O'Laughlin & Paris LLP Attorneys at Law

VIA FEDERAL EXPRESS AND ELECTRONIC MAIL

March 13, 2009

Danny McClure
Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Dr., Suite #200
Rancho Cordova, CA 95670

Re: Proposed Revisions to the 303(d) List of Impaired Water Bodies and Consideration of an Integrated Assessment Report for the Central Valley Region

Dear Mr. McClure

The San Joaquin River Group Authority ("SJRGA") appreciates the opportunity to comment on the 2008 proposed revisions to the Clean Water Act §303(d) List for the Central Valley Region. We hope the Central Valley Regional Water Quality Control Board takes its revisions seriously, as the §303(d) List greatly influences planning, resources allocation, and, most importantly, funding. The 2008 §303(d) List is replete with inconsistencies. It also conflicts with the *Water Quality Control Plan for Developing California's Clean Water Act §303(d) List* ("Listing Policy"), the *Water Quality Control Policy for the Sacrament River and San Joaquin River Basin* ("Basin-Plan"), the *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary and Suisun Marsh* ("Bay-Delta Plan"), and the *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California* ("Thermal Plan"). Finally, it exceeds the authority granted the water boards under Porter-Cologne and the Clean Water Act.

The SJRGA herein comments on the following 2008 listings:

1. Electrical conductivity for the San Joaquin River from Mendota to the Delta Boundary (Water Body IDs CAR5357000019990126152905, CAR535700002002l002093226, CAR535700002002l002094621, CAR544000002002l002100850, CAR5353000020041020143854, and CAR544000002004l020140348; Decision IDs 7018, 7566, 6960, 6243, 6359, 6232.)

Post Office Box 9259
Chico, California 95927-9259
www.olaughlinandparis.com

530.899.9755 tel
530.899.1367 fax

2. Temperature for the San Joaquin River from the Merced River confluence to the Delta boundary[1] (Decision IDs 15202, 15203, 15204), Lower Stanislaus River (Water Body ID CAR535300001998081715183 4, Decision ID 15206), Lower Tuolumne River (Water Body ID CAR5355000019980817143435, Decision ID 15207), and Merced River (Water Body ID CAR5357000019980817154245, Decision ID 15209);

3. Organic enrichment/low dissolved oxygen for the Delta Waterways (Stockton Ship Channel) (Decision ID 7203 for Water Body ID CAE5440000020021115141407);

4. All exotic species listings;

5. Insufficiently specific identification of the "Delta Waterways."

The SJRGA's comments include the attached comments, associated appendices, and referenced materials, all of which the SJRGA submits for the CVRWQCB to incorporate into the administrative record.

In addition, the SJRGA submitted comments for the proposed temperature listings for the San Joaquin River, Stanislaus River, Tuolumne River, and Merced River in response to your invitation at the September 25, 2007 workshop. The comments were submitted, via electronic mail, on November 19, 2007. A compact disc and paper copies followed by US mail. However, the comments were not included in any lines of evidence. The SJRGA therefore includes its November 19, 2007 comments in the appendices herein, also for incorporation into the administrative record.

In addition, the SJRGA is submitting its comments, with appendices and attachments, via electronic mail. A compact disc with all of the referenced documents and Excel spreadsheets with raw data for dissolved oxygen for the Stockton Deep Water Ship Channel will follow and should arrive on March 16, 2009.

Very truly yours,
O'LAUGHLIN & PARIS LLP

By: 
KENNETH PETRUZZELLI

[1] The Delta boundary, as defined by Water Code §12220, corresponds to Airport Way Bridge, near the town of Vernalis, and is often referred to as "Vernalis."(U.S. v. St. Water Resources Control Bd. (1986) 182 Cal.App.3d 82, 107.)

Tim O'Laughlin (SBN 116807)
William C. Paris III (SBN 168712)
Kenneth Petruzzelli (SBN 227192)
O'LAUGHLIN & PARIS LLP
1043 Village Lane, P.O. Box 9259
Chico, California 95927
Telephone: 530.899.9755
Facsimile: 530.899.1367

Attorneys for
San Joaquin River Group Authority

CALIFORNIA WATER QUALITY CONTROL BOARD

CENTRAL VALLEY REGION

IN RE PROPOSED REVISIONS TO THE 303(d) LIST OF IMPAIRED WATER BODIES AND CONSIDERATION OF AN INTEGRATED ASSESSMENT REPORT FOR THE CENTRAL VALLEY REGION	**COMMENTS OF THE SAN JOAQUIN RIVER GROUP AUTHORITY REGARDING PROPOSED REVISIONS TO THE 303(d) LIST OF IMPAIRED WATER BODIES AND CONSIDERATION OF AN INTEGRATED ASSESSMENT REPORT FOR THE CENTRAL VALLEY REGION** DATE; 22-23 April 2009 TIME: To Be Determined

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I. States Can Only Base Water Quality Limited Segment Identification on Non-Compliance with Applicable Water Quality Objectives for Existing Beneficial Uses.[2]

The Clean Water Act directs states to identify waters wherein effluent limitations are insufficient to implement applicable water quality objectives and to rank such waters based on the severity of pollution and uses to be made. (33 U.S.C. §1313(d)(1)(A); 40 C.F.R. §130.2(d).) Waters lacking applicable water quality objectives do not fall under §303(d) and are not identifiable as water quality limited segments.

"Water quality standards," as applied in the Clean Water Act, include both a beneficial use designation and water quality criteria. (40 C.F.R. §130.2(d).) However, the Clean Water Act only requires states to protect and maintain water quality for existing uses. (40 C.F.R. §131.12(a)(1); *see also* PUD No. 1 of Jefferson County v. Wash. Dept. of Ecology (1994) 511 U.S. 700, 705.) Existing uses are those actually achieved on or after November 28, 1975. (40 C.F.R. §130.3(g).) If states choose to degrade water quality, they must only assure water quality sufficient to protect existing uses. (40 C.F.R. §131.12(a)(2).) Consistent with the Clean Water Act direction to protect actual, existing beneficial uses, when states establish TMDLs they must analyze the pollutant loading level necessary to implement water quality standards for *actual* existing, or future beneficial uses of the water body. (33 U.S.C. §1313(d)(1)(C).) Consequently, the Clean Water Act's direction for states to identify water bodies not complying with an applicable "water quality standard" only directs states to identify water bodies not complying with water quality criteria for existing uses. (33 U.S.C. §1313(d)(1)(A).)

Further, the purpose of Porter-Cologne Water Quality Control Act ("Porter Cologne) (Water Code §12000 et seq.) is to achieve the highest water quality that is "*reasonable*, considering all demands made and to be made and the total values involved, beneficial and detrimental, economic and social, tangible and intangible." (Water Code §13000 (emphasis added).) Consistent with Porter-Cologne's quality goal, establishing water quality objectives is

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[2] The *Policy for Developing California's Clean Water Act §303(d) List of Water Quality Limited Segments* ("Listing Policy") does not define the term "impaired water." It appears nowhere in the glossary. Instead, it uses the term "water quality limited segment," just like federal regulations implementing §303(d). (Listing Policy, p. 28; *see also* 33 C.F.R. §130.2(j).) Even the Basin Plan uses the term "water quality limited segment." (Basin Plan, p. IV-7.00.) The CVRWQCB must avoid using dated, casual terms and use the proper term of art established in its regulatory material. For consistency with the Basin Plan, Listing Policy and federal regulations, as well as clarity, any and all uses of the term "impaired water" or "impaired body of water" should be changed to read "water quality limited segment. Similarly, sections using "impairment" either as a noun or an adjective need rewriting to clarify whether the Staff Report and fact sheets specifically refer to water quality factors resulting in water quality limited segment identification or to pollution in general.

therefore more than merely choosing criteria "fully protective" of a single beneficial use. Rather, it represents a policy decision by a RWQCB to ensure *reasonable* protection of beneficial uses in light of past, present, and *probable* beneficial uses, the environmental characteristics of the hydrograph under consideration, including the quality of water available thereto, economic considerations, economic factors, and water quality conditions reasonably achievable through coordinated control of factors affecting water quality. (Water Code §13241.) Fully protecting one beneficial use could preclude fully protecting another use or even prove harmful. Additionally, some beneficial uses may be relatively more important in one water body than in another.

The Basin Plan designates existing and "potential," beneficial uses, but although the Clean Water Act defines "existing use," it does not define "potential use." (40 C.F.R. §130.3(g).) Porter-Cologne and the Basin Plan similarly do not define "potential use."[3]

"Potential uses" are entirely absent from the Water Code. Porter-Cologne's purpose is to achieve the highest water quality "reasonable, considering all demands made and to be made and the total values involved, beneficial and detrimental, economic and social, tangible and intangible." (Water Code §13000.) Uses "made" are present uses. Uses "to be made" are likely future uses. Consistent with the direction to protect existing uses and likely future uses, Water Code §13241 directs the Regional Water Quality Control Boards ("RWQCBs"), when adopting water quality objectives, to consider, among other factors, "past, present, and probable beneficial uses." (Water Code §13241(a).) It does not direct the RWQCBs to consider hypothetical "potential uses." (Id.) Rather, it prohibits such considerations, because considering potential uses

[3] At the March 10, 2009 public meeting for the §303(d) List, when Staff were specifically asked to define "potential use," no Staff member could provide a definition. Then, when asked to explain how much "potential" a "potential use" has of becoming an existing use, Staff could similarly provide no definition. Staff could even provide no answer when posed with the question of whether a "potential use" had more "potential" to become an existing use than Joe Montana returning from retirement to once again play quarterback for the San Francisco 49ers. T the CVRWQCB can treat a "potential use" as equivalent to an "existing use" for the purposes of making applying water quality objectives if it does not know what a "potential use" is.

would inevitably result in ignoring existing uses and likely future uses.[4] The CVRWQCB therefore can only list waters for non-compliance with water quality objectives applicable to existing uses, not "potential uses."

II. The San Joaquin River Must be Removed from the §303(d) List for Electrical Conductivity.

A. The Electrical Conductivity Listing for the San Joaquin River was Based on Faulty Data.

1. Listings Based on Faulty Data Must be Re-Evaluated.

When the Listing Policy was adopted in 2004, there were already over 1,800 water-body pollutant combinations on the §303(d) List. (SWRCB, Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List Functional Equivalent Document ("Listing Policy FED"), p. 219 (September 2004).) Since the SWRCB concluded the water boards lacked the resources to review all of the existing listings for consistency with the Listing Policy, it decided to review pre-2004 listings as resources allowed with no requirement for new data. (Id.) As a result, under §4 of the Listing Policy:

> All listings of water segments shall be removed from the section 303(d) list if the listing was based on faulty data, and it is demonstrated that the listing would not have occurred in the absence of such faulty data. Faulty data include, but are not limited to, typographical errors, improper quality assurance/quality control procedures, or limitations related to the analytical methods that would lead to improper conclusions regarding the water quality status of the segment.

(Listing Policy, p. 11.)

