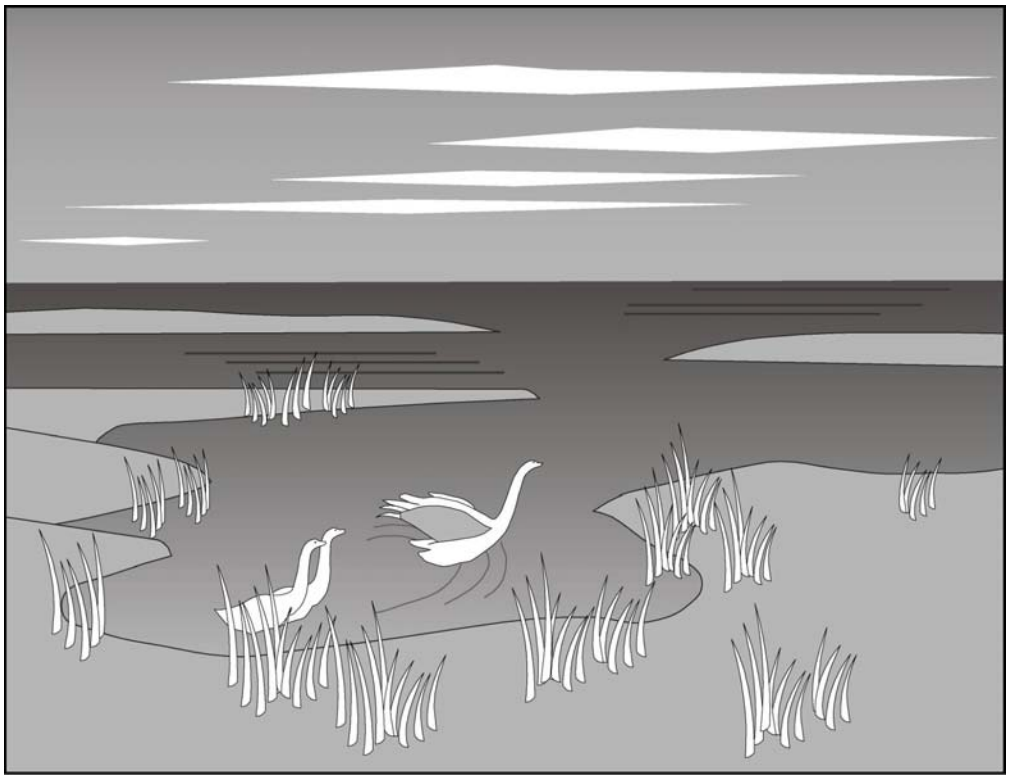

Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California

2005

STATE WATER RESOURCES CONTROL BOARD
California Environmental Protection Agency

STATE OF CALIFORNIA
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CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
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STATE WATER BOARD

RESOLUTION NO. 2005-0019

ADOPT AMENDMENTS TO THE POLICY FOR
IMPLEMENTATION OF TOXICS STANDARDS FOR
INLAND SURFACE WATERS, ENCLOSED BAYS,
AND ESTUARIES OF CALIFORNIA (SIP)

WHEREAS:

1. In March 2000, the State Water adopted the SIP, which implements criteria for priority toxic pollutants contained in the California Toxics Rule promulgated by the U.S. Environmental Protection Agency (USEPA) as well as other priority toxic pollutant criteria and objectives.

2. Section 303 of the federal Water Pollution Control Act (Clean Water Act) mandates that water quality standards be reviewed and revised, as necessary, at least once every three years. As part of the standards development program, the State Water Board periodically review its policies.

3. In October 2002, the State Water Board solicited comments on potential revisions to the SIP.

4. In December 2002, approximately 313 comments were received from 26 individuals and organizations.

5. State Water Board staff reviewed, carefully considered, and responded to all comments received.

6. State Water Board staff prepared an August 2003 report that contains recommendations for revisions to the SIP. Staff's recommended revisions are those that will improve the SIP's clarity and functionality and that can be made in a reasonable amount of time with existing resources.

7. The State Water Board notified interested parties of its recommended SIP revisions and provided an additional 30-day comment period.

8. The State Water Board held a public workshop on September 30, 2003 regarding issues to be addressed in future SIP amendments.

9. The State Water Board adopted Resolution No. 2003-0070 authorizing staff to prepare draft amendments and support documents to the SIP on October 15, 2003.

10. State Water Board staff completed the revisions to the SIP and provided a functional equivalent document for public review on December 15, 2004.

11. In January 2005, public comments were received from six organizations regarding the proposed amendment documents.

12. The State Water Board held a public hearing on February 2, 2005 regarding the proposed SIP amendments and addressed public comments.

13. In Order WQO 2003-0012, the State Water Board determined that (1) the propriety of including numeric effluents for chronic toxicity in NPDES permits for publicly-owned treatment works should be considered in a regulatory setting, in order to allow for full public discussion and deliberation; and (2) the SIP be modified to specifically address the issue.

THEREFORE BE IT RESOLVED THAT:

The State Water Board:

1. Adopts amendments to the SIP (Attachment A) that:

    a. Allow water effects ratios to be established in individual National Pollutant Discharge Elimination System permits, rather than in the Basin Planning process as currently required.
    b. Eliminate the reasonable potential trigger for situations where ambient background pollutant concentrations are greater than a priority pollutant objective or criterion.
    c. Make non-regulatory language corrections to improve clarity.
    d. Add mutual water companies to section 5.3 (exceptions).

2. Authorizes the State Water Board Executive Director to sign the Certificate of Fee Exemption (Attachment B).

3. Authorizes the State Water Board Executive Director or designee to submit the SIP revisions to the Office of Administrative Law and the USEPA for final approval.

4. Directs staff to introduce an amendment to the SIP to address narrative toxicity control provisions by January 2006.

CERTIFICATION

The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Board held on February 24, 2005.

Debbie Irvin
Clerk to the Board

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Section Page

POLICY FOR IMPLEMENTATION OF TOXICS STANDARDS FOR INLAND SURFACE WATERS, ENCLOSED BAYS, AND ESTUARIES OF CALIFORNIA

INTRODUCTION

This state policy for water quality control (Policy), adopted by the State Water Resources Control Board on March 2, 2000 and effective by May 22, 2000 (See "Note" below), applies to discharges of toxic pollutants into the *inland surface waters, *enclosed bays, and *estuaries of California subject to regulation under the State's Porter-Cologne Water Quality Control Act (Division 7 of the Water Code) and the federal Clean Water Act (CWA). Such regulation may occur through the issuance of National Pollutant Discharge Elimination System (NPDES) permits, or other relevant regulatory approaches.[1] The goal of this Policy is to establish a standardized approach for permitting discharges of toxic pollutants to non-*ocean surface waters in a manner that promotes statewide consistency. As such, this Policy is a tool to be used in conjunction with watershed management approaches and, where appropriate, the development of Total Maximum Daily Loads (TMDLs) to ensure achievement of water quality standards (i.e., water quality criteria or objectives, and the beneficial uses they are intended to protect, as well as the State and federal antidegradation policies).

This Policy establishes: (1) implementation provisions for priority pollutant criteria promulgated by the U.S. Environmental Protection Agency (U.S. EPA) through the National Toxics Rule (NTR)[2] (promulgated on December 22, 1992 and amended on May 4, 1995) and through the California Toxics Rule (CTR)[3], and for priority pollutant objectives established by Regional Water Quality Control Boards (RWQCBs) in their water quality control plans (basin plans)[4]; (2) monitoring requirements for 2,3,7,8-TCDD equivalents; and (3) chronic toxicity control provisions. In addition, this Policy includes special provisions for certain types of discharges and factors that could affect the application of other provisions in this Policy.

Note: This Policy was effective on April 28, 2000 with respect to the priority pollutant criteria promulgated by the U.S. EPA through the National Toxics Rule and to the priority pollutant objectives established by Regional Water Quality Control Boards in their water quality control plans (basin plans), with the exception of the provision on alternate test procedures in section 2.3., item (1). The alternate test procedures provision was effective on May 22, 2000. This Policy was effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the U.S. EPA through the California Toxics Rule.

1 This Policy does not apply to discharges of toxic pollutants from combined sewer overflows. These discharges will continue to be regulated in accordance with the federal "Combined Sewer Overflow (CSO) Control Policy," published April 19, 1994 (59 Fed. Register 18688-18698). This Policy does not apply to regulation of storm water discharges. The SWRCB has adopted precedential decisions addressing regulation of municipal storm water discharges in Orders WQ 91-03, 91-04, 96-13, 98-01, 99-05, and 2001-15. The SWRCB has also adopted two statewide general permits regulating the discharge of pollutants contained in storm water from industrial and construction activities. See SWRCB Orders 99-08-DWQ and 97-03-DWQ. This Policy does not apply to regulation of nonpoint source discharges.

2 40 CFR 131.36

3 65 Fed. Register 31682-31719 (May 18, 2000), adding Section 131.38 to 40 CFR.

4 If a water quality objective and a CTR criterion are in effect for the same priority pollutant, the more stringent of the two applies.

With the exception of Appendix 5 (Special Studies) and Appendix 6 (Watershed Management and TMDLs), the provisions of this Policy have full regulatory effect. Appendix 5 is provided as guidance that may be followed in planning and conducting special studies that may be needed to implement the provisions of this Policy. Appendix 6 is provided as information on the role of watershed management approaches and TMDL development in achieving water quality standards.

Except as provided in section 4, this Policy supersedes basin plan provisions to the extent that (1) they apply to implementation of water quality standards for priority pollutants, and (2) they regard the same subject matter as that addressed in this Policy with respect to priority pollutant standards. For example, the Policy supersedes basin plan mixing zone provisions to the extent that they apply to implementation of water quality standards for priority pollutants.

Reference to a RWQCB also refers to SWRCB, where appropriate. Terms indicated with an asterisk (*) are defined in Appendix 1.

1. ESTABLISHING WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR PRIORITY POLLUTANT CRITERIA/OBJECTIVES

The following sections address the issues of: (1) applicable priority pollutant criteria and objectives (section 1.1); (2) data requirements and adjustments (section 1.2); (3) determining priority pollutants requiring water quality-based effluent limitations (section 1.3); (4) calculating effluent limitations (section 1.4); (5) translators for metals and selenium (section 1.4.1); (6) mixing zones and dilution credits (section 1.4.2); (7) ambient background concentrations (section 1.4.3); and (8) intake water credits (section 1.4.4). Notwithstanding the provisions of these sections, effluent limitations must protect beneficial uses and comply with the State and federal antidegradation policies[5], federal antibacksliding requirements[6], and other applicable provisions of law.

1.1 Applicable Priority Pollutant Criteria and Objectives

Federal water quality criteria and State water quality objectives for priority pollutants have been established for non-ocean surface waters of California by the U.S. EPA and some RWQCBs, respectively. Federal priority pollutant criteria have been promulgated by the U.S. EPA in the 1992 NTR (amended in 1995) and in the 2000 CTR. For California, the criteria in the CTR supplement the criteria in the NTR (i.e., the CTR does not change or supersede any criteria previously promulgated for California in the NTR, but it does include them in the table of criteria for convenience). State priority pollutant objectives are contained in RWQCB basin plans.[4]

The RWQCB basin plans designate the beneficial uses that apply to the surface water bodies within their respective regions. Priority pollutant criteria/objectives are specifically established for the protection of aquatic life and human health beneficial uses designated in basin plans. Aquatic life criteria/objectives are established for fresh and salt waters. The CTR specifies the salinities to which the freshwater and saltwater criteria apply. The CTR also states that, except

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[5] SWRCB Resolution No. 68-16 (Statement of Policy with Respect to Maintaining High Quality of Waters in California), and 40 CFR 131.12 (revised as of July 1, 1996), respectively.

