisions were formulated by the State Water Board in coordination with Regional Board staff and discussed at a meeting with representatives from all regional boards in mid-December of 1974.[137] As part of the revision, the State Water Board recommended minimum criteria for some of the objectives based on EPA water quality criteria recommendations and/or recommendations from other state agencies.[138] But, as expressed earlier, there is no evidence that the uniform recommendations by the State Water Board, which would become adopted water quality objectives, received independent analysis pursuant to the provisions of section 13241 by either the State Water Board or the Regional Board.

The adopted water quality objective corresponds with the threshold concentration for fecal coliform found in the tentative guidelines of management memorandum #20.[139] However, there are no documents in the record that illustrate that an independent analysis was conducted before adopting the objective into the Basin Plan as advised by the March 21, 1973 memorandum regarding the use of management memorandum #20.

Neither the use of the tentative guidelines nor the State Water Board's directive to use specified criteria as water quality objectives negate the legal requirement that such objectives be analyzed pursuant to section 13241 before being adopted. As already discussed, the record shows that such an analysis did not occur. Appendix B documents changes and additions to water quality objectives.[140] According to Appendix B, the new objective was adopted to conform to those chosen for statewide uniformity.[141] In other words, the Regional Board adopted a new objective based on the State Water Board's

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[135] As mentioned in footnote #43, the State Water Board has failed to provide any records relevant to the development of the 1975 Basin Plans. According to State Water Board staff, the records have probably been destroyed due to normal record retention practices and policies. As such, we are relying upon a combination of the documents obtained from the Central Valley Regional Board and the U.S. EPA as the totality of the administrative record.
[136] Memorandum to Regional Board Executive Officers, from Bill Dendy, Executive Officer, State Water Resources Control Board, regarding Revisions in Water Quality Objectives (Jan. 22, 1975).
[137] Id. at page 1.
[138] Id. at page 2.
[139] Management Memorandum #20, Attachment 2, at page 7.
[140] Water Quality Plan Report, Appendices, Central Valley Region, Sacramento River Basin, Sacramento-San Joaquin Delta Basin, and San Joaquin Basin, Appendix B, at page B-1.
[141] Appendices, Appendix B, at page B-2.

direction and did not conduct any individual analysis. Consequently, the bacteria objective was established without the Regional Board considering the past, present and probable future beneficial uses of water, the environmental characteristics of the hydrographic unit, water quality conditions that could reasonably be achieved and economic considerations.

Nor does the Implementation Plan Chapter include an implementation program for meeting the bacteria objective. The implementation plan contains guidelines for waste disposal from septic systems, guidelines regarding animal wastes and control actions designed to protect water bodies from bacteria. However, there is no description of the actions related to achieving the objective; there is no time schedule for the related actions to be taken; and, there is no description of a surveillance program to determine compliance, as required by section 13242 of Porter-Cologne.

B. Chemical Constitutuents Objective

Objective: Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. Water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the limits specified in California Administrative Code, Title 17, Chapter 5, Subchapter 1, Group 1, Article 4, Section 7019, Tables 2, 3, and 4. The limits described therein will be reviewed on a case-by-case basis in order to assure protection of beneficial uses other than MUN, as appropriate. To the extent of any conflict with the above, the more stringent objective applies.

In addition to the general chemical objective, the Basin Plan also includes site specific objectives for eight inorganic chemicals and site specific objectives for electrical conductivity and total dissolved solids.[142] The general chemical objective was a new objective and according to Appendix B, the second sentence was justified to protect "waters designated for use as domestic or municipal supply," since consumption of such constituents can have an adverse physiological effect on humans.[143] Appendix B provides no reason for the inclusion of the first sentence, which acts as a catch all phrase.

One entity, Sacramento County,[144]commented on the specific inorganic chemical limits. There were no comments on the general language of the chemical objective. However, in responding to Sacramento's comments, the Regional Board claimed that the Administrative Code limits "were added by the State Water Board for statewide uniformity of protection of surface waters used for municipal supply."[145] The Regional Board also stated that "for the protection of other beneficial uses, certain of the

[142] 1975 Basin Plan, Chapter 4, Table 4-1, at page I-4-6 and I-4-7.
[143] 1975 Basin Plan, Appendix B, Table B-2 at page B-10.
[144] Statement of the Sacramento County Board of Supervisors and the Sacramento Regional County Sanitation District presented at the Public Hearing on the Water Quality Control Plan, June 26, 1975, Before the California Regional Water Quality Control Board, Central Valley Region, at pages 7-8.
[145] Major Issues in Basin Plan Adoption, at page 13.

Administrative Code limits were inappropriate and in these cases constituent limits have been adjusted accordingly," in reference to the site specific copper limit.[146]

More importantly, Regional Board staff recognized that flexibility was needed in applying objectives that were based on insufficient information.[147] To ensure such flexibility, the Regional Board staff recommended and the Regional Board adopted the following general language:

> In some instances water quality objectives were formulated to preserve historic conditions, but the data base is not sufficiently complete to determine the temporal and hydrologic variability that is an inherent aspect of historic water quality. When violations of such objectives occur, the Regional Board will use judgment to determine if the objectives could reasonably be achieved through the coordinated control of all factors affecting water quality in the area.[148]

The Regional Board's adoption of the language above, provides overwhelming evidence of the lack of information available for establishing water quality objectives pursuant to Porter-Cologne. The Regional Board recognized this deficiency by requiring consideration of one of the key section 13241 factors when determining if a violation of a water quality objective has occurred. In other words, they did not consider if the objective could reasonably be achieved through the coordinate control of all factors when the objective was adopted but allowed for such consideration when the objective was applied.

With regard to the inorganic chemical limits contained in the Basin Plan, four of them match the tentative guidelines for municipal water supplies (arsenic, cyanide, iron, manganese),[149] one matches the tentative guidelines for fresh-water habitats (copper),[150] and the other three (barium, silver, zinc) do not correspond to any of the concentrations contained in the tentative guidelines. None of the documents contained in the Basin Plan record indicate that any of the inorganic limitations underwent an analysis pursuant to section 13241, nor is there an implementation plan contained within the Basin Plan for achieving the individual objectives.

The Basin Plan record is similarly devod of evidence that an analysis pursuant to section 13241 was conducted for the general chemical constituent language and the other site specific objectives. As discussed in detail above, the implementation plan chapter is not specific to the objectives, therefore there is no implementation plan for achieving the chemical objective contained in the Basin Plan.

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[146] Id.
[147] Major Issues at page 14.
[148] Major Issues at page 14; 1975 Basin Plan, Chapter 4, at page I-4-4.
[149] Management Memorandum #20, Attachment 2, Tentative Guidelines for evaluating the quality of raw water used as a source of municipal supplies, at pages 1-2.
[150] Id., Tentative Guidelines for evaluating the quality of water in various Fresh-Water habitats at page 3.

C. Dissolved Oxygen Objective

Objective: The monthly median of the mean daily dissolved oxygen concentration shall not fall below 85 percent of saturation in the main water mass and the 95 percentile concentration shall not fall below 75 percent of saturation. The dissolved oxygen concentrations shall not be reduced below the following minimum levels at any time: Waters designated WARM – 5.0 mg/l; Waters designated COLD – 7.0 mg/l; and Waters designated SPWN – 7.0 mg/l.

The Sacramento Regional County Sanitation District commented that the interim Basin Plan and the Basin Plan contractor recommended a 5 mg/l limit for all of the above designated uses. The change from 5 mg/l to 7 mg/l for COLD and SPWN occurred between the distribution of the recommended plan in 1974 and the distribution of the new Basin Plan for Regional Board adoption in early 1975.[151] Sacramento was also concerned that such a change reflected a "trend toward a philosophy of 'higher is better' without regard to environmental significance or economic impact."[152] According to the staff response, the change was justified due to information and comments received from the Department of Fish and Game.[153] The staff did not respond to Sacramento's comment regarding the environmental significance and economic impact.

The concentration levels in the dissolved oxygen objective are below the minimums recommended in the tentative guidelines in management memorandum #20. The guidelines set concentration levels at 90% or more than 9 mg/l.[154] According to Appendix B, the new objective is equivalent to the existing objective in intent and is a restatement in terms of the beneficial uses.[155] The 1971 Interim Basin Plan does contain a dissolved oxygen objective that is similar to the objective in the 1975 Plan. As discussed previously, the objectives contained within the 1971 interim plan were not adopted in accordance with the requirements of Porter-Cologne. As such, the Regional Board was required to conduct a section 13241 analysis as the objective was being established in the 1975 Basin Plan and to prepare an implementation plan for achieving the dissolved oxygen objective. Neither was done.

D. pH Objective

Objective: The pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses.

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[151] Major Issues in Basin Plan Adoption, Basins 5A, 5B, and 5C at page 9.
[152] Statement of Sacramento County and Sacramento Regional County Sanitation District at page 9.
[153] Major Issues at page 9.
[154] Management Memorandum #20, Tentative Guidelines for Evaluating the Quality of Water in Various Fresh-Water Habitats, at page 10.
[155] Appendix B, Table B-1, at page B-5.

This objective corresponds to the tentative guidelines in management memorandum #20.[156] According to the guidelines document, the tentative guideline comes from the NTAC report.[157] As discussed previously, neither the tentative guidelines nor the recommended criteria from the NTAC report were scrutinized pursuant to the provisions of Porter-Cologne before being used as water quality objectives in the Central Valley 1975 Basin Plan. The guidelines for other beneficial uses such as municipal supplies (MUN) or contact recreation (REC1) also contained pH recommendations based on the NTAC Report. The Regional Board used the most stringent range of values that were recommended for various fresh-water habitats, therefore being protective of all beneficial uses. The Regional Board's record does not contain information that suggests a consideration if the fresh-water habitat uses are reasonable based on the objective necessary for their protection.

The record also does not include any evidence that the Regional Board or the State Water Board conducted a section 13241 analysis when establishing the pH objective in the Basin Plan. Similar to the bacteria and dissolved oxygen objectives, Appendix B states that the new objective is equivalent to the existing objective in intent and that the existing narrative objective was changed to achieve statewide uniformity.[158] There were no public comments received and therefore no staff responses with regard to the pH objective.

E. Pesticide Objective

Objective: No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses. There shall be no increase in pesticide concentrations found in bottom sediments or aquatic life that adversely affects beneficial uses. Pesticides are defined as any substance or mixture of substances used to control objectionable insects, weeds, rodents, fungi, or other forms of plant or animal life.

Total identifiable chlorinated hydrocarbon pesticides shall not be present at concentrations detectable within the accuracy of analytical methods prescribed in Standard Methods for the Examination of Water and Wastewater, latest edition, or other equivalent methods approved by the Executive Officer.

Waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of pesticides in excess of the limiting concentrations set forth in California Administrative Code, Title 17, Chapter 5, Subchapter1, Group 1, Article 4, Section 7019, Table 4.[159]

According to Appendix B, the first two sentences of the pesticide objective were equivalent to the objective contained in the Interim Basin Plan but that the wording was

[156] Tentative Guidelines at page 10.
[157] National Technical Advisory Committee to the Secretary of the Interior, 1968, Water Quality Criteria, Federal Water Pollution Control Administration, U.S. Department of the Interior.
[158] Appendix B, Table B-1 at page B-6.
[159] 1975 Basin Plan, Table 4-1, at pages I-4-8 thru I-4-9.

changed to achieve statewide uniformity. The staff response to comments explains that the narrative pesticide objective was promulgated by the State Water Board for inclusion in all Basin Plans.[160]

The language regarding total identifiable chlorinated hydrocarbon pesticides in the second paragraph was added to the pesticide objective because "chlorinated hydrocarbon pesticides can be extremely hazardous to fish and wildlife because of their persistence and accumulation in aquatic organisms."[161] On this issue, the Butte County Mosquito Abatement District commented on the need to prepare specific objectives for the chlorinated hydrocarbon pesticides instead of creating a total chlorinated hydrocarbon limit.[162] In response, the Regional Board noted the desirability of establishing numeric limits but determined that information regarding tolerance levels was insufficient to do so at the present time.[163] As a result, the Regional Board classified the objectives as interim objectives and planned to develop specific objectives as part of the continuing planning process with the assistance of other state agencies.[164]

Additional comments were received regarding the pesticide objective but were not evaluated by the staff prior to the hearing presumably due to their late submittal. The comments were from the California Forest Protective Association and the California Farm Bureau Federation. Both commenters objected to the language of the pesticide objective. The California Forest Protective Association argued that the issue was the bioaccumulation of pesticides not the increase of pesticide concentrations. As such, the Forest Association recommended that the Central Valley Board adopt the same language as the North Coast Regional Board by striking the word "increase" from the first paragraph and instead inserting the term "bioaccumulation."[165] The fact that the North Coast Regional Board adopted different language than the supposed "state uniform" language demonstrates that the Regional Board had the discretion to individually adopt the objectives instead of relying on the January 25, 1975 memorandum from the State Water Board. In other words, Regional Board adoption of the objective triggered all legal requirements related to such adoption under Porter-Cologne regardless of the State Water Board directive.

The Farm Bureau's comments argued that the pesticide objective as written was not rational, or in other words, was not reasonable.[166] The Farm Bureau believed that the objective should be modified "to the extent that a slight adverse affect would not prevent the use of pesticides when the benefits of such use outweigh the detriments." However,

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[160] Appendix B, Table B-1 at page B-6; Major Issues in Basin Plan Adoption, at page 34.
[161] Appendix B, Table B-2, at page B-10.
[162] Major Issues in Basin Plan Adoption at page 34.
[163] Major Issues in Basin Plan Adoption at page 34.
[164] Major Issues in Basin Plan Adoption at page 34.
[165] Letter to James A. Robertson, Executive Officer, Central Valley Water Quality Control Board, from Fred Landenberger, Assistant Manager, Land Use & Environment, California Forest Protective Association, July 18, 1975.
[166] Statement of California Farm Bureau Federation to Central Valley Region, California Regional Water Quality Control Board, at Public Hearing on Adoption of Water Quality Control Plans for the Central Valley Region, July 25, 1975.

since the comments were submitted after the staff prepared the response to earlier comments, there is no record to indicate how the Regional Board rationalized that the objective was reasonable and consistent with Porter-Cologne.

Like the other objectives promulgated to ensure statewide uniformity, there is no evidence in the record that the pesticide objective was considered or analyzed in light of section 13241 nor is there an implementation plan as required by section 13242 that determines what actions are necessary to achieve compliance with the pesticide objective. The Implementation Chapter of the 1975 Basin Plan consists primarily of control actions that will or should be undertaken by the Regional Board, the State Water Board and other public agencies. The control actions are identified according to the activity considered to contribute to the water quality problems. The activities identified in the Basin Plan include agriculture, confined animals, municipal, industrial, recreational, mining, natural runoff and urban runoff. None of the control actions identified for the various activities are directly related to the implementation of the pesticide objective. Most of the agricultural objectives are related to drainage issues associated with the accumulation of salts. The sole reference to pesticides within the Implementation Chapter is a statement that says, "[i]n some cases, irrigation return water may also contain small quantities of fertilizers and pesticides."[167]

In addition to the narrative Inland Surface Waters objective, the 1975 Plan included site specific pesticide objectives for Folsom Lake, the American River from Folsom Dam to the Sacramento River, and for Delta waters. The objective for Folsom Lake and the American River was, "[t]he sum of the individual concentrations of pesticides shall not exceed 0.1 µg/l."[168] The Delta site specific objective stated "[t]he total concentration of all pesticides shall not exceed 0.6 µg/l as determined by the summation of individual pesticide concentrations."[169] Appendix B does not include any explanation as to the source for these site specific objectives although all three are contained within the 1971 Interim Plan.[170]

Several decades later the Delta objective of 0.6 ug/l was the subject of much controversy between agricultural and downstream water interests and was at the center of a State Water Board Order adopted in 1987.[171] The State Water Board Order provides some explanation as to the historical basis for the Delta objective. According to the Order, the Delta objective was first adopted in 1967 with minimal evidence as to the technical basis which supported its adoption at that time.[172] Since its adoption in 1967, two years prior to the adoption of Porter-Cologne, the objective had not been reviewed.[173] In other words, when the Regional Board included the site-specific Delta objective in the 1975 Basin

[167] 1975 Basin Plan, at page I-5-10.
[168] 1975 Basin Plan at page I-4-9.
[169] 1975 Basin Plan, Table 4-2, at page I-4-15.
[170] 1971 Interim Plan at page 42.
[171] In re *City of Sacramento*, State Water Resources Control Board, Order No. WQ 87-4, April 16, 1987.
[172] In re *City of Sacramento*, State Water Resources Control Board, Order No. WQ 87-4, April 16, 1987 at page 25.
[173] Id. at page 25.

Plan, they did not review the objective in light of section 13241 and 13242, which were adopted in 1969. The Board also acknowledged in the Order that a "clear plan of implementation for achieving whatever water quality objectives," must be part of the Basin Plan and that the Basin Plan did not meet this requirement for the Delta objective.[174] The State Water Board's Order provides significant evidence as to the Regional Board's failure to adopt objectives according to the law in 1975.

The Regional Board reviewed the history of the site-specific objectives when it recommended the removal of these objectives as part of the 1990 amendment to the pesticide objective. As part of the 1990 amendment process, the Regional Board staff attempted to determine the technical basis for the numbers but were not successful.[175] According to the Functional Equivalent Document (FED), which was also the staff report for the agenda item, the site specific objectives were adopted in 1967 and retained in the 1975 Basin Plan under the rule that "[p]reviously adopted objectives were retained unless superseded by more recently adopted objectives or contained by conclusive technical information."[176] The FED pointed out that the Board recognized the questionable validity of this and other objectives in the 1975 plan and therefore included a qualifying statement in the Basin Plan, which was also used by the Regional Board to rationalize the chemical objective and to provide flexibility.

> In some instances water quality objectives were formulated to preserve historic conditions, but the data base is not sufficiently complete to determine the temporal and hydrologic variability that is an inherent aspect of the historic water quality. When violations of such objectives occur, the Regional Board will use judgment to determine if the objectives could reasonably be achieved through the coordinated control of all factors affecting water quality in the area.[177]

Although the inclusion of this language in the Basin Plan did not cure the Regional Board's requirement to consider section 13241 upfront when establishing objectives, it may have been an appropriate solution considering the lack of information available in 1975. However, as discussed further in Chapter V, subsequent Basin Plan records and the Regional Board's actions fail to show that the Regional Board proceeded as originally planned. Furthermore, the State Water Board's findings with regards to the Delta objective and the information contained in the Regional Board's 1990 staff report for the pesticide objective amendment provide further evidence of the Regional Board's failure to properly establish water quality objectives in the 1975 Basin Plan.

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[174] Id. at page 26.
[175] Draft Functional Equivalent Document, Amendment of the Water Quality Control Plan Report for Sacramento River Basin, Sacramento-San Joaquin Delta Basin, and San Joaquin Basin, California Regional Water Quality Control Board, Central Valley Region, December 11, 1989, at page 20.
[176] Draft FED at page 21; 1975 Basin Plan at page I-4-1.
[177] Draft FED at page 21; 1975 Basin Plan at page I-4-4.

F. Temperature Objective

Objective: The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Board that such alteration in temperature does not adversely affect beneficial uses.

Temperature objectives for COLD interstate waters, WARM interstate waters, and Enclosed Bays and Estuaries are as specified in the "Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays of California including any revisions thereto. A copy of this plan is included verbatim in the "Special Appendix, Plans and Policies."

At no time or place shall the temperature of any COLD intrastate water be increased more than 5°F above natural receiving water temperature.

At no time or place shall the temperature of WARM intrastate waters be increased more than 5° above natural receiving water temperature.[178]

As with some of the other general water quality objectives, Appendix B identifies the first part of the temperature objective as maintaining the intent of the existing objective while revising the language to reflect statewide uniformity.[179] The objective contained in the 1971 Interim Basin Plan is similar but distinguishable from the 1975 Basin Plan temperature objective.[180] Regardless, since the 1971 Interim Plan was not adopted in accordance with the provisions of Porter-Cologne, the Regional Board could not utilize existing objectives without going through an analysis pursuant to section 13241.

Appendix B does not provide a rationale for the second part of the objective that applies to WARM intrastate waters. The tentative guidelines, however, recommend that warm-water streams not have a temperature increase of more than 5°F over natural receiving water temperatures.[181] This guideline recommendation apparently comes from the California Department of Fish and Game recommendations for interstate waters of California, not intrastate waters.[182] There is no evidence in the record that either part of the objective was subject to a section 13241 analysis when established.

With regards to the temperature objective, the Regional Board received one comment from Sacramento County regarding the need to recognize the state's Thermal Plan as the applicable objective for the Sacramento River in the Delta. In the staff response to comments, the Regional Board clarifies that the Thermal Plan is the applicable objective for the Delta. The Regional Board further clarifies that the 5°F limitation is not meant to apply as an absolute differential between natural receiving water temperature and effluent

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[178] 1975 Basin Plan, Table 4-1, at page I-4-9.
[179] 1975 Basin Plan, Appendix B, Table B-1, at page B-8.
[180] 1971 Interim Basin Plan, at page 43; "Waters shall be maintained free from adverse temperature changes resulting from waste discharges or other activities of man."
[181] Tentative Guidelines for Evaluating the Quality of Water in Various Fresh-Water Habitats, at page 2.
[182] Tentative Guidelines for Evaluating the Quality of Water in Various Fresh-Water Habitats, at page 6.

temperature.[183] To address this issue, the staff response recognizes that mixing zones should be allowed in some instances and that language needed to be added to the Basin Plan regarding mixing zones.[184] Consequently, the Basin Plan includes the following paragraph, which is applicable to all objectives.