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[4] The Basin Plan does not define "potential" beneficial use and the difference is not merely one of semantics. "Probable" is defined as "likely to become true or real" or "supported by evidence strong enough to establish presumption." (*Merriam-Webster Online Dictionary*.) By comparison, "potential" merely means "capable of development into actuality." In other words, a potential use is speculative, whereas a probable use is reasonably foreseeable. (Dunham, Tess, *A Review of the Administrative Record for the Central Valley's Water Quality Control Plan: 1975-1994*, Cal. Resource Management Inst., p. 18 (Sept. 2003).) Designating "potential" in a basin plan and protecting such uses through water quality objectives and National Pollutant Discharge and Elimination System permits led a superior court judge to issue a writ of mandate ordering the Los Angeles RWQCB to revise every water quality objective in its basin plan applicable to storm water by eliminating potential use designations for any and all water quality objectives contained therein. (Writ of Mandate, *Cities of Arcadia et al. v. St. Water Resources Control Bd. Et al.* (Super. Ct. Orange County, 2007, Case No. 06CC02974 (July 2, 2008); *see also* Memo. from Michael M. Lauffer, Chief Counsel, St. Water Resources Control Bd., to Dorothy Rice, Exec. Dir., L.A. RWQCB, *Cities of Arcadia, et al. v. St. Water Resources Control Bd., et al., (Super. Ct. Orange County, 2007, No. 06CC02974): Impact of Peremptory Writ of Mandate on Enrollments Under the General Industrial and General Construction Storm Water Permits*, p. 2 (Jul. 16, 2008).)

An interested party may request reassessment of an existing listing whether new data are available or not. (Listing Policy FED, p. 219.) In requesting the reevaluation, the interested party must describe the reason or reasons the listing is inappropriate, state the reason the Listing Policy would lead to a different outcome, and provide the data and information necessary to enable the CVRWQCB and SWRCB to conduct the review. (Id.)

2. The Original Listing for the Lower San Joaquin River Was Based on "Faulty Data," Because it was Based on No Data.

It is unknown what basis, if any, was ever used to list the Lower San Joaquin River ("LSJR"), the segments from Mendota to the Delta boundary, for salinity. The 1996 §303(d) List provided with the agenda for the CVRWQCB meeting adopting the list in January 1996 did not include salinity as a water quality limiting pollutant for LSJR. It suddenly and inexplicably appeared after the meeting.[5] According to an April 3, 1996 memorandum from Sue Yee of the CVRWQCB to Nancy Richards at the Division of Water Quality, obtained pursuant to a request for public records by the SJRGA:

> As we discussed, I have enclosed the newly revised Section 303d list. Two pollutants have been added to the currently listed water bodies. Salt has been added to the Lower San Joaquin River and the Delta, and boron has been added to the lower San Joaquin River. These pollutants are well documented to be impairing the respective water bodies and should have been included on the earlier list. The water body data used for making these changes as well as that used for making the list is on file at our office. We appreciate that Dave Smith, the TMDL coordinator for Region 9 - U.S. EPA, will public notice these changes in the Federal Register. Thank you again for your help.

No supporting data or analysis was provided with the memorandum and none was provided in conjunction with the SJRGA's request for public records. Since there is no public or administrative record for the water quality limited segment identification for the LSJR, it is unknown exactly how or why it was identified. Analytical methods without data certainly fall

under analytical methods resulting in "improper conclusions" and "improper quality assurance/quality control procedures" described in §4. Re-evaluation is therefore required.

B. The San Joaquin River from the Merced River Confluence to the Delta Boundary Must Be Removed From the §303(d) List for Electrical Conductivity, Because there is No Non-Compliance With any Applicable Electrical Conductivity Objective for an Existing Beneficial Use.

1. There are No Applicable Numeric Objectives for Salinity for Existing Uses for the San Joaquin River from Mendota to the Delta Boundary.

The Clean Water Act directs states to identify waters wherein effluent limitations are insufficient to implement applicable water quality objectives for existing beneficial uses. (33 U.S.C. §1313(d)(1)(A).) Then, states must rank all identified waters, referred to as "water quality limited segments," in order of priority for TMDLs. (33 U.S.C. §1313(d)(1)(C); 40 C.F.R. §130.2(j).) States cannot list and rank water body-pollutant combinations absent applicable water quality objectives for existing beneficial uses. For waters with applicable water quality objectives with which compliance occurs and is expected to occur, states can establish TMDLs, but only after they have first established TMDLs for all water quality limited segments. (33 U.S.C. §1313(d)(3); 40 C.F.R. §130.7(e).)

The Basin Plan lacks numeric objectives for salinity for the San Joaquin River from Mendota to the Delta Boundary. (Basin Plan, p. III-6.01 to III-7.00.) However, the Chemical Constituent objective prohibits water from containing chemical constituents in concentrations adversely affecting beneficial uses. (Basin Plan, p. 3.00.) The Chemical Constituents objective prohibits MUN-designated waters from containing chemical constituents in excess of secondary maximum contaminant levels ("MCLs") contained in §64449 Table 64449-B in the California Code of Regulations. (Id.) Secondary MCLs, including secondary MCLs for TDS and specific conductivity, apply to water provided to the public by community water systems. (Cal. Code Regs., tit. 22, §64449(a).) A "community water system" is defined as a public water system

[5] The San Joaquin River was initially identified among water quality limited segments in the 1975 Basin Plan, deleted in 1989. The 1996 addition therefore constituted a new listing. The 2008 §303(d) List incorrectly cites the listing history for various segments of the LSJR for salinity and/or EC for the LSJR from Mendota to the Merced River confluence as 1996. As described herein, the entire 130-mile segment from Mendota to the Delta boundary has been listed since 1996. In 1998 the listings for salinity were changed to listings for EC. In 2006, the 130-mile segment from Mendota to the Delta boundary was broken into shorter units. The shorter segments each became separate listings, but otherwise the EC listing for the 130-mile segment of the LSJR did not change. The CVRWQCB §303(d) List fact sheets should therefore be changed to correctly state that the LSJR from Mendota to

serving at least 15 service connections or regularly serving an average of at least 25 individuals daily at least 60 days out of the year. (Cal. Code Regs., tit. 22, §64410.10.) Furthermore, since Secondary MCLs apply to water "supplied to the public," they apply at the tap, not the source.[6] (Cal. Code Regs., tit. 22, §64449(a).)

Between Mendota and the Delta Boundary, MUN beneficial uses are not existing uses. (Basin Plan, p. II-7.00 to II-8.00, III-3.00.) Neither are MUN beneficial uses actual uses, as there are no surface water diversions for any community water systems. (SWRCB Water Quality Order 85-1 Technical Report, p. III-3.) The CVRWQCB conducted the most recent survey of water diversion and discharge points between Mendota and the Delta Boundary from 1985 through 1986 and found no municipal or domestic diversions anywhere. (CVRWQCB, *Water Diversion and Discharge Points Along the San Joaquin River: Mendota Pool to Mossdale Bridge* (April 1989).) There is also no evidence that any municipality plans to, let alone desires, to divert and use surface water from the San Joaquin River between Mendota and the Delta boundary to supply a community water system.[7] No information suggests the existence of a community water system diverting and using water from the San Joaquin River between Mendota and the Delta boundary or that one plans to do so.

Appropriating water from the San Joaquin River is unlikely. The San Joaquin River between Mendota and the Delta boundary is classified as a "fully appropriated stream." (SWRCB Water Rights Order 98-08.) As a fully appropriated stream, the SWRCB must refuse all applications for any further appropriations from the stream for consumptive use, including small use domestic appropriations. (Id., p2-3.) The SWRCB may also cancel all pending applications to appropriate water from the stream. (Id.) Even if a municipality were able to obtain a permit to divert and use water from the San Joaquin River from Mendota to the Delta boundary for MUN beneficial use, the Department of Health Services (now the Department of Public Health) has stated that it will not approve any applications for urban or municipal water

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the Merced River should correctly state that the LSJR from Mendota to the Merced River confluence was listed in 1996, not 2006.

[6] This is consistent with the federal definition, pursuant to which an MCL is the maximum permissible level of a contaminant in water which is delivered to the free flowing outlet of the ultimate user of public water system. (22 C.F.R. §143.2(f); *see also* 44 Fed. Reg. 42197 (Jul. 19, 1979).)

[7] General plans reviewed for the San Joaquin River between Mendota and the Delta boundary included Merced, Lathrop, Turlock, Gustine, Modesto, Tracy, Manteca, Ripon, Escalon, Patterson, Oakdale, and Newman. Municipalities were selected based on a review of topographic maps for municipalities that may divert and use surface water from the San Joaquin River between Mendota and the Delta boundary. For the general planning documents and summaries of the water-supply related aspects of each, *see* Appendix A.

system using water from the San Joaquin River from Mendota to the Delta boundary. (*see* letter from Cindy Forbes at DHS to Brian Kumimoto (April 13, 1996).).

Chemical constituent concentrations cannot adversely affect beneficial uses that are not existing uses. Although MUN beneficial uses encompass both community water systems and domestic water systems, MCLs apply only to community water systems, but no community water systems between Mendota and the Delta Boundary divert surface water from the San Joaquin River. (Cal. Code Regs., tit. 22, §64449(a).) Even if a community water system did divert and use water from the San Joaquin River for MUN uses, Secondary MCLs would apply at the tap, not as water quality standards for surface water. (Cal. Code Regs., tit. 22, §64449(a).)

Even assuming the secondary MCL for specific conductivity can apply to the San Joaquin River from Merced to the Stanislaus, the 900 µS/cm level recommended for tap water served by community water systems should not apply as the surface water standard for the San Joaquin River. MCLs are established based on consumer acceptance levels of aesthetic qualities such as taste and smell, without fixed consumer acceptance contaminant levels for specific conductivity.[8] (Cal. Code Regs., tit. 22, §64449(d).) The regulations therefore recommend a level of 900 µS/cm, an upper level of 1,600 µS/cm, and a short-term level of 2,200 µS/cm. (Cal. Code Regs., tit. 22, §64449(a) Table 64449-B.) Constituent concentrations ranging to the upper contaminant level are acceptable if it is neither reasonable nor feasible to provide more suitable waters. (Cal. Code Regs., tit. 22, §64449(d)(2).) Constituent concentrations ranging to the short-term contaminant level are acceptable for existing community water systems on a temporary basis pending construction of treatment facilities or development of acceptable new water sources.[9] (Cal. Code Regs., tit. 22, §64449(d)(3).) It is unreasonable to provide water any more suitable than 1,600 µS/cm for tap water served by community water systems when there are no identified community water systems diverting surface water from the San Joaquin River between the Merced River confluence and the Stanislaus River confluence. Even the 2,200 µS/cm short-term level is "temporarily" acceptable pending construction of treatment facilities or

[8] Secondary MCLs were initially adopted by the USEPA as guidelines to provide states a realistic frame of reference for the aesthetic water quality goal they should be trying to achieve for consumer acceptance and confidence in public water systems. (40 C.F.R. §143.1; *see also* 44 Fed. Reg. 42195 (Jul. 19, 1979).

[9] A "water source" is an individual water source or individual surface water intake. (Cal. Code Regs., tit. 22, §64402.10.)

development of acceptable new water sources (even if there is no evidence that neither will occur in the foreseeable future).[10]

Finally, although listed as an existing use between Mendota and the Merced River confluence, Irrigated Agriculture is not an actual use.[11] In 1987, the Technical Committee for Water Quality Order 85-1 recommended salinity objectives for the LSJR. (SWRCB Water Quality Order ("WQO") 85-1 Technical Report, p. VIII-1 (August 1987).) In reviewing the agriculture practices in the region, the Technical Committee found few agriculture diversions between Mendota to Hills Ferry (Id.) All of the diversions were used for Stock Watering, a highly salt-tolerant beneficial use. (Id.) As a result, the Technical Committee recommended EC criteria as high as 3,000 µS/cm. (Id.)

Staff cannot identify the San Joaquin River between Mendota and the Delta boundary as a water quality limited segment for salinity, because the segment lacks and applicable salinity objectives for any existing beneficial uses. Municipal beneficial uses are not existing uses are not expected to exist any time in the foreseeable future. Recommending that the CVRWQCB apply any secondary MCL for specific conductivity or TDS becomes absurd, given the absence of any current or anticipated community water systems. However, applying the 2,200 µS/cm standard (or even 1,600 µS/cm standard) is much less absurd than applying the 900 µS/cm standard.