[6] CWA Sections 402(o)(1) and 303(d)(4), and 40 CFR 122.44(l) and 40 CFR 122.62 (revised as of July 1, 1996).

as specified in the CTR, the federal criteria apply to all waters assigned any aquatic life or human health use designated in basin plans. It further states that the application of the criteria are based on the presence in all waters of some aquatic life designation and the presence or absence of the municipal and domestic supply (MUN) designation (i.e., the aquatic life criteria and the human health criteria for consuming water and organisms apply to MUN-designated water bodies; the aquatic life criteria and the human health criteria for consuming organisms only apply to non-MUN water bodies).

Designated beneficial uses to which aquatic life criteria or objectives would apply include, but are not necessarily limited to, warm freshwater habitat (WARM), cold freshwater habitat (COLD), and estuarine habitat (EST). Designated beneficial uses to which human health criteria/objectives would apply include, but are not necessarily limited to, municipal and domestic supply (MUN) and water contact recreation (REC1). Human health criteria/objectives are differentiated by whether organisms alone from the water body are consumed compared to whether both organisms and water from the water body are consumed. Where MUN is designated, the latter situation applies.

1.2 Data Requirements and Adjustments

The RWQCB may adjust the criteria/objective for metals with *discharger-specific Water Effect Ratios established in accordance with U.S. EPA guidance – Interim Guidance on Determination and Use of Water Effect Ratios for Metals (EPA-823-B-94-001) or Streamlined Water-Effect Ratio Procedure for Discharges of Copper (EPA-822-R-01-005), if appropriate[7].

It is the discharger's responsibility to provide all data and other information requested by the RWQCB before the issuance, reissuance, or modification of a permit to the extent feasible. When implementing the provisions of this Policy, the RWQCB shall use all available, valid, relevant, representative data and information, as determined by the RWQCB. The RWQCB shall have discretion to consider if any data are inappropriate or insufficient for use in implementing this Policy. Instances where such consideration is warranted include, but are not limited to, the following: evidence that a sample has been erroneously reported or is not representative of effluent or ambient receiving water quality; questionable quality control/quality assurance practices; and varying seasonal conditions. The lack of a site-specific objective for a priority pollutant shall not be considered insufficient data.

When implementing the provisions of this Policy, the RWQCB shall ensure that criteria/objectives are properly adjusted for hardness or pH, if applicable, using the hardness or pH values for the receiving water, and that translators are appropriately applied (in accordance with section 1.4.1), if applicable. The RWQCB shall also ensure that pollutant and flow data are expressed in the appropriate forms and units for purposes of comparability and calculations.

1.3 Determination of Priority Pollutants Requiring Water Quality-Based Effluent Limitations

The RWQCB shall conduct the analysis in this section for each priority pollutant with an applicable criterion or objective, excluding priority pollutants for which a Total Maximum Daily Load (TMDL) has been developed, to determine if a water quality-based effluent limitation is

[7] A Water Effect Ratio may also be used to develop a site-specific metal objective, as described in Section 5.2.

required in the discharger's permit. It is the discharger's responsibility to provide all information requested by the RWQCB for use in the analysis. The RWQCB shall use all available, valid, relevant, representative information, as described in section 1.2, to determine whether a discharge may: (1) cause, (2) have a reasonable potential to cause, or (3) contribute to an excursion above any applicable priority pollutant criterion or objective. If the following analysis (which is depicted as a flowchart in Appendix 2) indicates that a limitation for a pollutant is required, the RWQCB shall establish the limitation in accordance with section 1.4. Within each step below, if it is necessary to express a dissolved metal or selenium value as total recoverable and a site-specific translator has not yet been developed, as described in section 1.4.1, the RWQCB shall use the applicable U.S. EPA conversion factor (Appendix 3).

Step 1: Identify applicable water quality criteria and objectives for priority pollutants as described in section 1.1. Determine the lowest (most stringent) water quality criterion or objective for the pollutant applicable to the receiving water (C). Adjust the criterion or objective for hardness and/or pH, if applicable, as described in section 1.2.

Step 2: Identify all effluent data for the pollutant as described in section 1.2 and proceed with *Step 3*. If effluent data are unavailable or insufficient, as described in section 1.2, proceed with *Step 5*.

Step 3: Determine the observed maximum pollutant concentration for the effluent (MEC). If the pollutant was detected, proceed with *Step 4*. If the pollutant was **not** detected in any of the effluent samples **and** any of the reported detection limits are below the C, use the lowest detection limit as the MEC and proceed with *Step 4*. If the pollutant was **not** detected in any of the effluent samples **and** all of the reported detection limits are greater than or equal to the C value, proceed with *Step 5*.

Step 4: Adjust the MEC from *Step 3,* if applicable, as described in section 1.2. Compare the MEC from *Step 3* or the adjusted MEC to the C from *Step 1*. If the MEC is greater than or equal to the C, an effluent limitation is required and the analysis for the subject pollutant is complete. If the MEC is less than the C, proceed with *Step 5*.

Step 5: Determine the observed maximum ambient background concentration for the pollutant (B) as described in section 1.4.3.1. If the pollutant was detected, proceed with *Step 6*. If B data are unavailable or insufficient, as described in section 1.2, proceed with *Step 7*.

Step 6: Adjust the B from *Step 5,* if applicable, as described in section 1.2. Compare the B from *Step 5* or the adjusted B to the C from *Step 1*. If the B is greater than the C and the pollutant is detected in the effluent, an effluent limitation is required and the analysis for the subject pollutant is complete. If B is greater than the C and the pollutant was not detected in any of the effluent samples, effluent monitoring is required (as described in *Step 8)* proceed with *Step 7*. If the B is less than or equal to the C, proceed with *Step 7*.

Step 7: Review other information available to determine if a water quality-based effluent limitation is required, notwithstanding the above analysis in *Steps 1* through *6*, to protect beneficial uses.

Information that may be used to aid in determining if a water quality-based effluent limitation is required includes: the facility type, the discharge type, solids loading analysis, lack of dilution, history of compliance problems, potential toxic impact of discharge, fish tissue residue data, water quality and beneficial uses of the receiving water, CWA 303(d) listing for the pollutant, the presence of endangered or threatened species or critical habitat, and other information. If data or other information is unavailable or insufficient, as described in section 1.2, to determine if a water quality-based effluent limitation is required, proceed with *Step 8*.

Step 8: If data are unavailable or insufficient, as described in section 1.2, to conduct the above analysis for the pollutant, or if all reported detection limits of the pollutant in the effluent are greater than or equal to the C value, the RWQCB shall require additional monitoring for the pollutant in place of a water quality-based effluent limitation. Upon completion of the required monitoring, the RWQCB shall use the gathered data to conduct the analysis in *Steps 1* through *7* above and determine if a water quality-based effluent limitation is required. If, upon completion of the monitoring required by Step 8 and the subsequent analysis in *Steps 1* through *7*, a specific pollutant was not detected in any effluent or if ambient background sample and applicable detection limits are greater than or equal to the C value, the RWQCB may require periodic monitoring of the pollutant.

The RWQCB shall require periodic monitoring (at least once prior to the issuance and reissuance of a permit) for pollutants for which criteria or objectives apply and for which no effluent limitations have been established; however, the RWQCB may choose to exempt low volume discharges, determined to have no significant adverse impact on water quality, from this monitoring requirement.

1.4 Calculation of Effluent Limitations

When a RWQCB determines, using the procedures described in section 1.3, that water quality-based effluent limitations are necessary to control a priority pollutant in a discharge, the permit shall contain effluent limitations developed using one or more of the following methods:

A. If a TMDL is in effect, assign a portion of the loading capacity of the receiving water to each identified priority pollutant source of waste, point and non-point, based on the TMDL (see Appendix 6);

B. Use the following procedure based on a steady-state model:

   Step 1: For each priority pollutant identified in section 1.3, identify the applicable water quality criteria/objectives for the pollutant as described in section 1.1. Adjust the criterion or objective, if applicable, as described in section 1.2. If it is necessary to express a dissolved metal or selenium criterion/objective as total recoverable and a site-specific translator has not yet been developed, as described in section 1.4.1, the RWQCB shall use the applicable U.S. EPA conversion factor (Appendix 3). If data are insufficient to calculate the effluent limitation, the RWQCB shall establish interim requirements in accordance with section 2.2.2.

Step 2: For each water quality criterion/objective, calculate the effluent concentration allowance (*ECA*) using the following steady-state mass balance equation:

$ECA = C + D\,(C - B)$ when $C > B$, and
$ECA = C$ when $C \leq B$,

where C = the priority pollutant criterion/objective, adjusted (as described in section 1.2), if necessary, for hardness, pH, and translators (as described in section 1.4.1);
D = the dilution credit (as determined in section 1.4.2); and
B = the ambient background concentration. The ambient background concentration shall be the observed maximum as determined in accordance with section 1.4.3.1 with the exception that an *ECA* calculated from a priority pollutant criterion/objective that is intended to protect human health from carcinogenic effects shall use the ambient background concentration as an arithmetic mean determined in accordance with section 1.4.3.2.

The concentration units for *C* and *B* must be identical. Both C and B shall be expressed as total recoverable, unless inappropriate. The dilution credit is unitless.

Step 3: For each *ECA* based on an aquatic life criterion/objective, determine the long-term average discharge condition (*LTA*) by multiplying the *ECA* with a factor (multiplier) that adjusts for effluent variability. The multiplier shall be calculated as described below, or shall be found in Table 1. To use Table 1, the *coefficient of variation (*CV*) for the effluent pollutant concentration data must first be calculated. If (a) the number of effluent data points is less than ten, or (b) at least 80 percent of the data are reported as not detected, the *CV* shall be set equal to 0.6. When calculating *CV* in this procedure, if an effluent data point is below the detection limit for the pollutant in that sample, one-half of the detection limit shall be used as a value in the calculations. Multipliers for acute and chronic criteria/objectives that correspond to the *CV* can then be found in Table 1.