> The objectives are intended to govern the levels of constituents and characteristics in the main water mass unless otherwise designated, and therefore do not apply at or in the immediate vicinity of effluent discharges. Where appropriate, zones of dilution or criteria for diffusion or dispersion will be defined in waste discharge requirements.[185]

Finally, there is no implementation plan related to achieving the temperature objective. Consequently, the adoption of the objective failed to meet the requirements of sections 13241 and 13242.

G. Toxicity Objective

Objective: All waters shall be maintained free of toxic substances in concentrations that are toxic to or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration or other appropriate methods as specified by the Regional Board.

The survival of aquatic life in surface waters subjected to a waste discharge or other controllable water quality factors, shall not be less than that for the same water body in areas unaffected by the waste discharge, or, when necessary, for other control water that is consistent with the requirements for "experimental water" as described in Standard Methods for the Examination of Water and Wastewater, latest edition. As a minimum, compliance with this objective as stated in the previous sentence shall be evaluated with a 96-hour bioassay.

In addition, effluent limits based upon acute bioassays of effluents will be prescribed where appropriate; additional numerical receiving water objectives for specific toxicants will be established as sufficient data become available; and source control of toxic substances will be encouraged.[186]

Appendix B provides the reason for adoption as "[t]he new objective is equivalent to the existing objective in intent. Wording of the existing narrative objective was changed to achieve statewide uniformity."[187] Regardless of the language of the toxicity objective language in the 1971 Interim Basin Plan, the Regional Board was still required to conduct

[183] Major Issues in Basin Plan Adoption at page 12.
[184] Major Issues in Basin Plan Adoption at page 12.
[185] 1975 Basin Plan, at page I-4-4.
[186] 1975 Basin Plan, at page I-4-10 and I-4-11.
[187] Appendix B, Table B-1, at B-8.

the analysis required under section 13241 and to develop an implementation plan for achievement of the toxicity objective. The Sacramento Regional County Sanitation District Agency questioned the use of such a general, broad, nonspecific objective but the Regional Board defended the objective as being prescribed by the State Water Board and as meeting federal EPA approval.[188] In addition, the Regional Board highlighted the provision of the objective which indicated that additional numeric objectives will be established as sufficient data become available.[189]

A memorandum from the State Water Board to the Regional Board confirms the claim that the narrative language was prescribed by the State Water Board and approved by EPA.[190] In the memorandum, the State Water Board states, "[t]his objective has been agreed to by EPA staff and should be included in the Basin Plans for all waters except those subject to the provision of the Ocean Plan:."[191] The language prescribed in the memorandum is identical to the language contained in the 1975 Basin Plan.

While the State Water Board prescribed the language, the memorandum also contained a caveat to indicate that these were not State Water Board approved objectives. "These objectives have not been approved by the State Water Board and should be considered supplementary to any other numerical limits on individual substances, or any more specific bioassay requirements for receiving waters or discharges you may wish to adopt in your Basin Plans."[192] In other words, the State Water Board had not adopted the objectives in compliance with the provisions of Porter-Cologne. As a result, the Regional Boards still had to comply with the provisions of Porter-Cologne when adopting the State Water Board mandated language. The record provides no evidence that the required elements of Porter-Cologne were considered when the narrative toxicity objective was adopted.

The State Water Board memorandum further conceded that full review of the water quality objectives had to be conducted at least once every three years and that it was expected that the "objectives relative to toxicity will receive careful reevaluation, and the continued appropriateness of the above recommendations will be considered during this review."[193] Rather than a State Water Board approved objective, the toxicity objective language was a recommendation that would be further reviewed during subsequent triennial review processes.

As with the other objectives, there was no implementation plan pursuant to section 13242 prepared for achieving the toxicity objective. The establishment and implementation of the toxicity objective therefore failed to comply with the provisions of Porter-Cologne.

[188] Major Issues in Basin Plan Adoption at page 7.
[189] Major Issues in Basin Plan Adoption at page 7.
[190] Memorandum to Regional Board Executive Officers, from Bill Dendy, Executive Officer, State Water Resources Control Board, July 12, 1974.
[191] Id. at page 1.
[192] Id. at page 2.
[193] Id. at page 2.

H. Turbidity Objective

Objective: Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses.

Increases in turbidity attributable to controllable water quality factors shall not exceed the following limits: Where natural turbidity is between 0 and 50 Jackson Turbidity Units (JTU), increases shall not exceed 20 percent; where natural turbidity is between 50 and 100 JTU, increases shall not exceed 10 JTU; and where natural turbidity is greater than 100 JTU, increases shall not exceed 10 percent.

Exceptions to the above limits will be considered when a dredging operation can cause an increase in turbidity. In this case, an allowable zone of dilution within which turbidity in excess of limits can be tolerated will be defined for the operation and prescribed in a discharge permit.

The turbidity objective in the 1975 Basin Plan is significantly different than what was contained in the 1971 Interim Basin Plan. According to Appendix B, the existing objective was "[n]o significant increase beyond natural background levels."[194] The new objective contained numeric limits to better define what was meant by a "significant increase."[195]

The numeric limits in paragraph two correspond to the tentative guidelines in management memorandum #20 for fresh-water habitats.[196] As discussed earlier, the tentative guidelines were not supposed to be used for arbitrarily selecting particular water quality objectives. In fact, the March 21, 1973 memorandum specifically advised the Basin Contractors and the Regional Boards to the contrary. However, the 1975 Basin Plan record does not contain any records that would provide evidence of the Regional Board's consideration of section 13241. Nor does the implementation plan in Chapter 5 include an implementation program that meets the specifics of section 13242 for obtaining the turbidity objective.

I. Groundwater Objectives

Objectives: The following objectives apply to all groundwater basins. As part of the state's continuing planning process, data will be collected and numerical water quality objectives will be developed for those mineral constituents where sufficient information is presently not available for the establishment of such objectives.

Bacteria: Ground waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. In ground waters used for domestic or

[194] 1975 Basin Plan, Appendix B, Table B-1, at page B-8.
[195] Id.
[196] Tentative Guidelines for Evaluating the Quality of Water in Various Fresh-Water Habitats at page 2.

municipal supply (MUN) the most probable number of coliform organisms over any seven-day period shall be less than 2.2/100 ml.

Chemical Constituents: Ground waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the limits specified in California Administrative Code, Title 17, Chapter 5, Subchapter 1, Group 1, Article 4, Section 7019, Tables 2, 3, and 4. Ground waters designated for use as agricultural supply (AGR) shall not contain concentrations of chemical constituents in amounts that adversely affect such beneficial use.

Radioactivity: Ground waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of radionuclides in excess of the limits specified in California Administrative Code, Title 17, Chapter 5, Subchapter 1, Group 1, Article 4, Section 7019, Table 5.

Tastes and Odors: Ground waters shall not contain taste or odor producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

Prior to the 1975 Basin Plan, there were no groundwater objectives.[197] Water quality objectives contained in the Basin Plan for groundwater are subject to the same state legal requirements as those for surface waters -- except that federal EPA approval is not required. The federal Clean Water Act does not apply to the state's groundwater resources. Consequently, the Regional Board was required to consider the factors contained in section 13241 and was required to establish a program of implementation pursuant to section 13242. In addition, the State Water Board advised the Basin Contractors and the Regional Board that the planning strategy outlined in management memorandum #20 applied to both surface and ground waters.[198] The planning strategy consisted of establishing the beneficial uses, establishing the water quality objectives, classifying stream segments as effluent limited or water quality limited, and developing a recommended management and facilities plan.[199]

Yolo County commented that the "specific objectives should be set for chemical constituents in ground waters designated for agricultural use."[200] In response to Yolo County's comment, the Regional Board staff stated that adequate data was necessary to characterize existing water quality but that such data was sparse for groundwater.[201] To address the issue regarding lack of data, the Regional Board referenced the continuing planning process and the subsequent collection of data to develop numeric water quality objectives "for those mineral constituents where sufficient information is presently not

[197] 1975 Basin Plan, Chapter 3, at page I-3-1, in its discussion regarding historical water quality objectives, the Basin Plan states, "[n]o objectives have been adopted for ground waters in the study area;" and Appendix B, at page B-1.
[198] Management Memorandum No. 20, at page 3.
[199] Id.
[200] Memorandum to California Regional Water Quality Control Board, from Yolo County Board of Supervisors, June 26, 1975 at page 3.
[201] Major Issues at page 40.

available for the establishment of objectives."[202] In other words, the Regional Board recognized that there was a significant void in necessary information to properly establish water quality objectives for groundwater. Yet, the Regional Board proceeded to adopt the objectives.

The record does not contain evidence of consideration of section 13241 factors or the inclusion of an implementation plan required under section 13242 for achieving the groundwater water quality objectives for the identified groundwater basins.

J. Mixing Zone Policy

Policy: The objectives are intended to govern the levels of constituents and characteristics in the main water mass unless otherwise designated, and therefore do not apply at or in the immediate vicinity of effluent discharges. Where appropriate, zones of dilution or criteria for diffusion or dispersion will be defined in waste discharge requirements.

The subject of a mixing zone policy first appeared in response to concerns raised by Sacramento Regional County Sanitation District with regard to the proposed temperature objective.[203] Sacramento pointed out that discharge from the proposed regional system and the discharge from the proposed bypass control system could not meet the temperature objective if it was the applicable objective without a mixing zone applied at the point of discharge.[204] In response to Sacramento's concern, the Regional Board clarified that the temperature objective in the Basin Plan did not apply to Sacramento's discharge and that the Thermal Plan contained the applicable objective. However, regardless of the objective's application to Sacramento's discharge, the staff recognized a need for a mixing zone based on Sacramento's comments and therefore recommended and the Board adopted the above language into the Basin Plan. This language is commonly referred to as the "mixing zone" policy.

The terms "main water mass" and "zones of dilution" were clarified through letters exchanged between federal EPA and the Regional Board during the federal EPA review and approval process. In its partial approval letter, federal EPA provided its interpretation of the term "main water mass" and the term "zone of dilution."[205] For "main water mass," federal EPA understood that all waters of Basins 5A, 5B and 5C were part of the main water mass except for those areas designated as zones of dilution as part of an effluent limitation in any NPDES permit.[206] In its required response to federal EPA, the state explained that "main water mass" meant to exclude "not only zones of dilution as defined in individual NPDES permits, but also near-shore and backwater areas where stagnant

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[202] Major Issues at page 40.
[203] Statement of Sacramento County and Sacramento Regional County Sanitation District, at page 12.
[204] Id.
[205] Letter to Edmund G. Brown, Jr. from Paul De Falco, Jr., Regional Administrator, U.S. EPA, Region IX, December 30, 1975, Enclosure 2.
[206] Id.

flow and evaporative conditions cause concentrations of various substances in excess of water quality objectives for the main stream."[207]

Both federal EPA and the state agreed that "zone of dilution" was to be determined "hydrodynamically in terms of the initial dilution zone as defined in Footnote 7 of the California Ocean Plan and Footnote 4 of the Bays and Estuaries Policy or on the bases of an alternate method approved by the State Water Board and the Administrator of EPA."[208] In its final approval of the Central Valley Plan, the federal EPA again confirmed its understanding and interpretations of the Basin Plan. In that document, federal EPA reconfirmed the definition of zone of dilution and added the understanding that "discharges which cause water quality standards violations outside of zones of dilution will not be permitted."[209]

Federal EPA's final approval and reconfirmation appear to obliterate the state's exclusion of near-shore and backwater areas from the meaning of main water mass, unless part of the zone of dilution. However, since federal EPA did not directly reject the state's interpretation in its final approval letter, one could argue that they accepted the state's understanding of the term "main water mass."