2. The Vernalis Salinity Objective is not an Applicable Salinity/Electrical Conductivity Objective for the San Joaquin River Upstream from the Delta Boundary.

The Vernalis Salinity Objective is contained in the 2006 Bay-Delta Plan as a compliance point for the "Southern Delta Water Quality Objectives for Agricultural Beneficial Uses." (2006 Bay-Delta Plan, p. 13 Table 2.) The Sacramento-San Joaquin Delta boundaries are established in the Water Code with Airport Way Bridge near Vernalis as the farthest upstream boundary. (Water Code §12220.)

The earliest incarnation of the Vernalis Salinity Objective, a 500 mg/L monthly average of TDS, was established in a 1965 agreement between the Sacramento River and Delta Water

[10] Since no community water systems will divert and use surface water from the San Joaquin River between the Merced River confluence and the Stanislaus River confluence any time in the foreseeable future, the "temporary" basis of applying the short-term 2,200 µS/cm level becomes permanent, demonstrating the absurdity of applying objectives to beneficial uses that do not exist and will likely never exist.

[11] The Technical Committee also observed that no municipalities diverted and used surface water from the San Joaquin River between Mendota and the Delta Boundary. (SWRCB WQO 85-1 Technical Report, p. VIII-19.) As a result, they opposed water quality objectives based on Municipal Beneficial uses. (Id.)

Association, the San Joaquin Water Rights Committee, the Department of Water Resources ("DWR"), and the USBR. (D-1641 EIR, Vol. I, p. VIII-11; *see also* USBR, *Water quality criteria agreement among Sacramento River and Delta Water Users Association, San Joaquin Water Rights Committee, Department of Water Resources, and U.S. Bureau of Reclamation*, p. 6 (1965).) Under the agreement, if New Melones Reservoir were ever used for water quality control, the USBR would maintain an average total dissolved solids concentration at Vernalis of 500 part per million ("ppm") TDS or less. (USBR, *Water quality criteria agreement among Sacramento River and Delta Water Users Association, San Joaquin Water Rights Committee, Department of Water Resources, and U.S. Bureau of Reclamation*, p. 6 (1965).) However, the agreement did not obligate the USBR to release more that 70,000 acre-feet in a single calendar year for this purpose. (Id.)

The 500 mg/l TDS, objective subsequently appeared in the 1967 Sacramento-San Joaquin Water Quality Control Policy, requiring a 500 mg/l TDS concentration at Vernalis over any consecutive 30-day period. (CVRWQCB, *Sacramento-San Joaquin Water Quality Control Policy*, p. G-2 (1967).) The CVRWQCB implemented the objective through a Memorandum of Agreement ("MOA") with the USBR. (Basin Plan, p. IV-21.00; *see also* Basin Plan Appendix Item 29, p. 3.) Similar to the 1965 agreement between Sacramento River and Delta Water Association, the San Joaquin Water Rights Committee, the DWR, and the USBR, the MOA required the USBR to maintain a mean monthly TDS concentration of 500 mg/l "immediately below the mouth of the Stanislaus River." (Basin Plan Appendix Item 29, p. 3.) The MOA also limited the USBR's obligation to 70,000 acre-feet in a single calendar year. (Id.) However, it also provided that if hydrologic or other conditions prevented maintaining a mean monthly concentration of 500 mg/l TDS immediate below the mouth of the Stanislaus River, then operational releases of the "water quality reservation" would be restricted to the irrigation season in accordance with the needs of irrigators. (Id.)

The 1978 Sacramento-San Joaquin Delta and Suisun Marsh ("1978 Delta Plan") revised the objective with a 700 µS/cm applying in the irrigation season objective and a 1,000 µS/cm non-irrigation season objective. (D-1641, p. 79-80, 160-163; SWRCB, *D-1641 Environmental Impact Report* ("D-1641 EIR"), Vol. 1, p. IX-3 to IX-5 (November 1999).) The revised objectives adopted in the 1978 Delta Plan were developed and based on thorough consideration of crops representative of those historically grown in the South Delta, in addition to South Delta

climate, soils, and cultural practices, its was established specifically for agricultural beneficial uses in the Southern Delta. (*D-1641 Environmental Impact Report*, Vol. 1, p. IX-3 to IX-4; St. Water Resources Control Bd. Cases, (2006) 136 Cal.App.4th 674, 744 ("The southern Delta agricultural salinity objectives in the 1995 Bay-Delta Plan, including the Vernalis salinity objective, were formulated specifically to maintain an adequate level of protection for agriculture in the southern Delta."); *see also* 1978 Delta Plan, p. VI-14 to VI-23.)

Although initially adopted in 1978, the Vernalis Salinity Objective did not become effective until 1995 when the SWRCB adopted the 1995 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary ("1995 Bay-Delta Plan"). (D-1641, p. 79-80, 160-163; SWRCB, D-1641 EIR, p.VIII-13 to VIII-14 (November 1999).) Furthermore, since the water right permits for the Central Valley Project ("CVP") had not come before the SWRCB, the Vernalis Salinity Objective had not been implemented through any changes in water right permits. (Id.) The Vernalis Salinity Objective was finally implemented in 1995, in part, when the SWRCB adopted Water Right Order 95-06. (SWRCB, D-1641 EIR, p. VIII-14.) It was fully implemented in 1999 when the SWRCB adopted D-1641. (D-1641, p. 79-80, 160-163.) Nothing in the regulatory history of the Vernalis Salinity Objective indicates it ever applied to the San Joaquin River upstream of the Delta boundary.

Even if the SWRCB had wished to apply the Vernalis Salinity Objective upstream of the Delta boundary, it would have lacked the jurisdiction to do so. The 1978 Delta Plan, the 1991 Salinity Plan, and the 1995 Bay-Delta Plan were all Bay-Delta proceedings specifically limited to the Delta, as defined by Water Code §12220. If the Vernalis Salinity Objective applied upstream of Vernalis, it would have been unnecessary for the SWRCB to direct the CVRWQCB, in D-1641, to "develop and adopt salinity objectives and a program of implementation for the main stem of the San Joaquin River upstream of Vernalis." (D- 1641, p. 85.) It would also be unnecessary for the Salt & Boron TMDL to develop salinity objectives for the LSJR. (Basin Plan, p. IV-32.03.)

From the start, the Vernalis Salinity Objective was not intended to apply to the LSJR, but to mitigate for the impacts of the State Water Project and Central Valley Project on agricultural beneficial uses in the South Delta. It applies only in the Delta. Its specific area of jurisdiction is clear from its regulatory history and on its face. It does not apply upstream of the Delta boundary

and therefore cannot operate as a water quality objective to identify a segment of the San Joaquin River upstream of the Delta as a water quality limited segment for electrical conductivity.[12]

3. The Current Electrical Conductivity Listing for the San Joaquin River from Mendota to the Merced River Confluence Must be Removed Because it is Based on Faulty Data.

The 2008 §303(d) electrical conductivity listing for the San Joaquin River from Mendota to the Merced River confluence has no data, no analysis, no citation to any line of evidence, and no citation to any section of the Listing Policy describing the basis for listing. (Decision IDs 7018, 7566, 6960.) The listings merely state:

> 303(d) listing decisions made prior to 2006 were not held in an assessment database. The Regional Boards will update this decision when new data and information become available and are assessed.

The lines of evidence to the prior listing decisions are blank "placeholders," lacking any data, analysis, or citations. (LOEs 4525, 4530, 4536.)

The original salinity/electrical conductivity listing for the San Joaquin River were based on "faulty data," because it was based on no data. The 2008 listing decisions similarly lack any data. Although the decisions state no data was submitted, the RWQCBs are required to consider all "readily available" data. (Listing Policy, p. 17.) "Readily available" data includes data from the Surface Water Ambient Monitoring Program ("SWAMP"), which gathers salinity data from the San Joaquin River. Therefore, data was available, but Staff ignored it.

The issue, however, is whether there is an existing beneficial use with an applicable electrical conductivity objective with which non-compliance has occurred. The primary Agriculture beneficial use on the San Joaquin River from Mendota to Crows Landing is not

[12] If the Vernalis Salinity Objective is an applicable salinity objective for the LSJR upstream of Vernalis, Staff properly recommended removing the San Joaquin River from the Tuolumne River to the Delta boundary for removal from the §303(d) list, although the removal is long overdue. Water Right Decision 1641 conditioned all of the water right permits for the CVP on compliance with the salinity objective at Vernalis by using "flow or other means." (SWRCB Water Right Decision 1641, pp. 160-162.) As a term and condition attached to water right permits, the United States Bureau of Reclamation lacks the discretion to operate the CVP in a manner that would result in any non-compliance with the Vernalis Salinity Objective, let alone a manner resulting in non-compliance sufficient to result in water quality limited segment classification. (C. Delta Water Agency v. U.S. Bureau of Recl. (2006) 452 F.3d 1021, 1026.) If it did not, then the SWRCB would have to use its water right enforcement authority to ensure the CVP fully implements the Vernalis Salinity Objective. (St. Water Resources Control Bd. Cases (2006) 136 Cal.App.4th 674, 734.)

surface water irrigation, but stock watering.[13] (SWRCB WQO 85-1 Technical Report, p. VIII-16.) Furthermore, MUN is not an existing use and likely never will be. The San Joaquin River from Mendota to the Merced River confluence therefore lacks an actual, existing beneficial use with applicable water quality objectives. Since Clean Water Act §303(d)(1)(A) only identifies water bodies with non-compliance with applicable water quality objectives for existing beneficial uses, the San Joaquin River from Mendota to the Merced River confluence cannot fall under Clean Water Act §303(d)(1)(A) and is not subject to water quality limited segment identification. (33 U.S.C. §1313(d)(1)(A).)

III. The San Joaquin River and Major Eastside Tributaries Should Not be Identified as Water Quality Limited Segments for Temperature.

A. The Fact Sheets Do Not Support the Existence of COLD Beneficial Uses.

1. Historic Temperature Data Is Not Relevant in Establishing that COLD is an Existing Use.

"Existing uses," as defined by the Clean Water Act, are those actually achieved since 1975. (40 C.F.R. §131.3(e).) As a result, comparing pre-1975 information about the presence/absence or abundance of sensitive aquatic life species is not relevant for establishing the existence of an existing use. Since the use must have been achieved since 1975, only information after 1975 is relevant. If post-1975 information shows a stable, fully supported cold water fishery, then COLD beneficial uses are existing uses. If post-1975 information does not establish the existence of a thriving, fully supported cold water fishery, then COLD beneficial uses are not existing uses. Uses that are not existing uses are not protected by the Clean Water Act. Since water quality limited segments are identified under the Clean Water Act, non-compliance with an objective for a beneficial use that does not exist does not constitute a valid basis for water quality limited segment identification.

Although the Basin Plan designates the San Joaquin River, Stanislaus River, Tuolumne River, and Merced River with COLD existing beneficial uses, it cannot change the definition of existing use contained in the Clean Water Act for the purposes of developing the §303(d) List. The Clean Water Act directs states to develop the §303(d) List and, as a result, the Clean Water

[13] Since the primary Agriculture beneficial use was specifically stock watering and no public water systems drew water from the San Joaquin River between Mendota and Crows Landing, the technical committee for the Technical Report for SWRCB Water Quality Order 85-1 recommended an EC objective of 3,000 µS/cm as far downstream as Hills Ferry. (SWRCB WQO 85-1 Technical Report, p. VIII-16.)