ECA Multipliers

$\text{ECA multiplier}_{\text{acute}_{99}} = e^{(0.5\sigma^2 - z\sigma)}$

$\text{ECA multiplier}_{\text{chronic}_{99}} = e^{(0.5\sigma_4^2 - z\sigma_4)}$

Where σ = *standard deviation
σ_2 = $[ln(CV^2 + 1)]^{0.5}$
σ^2 = $ln(CV^2 + 1)$
σ_4 = $[ln(CV^2/4 + 1)]^{0.5}$
σ_4^2 = $ln(CV^2/4 + 1)$
z = 2.326 for 99th percentile probability basis

Table 1. Effluent Concentration Allowance (ECA)
Multipliers for Calculating Long-Term Averages (LTAs)

Coefficient Of Variation (CV)	Acute Multiplier	Chronic Multiplier
	99^{th} Percentile Occurrence Probability	99^{th} Percentile Occurrence Probability
0.1	0.797	0.891
0.2	0.643	0.797
0.3	0.527	0.715
0.4	0.440	0.643
0.5	0.373	0.581
0.6	0.321	0.527
0.7	0.281	0.481
0.8	0.249	0.440
0.9	0.224	0.404
1.0	0.204	0.373
1.1	0.187	0.345
1.2	0.174	0.321
1.3	0.162	0.300
1.4	0.153	0.281
1.5	0.144	0.264
1.6	0.137	0.249
1.7	0.131	0.236
1.8	0.126	0.224
1.9	0.121	0.214
2.0	0.117	0.204
2.1	0.113	0.195
2.2	0.110	0.187
2.3	0.107	0.180
2.4	0.104	0.174
2.5	0.102	0.168
2.6	0.100	0.162
2.7	0.098	0.157
2.8	0.096	0.153
2.9	0.094	0.148
3.0	0.093	0.144
3.1	0.091	0.141
3.2	0.090	0.137
3.3	0.089	0.134
3.4	0.088	0.131
3.5	0.087	0.128
3.6	0.086	0.126
3.7	0.085	0.123
3.8	0.084	0.121
3.9	0.083	0.119
4.0	0.082	0.117

LTA Equations

LTA_{acute} = ECA_{acute} * ECA $multiplier_{acute_{99}}$ (from Table 1 or as calculated above)

$LTA_{chronic}$ = $ECA_{chronic}$ * ECA $multiplier_{chronic_{99}}$ (from Table 1 or as calculated above)

Step 4: Select the lowest (most limiting) of the *LTA*s for the pollutant derived in *Step 3*.

Step 5: Calculate water quality-based effluent limitations (an *average monthly effluent limitation, AMEL, and a *maximum daily effluent limitation, MDEL) by multiplying the most limiting *LTA* (as selected in *Step 4*) with a factor (multiplier) that adjusts for the averaging periods and exceedance frequencies of the criteria/objectives and the effluent limitations, and the effluent monitoring frequency as follows:

$AMEL_{aquatic\ life}$ = *LTA* * *AMEL multiplier*$_{95}$ (from Table 2 or as calculated below)
$MDEL_{aquatic\ life}$ = *LTA* * *MDEL multiplier*$_{99}$ (from Table 2 or as calculated below)

The AMEL and MDEL multipliers shall be calculated as described below, or shall be found in Table 2 using the previously calculated *CV* and the monthly sampling frequency (*n*) of the pollutant in the effluent. If the sampling frequency is four times a month or less, *n* shall be set equal to 4. For this method only, maximum daily effluent limitations shall be used for publicly-owned treatment works (POTWs) in place of average weekly limitations.

AMEL and MDEL Multipliers

AMEL $multiplier_{95}$ = $e^{(z\sigma_n - 0.5\sigma_n^2)}$

Where σ_n = $[ln(CV^2/n + 1)]^{0.5}$
σ_n^2 = $ln(CV^2/n + 1)$
z = 1.645 for 95th percentile probability basis
n = number of samples per month

MDEL $multiplier_{99}$ = $e^{(z\sigma - 0.5\sigma^2)}$

Where σ = $[ln(CV^2 + 1)]^{0.5}$
σ^2 = $ln(CV^2 + 1)$
z = 2.326 for 99th percentile probability basis

Step 6: For the applicable human health criterion/objective, set the AMEL equal to the *ECA* (from *Step 2*).

$AMEL_{human\ health}$ = ECA

To calculate the MDEL for a human health criterion/objective, multiply the *ECA* by the ratio of the MDEL multiplier to the AMEL multiplier.

Table 2. Long-Term Average (LTA) Multipliers for Calculating Effluent Limitations

Coefficient of Variation	MDEL Multiplier	AMEL Multiplier			MDEL/AMEL Multiplier		
	99th Percentile Occurrence Probability	95th Percentile Occurrence Probability			MDEL = 99th Percentile AMEL = 95th Percentile Occurrence Probability		
(CV)		n = 4	n = 8	n = 30	n = 4	n = 8	n = 30
0.1	1.25	1.08	1.06	1.03	1.16	1.18	1.22
0.2	1.55	1.17	1.12	1.06	1.33	1.39	1.46
0.3	1.90	1.26	1.18	1.09	1.50	1.60	1.74
0.4	2.27	1.36	1.25	1.12	1.67	1.82	2.02
0.5	2.68	1.45	1.31	1.16	1.84	2.04	2.32
0.6	3.11	1.55	1.38	1.19	2.01	2.25	2.62
0.7	3.56	1.65	1.45	1.22	2.16	2.45	2.91
0.8	4.01	1.75	1.52	1.26	2.29	2.64	3.19
0.9	4.46	1.85	1.59	1.29	2.41	2.81	3.45
1.0	4.90	1.95	1.66	1.33	2.52	2.96	3.70
1.1	5.34	2.04	1.73	1.36	2.62	3.09	3.93
1.2	5.76	2.13	1.80	1.39	2.70	3.20	4.13
1.3	6.17	2.23	1.87	1.43	2.77	3.30	4.31
1.4	6.56	2.31	1.94	1.47	2.83	3.39	4.47
1.5	6.93	2.40	2.00	1.50	2.89	3.46	4.62
1.6	7.29	2.48	2.07	1.54	2.93	3.52	4.74
1.7	7.63	2.56	2.14	1.57	2.98	3.57	4.85
1.8	7.95	2.64	2.20	1.61	3.01	3.61	4.94
1.9	8.26	2.71	2.27	1.64	3.05	3.65	5.02
2.0	8.55	2.78	2.33	1.68	3.07	3.67	5.09

Note:
n = monthly sampling frequency of the effluent concentration data

Table 2. Continued

Coefficient of Variation	MDEL Multiplier	AMEL Multiplier			MDEL/AMEL Multiplier		
	99th Percentile Occurrence Probability	95th Percentile Occurrence Probability			MDEL = 99th Percentile AMEL = 95th Percentile Occurrence Probability		
(CV)		n = 4	n = 8	n = 30	n = 4	n = 8	n = 30
2.1	8.83	2.85	2.39	1.72	3.10	3.70	5.14
2.2	9.09	2.91	2.45	1.75	3.12	3.72	5.19
2.3	9.34	2.97	2.50	1.79	3.15	3.73	5.22
2.4	9.58	3.03	2.56	1.82	3.17	3.74	5.25
2.5	9.81	3.08	2.61	1.86	3.18	3.75	5.27
2.6	10.0	3.13	2.67	1.90	3.20	3.76	5.29
2.7	10.2	3.18	2.72	1.93	3.22	3.76	5.30
2.8	10.4	3.23	2.77	1.97	3.23	3.77	5.30
2.9	10.6	3.27	2.82	2.00	3.25	3.77	5.30
3.0	10.8	3.31	2.86	2.04	3.26	3.77	5.30
3.1	11.0	3.35	2.91	2.07	3.27	3.77	5.29
3.2	11.1	3.38	2.95	2.11	3.29	3.77	5.28
3.3	11.3	3.42	2.99	2.14	3.30	3.77	5.27
3.4	11.4	3.45	3.03	2.17	3.31	3.77	5.25
3.5	11.6	3.48	3.07	2.21	3.32	3.77	5.24
3.6	11.7	3.51	3.10	2.24	3.33	3.76	5.22
3.7	11.8	3.53	3.14	2.27	3.34	3.76	5.20
3.8	11.9	3.56	3.17	2.30	3.35	3.76	5.18
3.9	12.1	3.58	3.21	2.34	3.36	3.76	5.16
4.0	12.16	3.60	3.24	2.37	3.37	3.76	5.14

Note:
n = monthly sampling frequency of the effluent concentration data.

MDEL/AMEL multiplier = MDEL multiplier$_{99}$ ÷ AMEL multiplier$_{95}$

$MDEL_{human\ health}$ = ECA * MDEL/AMEL multiplier

Step 7: Identify the lower of (1) the AMEL and MDEL calculated based on the aquatic life criteria/objectives, and (2) the AMEL and MDEL calculated based on the human health criterion/objective.

C. Apply a *dynamic model, approved by the RWQCB, where sufficient effluent and receiving water data exist; or

D. Establish effluent limitations that consider intake water pollutants according to section 1.4.4.

The RWQCB shall impose more restrictive water quality-based effluent limitations (e.g., discharge prohibitions established in accordance with Water Code Section 13243) where necessary for the protection of beneficial uses or where otherwise required by law[1]. Seasonal effluent limitations may be established where appropriate (such as in applying translators and mixing zones/dilution credits). Any significant change in effluent quantity or quality shall be cause for reevaluation of effluent limitations.

Regardless of which method is used for deriving water quality-based effluent limitations, the calculated water quality-based effluent limitations shall be compared to the technology-based effluent limitations for the pollutant, and the most protective of the two types of limitations shall be included in the permit.

Effluent limitations shall apply to the total effluent of a waste discharge at the end-of-pipe, except in the rare situations where it is impractical or infeasible (e.g., where the final discharge point is inaccessible, or the pollutants are so diluted by cooling water as to make monitoring impractical, or interferences among pollutants make analysis infeasible). In these cases, some effluent limitations and monitoring requirements for the discharge may be modified to apply to internal waste streams instead, provided that the permit fact sheet fully states the circumstances for allowing this to occur and the permit also contains the unmodified effluent limitations (see 40 CFR 122.45(h), revised as of July 1, 1996).

For pollutants that are so diluted by cooling water as to make monitoring impractical, effluent limitations for internal waste streams shall be based on the same averaging periods as the unmodified effluent limitations and shall be calculated as follows

[1] For example, to implement the State and federal antidegradation policies, and the federal antibacksliding requirements.

$IL = EL + (EL - CC) * CF/IF$
$IL = EL + (EL - CC) * (EF - IF)/IF$

where *IL* = the limitation for the internal waste stream;
EL = the unmodified effluent limitation;
CC = the concentration of the pollutant in the cooling water;
CF = the cooling water flow, which is equal to the effluent flow minus the internal waste stream flow;
IF = the internal waste stream flow; and
EF = the effluent flow.

These equations do not apply when intake water credits (as described in section 1.4.4) are being provided.

1.4.1 Translators for Metals and Selenium

To derive total recoverable effluent limitations for aquatic life metals and selenium criteria/objectives that are expressed in the dissolved form, a translator first must be applied to the criterion/objective to express it as total recoverable. The translator shall be the U.S. EPA conversion factor (see Appendix 3) that applies to the dissolved aquatic life metals criterion as specified in the CTR (i.e., the dissolved criterion/objective would be divided by the applicable U.S. EPA conversion factor to calculate a total recoverable criterion) unless:

A. the discharger, in the permit application, (1) commits to (a) completing a defensible site-specific translator study and (b) proposing a dissolved to total recoverable translator to the RWQCB, and (2) describes the method(s) to be used in developing the translator; and

B. the discharger, within a time period specified by the RWQCB not exceeding two years from the date of issuance/reissuance of the permit, submits to the RWQCB (1) the proposed translator, and (2) all data and calculations related to its derivation.

Site-specific translators can be developed from field data by either direct determination of the fraction dissolved, or by development of a site-specific partition coefficient that relates the fraction dissolved to ambient background conditions such as pH, suspended load, or organic carbon. The fraction of metal that is dissolved in a water body can vary depending on when and where measurements are taken. A site-specific translator must (1) account for spatial and/or seasonal variability in areas of the water body that are affected by the discharger's effluent and (2) protect against toxic effects during critical conditions. The translator shall be derived using the *median of data for translation of chronic criteria and the *90^{th} percentile of observed data for translation of acute criteria. If systematic seasonal variation in the translator is demonstrated, seasonal effluent limitations may be justified. If a spatial gradient in the translator is demonstrated, the highest translator value should be used unless the permit allows for a mixing zone (in accordance with section 1.4.2), in which case measurements should be taken outside the mixing zone. The site-specific study plan (including sampling design) must be approved by the RWQCB, after consultation with the California Department of Fish and Game, prior to conducting the study. Translator studies may be conducted by one or more dischargers discharging to the same receiving water body, as described in the permit application, subject to approval by the RWQCB. The planning and undertaking of the study may follow the guidelines presented in Appendix 5, as applicable.