K. Tributary Rule Statement

Policy: Those streams not listed have the same beneficial uses as the streams, lakes, or reservoirs to which they are tributary.

The above statement is commonly referred to as the tributary rule. In reality, the statement appears as a footnote to Table 2-1, which presents the beneficial uses for surface water bodies in the 1975 Basin Plan.[210] Unlike the mixing zone policy, the record provides no explanation as to the origin or reasoning of the tributary rule footnote to the table of beneficial uses. In fact, management memorandum #20 and the process for development of beneficial uses contrarily indicate that beneficial use designations need to be made for specified segments or water bodies, not for whole watersheds through a footnote of general applicability.

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[207] Letter to Paul De Falco, Jr., Regional Administrator, Region IX, Environmental Protection Agency, from W.W. Adams, Chairman, State Water Resources Control Board, February 4, 1976, .

[208] Letter to Edmund G. Brown, Jr., from Paul De Falco, Administrator, Region IX, EPA, enclosure 2; and, Letter to Paul De Falco, Jr. Regional Administrator, Region IX from W.W. Adams, Chairman, State Water Resources Control Board, February 4, 1976, which responds to Region IX's interpretation with, "[i]t is so agreed." The Footnotes of the Bays and Estuaries Plan and the Ocean Plan define the initial dilution zone as "the volume of water near the point of discharge within which the waste immediately mixes with the bay or estuarine water due to the momentum of the waste discharge and the difference in density between the waste and receiving water." 1975 Basin Plan, Special Appendices, Plans and Policies, pages SA-30 and SA-47.

[209] Letter to Edmund G. Brown, Jr., Governor, State of California, from Paul De Falco, Jr., Administrator, Region IX, U.S. EPA, June 2, 1976.

[210] 1975 Basin Plan, footnote 1, at page I-2-3.

The Regional Board's 1975 records do not contain any mention of footnote 1 on the beneficial use table. It was not part of the 1971 Interim Basin Plan and there are no public comments regarding the footnote. An explanation for the footnote is provided by the Regional Board in a 1994 staff report when the Regional Board proposed to delete the footnote.[211] According to this report, the Regional Water Board knew that the designation of beneficial uses was incomplete since there were designated uses for only 96 water bodies out of an estimated 10,000.[212] "The Regional Board envisioned that, in the ensuing years, there would be a continuing planning process in which tributaries of the major water bodies would be investigated in some priority fashion, and the beneficial uses of these tributaries would be identified and designated in periodic amendments to the Basin Plan."[213] In other words, the tributary footnote was intended to act as a stop gap measure until more factual information was available.[214]

The tributary rule raises another issue with regard to the designation of beneficial uses. The Basin Plan states that "[t]he determination of existing and <u>potential</u> beneficial uses was made as follows: Surface and ground waters in the study area were divided into segments or "water bodies."[215] (emphasis added) As such, the Basin Plan designates "potential" beneficial uses for the waters designated, and presumably for waters designated through application of the tributary footnote. No further explanation or clarification is given regarding the need to designate "potential" uses. Management memorandum #20 refers to the selection of beneficial uses for "a segment or body of water" as the first step in the planning process.[216] It does not reference or incorporate the selection of "potential" beneficial uses.

Porter-Cologne and the Clean Water Act do not reference or require the designation of "potential" beneficial uses. The only reference to non-existing uses is found in section 13241 of Porter-Cologne, which requires a Regional Board to consider past, present and **probable** future beneficial uses when establishing water quality objectives. As pointed out in Chapter III, the term "probable future" is far less speculative then the term "potential."

The protection of "potential" uses for undesignated water bodies through the tributary statement magnifies the problem of designating upstream water bodies through footnote 1. For example, a literal interpretation of footnote 1 would apply the potential cold water habitat for the Colusa Basin Drain to all of the man-made irrigation canals that discharge into the Colusa Basin Drain, regardless of a canal's ability to support such habitat.[217] In other words, the designation of "potential" uses combined with the tributary footnote

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[211] Staff Report for Amendment of the Water Quality Control Plan for Sacramento River Basin, Sacramento-San Joaquin Delta Basin and the San Joaquin River Basin, 9 December 1994, at page 17; Administrative Record for the 1994 Basin Plan Revision, page 00531.
[212] Id.
[213] Id.
[214] Id.
[215] 1975 Basin Plan, at page I-2-1.
[216] Management Memorandum No. 20, at page 3.
[217] 1975 Basin Plan, at Figure 2.1.

could apply downstream water quality objectives to non-existing, unsupportable and unattainable uses.

Chapter IV. Basin Plan Reviews and Amendments after 1975

Since adoption of the 1975 Basin Plan, there have been a number of structural revisions as well as amendments to specified objectives. A chronology of the Basin Plan amendments are outlined in Appendix A. A review of the Triennial Review process as well as most of the major Basin Plan amendments is provided below.

A. 1984 Triennial Review

After development of the 1975 Basin Plan, the Regional Board did not review the Basin Plan again until the 1984 Triennial Review.[218] In response to the Regional Board's request, detailed comments were submitted from (Sacramento Regional County Sanitation District). As part of its comments, Sacramento Regional County Sanitation District continually stressed that the development of water quality objectives depended on results of assessing attainability and economic factors.[219]

The records for the 1984 Triennial Basin Plan Review indicate that this review was initiated by a memorandum to the Regional Boards from the State Water Board.[220] According to the State Water Board's memorandum, the triennial review was initiated to comply with the Municipal Wastewater Treatment Construction Grant Amendments of 1981 to the Clean Water Act, which required the review and revision, if necessary, of water quality standards for all receiving waters affected by municipal dischargers that expect to receive a grant.[221] In response to the State Water Board's memorandum, the Regional Board issued a Notice of Solicitation of Public Comments for review of the Basin Plan on February 10, 1984.[222] Limited public comments were received in response to the Notice of Solicitation.[223]

The Regional Board concluded the triennial review process with adoption of a resolution that included an attachment of basin planning issues.[224] Through this process, the Regional Board identified eight issues related to water quality objectives. The first issue was water quality objectives for cadmium, copper, zinc and temperature in the

[218] The Regional Board requested suggestions for a basin plan review in January of 1982. Letter to James Robertson, Executive Officer, Central Valley Regional Board, from William S. Hyde, Chief, Water Quality Division, Sacramento County, Department of Public Works, Sacramento Regional County Sanitation District Comments to the Central Valley Regional Water Quality Control Board on Review of the Sacramento River Basin Plan. There are no other records in the Administrative Record to indicate earlier reviews by the Regional Board.
[219] Letter to James Robertson at page 20.
[220] Memorandum to Regional Board Executive Officers, from Walter G. Pettit, Chief, Division of Technical Services, State Water Resources Control Board, August 11, 1982.
[221] Id. at page 1.
[222] Notice of Solicitation of Public Comments, by Jerrold A. Bruns, Chief, Planning Section, Central Valley Regional Water Quality Control Board, 10 February 1984.
[223] The Administrative Record contained comments from two individuals, one oil company and the U.S. Department of the Interior.
[224] Resolution No. 84-046, Triennial Review Affirmation of Water Quality Control Plans, Central Valley Basin, California Regional Water Quality Control Board, Central Valley Region, 23 March 1984.

Sacramento River.[225] It appears from the basin planning records that the Regional Board was in the process of developing an amendment to the Basin Plan to address cadmium, copper and zinc while conducting the triennial review process.

The federal EPA approved the Regional Board's affirmation of the Central Valley Plan in correspondence dated September 20, 1984. EPA's approval was with the understanding that, "in order to satisfy section 131.11(a) of the Water Quality Standards Regulations adopted November 8, 1983, the Central Valley Regional Board will 'review water quality data and information on discharges to identify specific water bodies where toxic pollutants may be adversely affecting water quality or the attainment of designated beneficial uses.' Such a review should be incorporated through the continuing planning process, as part of the next triennial review of Central Valley Region water quality standards."[226]

Consequently, the 1984 triennial review did not result in any amendments to the Basin Plan.

B. 1987 Triennial Review

On September 4, 1987, the Central Valley Board issued a Notice of Public Hearing for the 1987 Triennial Review of the Central Valley Basin Plan. The Public Hearing was scheduled for October 23, 1987. Limited public comments were received in response to the Notice of Public Hearing. In response to the comments received and staff knowledge, the Regional Board prepared an *Issue List and Workplan* for the Basin Plan.[227] The Regional Board identified 11 issues that were considered major water quality concerns. The number one issue identified was agricultural drainage discharges in the San Joaquin River Basin.[228] The Regional Board adopted the 1987 Triennial Review and reaffirmed the adequacy of the existing water quality standards on January 29, 1988. According to the resolution of adoption and a Regional Board chronology, the 1987 triennial review process did not result in any Basin Plan amendments.

C. 1989 Revised Basin Plan (Adopted by SWRCB March 22, 1990)

The Regional Board decided to update and revise the Basin Plan in 1988. To start this process, the Regional Board distributed a draft Basin Plan for informal comment on August 15, 1988.[229] A formal notice of public review was subsequently issued on November 23, 1988.[230] The purpose of the revision was to update the Basin Plan with the

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[225] Id. at Attachment to Resolution No. 84-046, Basin Planning Issue List, 2.a.
[226] Letter to Carole Onorato, Chairwoman, State Water Resources Control Board, from Judith E. Ayres, Regional Administrator, U.S. Environmental Protection Agency, Region IX, September 20, 1984.
[227] *Issue List and Workplan*, 1987 Triennial Review Administrative Record, at page 1.
[228] Id. at 2.
[229] *Public Notice of Review Period for Proposed New Basin Plan Edition*, California Regional Water Quality Control Board – Central Valley Region, November 23, 1988.
[230] Id.

approved amendments adopted after publication of the 1975 Basin Plan and to revise the plan, "solely to address problems associated with the current Plan's structure and utility, and to prepare for future revisions to water quality standards."[231] "No new water quality objectives or beneficial uses are being considered as part of this amendment exercise."[232] In fact, a November 23, 1988 notice to Basin Plan Reviewers summarizes the text changes to the water quality objectives chapter as follows:

> No changes to this section except that Nephelometric Turbidity Units (NTUs) have been substituted for Jackson Turbidity Units (JTUs) for the turbidity water quality objectives (WQOs). This change in units does not affect the application of the limits since JTUs and NTUs are essentially equivalent.
>
> The Chemical Constituents WQO has been expanded to incorporate the Region's 1985 revisions for levels of copper, zinc, and cadmium in the Sacramento River above the State Highway 32 bridge at Hamilton City.[233]

According to the Regional Board staff report that was provided to the Central Valley Board members for the March 31, 1989 hearing, the only significant change subsequent to circulation of the November 1988 draft was the inclusion of a note that was to accompany the Delta pesticide objective. Other identified late revisions included clarifications to the federal antidegradation requirements, the addition and clarification of several memoranda, the correction of citations and the addition of nutrients to the designation of Clear Lake as a water quality limited segment.