Act's definitions of existing uses apply in developing the List. Consequently, ff data shows a beneficial use did not exist since 1975, then it is not an existing use, regardless of its designation in the Basin Plan.

The Department of Fish & Game ("DFG") submitted a substantial amount of information, including a substantial amount of anecdotal evidence to support its recommendation to indentify the Stanislaus River, Tuolumne River, Merced River, and San Joaquin River as water quality limited segments for temperature. (Decision IDs 15202, 15203, 15204, 15206, 15207, 15209.) In general, the evidence cites various hearsay statements describing the decline of Chinook salmon and steelhead since at least 1920. Rather than showing that effluent limitations are insufficient to implement temperature objectives for existing COLD beneficial uses, they instead show that such uses are not existing uses, as defined by the Clean Water Act.

For the San Joaquin River, Chinook salmon populations had already declined by 1920. (LOE 26524) By 1950's salmon were extinct in the mainstem San Joaquin River and populations of less than 500 were a common occurrence in the Merced, Tuolumne and Stanislaus Rivers. (LOE 26524) Although there have been several peak escapement trends since 1952, the trend over time to 2006 has been declining escapement, with escapement peaking in 1952 at over 8,000 salmon and declining to 1,000 in 2006. (LOE 26526, 26524, 26519) (Id.)

The Stanislaus River had a good spring and fall-run as late as 1929 and at least until the construction of Tulloch Dam in 1958, when fall-run escapement averaged 10,300 spawners. (LOE 26531) After Tulloch Dam's construction, however, escapement declined to an average of 4,300 spawners. (Id.) With the operation of New Melones Reservoir in the 1970s, annual escapement dropped further to an average of 3,600 spawners. (LOE 26531) Between 1952 and 2006 the fall-run escapement population has oscillated over time and has dropped to levels less than 1,000 on several occasions. (Id.)

On the Tuolumne River, John Marsh noted particular salmon abundance in 1830. (LOE 26536) In 1849 Samuel Ward recalled a "plenteous fish summer of salmon, caught by rifle shot in the lower Tuolumne River." (Id.) The Tuolumne River annual escapement trends from 1940 to 2006 show production steadily decreasing. (Id.)

On the Merced River, residents informed the Fish & Game Commission as early as 1920 that Chinook salmon had declined to only a fiftieth of their former numbers. (LOE 26541) In

1928, the DFG stated there were several hundred Chinook salmon in the fall, but by 1961 the run was "poor," with only about 250 estimated salmon per year (Id.)

To constitute an existing use, as defined by the Clean Water Act, the Chinook salmon and steelhead fisheries must have been stable and thriving since 1975, but the evidence cited by the DFG shows only the contrary. With declining abundance since as early as 1920, beneficial uses for Chinook salmon and steelhead have not been fully supported since 1975. COLD is therefore not an existing use under the Clean Water Act.

2. USEPA Region 10 Criteria and Data from the Department of Fish & Game Show COLD is Not an Existing Beneficial Use.

Due to an alleged lack of data for natural receiving water temperature, the CVRWCB Staff used the "alternative approach focused on beneficial use impacts and likely effects of elevated temperature on sensitive species" by comparing the seven day average daily maximum temperature ("7DADM") to temperature criteria published by Region 10 of the USEPA. (*see* Listing Policy FED, p. 133.) All of the data was collected after 1975. (*see* Table 1, below.)

Table 1. Department of Fish & Game data collection periods of temperature listings.

Water Body	Collection Periods				
	Migration	Spawning	Smoltification	Juvenile Rearing	Steelhead Summer Rearing
San Joaquin R.					
Merced R. to Tuolumne R.	1996-2006		1997-2007		
Tuolumne R. to Stanislaus R.	1996-2006		1997-2007		
Stanislaus R. to Delta boundary	2001-2005		2002-2005		
Stanislaus R.	1991-2007	1999-2007	1999-2007	1999-2007	1999-2007
Tuolumne R.	1996-2007	1996-2007	1997-2008	1997-2008	1998-2007
Merced R.	1991-2007	1991-2007	1992-2007	1992-2007	1992-2007

In addition, a large proportion of samples collected during the period of data collection show a large proportion of samples exceeding the USEPA Region 10 7DADM temperature criteria. (*see* Table 2, below.)

Table 2. Proportion of 7DADM Samples Exceeding USEPA Region 10 Criteria.

Water Body	Proportion				
	Migration	Spawning	Smoltification	Juvenile Rearing	Steelhead Summer Rearing
San Joaquin R.					
Merced R. to Tuolumne R.	19 of 20		5 of 7		
Tuolumne R. to Stanislaus R.	13 of 13		9 of 12		
Stanislaus R. to Delta boundary	13 of 13		5 of 7		
Stanislaus R.	38 of 76	38 of 49	36 of 73	36 of 73	7 of 27
Tuolumne R.	85 of 147	102 of 118	75 of 137	75 of 137	26 of 78
Merced R.	107 of 130	95 of 96	102 of 125	102 of 125	31 of 47

The Listing Policy analyses under §4.2 and §3.2 are quantitative measures of whether a beneficial use, as measured by a water quality objective, has or has not been attained. If DFG's analysis is correct, USEPA Region 10 7DADM temperature constitutes numeric criteria for

COLD beneficial uses, COLD beneficial uses have been attained and are existing uses only if temperature data does no support listing. If, however, all of the data obtained since 1975 supports listing, then COLD beneficial uses have not been attained since 1975 and are not existing uses.

All of the temperature data collected since 1975 and supported by a Quality Assurance Project Plan ("QAPP") supports rejecting the null hypothesis presented in Table 3.2 of the Listing Policy. (Decision IDs 15202, 15203, 15204, 15206, 15207, 15209.) No QAPP-supported temperature data supports rejecting the null hypothesis in Table 4.2 of the Listing Policy. As objectively measured by comparing USEPA Region 10 criteria to 7DADM temperature data obtained by the DFG and analyzed under the Listing Policy, COLD beneficial uses have never been attained since 1975. Consequently, COLD beneficial uses do not exist in the San Joaquin River or the Stanislaus, Tuolumne, and Merced River, precluding water quality limited segment identification due to non-compliance with Basin Plan temperature objectives.

B. Water Quality Objectives for Temperature.

1. The Basin Plan Temperature Objective is Based on Natural Receiving Water Temperature.

The Basin Plan does not provide water body-specific temperature objectives for the LSJR or its east side tributaries. (Basin Plan, p. III-8.00.) In general, "[t]he natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses." (Id.) Further, "At no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5°F above natural receiving water temperature." (Id.) The 5°F limitation is not an absolute differential between natural receiving water temperature and effluent temperature, as the Basin Plan allows for mixing zones.[14] (Basin Plan, p. II-2.00.) The San Joaquin River and its major east side tributaries all include COLD existing beneficial uses. (Basin Plan, p. II-7.00 to II-8.00.) Therefore, the objectives for COLD waters apply.

[14] "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." (Basin Plan, Ch. II p. 2.00.)

Most important, however, the Thermal Plan[15] defines "natural receiving water temperature," which is "[t]he temperature of the receiving water at locations, depths, and times which represent conditions unaffected by any elevated temperature waste discharge or irrigation return waters." (Thermal Plan, p1.) "Elevated temperature waste" is "[l]iquid, solid, or gaseous material including thermal waste discharged at a temperature higher than the natural temperature of receiving water." (Id.) "Thermal waste" is "cooling water and industrial process water used for the purpose of transporting waste heat." (Id.)

The Thermal Plan applies to interstate and coastal waters, enclosed bays, and estuaries. (Thermal Plan, p. 1.) However, the SWRCB has applied the definitions included therein, particularly the definition for "natural receiving water temperature," to intrastate waters. (SWRCB Water Quality Order No. 2002-0015, *In the Matter of Review on Own Motion of Waste Discharge Requirements Order No. 5-01-044 for Vacaville's Easterly Wastewater Treatment Plant Issued by the California Regional Water Quality Control Board, Central Valley Region*, p. 49 (Oct. 3, 2002).) Furthermore, "natural receiving water temperature" is defined nowhere other than the Thermal Plan. The use of the same term in similar regulations is presumed to have the same meaning. (Boise Cascade Corp. v. USEPA, 942 F.2d 1427, 1432 (9th Cir. 1991)). This is especially true when, as here, the agency has given a specific definition for a term. (Urban Renewal Agency v. Calif. Coastal Zone Conservation Co. (1975) 15 Cal.3d 577, 584-585). Since the SWRCB used the term "natural receiving water temperature" in regards to the interstate waters, coastal waters and enclosed bays covered expressly by the Thermal Plan, and in regards to the intrastate waters which are not discussed in the Thermal Plan, in the absence of some other manifestation of a differing intent, the two terms are to be treated as if they have the same meaning.

Natural receiving water temperature is the key component in establishing the naturally occurring background temperature. As the Listing Policy FED acknowledged, "Without natural receiving water temperatures it is impossible to interpret the Basin Plan and Thermal Plan water quality objectives." (Listing Policy FED, p. 133.) Solar radiation, since it is not water or liquid, solid, or gaseous material fits neither the definitions of elevated temperature waste not thermal waste. Reservoir releases that are colder than natural receiving water temperature also fall outside the definition of elevated temperature waste. Since "natural receiving water temperature"

[15] The Thermal Plan is included as Item 11 in the Basin Plan Appendix.

includes everything except elevated temperature waste, thermal waste, and irrigation return flows, it includes the effects of sunlight, flow, and changes in flow, regardless of whether flow has been increased or decreased.[16]

2. The Listing Policy Revised the Basin Plan Temperature Objective by Incorrectly Defining Natural Receiving Water Temperature.

a. The Listing Policy Illegally Revised the Basin Plan Temperature Objective by Adding Two Commas to the Definition of Natural Receiving Water Temperature.

The Listing Policy did not establish new or revised water quality objectives and the listing process similarly does not revise or establish water quality objectives. (Listing Policy FED, p. 41-42; Listing Policy, p. 1.) As a result, the Listing Policy cannot interpret an objective, whether numeric or narrative, in a manner establishing a new or revised water quality objective. (Fl. Publ. Interest Research Citizen Lobby v. U.S. Envtl. Protection Agency (2004) 386 F.3d 1070, 1088-1089.)

The SWRCB nonetheless fundamentally altered the Basin Plan temperature objective when it developed the Listing Policy by incorrectly defining "natural receiving water temperature." The Listing Policy FED defined natural receiving water temperature as "The temperature of the receiving water at locations, depths, and times which represent conditions unaffected by any elevated temperature, waste discharge, or irrigation return waters," adding commas between elevated temperature, waste discharge, and irrigation return water. (Listing Policy FED, p. 132.) Whereas the Thermal Plan definition of natural receiving water temperature includes everything except discharges of "elevated temperature waste," which is a term of art with a particular meaning, and "irrigation return waters," the Listing Policy only excludes elevated temperature, waste discharge, or irrigation return waters. By inserting a comma and separating "elevated temperature waste discharge" into "elevated temperature" and "waste discharge," the Listing Policy fundamentally changed the meaning of natural receiving water temperature.

In excluding elevated temperature waste from the definition of natural receiving water temperature, the SWRCB incorrectly interpreted natural receiving water temperature to mean

[16] If, for example, flows are augmented to achieve a pulse flow objective and have the incidental effect of lowering the water temperature, then the lowered water temperature is the natural receiving water temperature. If flows

historic, unaltered, and/or natural conditions in a water body. (Listing Policy FED, p. 132-133.) Since natural receiving water temperature includes everything except elevated temperature waste discharge and irrigation return water, time and history are only relevant for the purposes of eliminating such factors to determine natural receiving water temperature. The Thermal Plan itself precludes using a natural/historic baseline, providing that:

> "Natural water temperature will be compared with waste discharge temperature by near-simultaneous measurements accurate to within 1ºF. In lieu of near-simultaneous measurements, measurements may be made under calculated conditions of constant waste discharge and receiving water characteristics."