Alternatively, the RWQCB may consider applying a previously approved site-specific translator or translator based on a study completed prior to the adoption of this Policy if the RWQCB believes the translator adequately reflects existing conditions (including spatial and/or seasonal variability) in the areas of the water body affected by the discharger's effluent.

While a translator study is being conducted, a final effluent limitation based on the applicable U.S. EPA conversion factor shall be included in the provisions of the permit and interim requirements shall be established (in accordance with section 2.2.2). An interim deadline to submit the results of the study shall be specified by the RWQCB, and shall not exceed two years from the date of issuance/reissuance of the permit. Once the translator is developed by the discharger(s) and approved by the RWQCB, the RWQCB shall reopen the permit and a new effluent limitation shall be calculated using a method described in section 1.4 after adjusting the dissolved metal or selenium criterion/objective by dividing it by the translator. In the event a translator study is not completed within the specified time, the U.S. EPA conversion factor-based effluent limitation in the provisions of the permit shall become effective as a default limitation.

1.4.2 Mixing Zones and Dilution Credits

With the exception of effluent limitations derived from TMDLs, in establishing and determining compliance with effluent limitations for applicable human health, acute aquatic life, or chronic aquatic life priority pollutant criteria/objectives or the toxicity objective for aquatic life protection in a RWQCB basin plan, the RWQCB may grant *mixing zones and *dilution credits to dischargers in accordance with the provisions of this section. To the extent permitted by applicable law, mixing zones may be considered for TMDL-derived effluent limitations. Effluent limitations based on a TMDL shall meet the mixing zone conditions specified in section 1.4.2.2.A.

The applicable priority pollutant criteria and objectives are to be met throughout a water body except within any mixing zone granted by a RWQCB. The allowance of mixing zones is discretionary and shall be determined on a discharge-by-discharge basis. A RWQCB may consider allowing mixing zones and dilution credits only for discharges with a physically identifiable point of discharge that are regulated through an NPDES permit issued by the RWQCB.

1.4.2.1 Dilution Credits

The dilution credit, D, is a numerical value associated with the mixing zone that accounts for the receiving water entrained into the discharge. The dilution credit is a value used in the calculation of effluent limitations (described in section 1.4). Dilution credits may be limited or denied on a pollutant-by-pollutant basis, which may result in a dilution credit for all, some, or no priority pollutants in a discharge.

Before establishing a mixing zone and a dilution credit for a discharge, it must first be determined if, and how much (if any), receiving water is available to dilute the discharge. In determining the appropriate available receiving water flow, the RWQCBs may take into account actual and seasonal variations of the receiving water and the effluent. For example, a RWQCB may prohibit mixing zones during seasonal low flows and allow them during seasonal high flows. However, for year-round mixing zones, the mixing zone and dilution credit shall be

determined using the parameters specified in Table 3.

Table 3. Effluent and Receiving Water Flows for Calculating Dilution Ratios

In calculating a dilution ratio for:	**Use the critical receiving water flow[1] of:**	**Use the discharged effluent flow of:**
Acute aquatic life criteria/objectives	*1Q10	*maximum daily flow during period of discharge
Chronic aquatic life criteria/objectives Chronic toxicity objective for aquatic life[2]	*7Q10	*four-day average of daily maximum flows during period of discharge
Human health criteria/objectives	*harmonic mean	*long-term arithmetic mean flow during period of discharge

The approach to making a mixing zone determination also depends on whether a discharge is *completely-mixed or *incompletely-mixed with the receiving water as discussed below.

Completely Mixing Discharges

For completely-mixed discharges, as determined by the RWQCB and based on information provided by the discharger, the amount of receiving water available to dilute the effluent shall be determined by calculating the *dilution ratio (i.e., the critical receiving water flow divided by the effluent flow) using the appropriate flows in Table 3. In no case shall the RWQCB grant a dilution credit that is greater than the calculated dilution ratio. The dilution credit may be set equal to the dilution ratio only if the site-specific conditions concerning the discharge and the receiving water do not indicate that a smaller dilution credit is necessary to protect beneficial uses and meet the conditions of this Policy. If, however, dilution ratios that are calculated using the Table 3 parameters are inappropriate for use due to site-specific issues, the mixing zone and dilution credit shall be determined using site-specific information and procedures detailed for incompletely-mixed discharges.

Incompletely-Mixed Discharges

Dilution credits and mixing zones for incompletely-mixed discharges shall be considered by the

[1] U.S. EPA's *biologically-based receiving water flows may be used in place of these critical receiving water flows where sufficient data are available.

[2] These objectives are included in RWQCB basin plans and may address both chronic and acute toxicity to aquatic life. The flows in Table 3 apply to the chronic component of the objective.

RWQCB only after the discharger has completed an independent mixing zone study and demonstrated to the satisfaction of the RWQCB that a dilution credit is appropriate. Mixing zone studies may include, but are not limited to, tracer studies, dye studies, modelling studies, and monitoring upstream and downstream of the discharge that characterize the extent of actual dilution. These studies may be conducted in accordance with the procedures outlined in Appendix 5.

1.4.2.2 Mixing Zone Conditions

A mixing zone shall be as small as practicable. The following conditions must be met in allowing a mixing zone:

A. A mixing zone shall not:

(1) compromise the integrity of the entire water body;
(2) cause *acutely toxic conditions to aquatic life passing through the mixing zone;
(3) restrict the passage of aquatic life;
(4) adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws;
(5) produce undesirable or nuisance aquatic life;
(6) result in floating debris, oil, or scum;
(7) produce objectionable color, odor, taste, or turbidity;
(8) cause *objectionable bottom deposits;
(9) cause nuisance;
(10) dominate the receiving water body or overlap a mixing zone from different outfalls; or
(11) be allowed at or near any drinking water intake. A mixing zone is not a *source of drinking water. To the extent of any conflict between this determination and the Sources of Drinking Water Policy (SWRCB Resolution No. 88-63), this determination supersedes the provisions of that policy.

B. The RWQCB shall deny or significantly limit a mixing zone and dilution credit as necessary to protect beneficial uses, meet the conditions of this Policy, or comply with other regulatory requirements. Such situations may exist based upon the quality of the discharge, hydraulics of the water body, or the overall discharge environment (including water column chemistry, organism health, and potential for bioaccumulation). For example, in determining the extent of or whether to allow a mixing zone and dilution credit, the RWQCB shall consider the presence of pollutants in the discharge that are *carcinogenic, *mutagenic, *teratogenic, *persistent, *bioaccumulative, or attractive to aquatic organisms. In another example, the RWQCB also shall consider, if necessary to protect the beneficial uses, the level of flushing in water bodies such as lakes, reservoirs, enclosed bays, estuaries, or other water body types where pollutants may not be readily flushed through the system. In the case of multiple mixing zones, proximity to other outfalls shall be carefully considered to protect the beneficial uses.

If a RWQCB allows a mixing zone and dilution credit, the permit shall specify the method by which the mixing zone was derived, the dilution credit granted, and the point(s) in the receiving water where the applicable criteria/objectives must be met. The application for the permit shall include, to the extent feasible, the information needed by the RWQCB to make a

determination on allowing a mixing zone, including the calculations for deriving the appropriate receiving water and effluent flows, and/or the results of a mixing zone study. If the results of the mixing zone study are unavailable by the time of permit issuance/reissuance, the RWQCB may establish interim requirements in accordance with section 2.2.2.

1.4.3 Ambient Background Concentrations

Ambient background concentration, B, of a priority pollutant in the receiving water body shall be calculated on a pollutant-by-pollutant basis and on a discharge-by-discharge or water body-by-water body basis at the RWQCB's discretion. The ambient background concentration shall be the observed maximum ambient water column concentration in accordance with section 1.4.3.1 or the *arithmetic mean of observed ambient water concentrations in accordance with section 1.4.3.2 where these sections are specifically referenced in this Policy (i.e., sections 1.3 and 1.4).

1.4.3.1 Ambient Background Concentration as an Observed Maximum

Step 1: Identify all available, applicable ambient background data for the pollutant in accordance with section 1.2. If possible, preference should be given to ambient water column concentrations measured immediately upstream or near the discharge, but not within an allowed mixing zone for the discharge. The RWQCB shall have discretion to consider if any samples are invalid for use as applicable data due to evidence that the sample has been erroneously reported or the sample is not representative of the ambient receiving water column that will mix with the discharge. For example, the RWQCB shall have discretion to consider samples to be invalid that have been taken during peak flows of significant storm events.

Step 2: If all samples are below the reported detection limits, the ambient background concentration shall be set equal to the lowest of the individual reported detection limits. If any sample is reported with a detected concentration, as either measured or estimated by the laboratory, the ambient background concentration shall be set equal to the maximum of the individual reported measured or estimated concentrations.

1.4.3.2 Ambient Background Concentration as an Arithmetic Mean

Step 1: Identify all available, applicable ambient background data for the pollutant in accordance with section 1.2. If possible, preference should be given to ambient water column concentrations measured immediately upstream or near the discharge, but not within an allowed mixing zone for the discharge. The RWQCB shall have discretion to consider if any samples are invalid for use as applicable data due to evidence that the sample has been erroneously reported or the sample is not representative of the ambient receiving water column that will mix with the discharge.

Step 2: If all samples are below the reported detection limits, the ambient background concentration shall be set equal to the lowest of the individual reported detection limits. If any sample is reported with a detected concentration, as either measured or estimated by the laboratory, the ambient background concentration shall be set equal to the arithmetic mean of the individual reported measured or estimated concentrations. The arithmetic mean shall be calculated using the reported detection limits for samples that are reported below detection

limits.

1.4.4 Intake Water Credits

A RWQCB may consider priority pollutants in intake water on a pollutant-by-pollutant and discharge-by-discharge basis when establishing water quality-based effluent limitations, provided that the discharger has demonstrated to the satisfaction of the RWQCB that the following conditions are met:

(1) The observed maximum ambient background concentration, as determined in section 1.4.3.1, and the intake water concentration of the pollutant exceeds the most stringent applicable criterion/objective for that pollutant;

(2) The intake water credits provided are consistent with any TMDL applicable to the discharge that has been approved by the RWQCB, SWRCB, and U.S. EPA;

(3) The intake water is from the same water body as the receiving water body. The discharger may demonstrate this condition by showing that:

(a) the ambient background concentration of the pollutant in the receiving water, excluding any amount of the pollutant in the facility's discharge, is similar to that of the intake water;

(b) there is a direct hydrological connection between the intake and discharge points;

(c) the water quality characteristics are similar in the intake and receiving waters; and

(d) the intake water pollutant would have reached the vicinity of the discharge point in the receiving water within a reasonable period of time and with the same effect had it not been diverted by the discharger.

The RWQCB may also consider other factors when determining whether the intake water is from the same water body as the receiving water body;

(4) The facility does not alter the intake water pollutant chemically or physically in a manner that adversely affects water quality and beneficial uses; and

(5) The timing and location of the discharge does not cause adverse effects on water quality and beneficial uses that would not occur if the intake water pollutant had been left in the receiving water body.