Limited public comments were received on the proposed rewrite and revisions to the 1989 Basin Plan. The most significant comments addressed the issue of the note to the Delta site specific objective. The Regional Board adopted the revisions at the March 31, 1989 hearing.[234] A year later the State Water Board considered and adopted the Regional Board's revisions to the 1989 Basin Plan with some minor stipulations.[235]

In its rewrite of water quality objectives as part of the 1989 revisions, the Regional Board made some changes that could be classified as substantive and therefore required compliance with Porter-Cologne. The two most significant examples of these substantive changes were to the pesticide objective and the toxicity objective. In both cases, the Regional Board added language that allowed it to refer to criteria developed by other entities. Although the reference was amended out of the Basin Plan for pesticides as part of the 1990 pesticide objective amendment process, the language still remains as part of the toxicity objective in the current edition of the Basin Plan. The record provides no explanation as to why such language was added in 1989 to the objectives in question.

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[231] Id.
[232] Id.
[233] Memorandum to Basin Plan Reviewers, from Jerrold A. Bruns, Chief, Standards, Policies, and Special Studies Unit, Public Notice of Review Period for Proposed New Basin Plan Edition, 23 November 1988.
[234] Resolution No. 89-056, Central Valley Regional Water Quality Control Board, March 31, 1989.
[235] Resolution No. 90-28, State Water Resources Control Board, March 22, 1990.

D. 1994 Major Basin Plan Revisions

At a workshop in November of 1993, the Regional Board received public input and comments regarding potential changes to the Central Valley Basin Plan.[236] The purpose of the proposed revisions was "to update the Basin Plan and to revise the format to make the Basin Plan more useful."[237] As part of the 1994 revision process, the Regional Board amended the tributary rule policy, a number of water quality objectives and portions of the implementation plan.[238] In the "Background" section of the staff report, the Regional Board acknowledges Porter-Cologne sections 13000, 13241 and 13242.[239] The staff report claims that the Regional Board considered the first four factors required under section 13241 and that the amendments would not impact the ability to develop housing in the region or develop and use recycled water.[240]

Included in the staff report is an analysis of 16 substantive changes to the Basin Plan. This staff analysis "presents the present policy, a description of the issue, a description of alternatives considered, a staff recommendation, and analyses of attainability, economics, and environmental impacts (where applicable).[241] Of the 16 identified substantive changes, 5 are changes to the water quality objectives, 1 changes the tributary rule and 1 adds policy regarding the application of water quality objectives. The changes to the specific water quality objectives and the tributary rule are discussed in more detail below.

The policy regarding the "Application of Water Quality Objectives" was added to the implementation plan portion of the Basin Plan. According to the staff report, "the water quality objectives lack clarity and comprehensiveness."[242] As such, the Regional Board decided that a policy was necessary to identify how water quality objectives are implemented and applied.[243] The Regional Board did note that there are costs associated with the requirements of this policy but did not expand on the potential impact of such costs.[244] The policy does not include a description of control actions, a time schedule or a program for surveillance. As a result, the policy does not qualify as a §13242 implementation plan for water quality objectives in general.

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[236] Staff Report, Amendment of the Water Quality Control Plan for Sacramento River Basin, Sacramento-San Joaquin Delta Basin, and the San Joaquin River Basin, 9 December 1994, at page 1; 1994 Administrative Record at page 00515.
[237] Id.
[238] Id. at pages 3 through 12; 1994 Administrative Record pages 00517 through 00526.
[239] Id. at page 2; 1994 Administrative Record at page 00516.
[240] Id.
[241] Id. at page 13: 1994 Administrative Record at page 00527.
[242] Id. at page 44; 1994 Administrative Record at page 00558.
[243] Id. at page 46; 1994 Administrative Record at page 00550 (the record page number appears to be mis-stamped since it repeats a previously stamped page.
[244] Id. at page 49; 1994 Administrative Record at page 00553 (the record page number appears to be mis-stamped since it repeats a previously stamped page.

Chapter V. Amendments to Objectives after 1975

In addition to amendments that have occurred as part of the triennial review process or a Basin Plan revision process, the Regional Board has amended some of the specific objectives. Some of the objective amendments were part of the triennial review process, some occurred as a separate amendment process and some changes happened during a revision process and were classified as editorial changes with little or no explanation. Major changes to the objectives between 1975 and 1994 are discussed below. Since the 1994 triennial review and rewrite, there have been several proposed amendments and changes to the Basin Plan. However, the 1994 Basin Plan, as reprinted in 1998, is the most current version that controls the Regional Board's regulatory functions.

A. Copper, Zinc and Cadmium Objectives for the Upper Sacramento River

Site specific objectives for copper, zinc and cadmium were adopted by the state for the Sacramento River in 1984 and approved by federal EPA in 1985.[245] According to the records obtained from the Regional Board, this is the first significant Basin Plan amendment relative to water quality objectives that occurred after adoption of the 1975 Basin Plan. As the first significant amendment, it becomes an example of the process and considerations undertaken by the Regional Board when adopting water quality objectives pursuant to state and federal law. The process used for this amendment provides further evidence that the Regional Board did not take into consideration the section 13241 factors and section 13242 implementation plan requirements when adopting water quality objectives.

Neither the staff report, the Central Valley Board's resolution of adoption, or the State Water Board's resolution of adoption include any mention of Porter-Cologne and the requirements associated with adoption of water quality objectives.[246] While the objectives in question are considered site-specific objectives since they apply to a defined water segment, the requirements relative to water quality objectives under Porter-Cologne still apply. In other words, the revision of the copper and zinc objectives and the addition of the cadmium objectives still needed to comply with all applicable provisions of Porter-Cologne, including sections 13241 and 13242.

[245] The State Water Resources Control Board adopted the objectives via Resolution No. 84-44 on August 16, 1984; The Regional Board for the Central Valley Region adopted the objectives via Resolution No. 840054 on April 27, 1984; and the EPA approved the objectives vial letter to Raymond V. Stone, Chairman of the State Water Resources Control Board, from Judith Ayers, Regional Administrator, U.S. EPA, Region IX on August 7, 1985.

[246] Staff Report, Water quality Objectives for Copper (CU), Zinc (ZN), and Cadmium (CD) in the Upper Sacramento River Basin; Resolution No. 84-054, Amending the Water Quality Control Plan for Water Quality Objectives for Copper (CU), Zinc (ZN) and Cadmium (CD) in the Upper Sacramento River Basin, California Regional Water Quality Control Board, Central Valley Region, April 27, 1984; State Water Resources Control Board, Resolution No. 84-55, Consideration of an Amendment of the Comprehensive Water Quality Control Plan for the Sacramento River (5A) Basin to Revise the Existing Water Quality Objectives for Copper and Zinc, and to add a New Objective for Cadmium in the Sacramento River Upstream of Hamilton City.

The information, or lack thereof, contained in the record shows that the section 13241 factors were not considered. In addition, the record also raises questions whether the objectives would provide reasonable protection of beneficial uses. Only the first requirement in §13241 regarding past, present and probable future beneficial uses of water was considered by the Regional Board. The objective was proposed to protect the primary spawning areas for salmon and steelhead trout. Other than discussing the levels of copper, zinc and cadmium in the Upper Sacramento River, the record contains no information on the environmental characteristics of the Upper Sacramento River. In addition, the Regional Board focuses control activities on the Superfund Cleanup of Iron Mountain Mine. There is absolutely no mention of economic considerations.

In addition, statements in the record, comments from the Bureau of Reclamation and a contemporaneous news article question if the water quality objectives are achievable. This information provides evidence that the water quality objectives were unreasonable at the time that they were established and that the Regional Board knew they could not be achieved. For example, the staff report contains only one comment with regard to achievability. The report says "[i]t appears prudent at this time to establish water quality objectives that will guide the Superfund Study and that, if achieved, will protect all beneficial uses of the Upper Sacramento River."[247] In a statement to the Regional Board, the U.S. Bureau of Reclamation remarked that the proposed new objectives "cannot be met under current conditions."[248] The Bureau further provided that "under conditions similar to those experienced in the winter of 1977-78, additional releases of over 8 million acre-feet —about twice the volume of Shasta Lake — would have been required to meet the proposed objectives."[249] The Bureau concluded that the proposed objectives could not be met without the construction of new water management facilities or the implementation of source control measures. To evaluate the potential of source control, a study was being conducted. According to the Bureau, the results of the study might indicate if and to what extent the revised objectives might be met.[250] In other words, the Regional Board was advised and aware of a study being conducted that might provide useful information on the achievability and reasonableness of the proposed objectives. However, the record indicates that the Regional Board chose to adopt the objectives without regard to the question of feasibility.

An article published the day after the hearing provides some insight into the thinking of the Regional Board and Regional Board staff with regards to the adoption of water quality objectives and what those objectives were intended to represent. It appears from quotes in the article that the Regional Board staff did not consider water quality

[247] Staff Report, Water Quality Objectives for Copper (CU), Zinc (ZN) and Cadmium (CD) in the Upper Sacramento River Basin.
[248] Statement of the Bureau of Reclamation at the April 27, 1984, Public Hearing Regarding the California Regional Water Quality Control Board, Central Valley Region's Proposal to Revise Water Quality Objectives for Copper, Zinc, and Cadmium in the Upper Sacramento River Basin (Upstream of Hamilton City).
[249] Id. at page 2.
[250] Id. at page 2.

objectives as regulatory restrictions, but water quality goals.[251] Furthermore, Regional Board staff indicated that "the purpose of the numbers is to set a goal for ideal conditions in the river."[252] A supervising engineer is quoted as acknowledging that "the board may have a difficult time ever meeting the new goals."[253] Notwithstanding the requirements of Porter-Cologne, the Regional Board staff encouraged Board adoption of the objectives even though there were serious questions about the ability to ever achieve the objective.

Moreover, the Basin Plan amendment did not include an implementation plan for the revised objectives and the new objective. The primary purpose for adoption was apparently to try and influence federal EPA's Superfund Cleanup decisions. The amendment did not include a description of the nature of actions necessary to achieve the objectives, there was no time schedule and there was no description of surveillance to determine compliance with the objectives.