(Thermal Plan, p. 6.)

Given the SWRCB's insistence that temperature comparisons be made using "near-simultaneous measurements," it is clear that the SWRCB was not contemplating the need or use for data reflective of the "historic" or "unaltered" condition of the water body. Rather, the SWRCB viewed elevated temperature waste discharge as a point source discharge. Other than irrigation return water, natural receiving water temperature includes all non-point source discharges, including solar radiation.

b. The Fact Sheets Fail to Consider the Entire Temperature Objective.

In the listing decisions for temperature for the San Joaquin River, Stanislaus River, Tuolumne River, and Merced River, Staff further altered the Basin Plan temperature objective by limiting the narrative to the first sentence, "The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses." (CVRWQCB, *Clean Water Act Sections 305(b) and 303(d) Integrated Report for the Central Valley Region Public Review Draft* ("2008 §305(b)/303(d) Staff Report"), p. 8 (January 2009); 2008 §305(b)/303(d) Staff Report, App. E, Decision IDs 15202, 15203, 15204, 15206, 15207, 15209.) As a result, the facts sheets ignore the definition of natural receiving water temperature contained in the Thermal Plan and entirely ignore the Basin Plan COLD water narrative limiting changes in natural receiving water temperature to 5°F. (2008 §305(b)/303(d) Staff Report, App.

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consist almost entirely of temperature waste, thermal waste, and irrigation return flows, then there is no "natural" receiving water.

E, Decision IDs 15202, 15203, 15204, 15206, 15207, 15209.) This interpretation has even less basis in the water quality control plans. While the quoted language is contained in the Basin Plan (*see* Chapter III, p. 8.00), it does not constitute a "water quality objective" as defined by the Water Code.

A water quality objective is a standard that limits the levels of water quality constituents or characteristics. Specifically, the Water Code defines a "water quality objective" 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."(*See* Water Code 13050(h)(emphasis added)). The language cited by the CVRWQCB as a "narrative objective" does not qualify as a water quality objective as defined by the Water Code as it does not contain any level, criteria, characteristic or other description or limitation regarding the temperature of intrastate water. Rather, the language relied upon by the CVRWQCB merely provides that no alteration of temperature will be allowed unless expressly approved by the CVRWQCB. Although, the language relied upon by the CVRWQCB establishes that alterations of temperature are allowed, it provides for no such alterations unless prior approval is obtained from the CVRWQCB. The need to obtain prior CVRWQCB approval is not a description or identification of a limit or level of water quality constituents as required by Water Code §13050(h).

The language relied upon by Staff similarly does not comply with federal requirements under the Clean Water Act. Pursuant to federal regulation, a water quality standard is comprised of both the designation of use to be made of the water, and the criteria necessary to protect such use. (40 C.F.R. §131.2). In addition to not identifying any criteria, the language relied upon by the CVRWQCB fails to identify any beneficial use or uses which are to be protected. All that the language relied upon by the CVRWQCB says is that temperature cannot be altered, absent the permission of the CVRWQCB, if it will harm "beneficial uses." The Water Code and Clean Water Act both require the CVRWQCB to evaluate, weigh and balance a host of factors before identifying the beneficial use or uses for a particular water (not to mention the criteria necessary to reasonably protect such beneficial use). (Water Code § 13241; 33 U.S.C. §1313(c)(2)(A); *see also* 40 C.F.R. §§131.10-131.13). There is no evidence that the weighing and balancing the CVRWQCB must have engaged in ever occurred, as the language does not identify any specific beneficial use or uses which are to be protected.

Staff's interpretation of the objective is inconsistent with prior interpretations by the CVRWCB, which has treated the language "natural receiving water temperature… shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses" as an exception to the objective rather than the objective itself. In granting an exception to the Thermal Plan for the Antioch Paper and Pulp Mill, the CVRWQCB noted, using similar language to that contained in the Basin Plan, that federal regulations allow the CVRWQCB to establish effluent limitations in permits less stringent than those contained in applicable standards if the discharger demonstrates to the satisfaction of the CVRWQCB that the effluent limitations are more stringent than necessary to assure the protection and propagation of a balanced, indigenous community of shellfish, fish, and wildlife in and on the body of water into which the discharge is made.[17] (Central Valley Regional Water Quality Control Board, *Granting an Exception to the Water Quality Control Plan for the Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California for the Gaylord Container Corporation Antioch Paper And Pulp Mill (Discharger) Wastewater Discharge into the San Joaquin River*, p. 1 (Resolution R5-2003-0069, April 25, 2003).

The Antioch Paper and Pulp Mill subsequently conducted a study in 1976, 27 years prior, determining that the thermal waste discharge was 45 °F hotter than the maximum temperatures of the receiving water. (Id. at 2.) However, the studies also concluded that the thermal waste discharge would not "adversely affect beneficial uses and the propagation of a typical community of fish and macroinvertebrates in the receiving waters." (Id.) Finally, the study

[17] Specifically, Clean Water Act §316(a) provides that:

> "…with respect to any point source otherwise subject to the provisions of section 1311 of this title or section 1316 of this title, whenever the owner or operator of any such source, after opportunity for public hearing, can demonstrate to the satisfaction of the Administrator (or, if appropriate, the State) that any effluent limitation proposed for the control of the thermal component of any discharge from such source will require effluent limitations more stringent than necessary to assure the projection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in and on the body of water into which the discharge is to be made, the Administrator (or, if appropriate, the State) may impose an effluent limitation under such sections for such plant, with respect to the thermal component of such discharge (taking into account the interaction of such thermal component with other pollutants), that will assure the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in and on that body of water."

(33 U.S.C. §1326(a); *see also* 40 C.F.R. §125.73.)

concluded that a zone defined by water temperatures of no more than 1 °F across 25% of the main river channel and not elevating water temperature more than 4 °F above natural receiving water temperatures could not be met for any foreseeable tidal or river conditions. (Id.) Even though the studies were 23 years old, the Antioch Paper and Pulp Mill nonetheless satisfied the CVRWQCB that natural receiving water temperature could be altered without harming beneficial uses and the CVRWQCB granted an exception to the Thermal Plan. The exception granted to the Antioch Paper and Pulp Mill therefore demonstrates that the language relied upon by Staff as a temperature objective is not a temperature objective, merely authorization for the CVRWQCB to grant exceptions to temperature objectives contained elsewhere.

The Staff interpretation is also inconsistent with that of the SWRCB, which, in reviewing the waste discharge permit for the City of Vacaville's Easterly Wastewater Treatment Plant issued by the CVRWQCB for waste discharges into Old Alamo Creek, stated:

> The Vacaville permit… implements a Current Basin Plan objective that states that "[a]t no time shall the temperature of COLD or WARM interstate waters be increased more than 5° F above natural receiving water temperature." "Natural receiving water temperature" is defined in the [Thermal Plan]. It means "[t]he temperature of the receiving water at locations, depths, and times which represent conditions unaffected by any elevated temperature waste discharge or irrigation return waters."

(SWRCB Water Quality Order No. 2002-0015, *In the Matter of Review on Own Motion of Waste Discharge Requirements Order No. 5-01-044 for Vacaville's Easterly Wastewater Treatment Plant Issued by the California Regional Water Quality Control Board, Central Valley Region*, p. 49 (Oct. 3, 2002).)

Similarly, in amending the Basin Plan to adopt temperature objectives for Deer Creek, the CVRWQCB stated the temperature objective as much more than just the first sentence:

> "The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alternation in temperature does not adversely affect beneficial uses.
>
> …At no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5ºF above natural receiving water temperature. Temperature changes due to controllable factors shall be limited for the water bodies specified as described in Table III-4. To the extent of any conflict with the above, the more stringent objective applies.

> In determining compliance with the water quality objectives for temperature, appropriate averaging periods may be applied provided that beneficial uses will be fully protected."

(CVRWQCB, *Amendments To The Water Quality Control Plan For The Sacramento River And San Joaquin River Basins For Temperature At Deer Creek El Dorado & Sacramento Counties Staff Report Functional Equivalent Document - Final Staff Report*, p. 4-1 (January 2003).)

Staff's present interpretation of the Basin Plan temperature objective is also inconsistent with previous listing determinations. In responding to recommendations to list certain water bodies for temperature, the CVRWQCB Staff acknowledged the need to determine "natural receiving water temperature" before determining whether temperatures had increased more than 5°F above natural receiving water temperature. (CVRWQCB, *Final Staff Report on Recommended Changes to California's Clean Water Act section 303(d) List*, p. 28 (December 14, 2001).) In responding to requests to list various streams for temperature on the 2002 §303(d) List, the CVRWQCB Staff summarized the objective as:

> "The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses. ….At no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5°F above natural receiving water temperature. Temperature changes due to controllable factors shall be limited for the water bodies specified as described in Table III-4. To the extent of any conflict with the above, the more stringent objective applies. In determining compliance with the water quality objectives for temperature, appropriate averaging periods may be applied provided that beneficial uses will be fully protected."

(CVRWQCB, Final Staff Report on Recommended Changes to California's Clean Water Act section 303(d) List, p. 28 (December 14, 2001).)

Even in 2006, the CVRQWCB used the "entire" temperature objective prohibiting increases of more than 5 °F above natural receiving water temperature for making listing determinations for Butt Valley Reservoir (LOE 726), Butte Creek (LOE 2677), and the Middle Fork of the Feather River (LOE 2629). Staff, however, at the March 10, 2009 public meeting, admitted they did not consult the Thermal Plan for the definition of "natural receiving water temperature," did not know what "natural receiving water temperature" was, did not try to determine what "natural receiving water temperature" was, and did not even know that "natural

receiving water temperature" has a specific definition. As a result, even if Staff's "objective" were correct, which it is not, Staff cannot determine whether compliance has occurred, because if it does not know what "natural receiving water temperature" is, if cannot determine whether natural receiving water temperature changes have adversely affected beneficial uses.

Nonetheless, the objective used for temperature listing determinations for the San Joaquin River, Stanislaus River, Tuolumne River, and Merced River is facially inconsistent with a plain, full reading of the Basin Plan's section regarding surface water temperature. It is also inconsistent with previous interpretations and applications of the objective by the SWRCB and the CVRWQCB. The applicable objective for surface water temperature is more than just the first sentence in the surface water section of the Basin Plan.

3. Even Assuming the Alternative Approach Focused on Beneficial Use Impacts and Likely Effects of Elevated Temperature on Sensitive Species Were Legally Supportable, the Listing Policy Does Not Permit its Application.

Under the Listing Policy, the alternative approach focused on beneficial use impacts and likely effects of elevated temperature on sensitive species only applies if and when information regarding natural receiving water temperature is unavailable. (Listing Policy, p. 25.) Therefore, even assuming the "alternative approach" was legally supportable, which it is not, the RWQCB would first have to show that natural receiving water temperature is unavailable or impossible to determine.