Where the above conditions are met, the RWQCB may establish effluent limitations allowing the facility to discharge a mass and concentration of the intake water pollutant that is no greater than the mass and concentration found in the facility's intake water. A discharger may add mass of the pollutant to its waste stream if an equal or greater mass is removed prior to discharge, so there is no net addition of the pollutant in the discharge compared to the intake water. Where proper operation and maintenance of a facility's treatment system results in the removal of an intake water pollutant, the RWQCB may establish limitations that reflect the lower mass and

concentration of the pollutant achieved by such treatment.

Where intake water for a facility is provided by a municipal water supply system and the supplier provides treatment of the raw water that removes an intake water pollutant, the concentration of the intake water pollutant shall be determined at the point where the water enters the water supplier's distribution system.

Where a facility discharges pollutants from multiple sources that originate from the receiving water body and from other water bodies, the RWQCB may derive an effluent limitation reflecting the flow-weighted amount of each source of the pollutant provided that adequate monitoring to determine compliance can be established and is included in the permit. When calculating the flow-weighted effluent limitation, the pollutant from the receiving water body shall be assumed to have a concentration that is no greater than the concentration in the facility's intake water; the same pollutant from other sources shall be assumed to have a concentration that is no greater than the most stringent applicable criterion/objective.

The permit shall specify how compliance with mass- and concentration-based limitations for the intake water pollutant will be assessed. This may be done by basing the effluent limitation on ambient background concentration data. Alternatively, the RWQCB may determine compliance by simultaneously monitoring the pollutant concentrations in the intake water and in the effluent. This monitoring may be supplemented by monitoring internal waste streams or by a RWQCB evaluation of the use of *best management practices.

2. DETERMINING COMPLIANCE WITH PRIORITY POLLUTANT CRITERIA/OBJECTIVES AND WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR PRIORITY POLLUTANT CRITERIA/OBJECTIVES

Compliance with priority pollutant criteria/objectives and water quality-based effluent limitations established pursuant to section 1 shall be determined according to the following provisions for (1) compliance schedules (section 2.1), (2) interim requirements (section 2.2), (3) monitoring requirements (section 2.3), and (4) reporting requirements including compliance determinations (section 2.4). In determining compliance with effluent limitations based on intake water credits, only the monitoring requirements (section 2.3) and the reporting requirements (section 2.4) apply. In determining compliance with effluent limitations derived from TMDLs, only the compliance schedule provisions (section 2.1) apply.

2.1 Compliance Schedules

Based on an *existing discharger's request and demonstration that it is *infeasible for the discharger to achieve immediate compliance with a CTR criterion[3], or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit. Compliance schedules shall not be allowed in permits for *new dischargers.

A schedule of compliance shall include a series of required actions to be undertaken for the purpose of achieving a CTR criterion and/or effluent limitations based on a CTR criterion. These actions shall demonstrate reasonable progress toward the attainment of a CTR criterion and/or effluent limitations. The compliance schedule shall include a schedule for completion

[3] CTR criteria, for purposes of this section, exclude NTR criteria.

that reflects a realistic assessment of the shortest practicable time required to perform each task. The compliance schedule shall contain a final compliance date based on the shortest practicable time required to achieve compliance. The deadlines to complete each action in the compliance schedule shall be specified in the NPDES permit and shall be accompanied by interim requirements as described in section 2.2.1. When a compliance schedule exceeds one year from the date of permit issuance, interim limitations with specific compliance dates (as described in section 2.2.1) shall be included in the NPDES permit. If the final compliance date extends beyond the permit term, the final compliance date and supporting explanation shall be included in the permit findings.

The discharger shall submit to the RWQCB the following justification before compliance schedules may be authorized in a permit: (a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream, and the results of those efforts; (b) documentation of source control and/or pollution minimization efforts currently underway or completed; (c) a proposed schedule for additional or future source control measures, *pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable.

The schedule of compliance for point source dischargers in an NPDES permit shall be as short as practicable but in no case exceed the following:

A. Up to five years from the date of permit issuance, reissuance, or modification to complete actions (such as pollutant minimization or facility upgrades) necessary to comply with CTR criterion-based effluent limitations that are derived with or without a TMDL. Such actions shall include the development and adoption of a site-specific objective, if appropriate, as provided in section 5.2.

B. Up to 15 years from the effective date of this Policy to develop and adopt a TMDL, and accompanying Waste Load Allocations (WLAs) and Load Allocations (LAs), as described in section 2.1.1, below.

In no case (unless an exception has been granted in accordance with section 5.3) shall a compliance schedule for these dischargers exceed, from the effective date of this Policy:
(a) 10 years to establish and comply with CTR criterion-based effluent limitations; or
(b) 20 years to develop and adopt a TMDL, and to establish and comply with WLAs derived from a TMDL for a CTR criterion (i.e., up to 15 years to complete the TMDL and up to five years to comply with a TMDL-derived effluent limitation).

2.1.1 TMDL-Based Compliance Schedule

The compliance schedule provisions for the development and adoption of a TMDL only apply when: (a) the discharger requests and demonstrates that it is *infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion; and (b) the discharger has made appropriate commitments to support and expedite the development of the TMDL. In determining appropriate commitments, the RWQCB should consider the discharge's contribution to current loadings and the discharger's ability to participate in TMDL development.

For *bioaccumulative priority pollutants for which the receiving water has been included on the

CWA Section 303(d) list, the RWQCB should consider whether the mass loading of the bioaccumulative pollutant(s) should be limited to representative, current levels pending TMDL development in order to implement the applicable water quality standard.

2.2 Interim Requirements

If a compliance schedule is allowed (in accordance with section 2.1) or a schedule is allowed to collect and provide data needed to establish water quality-based effluent limitations for a CTR criterion (in accordance with provisions in section 1), interim requirements shall be included in an NPDES permit.

2.2.1 Interim Requirements Under a Compliance Schedule

If a compliance schedule is granted (in accordance with section 2.1), the RWQCB shall establish interim requirements and dates for their achievement in the NPDES permit. If the compliance schedule exceeds one year, the RWQCB shall establish interim numeric limitations for the priority pollutant in the permit and may also impose interim requirements to control the pollutant, such as *pollutant minimization and source control measures. Numeric interim limitations for the pollutant must be based on current treatment facility performance or on existing permit limitations, whichever is more stringent. If the existing permit limitations are more stringent, and the discharger is not in compliance with those limitations, the noncompliance under the existing permit must be addressed through appropriate enforcement action before the permit can be reissued, unless antibacksliding provisions are met.

There shall be no more than one year between interim dates. The interim requirements shall state that the discharger must notify the RWQCB, in writing, no later than 14 days following each interim date, of its compliance or noncompliance with the interim requirements.

If the compliance schedule is within the term of the permit, the final effluent limitations shall be included in the permit provisions. If the compliance schedule exceeds the length of the permit, the final effluent limitations shall be included in the permit findings. In the latter case, the findings shall include: (1) the water quality to be achieved; (2) the reason that a final water quality-based effluent limitation is not being incorporated into the permit as an enforceable limitation at this time; (3) a statement that it is the intent of the RWQCB to include, in a subsequent permit revision, the final water quality-based effluent limitation as an enforceable limitation (based either on the CTR criterion directly or on future regulatory developments, such as TMDL or site-specific objective development). The permit findings shall also state the appropriate enforcement actions that may be taken by the RWQCB if interim limitations and requirements are not met.

2.2.2 Reserved

2.3 Monitoring Requirements

The RWQCB shall require dischargers to conduct self-monitoring programs and shall clearly state in all permits the objective and purpose of the monitoring. Furthermore, the RWQCB shall determine, and specify under the monitoring and reporting requirements, the sampling parameters, monitoring frequencies, locations, and analytical methods to be used. To evaluate compliance with effluent limitations, effluent and ambient monitoring should occur within a

brief enough period to be able to evaluate the effect of the effluent on the ambient water quality. All data shall be reported in accordance with section 2.4. Options for analytical methods are:

(1) those methods listed in Appendix 4 and described in Tables 1A, 1B, 1C, 1D, and 1E of 40 CFR 136.3 (revised as of May 14, 1999); or alternate test procedures for individual discharges that have been approved by the U.S. EPA Regional Administrator pursuant to 40 CFR 136.4 (a) through (c), inclusive, and 40 CFR 136.5 (a) through (d), inclusive (revised as of May 14, 1999); or

(2) where no methods are specified for a given pollutant in the tables described in (1) above, methods approved by the SWRCB or RWQCB.

Laboratories analyzing monitoring samples shall be certified by the Department of Health Services, in accordance with the provision of Water Code Section 13176, and must include quality assurance/quality control data with their reports.

Dischargers are also encouraged to submit monitoring data in electronic formats approved by the SWRCB or RWQCB.

Furthermore, it is the policy of the SWRCB that individual permit monitoring complement and be coordinated with water body, watershed, and regional monitoring programs to the extent practicable.

2.4 Reporting Requirements

The discharger shall submit to the RWQCB reports necessary to determine compliance with effluent limitations for priority pollutants in permits. The reports shall comply with the requirements of sections 2.4.1 through 2.4.4.

2.4.1 Reporting Levels

The RWQCB shall require in the permit that the discharger shall report with each sample result:

1. The Reporting Level (RL) (selected from the MLs listed in Appendix 4 in accordance with section 2.4.2 or established in accordance with section 2.4.3); and

2. The laboratory's current *Method Detection Limit (MDL), as determined by the procedure found in 40 CFR 136 (revised as of July 3, 1999).

2.4.2 Selection and Use of Appropriate ML Value

Reporting Level Selection: When there is more than one ML value for a given substance, the RWQCB shall include as RLs, in the permit, all ML values, and their associated analytical methods, listed in Appendix 4 that are below the calculated effluent limitation. The discharger may select any one of those cited analytical methods for compliance determination. If no ML value is below the effluent limitation, then the RWQCB shall select as the RL, the lowest ML value, and its associated analytical method, listed in Appendix 4 for inclusion in the permit.

ML Usage: The ML value in Appendix 4 represents the lowest quantifiable concentration in a

sample based on the proper application of all method-based analytical procedures and the absence of any matrix interferences. Assuming that all method-specific analytical steps are followed, the ML value will also represent, after the appropriate application of method-specific factors, the lowest standard in the calibration curve for that specific analytical technique. Common analytical practices sometimes require different treatment of the sample relative to calibration standards. Some examples are given below:

Substance or Grouping	Method-Specified Treatment	Most Common Method-Specific Factor(s)
Volatile organic	No differential treatment	1
Semi-Volatile organic	Samples concentrated by extraction	1000
Metals	Samples diluted or concentrated	½, 2, and 4
Pesticides	Samples concentrated by extraction	100

Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied in the computation of the reporting limit. Application of such factors will alter the RL (as described in section 2.4.1).

Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the discharger to use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve. The discharger's laboratory(ies) may, as allowed for by the rules governing alterations to ML values in section 2.4.3 below, employ a calibration standard lower than the ML value in Appendix 4.

2.4.3 Deviation from MLs Listed in Appendix 4

The RWQCB, in consultation with the SWRCB's Quality Assurance Program, shall establish an RL that is not contained an ML in Appendix 4 to be included in the discharger's permit in any of the following situations:

1. When the pollutant under consideration is not included in Appendix 4.

2. When the discharger and the RWQCB agree to include in the permit a test method that is more sensitive than those specified in 40 CFR 136 (revised as of July 3, 1999).