B. Pesticide Objective

The text of the pesticide objective has changed several times since the adoption and publication of the 1975 Basin Plan. Some of the textual changes can be accounted for through the administrative record - other changes can not. Changes accounted for in the record are the adoption of the note for the Delta pesticide objective, the deletion of the note and the wholesale change of the objective due to the 1990 pesticide amendment.

The first printing of the 1989 Basin Plan includes a note to the Delta pesticide objective. The note was added by staff and adopted by the Board as part of the 1989 Basin Plan review process discussed above. According to the record, the Regional Board added the language to clarify the cumulative pesticide objective for the Delta due to the State Water Board's findings in WQO 87-4 (City of Sacramento).[254] In the Water Quality Order, the State Water Board directed the Regional Board to reconsider the propriety of the objective since it had not been reviewed since its adoption in 1967.[255] Furthermore, the State Water Board ordered the Regional Board to amend the Basin Plan to include a clear program of implementation for the objective(s) that result from the review process of the Delta objective.[256] Lastly, the State Water Board was in the midst of preparing a Pollutant Policy Document for adoption in late 1988. The State Water Board encouraged the Regional Board to use this document in its review and revision of the Basin Plan.[257]

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[251] Regional Board Member Steve Tompkins questioned whether the strict new goals could lead to trouble for the City of Redding. Staff member, Dennis Heiman, responded that there would be no problem "because the numbers are goals, not definite restrictions as listed in existing discharge permits." *Record Searchlight*, Saturday, April 28, 1984, "Water Goals are changed."
[252] "Water Goals are Changed," *Record Searchlight*, April 28, 1984, A-1.
[253] Id. at A-14.
[254] In the Matter of the Petition of the *City of Sacramento* for Review of Failure to Act by the California Regional Water Quality Control Board, Central Valley Region, with Respect to Discharges of Rice Herbicides, Order No. WQ 87-4, April 16, 1987.
[255] Id. at page 17.
[256] Id. at page 18.
[257] Id.

In addition to other issues, the City of Sacramento petition argued that the Regional Board was failing to enforce the 0.6 ppb total pesticide objective contained within the Basin Plan.[258] In response to this argument, the State Water Board found that, "[t]his objective was first adopted by the Regional Board in 1967; there is minimal evidence as to the technical basis which supported its adoption at that time and the objective has not been reviewed over the past 20 years."[259] The State Water Board further stated that "[g]iven this situation, it is imperative that the Regional Board reconsider the propriety of such an objective."[260]

Besides the addition of the note to the Delta pesticide objective, language was added to the second paragraph of the pesticide objective that allowed the Regional Board to consider criteria developed by other entities such as the Department of Food and Agriculture, federal EPA and the National Academy of Sciences. There is no information in the administrative record that documents the rationale for the addition of this language. The record does not indicate that the Regional Board considered the factors enumerated in section 13241 or prepared a program of implementation as required by section 13242 when adding the note to the pesticide objective and when adding the consideration of other criteria.

After the Regional Board adopted the 1989 version and while the State Water Board was considering adoption of the 1989 version, the Regional Board conducted a review of its pesticide control program for surface waters and prepared another Basin Plan amendment.[261] The review of the pesticide program and the subsequent amendment was primarily in response to the State Water Board's findings in WQO 87-4. The 1990 amendment included a change to the pesticide objective and added a section to the implementation plan for pesticide discharges from nonpoint sources. The amendment was adopted by the Regional Board on January 26, 1990 and the State Water Board on February 15, 1990. The second printing of the 1989 Basin Plan included the changes to the pesticide objective and the implementation plan contained in the 1990 Pesticide Objective amendment.

In the Regional Board agenda packet for the 1990 amendment, the staff identifies the draft Functional Equivalent Document (FED) as the staff report for this item.[262] The FED includes a discussion on pesticide use as well as a discussion on some of the major changes to the pesticide objective. While the Regional Board considered the redundancy of the pesticide objective due to beneficial uses also being protected from pesticides under the toxicity objective and the taste and odor objective, the Regional Board

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[258] Id. at page17.
[259] Id. at page17.
[260] Id. at page 17.
[261] Resolution No. 90-028, Amendment of the Water Quality Control Plan for the Sacramento River, Sacramento-San Joaquin Delta and San Joaquin Basins, California Regional Water Quality Control Board, Central Valley Region, January 26, 1990.
[262] Board Packet, Staff Summary, Item 2, Consideration of Amending the Water Quality Control Plans addressing Pesticides in Surface Waters for the Sacramento River, Sacramento-San Joaquin Delta and San Joaquin River Basins.

maintained a separate pesticide objective in order to "allow the Board to focus on a group of chemicals extensively used within the watershed and [to] make it easier for pesticide dischargers to understand their obligations."[263]

The FED provides an explanation for major changes to the pesticide objective and classifies others not explained as being reorganized and/or restated for clearer presentation.[264] The changes identified as major in the FED are (1) Cite analytical methods developed by EPA rather than those prescribed in Standard Methods for the Examination of Water and Wastewater for the evaluation of chlorinate hydrocarbons; (2) Limit thiobencarb concentrations to 1.0 µg/l (microgram per liter or part per billion) in waters used for domestic or municipal supplies; (3) Add an objective that limits pesticide concentrations to those allowable by applicable nondegradation policies; (4) Add an objective that limits pesticide concentrations to the lowest levels technically and economically achievable; (5) Delete the numerical cumulative pesticide objectives for Folsom Lake, the American River (Folsom Dam to Sacramento River) and Delta Waters; and, (6) Expand the definition of "pesticide" to include chemical breakdown products, "inert" ingredients in pesticide formulations, and adjuvants.[265]

The Regional Board recognized that the factors in section 13241 were supposed to be considered when establishing water quality objectives; however, the reasons provided by the Regional Board for the various major changes do not include a consideration of the five required factors.[266] For example, the Regional Board added the objective that limits pesticide concentrations to the lowest levels technically and economically achievable. The FED describes the language as necessary to address pesticides that are relatively nontoxic, even if there is not an adverse impact on beneficial uses because the public may be alarmed at such allowable levels if lower levels can be technically and economically achieved.[267] In other words, the Regional Board adopted a new water quality objective that was not tied to protecting the designated beneficial uses but was designed to address public perception. Section 13241 requires that water quality objectives be established to reasonably protect beneficial uses, not to address public alarm about the discharge of nontoxic chemicals.

Further evidence of the Regional Board's failure to consider section 13241 is found within the FED section for costs. The FED states upfront that "it is not known what steps must be taken, and at what cost, to comply with the objectives."[268] However, the

[263] Draft Functional Equivalent Document, Amendment of the Water Quality Control Plan Report for Sacramento River Basin, Sacramento-San Joaquin Delta Basin and San Joaquin Basin, California Regional Water Quality Control Board, Central Valley Region, December 11, 1989, at page 17.
[264] Id. at page 17.
[265] Id. at pages 17 through 23.
[266] In 1990, Porter-Cologne required the following factors to be considered when establishing water quality objectives: Past, present and probable future beneficial uses; Environmental characteristics of the hydrogeographic unit under consideration, including the quality of water available thereto; water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area; economic considerations; and the need for developing housing within the region.
[267] Id. at page 19.
[268] Id. at page 28.

Regional Board clarifies that the proposed program "should not add an unreasonable economic burden."[269] To address the potential economic burden, the Regional Board suggests extending compliance timetables and minimizing formal regulatory steps.[270] The FED also states that the "implementation program is intended to provide a balance between the need to protect beneficial uses and the need to consider economic impacts."As noted above, section 13241 requires that economic and housing considerations be taken into consideration when establishing the water quality objective, not when a program is being implemented to achieve an objective.

As mentioned previously, the 1990 pesticide amendments included a control section, or implementation program, for pesticide discharges to surface waters from non-point sources. No changes were suggested for discharges from point sources of pollution since the 1989 revisions had updated the point source provisions and since NPDES permits could be used to control discharges from point sources.[271] The implementation plan for pesticide discharges from nonpoint sources is primarily designed to develop and implement management practices that minimize or eliminate the amount of pesticides discharged.[272] Under the plan, the Regional Board will monitor the major water bodies receiving irrigation return flows and when a pesticide is detected more than once in surface waters, investigations will be conducted to identify sources.[273] The Board will notify pesticide dischargers through public notices, educational programs and pesticide regulatory programs of the need to implement management practices that result in full compliance with the objectives by January 1, 1993.

In order to determine the effectiveness of the management practices, the Regional Board planned to conduct reviews on practices associated with one or two pesticides per year.[274] When compliance with the water quality objectives is not obtained within the allowable time frames, the Board will consider alternative control options as outlined in the implementation plan. For five specific rice pesticides, the 1990 amendment contained an immediate prohibition for two pesticides (molinate and thiobencarb) and a prohibition unless following approved management practices for three others (carbofuran, malathion and methyl parathion). Full compliance with all objectives was required by 1995.

While the Regional Board failed to properly comply with section 13241, the implementation plan appears to comply with section 13242.

C. Chemical Constituent Objective

The chemical objective was amended substantially in 1994 as part of the Basin Plan revision process. Besides changing the drinking water contaminant level reference from Title 17 of the California Administrative Code to Title 22 of the California Code of

[269] Id. at page 28.
[270] Id. at page 28.
[271] Id. at page 23.
[272] Resolution of Adoption, 90-028, Attachment 1 at page 2.
[273] Id. at page 2.
[274] Id. at page 3.

Regulations, the amendment added federal maximum contaminant levels (MCLs) and included an additional statement that the Regional Board may apply limits more stringent than MCLs to protect all beneficial uses.

The Regional Board recommended the inclusion of federal MCLs to create consistency with the state Health and Safety Code and the federal Safe Drinking Water Act.[275] The Regional Board's inclusion of federal MCLs into the 1994 Basin Plan was subsequently disapproved by the Office of Administrative Law (OAL) because it was an inappropriate delegation of power by the Regional Board to a federal agency.[276] In its disapproval, the OAL stated that "allowing a Regional Board to incorporate-by-reference future revisions of the Code of Federal Regulations may be an inappropriate delegation of power by the Regional Board to a federal agency."[277] Consequently, the language of the 1994 Basin Plan was amended accordingly before publication and reference to federal MCLs found in 40 CFR parts 141 and 143 were stricken from the Basin Plan.