The fact sheets, however, do not establish that such information is unavailable or indeterminate. (Decision IDs 15202, 15203, 15204, 15206, 15207, 15209.) They entirely ignore the need to consider elevated temperature waste discharge and agriculture return flows and any evidence of such.[18] As a result, even if the Listing Policy had properly included elevated temperature waste discharge and agriculture return flows in the definition of natural receiving water temperature, which it did not, the fact sheets ignored the factors necessary to determine natural receiving water temperature. (Id.) There is no assertion that the San Joaquin River from the Merced River confluence to the Delta boundary, the Stanislaus River, Tuolumne River, or Merced River lack elevated temperature waste discharge or agriculture return flows. To the contrary, agriculture return flows are substantial, considering the 2008 §303(d) List cites

[18] Furthermore, since Staff admitted at the March 10, 2009 public meeting that they did not know what the term "natural receiving water temperature" meant, they would not have known what to look for or what to determine.

agriculture as the pollution source for Chlorpyrifos, Diazinon, and Group A Pesticides for all of the aforementioned streams, as well as Boron, DDT, and Electrical Conductivity for the San Joaquin River. (2008 California §303(d) List of Water Quality Limited Segments, Category 5.) Therefore, even assuming the alternative approach focused on beneficial use impacts and likely effects of elevated temperature on sensitive species were legally supportable, the fact sheets fail to meet the Listing Policy's threshold requirement of first showing that information regarding natural receiving water temperature is unavailable.

If the "alternative approach" is used loss of habitat, diversions, toxic spills, and other factors are also considered must also be considered. (Listing Policy, p. 26.) However the facts sheets and lines of evidence similarly lack any such considerations.

4. Information Regarding Natural Receiving Water Temperature is Available.

"Historic" or "natural" temperature data need not be generated solely from actual measurements taken. Since actual measurements of "historic" or "natural" temperatures are rarely available, computer modeling is generally required to determine what such temperatures were. (CVRWQCB, Final Staff Report on Recommended Changes to California's Clean Water Act section 303(d) List, p. 28 (December 14, 2001).) For example, in the Eel River TMDL, the United States Environmental Protection Agency ("USEPA") used a computer model to calculate "natural stream temperatures" and also to evaluate the temperature affects of four additional riparian management scenarios. (USEPA Region 9, *2004 Final Upper Main Eel River and Tributaries Total Maximum Daily Loads for Temperature and Sediment*, p. 20-24, 28-32 (Dec. 29, 2004).). In so doing, USEPA noted that "Modeling of stream temperature is a well developed area of inquiry and many models are available to assist policymakers in understanding the factors controlling stream temperatures." (Id., p. 20.)

A San Joaquin River Basin-Wide Water Temperature Modeling Project ("SJR Basin Temperature Model") began in 2005 as an extension of the HEC-5Q Stanislaus–Lower San Joaquin River Water Temperature Modeling and Analysis Project ("Stanislaus Temperature Model"). The geographic boundaries of the model are the San Joaquin River from the Stevinson Bridge downstream to the Mossdale Bridge, the Merced River from New Exchequer Reservoir downstream to the San Joaquin River confluence, the Tuolumne River from New Don Pedro downstream to the San Joaquin River confluence, and the Stanislaus River from New Melones

Reservoir downstream to the San Joaquin River confluence. (*see* Appendix B, Cal. Dept. of Fish & Game ("DFG") *Lower San Joaquin River Basin-Wide Temperature Modeling Project Data Collection Protocol*, p. 4 (Mar. 22, 2006)[19].) The primary purpose of the SJR Temperature Model is to identify a suite of restoration actions that would, if implemented, assist in developing management strategies for maintaining suitable water temperatures for fall-run Chinook salmon (salmon) and Steelhead rainbow trout (steelhead) in the lower San Joaquin River Basin. (Id.)

Just as the SJR Basin Temperature Model is capable of predicting future water temperatures given a range of operation scenarios, it is likewise capable of accurately identifying "natural" or "historic" temperatures using the same principles. (*see* Appendix C, Item 5, San Joaquin River Group Authority's Written Comments to Proposal By Central Valley Regional Water Quality Control Board to List the San Joaquin, Tuolumne, Merced and Stanislaus Rivers as Impaired Bodies of Water For Temperature Pursuant to Section 303(d), Exhibit B p. 3-4 (Nov. 19, 2007).) As an example, in the Case 1 run done for the SJRGA by AD Consultants, the SJR Basin Temperature Model identified and compared "actual" temperatures with "historic" temperatures at varying locations in the Stanislaus River for the period 1967-1982. (Id., p. 6-7.) The "historic" temperatures were derived solely from the model by removing New Melones Dam and reservoir, installing the original Melones Dam and reservoir, and using historical flow and operation criteria for Melones Dam and reservoir. (Id.) Similarly, the "actual" temperatures, which assumed the existence of New Melones Dam and reservoir and the Interim Plan of Operation as the operating criteria for the period 1967-1982, were derived solely from the model. (Id.) Once the simulation was completed, the results were compared with temperature data collected at Vernalis and downstream of Goodwin Dam. (Id.) The comparison indicated that the model under-predicted the observed temperatures slightly, indicating that the model results are conservative from a temperature increment standpoint. (Id., p. 6, p. 10 [Figure 7].)

In another simulation, the SJR Basin Temperature Model compared historic conditions on the Stanislaus River with and without New Melones, replacing New Melones Reservoir with Old Melones Reservoir. (Id., p. 3.) Simulated historic temperatures were higher than actual historic

[19] The CDFG's *Lower San Joaquin River Basin-Wide Temperature Modeling Project Data Collection Protocol* ("*San Joaquin River Basin Temperature Modeling Project*") was attached to its February 28, 2007 submittal as Exhibit E, but not included in the data, references, and other materials for Decision IDs 15202, 15203, 15204, 15206, 15207, and 15209. The *San Joaquin River Basin Temperature Modeling Project* is attached herein as Exhibit B.

temperatures, which failed to meet numeric temperature criteria recommended by the DFG in the Stanislaus River and the San Joaquin River.[20] (Id., p. 6.)

Table 3. DFG recommended temperatures in letter to CVRWCB, February 28, 2007.

River	Location	River Mile	Season	Life Phase	Threshold (ºF)	Affected River Miles	Threshold (ºC)
San Joaquin	Vernalis	72	9/1 - 10/31	Adult/Egg	64.4	118	18
	Vernalis	72	3/15 - 6/15	Smolt	59.0	118	15
Stanislaus	Mouth	0	9/1 - 10/31	Adult/Egg	64.4	58	18
	Riverbank	33	10/1 - 12/15	Egg	55.4	33	13
	Mouth	0	3/15 - 6/15	Smolt	59.0	58	15
Tuolumne	Mouth	0	9/1 - 10/31	Adult/Egg	64.4	52	18
	Waterford	28	10/1 - 12/15	Egg	55.4	24	13
	Mouth	0	3/15 - 6/15	Smolt	59.0	52	15
Merced	Mouth	0	9/1 - 10/31	Adult/Egg	64.4	52	18
	River Mile 28	28	10/1 - 12/15	Egg	55.4	24	13
	Mouth	0	3/15 - 6/15	Smolt	59.0	52	15

Table 4. Number and percent of days historic simulated temperatures were higher than actual historic temperatures.[21]

Location	Average Temperatures		Maximum Temperatures	
	# of Days	% of Time	# of Days	% of Time
Goodwin	248	68	340	93
Knights Ferry	241	66	287	79
Orange Blossom	243	67	278	76
Riverbank	247	68	318	87
Ripon	251	69	328	90
Confluence	221	61	303	83
Vernalis	205	56	279	76

The primary reason for the cooling effect under actual historic conditions is the increased storage in New Melones. (App. C, Exh. B p. 7.) Whereas the Old Melones Reservoir storage capacity was approximately 110 thousand acre-feet, New Melones Reservoir storage capacity is approximately 2.4 million acre-ft. (Id.) Additionally, Old Melones Reservoir cycled from full to empty on a yearly basis, either spilling large quantities of water during the flood control season or passing through low flows when the reservoir was empty. (Id.) By comparison, New Melones Reservoir has significantly greater carry-over storage capacity, allowing it to release water for flood control while maintaining cold water storage. (Id.)

The SJR Basin Temperature Model is capable of accurately depicting actual historic temperatures for the San Joaquin, Tuolumne, Merced and Stanislaus Rivers, as well as simulated

[20] The SJR Basin Temperature Model simulations assessed temperature compliance for the San Joaquin River at Vernalis.

a multitude of other conditions. Information regarding natural/historic conditions is available. As a result, the CVRWQCB should not rely on the "alternative approach," set forth in §6.1.5.9 of the Listing Policy, focusing on beneficial use impacts and likely effects of elevated temperature on sensitive species. Instead, it can use the SJR Basin Temperature Model to simulate such conditions.

More importantly, in the context of the Basin Plan Temperature Objective, the impact of New Melones, Old Melones, and other reservoirs is only relevant if they release water warmer than the natural temperature of receiving water. (Basin Plan, p. III-8.00; Thermal Plan, p1.) Such releases would constitute a discharge elevated temperature waste. (Thermal Plan, p1.) Every other impact of dams and reservoirs falls within the scope and definition of natural receiving water temperature. (Id.) The "alternative approach" set forth in §6.1.5.9 of the Listing Policy only becomes possible by misreading or outright ignoring the Basin Plan and Thermal Plan by making commas disappear or pretending they do not exist.

5. Controllable Factors Cannot Achieve the Recommended Temperatures.

Achieving water quality objectives depends on controllable factors. (Basin Plan, p. III-1.00.) Controllable water quality factors are those actions, conditions, or circumstances resulting from human activities that may influence the quality of waters of the state and that may be reasonably controlled. (Id.) When a RWQCB establishes new or revised water quality objectives, it must consider the water quality conditions reasonably achievable through coordinated control of all factors affecting water quality in an area is a required consideration. (Water Code §13241(c).) Although many numeric water quality objectives have been adopted, in many instances RWQCBs have been unable to adopt numerical water quality objectives for constituents or parameters. (Basin Plan, p. IV-17.00.) Instead, they adopt narrative water quality objectives such as the Basin Plan Temperature Objective. (Id.; *see also* p. III-8.00.) When evaluating compliance with narrative water quality objectives, such as where narratives apply to protect specified beneficial uses, the CVRWQCB must adopt, in each circumstance, numeric limitations. (Basin Plan, p. IV-17.00.) When adopting numeric limitations, the CVRWQCB considers direct evidence of beneficial use impacts, all material and relevant information submitted by the discharger and other interested parties, and relevant numerical criteria and

[21] *See* App. C, Item 5, p. 7 [Table 1].)

guidelines developed and/or published by other agencies and organizations. (Id.) In considering such criteria, the CVRWQCB evaluates whether the specific numerical criteria are relevant and appropriate to the situation at hand and, therefore, should be used in determining compliance with the narrative objective. (Id.)

The requirement to achieve water quality objective compliance through controllable factors was a significant consideration when the SWRCB, in adopting the 1991 Salinity Plan, decided that temperature no greater than 68°F should be achieved though waste discharge controls, increasing riparian canopy, and bypassing warming areas. (SWRCB, *Water Quality Control Plan for Salinity San Francisco Bay/Sacramento San Joaquin Delta Estuary* (adopted pursuant to SWRCB Resolution No. 91-34, May 1, 1991) ("1991 Salinity Plan"), p. 1-13, Table 1-1 fn 4.) Reservoir releases were ruled out as an unreasonable use of water under Article X, §2 of the Constitution, because travel time from reservoirs and ambient air temperatures eliminated any significant benefits in the Delta. (Id.)

The need to achieve water quality objective compliance through controllable factors was also the basis for Decision ID 4323, which recommends against listing Lake Almanor for temperature. (Decision ID 4323, Water Body ID CAL5184100020020418094956.) Of five temperature samples, three exceeded the temperature criteria for steelhead. (Water Body ID CAL5184100020020418094956, LOE 724.) However, Staff decided not to list Lake Almanor for temperature, because there was no evidence that human activities (i.e. controllable factors) were responsible for modifying the temperature regime and adversely impacting cold water species. (Water Body ID CAL5184100020020418094956, LOE 723.) Rather, Lake Almanor, being a reservoir, took on its own temperature regime, which included seasonal development of warm and cold water layers, something unrelated to human induced impacts.[22] (Id.)