3. When a discharger agrees to use an RL that is lower than the MLs listed in Appendix 4.

4. When a discharger demonstrates that the calibration standard matrix is sufficiently different from that used to establish the ML in Appendix 4 and proposes an appropriate ML for their matrix.

5. When the discharger uses a method whose quantification practices are not consistent with the definition of an ML. Examples of such methods are the U.S. EPA-approved method 1613 for dioxins and furans, method 1624 for volatile organic substances, and method 1625 for semi-volatile organic substances. In such cases, the discharger, the RWQCB, and the SWRCB shall agree on a lowest quantifiable limit and that limit will substitute for

the RL for reporting and compliance determination purposes.

2.4.4 Reporting Protocols

The discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

1. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

2. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The *estimated chemical concentration of the sample shall also be reported.

   For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (± a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

3. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

2.4.5 Compliance Determination

Compliance with effluent limitations shall be determined as follows:

1. Dischargers shall be deemed out of compliance with an effluent limitation, if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the RL.

2. Dischargers shall be required to conduct a Pollutant Minimization Program (PMP) in accordance with section 2.4.5.1 when there is evidence (e.g., sample results reported as DNQ when the effluent limitation is less than the MDL, sample results from analytical methods more sensitive than those methods included in the permit in accordance with sections 2.4.2 or 2.4.3 above, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that the priority pollutant is present in the effluent above an effluent limitation and either:

   a. A sample result is reported as DNQ and the effluent limitation is less than the RL; or

   b. A sample result is reported as ND and the effluent limitation is less than the MDL.

   RWQCBs may include special provisions in the permit to require the gathering of evidence to determine whether the constituent of concern is present in the effluent at levels above a calculated effluent limitation.

When determining compliance with an AMEL and more than one sample result is available in a month, the discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or ND. In those cases, the discharger shall compute the median

in place of the arithmetic mean in accordance with the following procedure:

1. The data set shall be ranked from low to high, reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

2. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

If a sample result, or the arithmetic mean or median of multiple sample results, is below the RL, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the discharger conducts a PMP (as described in section 2.4.5.1), the discharger shall not be deemed out of compliance.

2.4.5.1 Pollutant Minimization Program

The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through *pollutant minimization (control) strategies, including *pollution prevention measures as appropriate,[4] to maintain the effluent concentration at or below the water quality-based effluent limitation. The RWQCB may consider cost-effectiveness when establishing the requirements of a PMP. The program shall include, but not be limited to, the following actions and submittals acceptable to the RWQCB:

1. An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;

2. Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system;

3. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;

4. Implementation of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and

5. An annual status report that shall be sent to the RWQCB including:

    a. All PMP monitoring results for the previous year;

    b. A list of potential sources of the reportable priority pollutant(s);

    c. A summary of all actions undertaken pursuant to the control strategy; and

[4] Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted.

d. A description of actions to be taken in the following year.

The permit shall contain a reopener clause authorizing modifications, or revocation and reissuance of the permit, as a result of the detection of a reportable priority pollutant generated by special conditions included in the permit. These special conditions in the permit may be, but are not limited to, fish tissue sampling, whole effluent toxicity tests, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in the permit as a result of the special condition monitoring data.

The completion and implementation of a pollution prevention plan, required pursuant to Water Code Section 13263.3(d), shall be considered to fulfill the PMP requirements of this section.

3. 2,3,7,8-TCDD EQUIVALENTS

The CTR includes criteria for 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD). In addition to this compound, there are many congeners of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) that exhibit toxic effects similar to those of 2,3,7,8-TCDD. The U.S. EPA has published toxic equivalency factors (TEFs) for 17 of the congeners. The TEFs express the relative toxicities of the congeners compared to 2,3,7,8-TCDD (whose TEF equals 1.0). In June 1997, participants in a World Health Organization (WHO) expert meeting revised TEF values for 1,2,3,7,8-PentaCDD, OctaCDD, and OctaCDF. The current TEFs for the 17 congeners, which include the three revised values, are shown in Table 4:

Table 4. Toxic Equivalency Factors (TEFs) for 2,3,7,8-TCDD Equivalents

Congener	TEF
2,3,7,8-TetraCDD	1
1,2,3,7,8-PentaCDD	1.0
1,2,3,4,7,8-HexaCDD	0.1
1,2,3,6,7,8-HexaCDD	0.1
1,2,3,7,8,9-HexaCDD	0.1
1,2,3,4,6,7,8-HeptaCDD	0.01
OctaCDD	0.0001
2,3,7,8-TetraCDF	0.1
1,2,3,7,8-PentaCDF	0.05
2,3,4,7,8-PentaCDF	0.5
1,2,3,4,7,8-HexaCDF	0.1
1,2,3,6,7,8-HexaCDF	0.1
1,2,3,7,8,9-HexaCDF	0.1
2,3,4,6,7,8-HexaCDF	0.1
1,2,3,4,6,7,8-HeptaCDF	0.01

1,2,3,4,7,8,9-HeptaCDF	0.01
OctaCDF	0.0001

TEF Reference: Van den Berg, M., et al. (22 additional authors). 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs, for humans and wildlife. Environmental Health Perspectives 106(12):775-792.

Whether or not an effluent limitation is required for 2,3,7,8-TCDD in accordance with section 1.3 of this Policy, each RWQCB shall require (as described below) major and minor POTW and industrial dischargers in its region to conduct effluent monitoring for the 2,3,7,8-TCDD congeners listed above. The purpose of the monitoring is to assess the presence and amounts of the congeners being discharged to inland surface waters, enclosed bays, and estuaries for the development of a strategy to control these chemicals in a future multi-media approach.

Within one year of the effective date of this Policy, each RWQCB shall either (1) amend the NPDES permits, or (2) send a written request for the information pursuant to California Water Code Section 13267 or 13383, for NPDES permittees in their respective regions, requiring, for a period of three consecutive years from the date the permit is amended or the request is sent, that: (1) each major POTW and major industrial discharger monitor its effluent for the presence of the 17 congeners once during dry weather and once during wet weather each of the three years; and (2) each minor POTW and minor industrial discharger monitor its effluent for the presence of the 17 congeners once during dry weather and once during wet weather for one year during the three-year period.

The RWQCB should coordinate this region-wide monitoring to provide data that are consistent with the purpose of the provisions of this section to the extent possible. The RWQCB shall encourage public and private dischargers, and local governments, to develop a coordinated, cooperative regional monitoring program to gather this information.

The RWQCB shall require the discharger to report for each congener the analytical results of the effluent monitoring, including the quantifiable limit[5] and the MDL, and the measured or estimated concentration. In addition, the RWQCB shall require the discharger to multiply each measured or estimated congener concentration by its respective TEF value (presented above) and report the sum of these values. This information shall be submitted to the RWQCB as part of the discharger's self-monitoring reports, in accordance with section 2.3. The RWQCB shall, subsequently, submit the information to the SWRCB.

Based on the monitoring results, the RWQCB may, at its discretion, increase the monitoring requirement (e.g., increase sampling frequency) to further investigate frequent or significant detections of any congener. At the conclusion of the three-year monitoring period, the SWRCB and RWQCBs will assess the data (a total of six samples each from major POTWs and industrial dischargers, and a total of two samples each from minor POTWs and industrial dischargers), and determine whether further monitoring is necessary.

[5] As determined by the procedure found in section 2.4.3, number 5.

4. TOXICITY CONTROL PROVISIONS

This section establishes minimum toxicity control requirements for implementing the narrative toxicity objectives for aquatic life protection in RWQCB basin plans. These provisions are intended to supplement basin plan requirements and do not supersede existing RWQCB toxicity requirements.

Water Quality-Based Toxicity Control

A chronic toxicity effluent limitation is required in permits for all discharges that will cause, have reasonable potential to cause, or contribute to chronic toxicity in receiving waters.

To determine compliance with the chronic aquatic life toxicity objective in a RWQCB basin plan, or an effluent limitation based on the objective, the RWQCB shall require, in a permit or other appropriate order, the use of short-term chronic toxicity tests. At least three test species with approved test protocols shall be used to measure compliance with the toxicity objective. If possible, the test species shall include a vertebrate, an invertebrate, and an aquatic plant. After a screening period, monitoring may be reduced to the most sensitive species. Dilution and control waters should be obtained from an area unaffected by the discharge in the receiving waters. For rivers and streams, dilution water should be obtained immediately upstream of the wastewater outfall. Standard dilution water can be used if the above sources exhibit toxicity or if approved by the RWQCB. The sensitivity of the test organisms to a reference toxicant shall be determined concurrently with each bioassay and reported with the test results.

The tests contained in Appendix II, "Chapter IV. Compliance With Toxicity Limitations and Objectives", of the California Ocean Plan (amended March 20, 1997 and effective July 23, 1997) are incorporated by reference and one or more of these tests shall be used to measure toxicity in salt water. This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect. One or more of the tests in Table 5 shall be used to measure chronic toxicity in fresh water.

Table 5. Short-term Methods for Estimating Chronic Toxicity-Fresh Water

Species	Effect	Test duration (days)
fathead minnow (Pimephales promelas)	larval survival; growth	7
water flea (Ceriodaphnia dubia)	survival; number of young	6 to 8
alga (Selenastrum capricornutum)	growth rate	4

Toxicity Test Reference: U.S. EPA. 1994. Short-term methods for estimating the chronic toxicity of effluents and receiving waters to freshwater organisms. Third edition. U.S. EPA Environmental Monitoring Systems Laboratory, Cincinnati, Ohio. EPA/600/4-91-002.

Toxicity Reduction Requirements

If a discharge causes or contributes to chronic toxicity in a receiving water body, a *toxicity reduction evaluation (TRE) is required. Where multiple dischargers to the same water body are required to conduct TREs, the TREs may be coordinated with the approval of the RWQCB. The TRE shall include all reasonable steps to identify the source(s) of toxicity. Once the source of toxicity is identified, the discharger shall take all reasonable steps necessary to eliminate toxicity.

The following shall be incorporated into permits: (1) a requirement to conduct a TRE if repeated tests reveal toxicity as a result of the waste discharge; (2) a provision requiring a discharger to take all reasonable steps to control toxicity once the source of toxicity is identified; and (3) a statement that failure to conduct required toxicity tests or a TRE within a designated period shall result in the establishment of effluent limitations for chronic toxicity in a permit or appropriate enforcement action.

5. SPECIAL PROVISIONS

The following sections include provisions that address certain discharges and factors that could affect the application of other provisions in this Policy. They include: (1) nonpoint source discharges (section 5.1); (2) site-specific objectives (section 5.2); and (3) exceptions to the Policy provisions (section 5.3).

5.1 Nonpoint Source Discharges

It is the intent of the SWRCB, in adopting this Policy, that the implementation of the priority pollutant criteria/objectives and other requirements of this Policy for nonpoint source discharges shall be consistent with the State's " Policy for the Implementation and Enforcement of the Nonpoint Source Pollution Control Program, 2004."

5.2 Site-Specific Objectives

If a priority pollutant criterion or objective is inappropriate for a particular water body (i.e., it does not protect the beneficial uses or, based on site-specific conditions, a less stringent standard may be warranted), a water quality objective that differs from the applicable criterion or objective may be developed for the site. A RWQCB may develop site-specific objectives whenever it determines, in the exercise of its professional judgement, that it is appropriate to do so. Where a priority pollutant criterion or objective is not being attained in the water body, under certain circumstances, it may be more appropriate to pursue other approaches to achieve the applicable criterion or objective rather than develop a site-specific objective. These approaches include, but are not limited to, watershed management and development of TMDLs (see Appendix 5 and Appendix 6). The RWQCB may investigate, facilitate, or implement such approaches as appropriate.