Before 1994, the Basin Plan allowed the Regional Board to apply the more stringent objective to protect beneficial uses. The 1994 amendment changed the wording to allow the Regional Board to apply more stringent "limits," not just the more stringent objective. In its rationale for the amendment that allows the Regional Board to apply limits more stringent than MCLs, the Regional Board argues that "numerical limits more stringent than MCLs and [secondary maximum contaminant levels] SMCLs are needed to be fully protective of beneficial uses in many situations."[278] As part of the rationale for including other limits, the Regional Board provides an example for the protection of agricultural uses by comparing the MCL/SMCL level for four constituents to recommended goals from a 1985 report published by the United Nations.[279] In that instance, the Regional Board is trying to show that the MCL was not stringent enough to protect the agricultural uses as recommended by the United Nations report and that the recommended goals in the U.N. report are a more stringent limit. However, nothing in the record indicates that the Regional Board formally or officially adopted the recommended goals from the U.N. report as water quality objectives pursuant to Porter-Cologne. Consequently, the language created de facto water quality objectives by allowing the Regional Board to rely on other unidentified limits. Furthermore, the Regional Board characterizes the amendment to establish more stringent limits as it deems necessary as a clarification and therefore attainability is not in question nor are economic consequences anticipated.[280]

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[275] Staff Report, Amendment of the Water Quality Control Plan for Sacramento River Basin, Sacramento-San Joaquin Delta Basin, and the San Joaquin River Basin at page 28; 1994 Administrative Record at page 00542.
[276] OAL file No. 95-0328-01.
[277] Id. at page 12.
[278] Staff Report, Amendment of the Water Quality Control Plan for Sacramento River Basin, Sacramento-San Joaquin Delta Basin, and the San Joaquin River Basin at page 28; 1994 Administrative Record at page 00542.
[279] Id.
[280] Id. at 30; 1994 Administrative Record at page 00544.

In addition to creating de facto objectives outside of Porter-Cologne, the Regional Board rejected the use of MCLs in some instances because "MCLs are derived from health based criteria in conjunction with technologic and economic factors relating to the feasibility of achieving and monitoring these concentrations in drinking water supply systems."[281] The Regional Board dismisses strict adherence to MCLs as inadequate by claiming that "[t]his balancing of health effects with technologic and economic considerations in the derivation of MCLs is not necessarily applicable to the protection of sources of drinking water (a raw surface or ground water resource)." In other words, the Regional Board rejected the state's economic considerations when establishing this water quality objective when it claimed that the economic considerations implicit within MCLs as an unnecessary consideration for the protection of raw surface or ground water resources. The Regional Board's rejection of such implicit information provides evidence of the Regional Board's failure to consider economics when establishing water quality objectives.

The Regional Board does not acknowledge or consider the other applicable section 13241 factors for the amendments to the chemical objective or the new stringent limits it anticipates using through this very broad language. Because of the general nature of the language, the Regional Board does not provide an implementation plan pursuant to section 13242 for implementing the amendments to the chemical objective.

D. Toxicity Objective

Since 1975, the language of the toxicity objective has been changed several times. (See Appendix E.) In 1989, the first paragraph of the toxicity objective was amended to include language that allows the Regional Board to refer to criteria for toxic substances developed by the State Water Board, the U.S. Food and Drug Administration, the National Academy of Sciences, the EPA and other organizations. The records for the 1989 Basin Plan do not explain or provide any information regarding this additional language. In fact, public notices to Basin Plan reviewers do not include this change as a key text change. In a summary of key text changes, the Regional Board identified two changes to the water quality objectives chapter of the Basin Plan. The first change was the substitution of Nephelometric Turbidity Units for Jackson Turbidity Units and the second change was for the inclusion of the new site specific objectives for Copper, Zinc and Cadmium.[282] No other changes were identified by the Regional Board; however, the language was changed to include criteria from other entities. This language is of major import since it is cited by the Central Valley Regional Board to support its use of non-regulatory advisory criteria to establish effluent limitations in permits and targets in TMDLs. This revision is not merely an editorial or textual change and its adoption was subject to the provisions of Porter-Cologne.

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[281] Id. at 29; 1994 Administrative Record at page 00543.
[282] Memorandum to Basin Plan Reviewers, from Jerrold A. Bruns, Chief, Standards, Policies and Special Studies Unit, Central Valley Regional Water Quality Control Board, November 23, 1988, Attachment A, page 1.

The narrative toxicity objective received considerable attention in the 1994 revision process. In the 1994 Basin Plan, the toxicity objective language was expanded to allow the Regional Board to consider all material and relevant information from the discharger and other interested parties as well as considering numeric criteria and guidelines developed by the State Water Board, the California Office of Environmental Health Hazard Assessment, the California Department of Health Services, the U.S. Food and Drug Administration, the National Academy of Sciences, the U.S. Environmental Protection Agency and other appropriate organizations.[283] According to the Regional Board staff report that accompanied the proposed revisions, the list of references was updated to give "a more complete description of the references most commonly used by the Regional Water Board when evaluating compliance with the toxicity objective and clarifies what is meant by 'other organizations.'"[284] The Sacramento Regional County Sanitation District commented on this amendment and expressed concern that as written it could allow the Regional Board to circumvent Porter-Cologne and CEQA by using criteria from other sources that were not formally adopted into the Basin Plan.[285] Sacramento Regional County Sanitation District also commented that the additional reference language needed to be evaluated with respect to cost and attainability as required under Porter-Cologne.[286]

In response to Sacramento Regional County Sanitation District, the Regional Board argued that "[t]he list of reference organizations has always been a part of this objective and, therefore, no Porter-Cologne or CEQA analyses are required."[287] As mentioned above, the reference language in question first appeared in the 1989 revision process with no record or explanation and without any evidence of compliance with Porter-Cologne or CEQA. It was not part of the narrative language developed in 1975, which was dictated via memorandum from the State Water Board to the Regional Boards. In any case, the narrative toxicity language and the inclusion of other references were not considered pursuant to Porter-Cologne in 1975, 1989 or 1994.

In addition to the expansion of references discussed above, the 1994 amendments also added the sentence, "[t]his objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances." This language was a late revision to the draft Basin Plan that was circulated for comment in October of 1994.[288] As summarized by the Regional Board, the language originally proposed

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[283] Water Quality Control Plan for the Central Valley Region, Third Edition, 1994, Sacramento River Basin and San Joaquin River Basin, at III-8.00.

[284] 1994 Basin Plan Review Administrative Record, stamped page 00544, Staff Report, Issue 8, page 30 of the staff report.

[285] Letter to Jean McCue, Regional Water Quality Control Board, Central Valley Region, from Robert F. Shanks, District Manager, Sacramento Regional County Sanitation District, November 18, 1994 at pages 2 through 3; 1994 Basin Plan Administrative Record at page 07119.

[286] Id. at page 8; Administrative Record at page 07125.

[287] To Basin Plan Reviewers, from Jerrold A. Bruns, Chief, Standards, Policies and Special Studies, Response to Comments and Late Revisions for the October 1994 Draft Basin Plan, 7 December 1994 at page 24.

[288] Late Revisions to the October 1994 Draft Basin Plan, November 23, 1994, at page 3; 1994 Administrative Record page number 07231.

received considerable attention and comments that the language was unclear, and "potentially posed a new, unevaluated economic burden."[289]

In either case, the "additivity" language was a new part of the toxicity objective and therefore subject to the provision of Porter-Cologne. The December 1994 staff report did address cost considerations but only to state that "[s]ince the objective has broad and general applicability, it is not feasible to perform a meaningful economic analysis of its impacts at this time."[290] The staff report further stated that "[t]o implement this Basin Plan language, the Regional Water Board will weigh economic considerations along with other factors in adopting enforcement orders and waste discharge requirements for individual discharges."[291] While Porter-Cologne section 13241 must be considered when the Regional Board prescribes water quality requirements for individual discharges, Porter-Cologne does not specifically state if the consideration of such factors initially required when water quality objectives are established can be deferred and considered when water quality objectives are enforced.[292] Section 13241 of the Water Code states, "[e]ach regional board shall establish water quality objectives [and]…. [f]actors to be considered by a regional board in establishing water quality objectives shall include…."[293] Regardless, the deferral for considering such factors clearly provides evidence that the Regional Board failed to follow section 13241 when it added the "additivity" language to the toxicity objective. [294]

The 1994 revisions also failed to include an implementation plan as required by section 13242 for the new language to the toxicity objective. While the Regional Board did adopt a policy for application of water quality objectives that included language applicable to the additivity language, the language does not meet the elements as required under section 13242. The policy explains how the Regional Board will evaluate on a case-by-case basis if there is a reasonable potential for interactive toxicity.[295] It does not include a description of actions necessary to achieve the additivity language; it does not include a time schedule for actions to be taken; and, it does not include a description of surveillance. Consequently, it does not meet the requirements of section 13242.

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[289] Id.

[290] Staff Report, Amendment of the Water Quality Control Plan, 9 December 1994 at page 33.

[291] Id.

[292] When §13241 factors shall be applied is currently an issue in litigation before the California Court of Appeals for the Second District. The Court of Appeals vacated a previous decision in *City of Burbank v. State Water Resources Control Board* and is reconsidering the case. A decision is supposed to be released in July 2003.

[293] CA Water Code §§13263 and 13241 respectively.

[294] In *City of Burbank v. State Water Resources Control Board*, the Court of Appeal for the California Second Appellate District just published a partial opinion that states, "a regional water quality control board must consider economic costs and benefits and other factors when it establishes water quality standards." Opinion filed 8/14/03, page 13.

[295] 1994 Basin Plan, at page IV-18.00.

E. Turbidity Objective

The Regional Board amended the turbidity objective in 1994 because it was found to be unnecessarily stringent. In this case, the Regional Board did consider the economic costs and found that the existing objective could be cost prohibitive considering the actual increase in turbidity may be fractional and may not cause significant water quality problems.[296] The Regional Board also acknowledged that in many cases good quality effluent is a valuable resource and helps to maintain flows in natural channels.[297] The amendment of the turbidity objective did not include an implementation plan element for meeting the objective.

F. Groundwater Objective

The ground water chemical objective was amended along with the surface water chemical objective as discussed above. Additionally, a new objective for toxicity was added for all ground waters. According to the staff report, the existing ground water objectives lacked clarity and comprehensiveness with respect to toxicity. As a result, the Regional Board established a toxicity objective for ground water that contained part of the narrative toxicity language already in use for inland surface waters. Specifically, the objective states:

> Ground waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial use(s). This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances.[298]

Because this was a newly established water quality objective, the Regional Board was required to consider the factors listed in section 13241 and to prepare an implementation plan amendment pursuant to section 13242. The 1994 administrative record in general and the staff report fail to provide evidence of the Regional Board's consideration of the section 13241 factors. With regard to the consideration of beneficial uses and the water quality of the hydrographic unit, the staff report makes a general statement that the Regional Board has identified over 7000 sites with confirmed releases of toxic and other deleterious substances and that these releases have or have threatened to impact ground water quality. It does not discuss or provide any information relative to the environmental characteristics of the hydrographic units that are covered by this objective.

The record also fails to include any information regarding what water quality conditions could be reasonably achieved through the control of all factors. Also, there is no mention

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[296] Staff Report, Amendment of the Water Quality Control Plan, at page 35; 1994 Administrative Record at page 00549.
[297] Id.