For similar reasons, non-compliance with Basin Plan Temperature Objectives only occurs through failure to implement controllable factors. The listing determinations for the San Joaquin River, Stanislaus River Tuolumne River, and Merced River do not address controllable factors such as flow. (Decision IDs 15202, 15203, 15204, 15206, 15207, 15209.) However, in

[22] Staff also used a different methodology than it did for the San Joaquin River, Stanislaus River, Tuolumne River, and Merced River. It used maximum annual temperature instead of seven day average daily maximum temperature and it used Sullivan et al. (2000) Published Temperature Thresholds-Peer Reviewed Literature instead of USEPA Region 10 criteria. Sullivan et al. calculated the Annual Maximum (instantaneous maximum observed during the summer) upper threshold criterion for steelhead trout as 21.0°C and not the <18 °C 7DADM.

responding to the SJRGA's comments at the September 25 2006 staff workshop, the DFG clearly stated their belief that flow was the key factor affecting temperature:

> While the critically dry conditions have not been assessed for the east-side tributaries it is anticipated that water temperatures would exceed those values observed during Dry year type conditions by virtue of 1) lower instream flow levels and 2) the strong relationship between instream flow levels and water temperature.

(*see* Appendix D, p. 10.)

To the contrary, the water quality limited segment identification has not occurred as a result of flow alterations. In the final simulation, Case 5, the SJR Basin Temperature Model simulated temperature conditions if all of the water in the basin were used for fishery flows. (App. C, Exh. B p. 5.) The simulation used the 1995 through 2005 hydrology, but maintained historical storage and eliminated diversions by rerouting them back to the reservoirs. (Id.) Even if New Melones, Don Pedro, McClure Reservoir, and Millerton Lake were emptied immediately, the enhanced flow would still fail to achieve the DFG's recommended temperature criteria sufficiently often to avoid water quality limited segment identification. (App. C, Item 5, Exh. B p. 21-22.) If committing every ounce of water in the basin to fishery flows fails to achieve the DFG's recommended temperature criteria sufficiently often to avoid water quality limited segment identification, then flow alterations are not a controllable factor capable of achieving water quality objectives. [23] Regardless of how many salmon and steelhead once occupied the San Joaquin River, Stanislaus River, Tuolumne River, and Merced River, the temperature regime advocated by the DFG never could have existed and the listing determinations have used the wrong baseline in evaluating compliance with the Basin Plan Temperature Objective.

6. Porter-Cologne, the Clean Water Act, and the Basin Plan do Not Support Using the USEPA Region 10 Criteria for Water Quality Limited Segment Identification.

Without natural receiving water temperature, interpreting the Basin Plan and Thermal Plan temperature objectives is impossible. (Listing Policy FED, p. 133.) Unfortunately, since historic, unaltered, and/or natural conditions in a water body are so site specific, stream segments rarely have any available and useable natural receiving water temperature data sets. (Listing

Policy FED, p. 133.) In developing the 2002 §303(d) List, the CVRWQCB chose not to identify certain streams precisely because they lacked sufficient data and modeling capability to determine natural receiving water temperature. (CVRWQCB, *Final Staff Report on Recommended Changes to California's Clean Water Act section 303(d) List*, p. 28 (December 14, 2001).) In any event, since natural receiving water temperature includes all factors except elevated temperature waste discharges and irrigation return flows, historic data is only relevant for the purposes of using data lacking elevated temperature waste discharges and irrigation return flows for use in determining natural receiving water temperature. (*see* The Basin Plan Temperature Objective is Based on Natural Receiving Water Temperature., *supra*.) However, difficulty interpreting an applicable water quality objective does not negate an objective's applicability.

Instead of finding ways to determine natural receiving water temperature, the SWRCB adopted "an alternative approach focused on beneficial use impacts and likely effects of elevated temperature on sensitive species." (Listing Policy FED, p. 133.) Instead of using natural receiving water temperature, the "alternative approach" compares recent temperature monitoring data for a specific water body to the temperature requirements of resident aquatic life. (Listing Policy FED, p. 134.) There is no evidence in the Listing Policy FED, fact sheets, or elsewhere that the temperature criteria for resident aquatic life, such as those recommended by USEPA Region 10 or by the DFG, are equivalent to the Basin Plan's temperature objective of natural receiving water temperature plus 5 °F. As a result, since the Listing Policy did not change any established water quality objectives and therefore could not have adopted a method of interpretation constituting a revision to the Basin Plan temperature objective, the alternative approach focused on beneficial use impacts and likely effects of elevated temperature on sensitive species violates the Clean Water Act and Porter-Cologne. It cannot serve as a basis for identifying water quality limited segments.

IV. The Delta Should Not Be Listed for Temperature.

The Basin Plan designates the Delta as having existing COLD beneficial uses for freshwater habitat and migration, but not for spawning. (Basin Plan, p. II-8.00.)

[23] Releasing stored water to regulate temperatures in the San Joaquin River, Stanislaus River, Tuolumne River, and Merced River would still fail to achieve objectives, provide no discernible temperature benefit, and, like the use using stored water for temperature control in the Delta, constitute an illegal waste and unreasonable use of water under Article X, §2 of the Constitution.

For estuaries such as the Delta, the Thermal Plan contains objectives for both existing discharges and new discharges.[24] (Thermal Plan, p. 5.) Existing elevated temperature waste discharges shall not exceed natural receiving water temperature by more than 20 °C. (Id.) Further, elevated temperature waste discharges either individually or combined with other discharges shall not create a zone, defined by water temperatures of more than 1 °F above natural receiving water temperature, exceeding 25 percent of the cross-sectional area of a main river channel at any point. (Id.) Finally, no discharge shall cause surface water temperature rise greater than 4 °F above the natural receiving water temperature of the receiving waters at any time or place. (Id.)

The Basin Plan also adopted temperature objectives for the Delta contained in the SWRCB 1991 Water Quality Control Plan for Salinity ("1991 Salinity Plan"). For Chinook salmon, temperatures at Vernalis would be no more than 68°F from April through June and September through November. (1991 Salinity Plan, p. 1-13.) The temperature objective should be achieved through "controllable factors" such as "waste discharge controls, increases in thermal canopy, and bypass of warming areas." (Id.) With the exception of establishing a 66°F objective for winter-run Chinook salmon on the Sacramento River, no temperature objective specific to any particular run of Chinook salmon was adopted. Furthermore, according to the footnotes to the table establishing various water quality objectives:

> Controllable water quality factors are those actions, conditions, or circumstances resulting from human activities that may influence the quality of the waters of the State, that are subject to the authority of the State Board, or the Regional Board, and that may be reasonably controlled. Based on the record in these proceedings, controlling temperature in the Delta utilizing reservoir releases does not appear to be reasonable due to the distance of the Delta downstream of reservoirs and uncontrollable factors such as ambient air temperature, water temperatures in the reservoir releases, etc. For these reasons, the State Board considers reservoir releases to control water temperatures in the Delta a waste of water; therefore, the State Board will require a test of reasonableness before consideration of reservoir releases for such a purpose.

[24] The CVRWQCB acknowledged that the temperature objectives in the Thermal Plan apply in the Delta when it granted the Antioch Paper and Pulp Mill an exception to the Thermal Plan, stating that the "discharger had an existing discharge of thermal waste into the San Joaquin River at a location in the [Delta]." (CVRWQCB, *Granting an Exception to the Water Quality Control Plan for the Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California for the Gaylord Container Corporation Antioch Paper And Pulp Mill (Discharger) Wastewater Discharge into the San Joaquin River*, p. 1 (Resolution R5-2003-0069, April 25, 2003).) Consistent with the Thermal Plan, the CVRWQCB applied the objective for existing discharges in estuaries. (Id.)

(1991 Salinity Plan, p. 1-13, Table 1-1 fn 4.)

This language no longer exists in the Bay-Delta Plan. However, the Final EIR for D-1641 stated that "The effects of the flow alternatives on water temperature in the Delta are difficult to assess. In general, water temperatures in the Delta are affected primarily by ambient air temperatures." (D-1641 EIR, Vol. 1, p. IV-43.) None of the project alternatives would have resulted in detectable temperature changes in the Delta. (Id.)

The Delta temperature objectives were deleted from the 1995 Bay-Delta Plan and replaced with the San Joaquin River Spring Flow Objectives, which established minimum flow requirements from February through June and a pulse flow from mid-April through mid-May. (SWRCB Resolution No. 95-24, *Adoption of the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* (May 22, 1995), p2.) The Spring Flow Objective would provide habitat, water quality, and temperature benefits to fall-run Chinook salmon, migrating steelhead, spawning, larval, and juvenile Delta smelt. (2006 Bay-Delta Plan Appendix I, p. 50.)

Since the SWRCB replaced the temperature objective with the flow objectives, flow, not temperature, is the measure of whether the beneficial use is achieved. No data showing flow objective non-compliance has been submitted. Even if there were flow-objective non-compliance, it is unclear how a TMDL would be established for flow. As a result, even if there were flow objective non-compliance, the Delta should no be listed for insufficient flow. Other forums exist for addressing adequate flow for the Delta.

V. The Delta Waterways (Stockton Ship Channel) Must be Removed from the §303(d) List for Organic Enrichment/Low Dissolved Oxygen.

Currently, the Stockton Ship Channel, located in the Delta Waterways (Water Body ID CAE5440000020021115141407), is listed as a water quality limited segment for organic enrichment/low dissolved oxygen. (Decision ID 7203.) However, nothing in the administrative records for the §303(d) Lists from 1996, 1998, 2002, and 2006 explain the precise rationale for listing the Stockton Ship Channel for low dissolved oxygen. According to the D-1641 EIR:

> The fall-run chinook salmon pass through the Delta on their way to spawning areas in upstream tributaries. In order to migrate successfully to their natal streams, San Joaquin salmon must encounter favorable conditions in the Delta and the lower San Joaquin River. Water quality conditions in the reach of the San Joaquin River near the City of Stockton

> (Stockton), however, are often unfavorable, particularly in regard to temperature and DO levels. The reach of river (see Figure X-1) from Turner Cut to the head of Old River, which includes the Stockton ship channel, the Port of Stockton's turning basin, and the Stockton Wastewater Treatment Plant (Stockton WWTP) outfall has been identified as an area of concern because of low DO levels. DO levels below 5.0 mg/l create an "oxygen block" which impedes salmon migration upstream (Hallock 1970). DO levels as low as 1.5 mg/l have been recorded in the reach of the San Joaquin River from the turning basin to Turner Cut, and levels as low as 0 mg/l have been recorded in the turning basin.

(D-1641 EIR, p. X-1.)

The DO Objective for the Ship Channel is 5.0 mg/l throughout the year, except for September through November, when the objective is 6.0 mg/l. (2006 Bay-Delta Plan, p. 14 Table 3.) The DO Objective lacks a specific averaging period. However, the Listing Policy specifies that, for dissolved oxygen, the seven-day average of minimum daily measurements is used. (Listing Policy, p. 4.)