Regardless of an action taken by the RWQCB as described above, the RWQCB shall, at a public meeting, consider initiating the development of a site-specific objective under the following conditions:

(1) A written request for a site-specific study, accompanied by a preliminary commitment to fund the study, subject to development of a workplan[6], is filed with the RWQCB; and

(2) Either:

(a) a priority pollutant criterion or objective is not achieved in the receiving water; or
(b) a holder of an NPDES permit demonstrates that they do not, or may not in the future, meet an existing or potential effluent limitation based on the priority pollutant criterion or objective; and

(3) A demonstration that the discharger cannot be assured of achieving the criterion or objective and/or effluent limitation through reasonable treatment, source control, and *pollution prevention measures. This demonstration may include, but is not limited to, as determined by the RWQCB:

(a) an analysis of compliance and consistency with all relevant federal and State plans, policies, laws, and regulations;
(b) a thorough review of historical limits and compliance with those limits;
(c) a thorough review of current technology and technology-based limits; and
(d) an economic analysis of compliance with the priority pollutant criterion or objective of concern.

During the period when site-specific objectives studies are being conducted, the RWQCB shall place effluent limitations based upon the applicable priority pollutant criteria or objectives into permits only in conjunction with an appropriate compliance schedule and interim requirements, as described in sections 2.1 and 2.2.

A discharger subject to a schedule for compliance with a CTR criterion or CTR criterion-based effluent limitations, as described in section 2.1, may choose to, concurrently with the actions necessary to achieve compliance, conduct the studies necessary to support the development and adoption of a site-specific objective.[7]

Following adoption of a site-specific objective by the RWQCB, existing effluent limitations shall be replaced with effluent limitations (calculated as described in section 1.4) based on the adopted site-specific objective if the analysis in section 1.3 indicates that a limitation for the pollutant is required. In the event that, for reasons beyond the control of the discharger, a decision whether or not to adopt site-specific objectives has not been made by the RWQCB before the end of the compliance schedule, the compliance schedule shall be extended for an additional period to allow time for a decision whether or not to adopt the objective. However, in no event may a compliance schedule exceed the maximum time period allowed for compliance with the CTR criteria (as described in section 2.1) or priority pollutant objectives (as described in the basin plan, if applicable), unless an exception has been granted (in accordance with section 5.3).

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[6] The elements presented under the "Special Studies Process" in Appendix 5 should be considered in developing the site-specific objectives workplan.

[7] A RWQCB may include a compliance schedule in a water quality standard based on a site-specific objective. Such a compliance schedule is separate and distinct from the compliance schedules established by this Policy.

Development of Site-Specific Objectives

Water quality objectives shall be developed in a manner consistent with State and federal law and regulations. In accordance with the State's Porter-Cologne Water Quality Control Act (Division 7 of the Water Code), objectives must provide for the reasonable protection of beneficial uses based on consideration of the factors listed in Water Code Section 13241. In accordance with federal law (CWA) and regulations (40 CFR 131.11, revised as of July 1, 1997), the objectives must be based on sound scientific rationale and protect the designated beneficial uses of the receiving water.

The RWQCB shall use scientifically defensible methods appropriate to the situation to derive the objectives. Such methods may include U.S. EPA-approved methods (e.g., Water Effects Ratio [WER] procedure, recalculation procedure, a combination of recalculation and WER procedures, Resident Species Procedure), and/or other methods specified in the workplan.

A site-specific objective adopted by the RWQCB may include a compliance schedule. However, if attainment of the potential objective(s) developed under the study is anticipated to be infeasible (as defined in 40 CFR 131.10(g), revised as of July 1, 1997), or if the RWQCB otherwise determines it is appropriate, a *use attainability analysis (UAA) may be conducted. The RWQCB shall conduct, with the participation of interested persons, as appropriate, the UAA in accordance with 40 CFR 131.10(j) (revised as of July 1, 1997). If the UAA shows that attainment of the designated beneficial use(s) is not feasible (pursuant to 40 CFR 131.10(g) (revised as of July 1, 1997), the RWQCB shall designate an alternative beneficial use or subcategory of use, and develop appropriate water quality objectives to protect the new use(s). Both the use(s) and the objective(s) established to protect it would be reevaluated during the triennial reviews of the State's water quality standards.

5.3 Exceptions

Categorical and case-by-case exceptions to this Policy may be granted pursuant to the provisions below.

Categorical Exceptions

The RWQCB may, after compliance with the California Environmental Quality Act (CEQA), allow short-term or seasonal exceptions from meeting the priority pollutant criteria/objectives if determined to be necessary to implement control measures either:

1. for resource or pest management (i.e., vector or weed control, pest eradication, or fishery management) conducted by *public entities or *mutual water companies to fulfill statutory requirements, including, but not limited to, those in the California Fish and Game, Food and Agriculture, Health and Safety, and Harbors and Navigation codes; or

2. regarding drinking water conducted to fulfill statutory requirements under the federal Safe Drinking Water Act or the California Health and Safety Code. Such categorical exceptions may also be granted for draining water supply reservoirs, canals, and pipelines for maintenance, for draining municipal storm water conveyances for cleaning or maintenance, or for draining water treatment facilities for cleaning or maintenance.

For each project, the discharger shall notify potentially affected public and governmental agencies. Also, the discharger shall submit to the Executive Officer of the appropriate RWQCB, for approval:

(1) A detailed description of the proposed action, including the proposed method of completing the action;

(2) A time schedule;

(3) A discharge and receiving water quality monitoring plan (before project initiation, during the project, and after project completion, with the appropriate quality assurance and quality control procedures);

(4) CEQA documentation;

(5) Contingency plans;

(6) Identification of alternate water supply (if needed); and

(7) Residual waste disposal plans.

Additionally, upon completion of the project, the discharger shall provide certification by a qualified biologist that the receiving water beneficial uses have been restored.

To prevent unnecessary delays in taking emergency actions or to expedite the approval process for expected or routine activities that fall under categorical exceptions, the discharger is advised to file with the appropriate RWQCB, in advance of seeking RWQCB approval, the information required in items (1)-(7) above, to the extent possible.

Case-by-Case Exceptions

Where site-specific conditions in individual water bodies or watersheds differ sufficiently from statewide conditions and those differences cannot be addressed through other provisions of this Policy, the SWRCB may, in compliance with the CEQA, subsequent to a public hearing, and with the concurrence of the U.S. EPA, grant an exception to meeting a priority pollutant criterion/objective or any other provision of this Policy where the SWRCB determines:

1. The exception will not compromise protection of enclosed bay, estuarine, and inland surface waters for beneficial uses; and

2. The public interest will be served.

An example of where a case-by-case exception would be appropriate is where it is necessary to accommodate wastewater reclamation or water conservation.

APPENDIX 1

Definition of Terms

ACUTELY TOXIC CONDITIONS, as used in the context of mixing zones, refers to lethality that occurs to mobile aquatic organisms that move or drift through the mixing zone.

ARITHMETIC MEAN (μ), also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

Arithmetic mean = $\mu = \Sigma x / n$ where: Σx is the sum of the measured ambient water concentrations, and
n is the number of samples.

AVERAGE MONTHLY EFFLUENT LIMITATION (AMEL) means the highest allowable average of daily pollutant discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of measurements.

BEST MANAGEMENT PRACTICES (BMPs) are methods, measures, or practices designed and selected to reduce or eliminate the discharge of pollutants to surface waters from point and nonpoint source discharges including storm water. BMPs include structural and non-structural controls, and operation and maintenance procedures, which can be applied before, during, and/or after pollution producing activities.

BIOACCUMULATIVE pollutants are those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

BIOLOGICALLY-BASED RECEIVING WATER FLOW refers to the method for determining receiving water flows developed by the U.S. EPA Office of Research and Development which directly uses the averaging periods and exceedance frequencies specified in the acute and chronic aquatic life criteria for individual pollutants (e.g., 1 day and 3 years for acute criteria, and 4 days and 3 years for the chronic criteria). Biologically-based flows can be calculated using the program DFLOW.

CARCINOGENIC pollutants are substances that are known to cause cancer in living organisms.

COEFFICIENT OF VARIATION (*CV*) is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

COMPLETELY-MIXED DISCHARGE condition means not more than a 5 percent difference, accounting for analytical variability, in the concentration of a pollutant exists across a transect of the water body at a point within two stream/river widths from the discharge point.

DILUTION CREDIT is the amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

DILUTION RATIO is the critical low flow of the upstream receiving water divided by the flow of the effluent discharged.

DISCHARGER-SPECIFIC WER is a WER that is applied to individual pollutant limits in an NPDES permit issued to a particular permit holder. A discharger-specific WER applies only to the applicable limits in the discharger's permit. Discharger-specific WERs are distinguished for WERs that are developed on a waterbody or watershed basis as part of a water quality standards action resulting in adoption of an SSO.

DYNAMIC MODELS used for calculating effluent limitations predict the effects of receiving water and effluent flow and of concentration variability. The outputs of dynamic models can be used to base effluent limitations on probability estimates of receiving water concentrations rather than critical conditions (which are used in the steady-state model). The three dynamic modeling techniques recommended by the U.S. EPA for calculating effluent limitations are continuous simulation, Monte Carlo simulation, and lognormal probability modeling.

EFFLUENT CONCENTRATION ALLOWANCE (ECA) is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in U.S. EPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

ENCLOSED BAYS means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

ESTIMATED CHEMICAL CONCENTRATION is the estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

ESTUARIES means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code Section 12220,

Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

EXISTING DISCHARGER means any discharger that is not a new discharger. An existing discharger includes an "increasing discharger" (i.e., an existing facility with treatment systems in place for its current discharge that is or will be expanding, upgrading, or modifying its existing permitted discharge after the effective date of this Policy).

FOUR-DAY AVERAGE OF DAILY MAXIMUM FLOWS is the average of daily maximums taken from the data set in four-day intervals.

HARMONIC MEAN flows are expressed as $Q_{hm} = (n)/(\Sigma^{n}_{i=1}\ 1/x_i)$, where x_i = specific data values and n = number of data values.

INCOMPLETELY-MIXED DISCHARGE is a discharge that contributes to a condition that does not meet the meaning of a completely-mixed discharge condition.

INFEASIBLE means not capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

INLAND SURFACE WATERS are all surface waters of the State that do not include the ocean, enclosed bays, or estuaries.

LOAD ALLOCATION (LA) is the portion of a receiving water's total maximum daily load that is allocated to one of its nonpoint sources of pollution or to natural background sources.

LONG-TERM ARITHMETIC MEAN FLOW is at least two years of flow data used in calculating an arithmetic mean as defined in this appendix.

MAXIMUM DAILY FLOW is the maximum flow sample of all samples collected in a calendar day.

MAXIMUM DAILY EFFLUENT LIMITATION (MDEL) means the highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

MEDIAN is the middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the $n/2$ and $n/2+1$).

METHOD DETECTION LIMIT (MDL) is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 CFR 136, Appendix B, revised as of May 14, 1999.

MINIMUM LEVEL (ML) is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

MIXING ZONE is a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

MUTAGENIC pollutants are substances that are known to cause a mutation (i.e., change in a gene or chromosome) in living organisms.