[298] Water Quality Control Plan, Central Valley Region, Sacramento and San Joaquin River Basins, Third Edition – 1994, page III-10.00.

of the need to develop housing or use recycled water in relationship to the establishment of this objective. Finally, the Regional Board addresses the additivity portion of the language in the same manner as it was addressed for surface waters. Consideration of economics and other factors were postponed until the Regional Board adopted enforcement orders and waste discharge requirements for individual dischargers. As already discussed above, Porter-Cologne does not allow the Regional Board to delay consideration of section 13241 until it is implemented. Section 13241 factors must be considered at the time that the objective is established.

A review of the record also shows that an implementation plan for this objective was not developed as required pursuant to section 13242. Like the surface water toxicity objective, there was implementation language regarding the additivity portion of the objective but it does not comply with or qualify as a program of implementation as required by section 13242.

G. Mixing Zone Policy

As part of the 1994 revision process, the Regional Board amended the mixing zone policy in response to comments received from the Sacramento Regional County Sanitation District.[299] The revised language was called out in the "Late Revisions to the October 1994 Draft Basin Plan" but was not identified as an issue in the December 9, 1994 staff report. Sacramento Regional County Sanitation District recommended the inclusion of a mixing zone policy to comply with EPA's requirement that one must be included in the Basin Plan in order to allow the Regional Board to give dilution credits in the permitting process. Since the Inland Surface Waters plan was ruled invalid, Sacramento Regional County Sanitation District was concerned with the lack of such policy.[300] While the Regional Board responded that a general mixing zone policy was already included, the new language proposed by Sacramento Regional County Sanitation District was incorporated into the Basin Plan (with some revisions) for clarification.[301]

The mixing zone policy was included in the "Policy for Application of Water Quality Objectives" and states as follows:

> In conjunction with the issuance of NPDES and storm water permits, the Regional Water Board may designate mixing zones within which water quality objectives will not apply provided the discharger has demonstrated to the satisfaction of the Regional Water Board that the mixing zone will not adversely impact beneficial uses. If allowed, different mixing zones may be designated for different types of objectives, including, but not limited to, acute aquatic life objectives, chronic aquatic life objectives, human health objectives, and acute and chronic whole

[299] Letter to Jean McCue, Central Valley Region Water Quality Control Board, from Robert Shanks, District Manager, Sacramento Regional County Sanitation District, November 30, 1993 at page 5; and, Letter to Jean McCue, Central Valley Region Water Quality Control Board, from Robert F. Shanks, District Manager, Sacramento Regional County Sanitation District, November 18, 1994, Attachment 1 at page 5.
[300] Letter to Jean McCue, November 30, 1993 at page 5.
[301] Response to Comments Received on the November 1993 Draft Basin Plan, December 7, 1994 at page 3.

> effluent toxicity objectives, depending in part on the averaging period over which the objectives apply. In determining the size of such mixing zones, the Regional Water Board will consider the applicable procedures and guidelines in EPA's Water Quality Standards Handbook and the Technical Support Document for Water Quality-based Toxics Control. Pursuant to EPA guidelines, mixing zones designated for acute aquatic life objectives will generally be limited to a small zone of initial dilution in the immediate vicinity of the discharge.[302]

In federal EPA's approval of the 1994 Basin Plan revisions, the mixing zone policy issue was approved with specified understandings. EPA's understanding was that "all waters of the Sacramento and San Joaquin River basins are part of the 'main water mass', except for those areas designated as zones of dilution as part of effluent limitations in any NPDES permits."[303] Additionally, federal EPA clarified its understanding of the mixing zone policy to mean that the policy provides for the option of establishing mixing zones but does not prohibit the application of objectives as end-of-pipe limits.[304] EPA's approval of the mixing zone policy included the language included within the "Policy for Application of Water Quality Objectives."[305]

The Regional Board did not respond to federal EPA's understandings regarding its interpretation of the mixing zone policy.

H. Tributary Rule

As mentioned previously, the Regional Board intended the tributary rule (i.e. footnote 1 to Table II-1 of the 1975 Basin Plan) to act as a stop gap measure until the Regional Board could investigate the tributaries of major water bodies and appropriately designate beneficial uses for those tributaries. In 1994, the Regional Board acknowledged that the footnote to Table II-1 was being "misunderstood and misused by various parties."[306] In particular, other agencies had contended that the footnote meant that "all tributaries to the water bodies listed in the Basin Plan have precisely the same beneficial uses as the water bodies to which they are tributary, without exception, exemption, or qualification."[307] To address this concern and literal interpretation, the Regional Board amended the Basin Plan by striking out the tributary rule footnote 1 to Table II-1 and inserting new clarifying text to the beneficial use chapter.[308]

The new text, which still exists in the Basin Plan today, is as follows:

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[302] 1994 Basin Plan, Implementation Plan, at IV-16.00 through IV-17.00.
[303] Letter to Edward Anton, Acting Executive Director, State Water Resources Control Board, from Alexis Strauss, Director, Water Division, U.S. EPA, Region IX, May 26, 2000, Attachment B, at page 1.
[304] Id.
[305] Memorandum to the Record, from Kathleen Goforth, Life Scientist, Clean Water Act Standards and Permits Office, Administrative Record Regarding EPA's Action on Amendments Adopted by the Central Valley Regional Water Quality Control Board to the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* between 1989 and 1995 (May 26, 2000).
[306] Staff Report, Amendment of the Water Quality Control Plan, 9 December 1994 at page 18.
[307] Staff Report, 9 December 1994 at page 18.
[308] Staff Report, Amendment of the Water Quality Control Plan, 9 December 1994 at page 19.

> The beneficial uses of any specifically identified water body generally apply to its tributary streams. In some cases a beneficial use may not be applicable to the entire body of water. In these cases the Regional Water Board's judgment will be applied.
>
> It should be noted that it is impractical to list every surface water in the Region. For unidentified water bodies, the beneficial uses will be evaluated on a case-by-case basis.[309]

The clarifying language adopted by the Regional Board was subsequently approved by the State Water Board and remains in full force and effect today. However, the controversy surrounding the tributary rule statements does not end there. In May of 2000, federal EPA acted on a number of Central Valley Board Basin Plan revisions, some of which had been before EPA for approval since 1989. As part of this action, federal EPA disapproved of the state's removal of footnote 1 and the addition of the clarifying text.[310] Federal EPA disapproved of the amendments because in its mind the deletion of the footnote de-designated previously designated uses outside of the federal regulatory process.[311] The state disagreed with EPA's interpretation and responded to the disapproval accordingly.[312]

Because federal EPA failed to disapprove of the amendment in a timely manner, the deletion of footnote 1 and the addition of the clarifying text remains intact until federal EPA approves a subsequent revision or promulgates a federal replacement standard under its own authority.[313] In May of 2002, the Regional Board circulated a draft report that would amend the beneficial use language by adding language to the Basin Plan that states:

> The judgment of the Regional Board on beneficial use evaluations and designations, particularly to change the above designated and assigned beneficial uses, will be conducted in accordance with California Water Code Sections 13240 through 13247 and 40 CFR Part 131 which relate to the adoption and approval of water quality control plans and water quality standards.[314]

Federal EPA reviewed and responded to the proposed amendment in June of 2002. According to the response, federal EPA's disapproval would be resolved if the proposed

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[309] Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board, Central Valley Region, Fourth Edition – 1998, Sacramento River Basin and San Joaquin River Basin at page II-2.00.

[310] Letter to Edward C. Anton, Acting Executive Director, State Water Resources Control Board, from Alexis Strauss, Director, Water Division, U.S. EPA, Region IX, May 26, 2000.

[311] Id., Attachment A, at page 1.

[312] Letter to Kathy Goforth, U.S. EPA, from Jerrold A. Bruns, Sacramento River Watershed Section, Central Valley Regional Water Quality Control Board, August 31, 2000 at page 1.

[313] In re *Vacaville*, WQO 2002-0015, State Water Resources Control Board, at page 9; Alaska Rule, codified at 40 C.F.R. §131.21.

[314] Amendment to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for designating beneficial uses and non-regulatory changes, Draft Report, May 2002 at page 2.

amendment was adopted.[315] According to Regional Board staff, the language contained in the May 2002 draft report was adopted by the Regional Board in September of 2002.[316] The amendment had been submitted to the State Water Board for review and approval.[317]As of August 21, 2003, the Regional Board's proposed amendment regarding the tributary statement was withdrawn from the State Water Board for consideration. As such, the removal of footnote 1 and the addition of the clarifying text, as adopted in the 1994 Basin Plan revisions, remains the applicable standard with regards to the designation of beneficial uses to tributaries.

[315] Letter to Betty Yee, Central Valley Regional Water Quality Control Board, from Kathleen Martyn Goforth, Life Scientist, U.S. EPA, Region IX, June 24, 2002.
[316] Phone Conversation with Betty Yee, Senior Water Resource Control Engineer, Basin Planning, Central Valley Region Water Quality Control Board, April 28, 2003.
[317] Id.

Chapter VI. Conclusions and Findings

Based upon the review of the administrative record for the Central Valley's Water Quality Control Plan, a number of general findings can be made regarding the water quality standards contained in the Basin Plan and the process used for their adoption.

- The Administrative Record contains little documentation regarding the scientific and technical foundation for the water quality objectives.
- The Regional Board acknowledged the lack of information and planned to collect further information to revise water quality objectives.
- The Regional Board intended to utilize the mandatory triennial review process to address inadequacies in the 1975 water quality objectives.
- The Regional Board intended to prioritize and investigate the tributaries of major water bodies to determine appropriate beneficial uses.
- The Regional Board failed to consider required factors (i.e. environment, water quality conditions, economics) when adopting water quality objectives.
- The Regional Board failed to adopt implementation programs that included actions for public and private entities and time schedules for achieving water quality objectives.
- Regional Board staff considered water quality objectives to be goals – not regulatory restrictions.
- Substantive amendments were labeled editorial.
- Many of the water quality objectives remain unchanged since adoption in 1975.

In conclusion, the establishment of water quality objectives and creation of a program of implementation for achieving the objectives in the Central Valley Basin Plan for the Sacramento River and San Joaquin River Basins has failed to adequately consider or comply with the legal requirements under Porter-Cologne. The Regional Board's failure to adopt water quality objectives pursuant to Porter-Cologne has created considerable doubt as to the validity and applicability of the water quality objectives contained with the Basin Plan.

Currently, the Regional Board is adopting permits and TMDLs based on these very broad and general water quality objectives adopted in 1975. The use of these objectives as the basis of permit and regulatory decisions has far reaching impacts on businesses, public agencies, agriculture, rate-payers, the need to develop housing and the use of recycled water. The comprehensive record of the Central Valley's complete basin planning process clearly shows that the broad objectives adopted in 1975 were never intended to remain intact and be strictly interpreted almost thirty years later; however, the lack of attention and resources to the proper development of water quality objectives and the basin planning process has stalled the refinement of the narrative objectives and the development of numeric objectives as originally anticipated in 1975.