Although the D-1641 EIR did not discuss exceedance frequency, the Staff Report for the *Control Program for Factors Contributing to the Dissolved Oxygen Impairment in the Stockton Deep Water Ship Channel* ("DO TMDL") determined that historically, the long-term exceedance frequency averaged 17 percent. (CVRWQCB, *Control Program for Factors Contributing to the Dissolved Oxygen Impairment in the Stockton Deep Water Ship Channel Final Staff Report* ("Stockton Ship Channel DO TMDL"), p. 22 (February 28, 2005).)[25] However, Stockton Ship Channel DO TMDL Staff did not address the issue of whether a sufficient number of exceedances of the DO Objective occurred to identify the Stockton Ship Channel as a water quality limited segment for low dissolved oxygen.

Currently, the Rough & Ready Island monitoring station currently monitors dissolved oxygen in the Ship Channel at 15-minute intervals. (*see* Table 5 and Figure 1, below) It began gathering data in 2001. (*see* Table 6, below.)

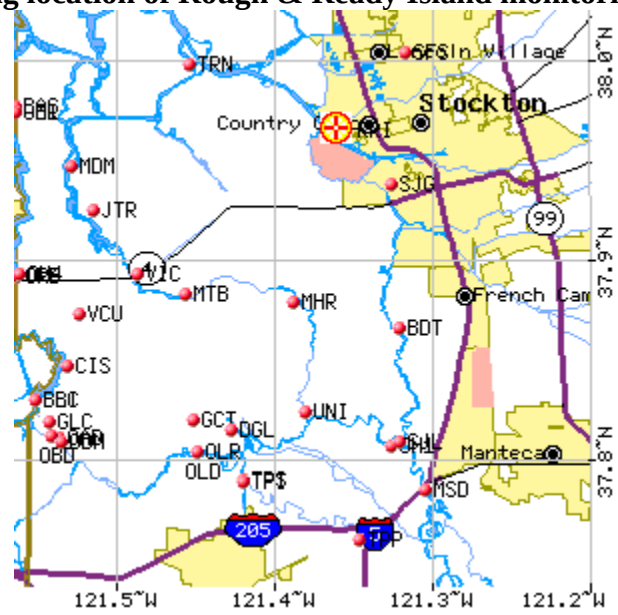
[25] The Staff Report does not provide sample size or number of exceedances. (CVRWQCB, *Control Program for Factors Contributing to the Dissolved Oxygen Impairment in the Stockton Deep Water Ship Channel Final Staff Report*, p. 21-12 (February 28, 2005).)

Table 5. California Data Exchange Center Data for the Rough & Ready Island Monitoring Station

Station ID	RRI	**Elevation**	15' ft
River Basin	SAN JOAQUIN R	**County**	SAN JOAQUIN
Hydrologic Area	SAN JOAQUIN RIVER	**Nearby City**	STOCKTON
Latitude	37.9630°N	**Longitude**	121.3650°W
Operator	CA Dept of Water Resources	**Data Collection**	SATELLITE

River Stage Definitions			
Datum 0	0.00' NAVD	Adjustment to NGVD	-0.87'

Figure 1. Map depicting location of Rough & Ready Island monitoring station

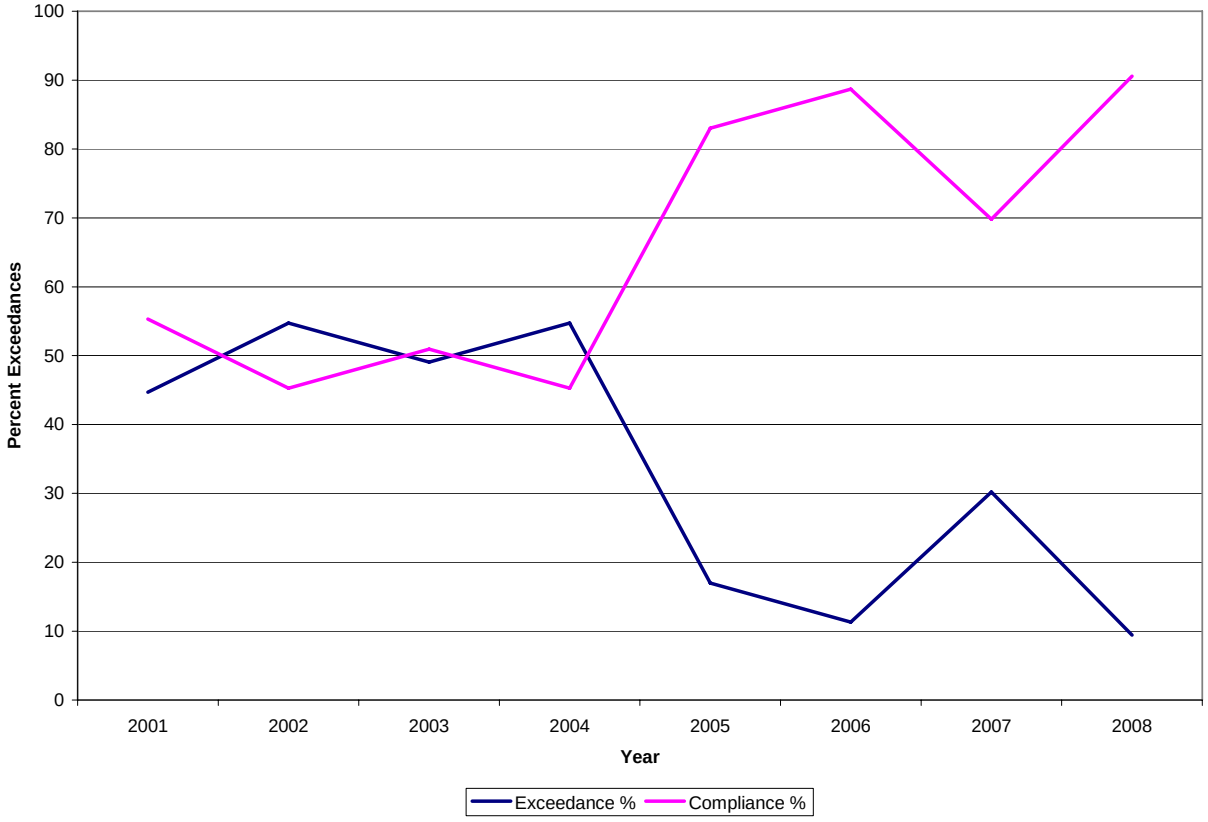


From 2001 through 2008, the overall average exceedance rate, based on the lowest minimum dissolved oxygen sample each day, was approximately 34 percent. (*see* Table 7, below.) Starting in 2005, however, compliance improved substantially, with exceedances occurring only 17 percent of the time. (Id.; *see also* Figure 2, below.) By 2008, exceedances occurred only 9 percent of the time, a total of 5 weeks, based on weekly average minimum daily DO. In 2005 and 2006, also based on weekly average minimum daily DO, the exceedances occurred only 17 and 11 percent of the time.

Table 6. Occurrences and frequencies of compliance for Rough & Ready Island, from 2001 through 2008.[26]

	Year							
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
Samples	47	53	53	53	53	53	53	53
Exceedance #	21	29	26	29	9	6	16	5
Compliance #	26	24	27	24	44	47	37	48
Exceedance %	45	55	49	55	17	11	30	9
Compliance %	55	45	51	45	83	89	70	91

Figure 2. Dissolved oxygen exceedance and compliance frequencies at Rough & Ready Island, 2001-2008.



[26] Daily minimum dissolved oxygen data is included in Appendix E. In reviewing the data, there were numerous instances in which the DO would steadily maintain a constituent and high concentration and then drop to zero for a single 15-minute period. In other instances, DO would steadily maintain a constituent and high concentration and then drop to zero and remain at zero for a long period of time. Both occurrences were construed as sampling errors and discarded from the analysis. Weeks wherein the objective changed from 5.0 mg/l to 6/0 mg/l were also not included in the compliance analysis, as this would have significantly complicated the analysis.

Table 7. Average occurrences and frequencies of compliance for Rough & Ready Island, from 2001 through 2008.

		2001-2004		2005-2008	
	2001-2008 Average	Total	Average	Total	Average
Samples	52	206	52	212	53
Exceedance #	18	105	26	36	9
Compliance #	35	101	25	176	44
Exceedance %	34		51		17
Compliance %	66		49		83

New management practices have been implemented since 2005. That year the CVRWQCB adopted, and the SWRCB approved, a TMDL for the Ship Channel. (SWRCB Resolution No. 2005-0086, *Approving an Amendment to the Water Quality Control Plan for The Sacramento River and San Joaquin River Basins to Control Factors Contributing to Dissolved Oxygen Impairment in the Stockton Deep Water Ship Channel* (Nov. 16, 2005.)

More significant is the progress in mechanically aerating the Ship Channel. Initial testing of the mechanical aerator occurred in March 2008. (Jones & Stokes, *Initial Testing of Aeration Facility Capacity and Efficiency*, p. 1 (Aug. 2008).) The aerator began operating in May 2008, although pulse tests were still occurring. (*see* Appendix F, p. 1.) The impact of the mechanical aeration is significant. 2007 and 2008 were both Critical years for the San Joaquin Valley, but with the mechanical aerator operating in 2008 compliance occurrence rates were significantly higher, with 91 percent compliance in 2008 compared to only 70 percent compliance in 2007. (*see* Table 7, above.) Compliance should improve even more as the Aeration Facility efficiency and operations improve.

Based on the section 4.2 of the Listing Policy, the period from 2005 through 2008, sufficient compliance with the DO Objective has occurred to require de-listing. (Listing Policy, p. 12, 16.) In 2008 the compliance rate was so high, 91 percent, that under section 4.2 of the Listing Policy, de-listing is required.

VI. The CVRWQCB Must Remove all Exotic Species Listings from the §303(d) List.

The Functional Equivalent Document ("FED") for the *Policy for Developing California's Clean Water Act §303(d) List of Water Quality Limited Segments* ("Listing Policy") determined that TMDLs for exotic species are inappropriate (Listing Policy FED, p. 101.) As a result, "exotic species listings [then] on the section 303(d) list would be removed during the next listing

cycle."[27] (Id.) All exotic species listings must be eliminated. Since the Listing Policy and its FED were adopted in 2004 and the subsequent listing cycle occurred in 2006, the water boards are only two years behind in complying with their own policy.

VII. The "Delta Waterways" should be identified with greater particularity.

The Central Valley §303(d) List includes listings for the "Delta Waterways," which are further divided into different subareas. There is, however, no definition of what the Delta Waterways are or of their various subareas.

VIII. Conclusion.

The Clean Water Act only protects existing beneficial uses and the CVRWQCB must interpret water quality as established in the Basin Plan and water quality control plans. Municipal beneficial uses are not existing uses for the San Joaquin River and there is no evidence that they ever will be any time in the foreseeable future. As a result, there the CVRWQCB cannot apply the drinking water MCL for specific conductivity as an objective. COLD beneficial uses are similarly not existing beneficial uses, as defined by the Clean Water Act, as no evidence shows that the requisite temperatures have been achieved or that a stable cold water fishery has existed since 1975. Even if COLD beneficial uses are existing uses, the CVRWQCB has interpreted the Basin Plan temperature objective in a manner resulting in a revised objective. As a result, the §303(d) List should not list the San Joaquin River for temperature and electrical conductivity and should not list the Stanislaus River, Tuolumne River, and Merced River for temperature.

[27] The view that exotic species were inappropriate "pollutants" for the §303(d) List is consistent with the response to Deltakeeper's recommendation in 2002 to list various water bodies for exotic species. (CVRWQCB, Final Staff Report on Recommended Changes to California's Clean Water Act section 303(d) List, p. 28-29 (December 14, 2001).) The CVRWQCB Staff declined, responding that, although exotic species were a problem, they were not "pollutants," as defined by the Clean Water Act and would therefore be excluded from the §303(d) List. (Id.)

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