MUTUAL WATER COMPANY is defined in the Public Utilities Code, section 2725 as: "any private corporation or association organized for the purpose of delivering water to its stockholders and members at cost, including use of works for conserving, treating and reclaiming water".

NEW DISCHARGER includes any building, structure, facility, or installation from which there is, or may be, a discharge of pollutants, the construction of which commenced after the effective date of this Policy.

OBJECTIONABLE BOTTOM DEPOSITS are an accumulation of materials or substances on or near the bottom of a water body, which creates conditions that adversely impact aquatic life, human health, beneficial uses, or aesthetics. These conditions include, but are not limited to, the accumulation of pollutants in the sediments and other conditions that result in harm to benthic organisms, production of food chain organisms, or fish egg development. The presence of such deposits shall be determined by RWQCB(s) on a case-by-case basis.

OCEAN WATERS are the territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. Discharges to ocean waters are regulated in accordance with the SWRCB's California Ocean Plan.

PERSISTENT pollutants are substances for which degradation or decomposition in the environment is nonexistent or very slow.

POLLUTANT MINIMIZATION means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses.

POLLUTION PREVENTION means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes,

but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code Section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the SWRCB or RWQCB.

PROCESS OPTIMIZATION means minor changes to the existing facility and treatment plant operations that optimize the effectiveness of the existing treatment processes.

PUBLIC ENTITY includes the federal government or a state, county, city and county, city, district, public authority, or public agency.

SOURCE OF DRINKING WATER is any water designated as municipal or domestic supply (MUN) in a RWQCB basin plan.

STANDARD DEVIATION (σ) is a measure of variability that is calculated as follows:

$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:

x is the observed value;

μ is the arithmetic mean of the observed values; and

n is the number of samples.

TERATOGENIC pollutants are substances that are known to cause structural abnormalities or birth defects in living organisms.

TOXICITY REDUCTION EVALUATION (TRE) is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

USE ATTAINABILITY ANALYSIS is a structured scientific assessment of the factors affecting the attainment of the use which may include physical, chemical, biological and economic factors as described in 40 CFR 131.10(g) (40 CFR 131.3, revised as of July 1, 1997).

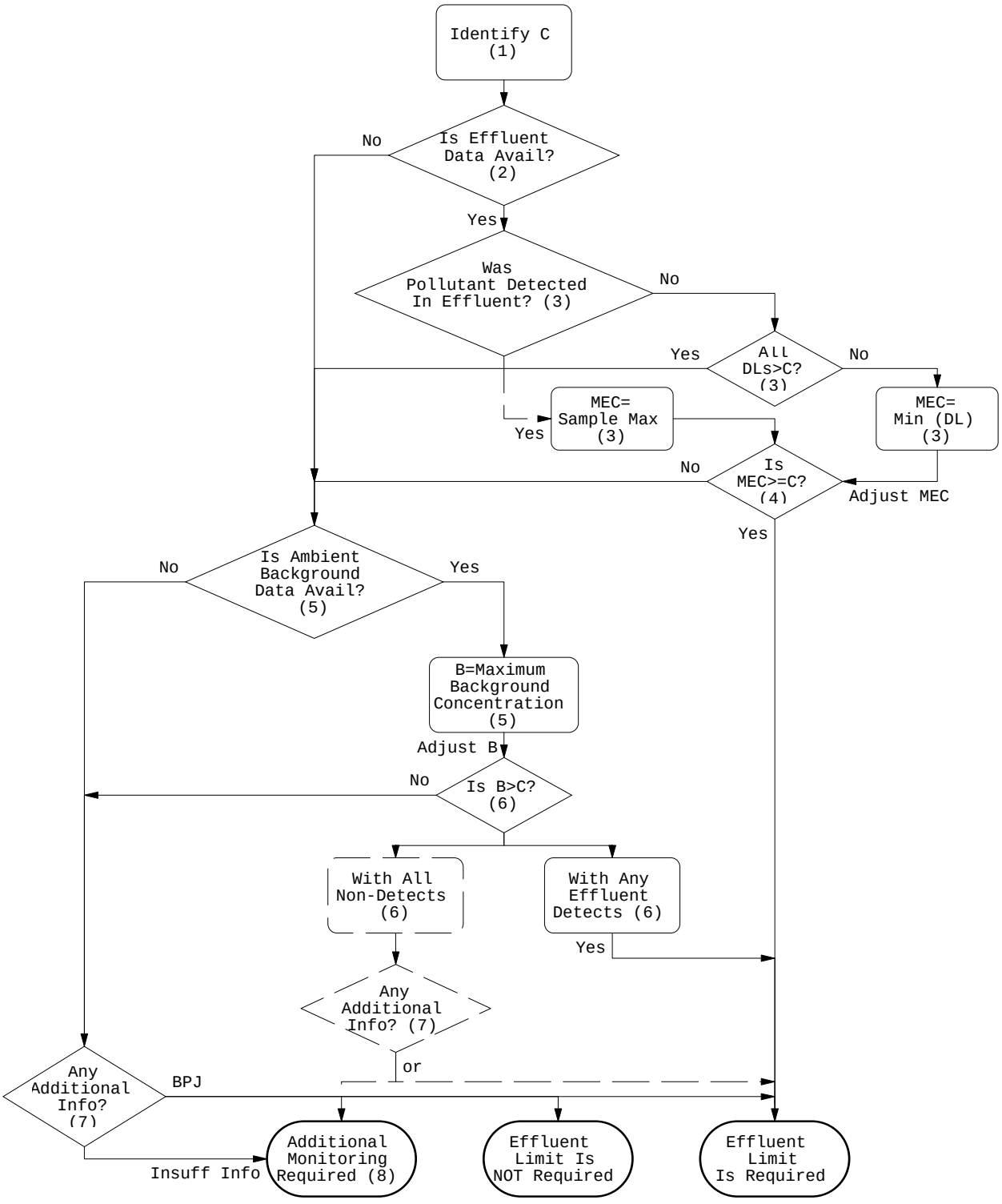
WATER-EFFECT RATIO (WER) is an appropriate measure of the toxicity of a material obtained in a site water divided by the same measure of the toxicity of the same material obtained simultaneously in a laboratory dilution water.

1Q10 is the lowest flow that occurs for one day with a statistical frequency of once every 10 years.

7Q10 is the average low flow that occurs for seven consecutive days with a statistical frequency of once every 10 years.

90^{th} PERCENTILE OF OBSERVED DATA is the measurement in the ordered set of data (lowest to highest) where 90 percent of the reported measurements are less than or equal to that value.

APPENDIX 2
Determination of Pollutants Requiring Water Quality-Based Effluent Limitations



APPENDIX 3

U.S. Environmental Protection Agency Conversion Factors

Metal	Conversion Factor (CF) for Freshwater Acute Criteria	CF for Freshwater Chronic Criteria	CF for Saltwater Acute Criteria	CF(a) for Saltwater Chronic Criteria
Antimony	(d)	(d)	(d)	(d)
Arsenic	1.000	1.000	1.000	1.000
Beryllium	(d)	(d)	(d)	(d)
Cadmium (b)	0.944	0.909	0.994	0.994
Chromium (III)	0.316	0.860	(d)	(d)
Chromium (VI)	0.982	0.962	0.993	0.993
Copper	0.960	0.960	0.83	0.83
Lead (b)	0.791	0.791	0.951	0.951
Mercury	0.85	0.85	0.85	0.85
Nickel	0.998	0.997	0.990	0.990
Selenium	(c)	(c)	0.998	0.998
Silver	0.85	(d)	0.85	(d)
Thallium	(d)	(d)	(d)	(d)
Zinc	0.978	0.986	0.946	0.946

Footnotes:

(a) Conversion Factors for chronic marine criteria are not currently available. Conversion Factors for acute marine criteria have been used for both acute and chronic marine criteria.

(b) Conversion Factors for these pollutants are hardness dependent. CFs are based on a hardness of 100 mg/l as calcium carbonate ($CaCO_3$). Other hardness can be used; CFs should be recalculated using the following equations:
Cadmium: Acute: CF = 1.136672 - [(ln {hardness})(0.041838)]
Cadmium: Chronic: CF = 1.101672 - [(ln {hardness})(0.041838)]
Lead: Acute and Chronic: CF = 1.46203 - [ln {hardness})(0.145712)]

(c) Bioaccumulative compound and inappropriate to adjust to percent dissolved.

(d) U.S. EPA has not published an aquatic life criterion value.

NOTE: The term "Conversion Factor" represents the recommended conversion factor for converting a metal criterion expressed as the total recoverable fraction in the water column to a criterion expressed as the dissolved fraction in the water column. See "Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria," October 1, 1993, by Martha G. Prothro, Acting Assistant Administrator for Water, available from the Water Resource Center, USEPA, 401 M St. SW., mail code RC 4100, Washington, DC 20460; and 40 CFR §131.36(b)(1).

Source: CTR (65 Fed. Register 31682-31719 (May 18, 2000), adding Section 131.38 to 40 CFR).

APPENDIX 4

SWRCB Minimum Levels in ppb (μg/L)

The Minimum Levels (MLs) in this appendix are for use in reporting and compliance determination purposes in accordance with section 2.4 of this Policy. These MLs were derived from data for priority pollutants provided by State certified analytical laboratories in 1997 and 1998. These MLs shall be used until new values are adopted by the SWRCB and become effective. The following tables (Tables 2a - 2d) present MLs for four major chemical groupings: volatile substances, semi-volatile substances, inorganics, and pesticides & PCBs.

Table 2a - VOLATILE SUBSTANCES*	GC	GCMS
1,1 Dichloroethane	0.5	1
1,1 Dichloroethene	0.5	2
1,1,1 Trichloroethane	0.5	2
1,1,2 Trichloroethane	0.5	2
1,1,2,2 Tetrachloroethane	0.5	1
1,2 Dichlorobenzene (volatile)	0.5	2
1,2 Dichloroethane	0.5	2
1,2 Dichloropropane	0.5	1
1,3 Dichlorobenzene (volatile)	0.5	2
1,3 Dichloropropene (volatile)	0.5	2
1,4 Dichlorobenzene (volatile)	0.5	2
Acrolein	2.0	5
Acrylonitrile	2.0	2
Benzene	0.5	2
Bromoform	0.5	2
Bromomethane	1.0	2
Carbon Tetrachloride	0.5	2
Chlorobenzene	0.5	2
Chlorodibromo-methane	0.5	2
Chloroethane	0.5	2
Chloroform	0.5	2
Chloromethane	0.5	2
Dichlorobromo-methane	0.5	2
Dichloromethane	0.5	2
Ethylbenzene	0.5	2
Tetrachloroethene	0.5	2
Toluene	0.5	2
trans-1,2 Dichloroethylene	0.5	1
Trichloroethene	0.5	2
Vinyl Chloride	0.5	2

*The normal method-specific factor for these substances is 1, therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance.

Table 2b - SEMI-VOLATILE SUBSTANCES*	GC	GCMS	LC	COLOR
1,2 Benzanthracene	10	5		
1,2 Dichlorobenzene (semivolatile)	2	2		
1,2 Diphenylhydrazine		1		
1,2,4 Trichlorobenzene	1	5		
1,3 Dichlorobenzene (semivolatile)	2	1		
1,4 Dichlorobenzene (semivolatile)	2	1		
2 Chlorophenol	2	5		
2,4 Dichlorophenol	1	5		
2,4 Dimethylphenol	1	2		
2,4 Dinitrophenol	5	5		
2,4 Dinitrotoluene	10	5		
2,4,6 Trichlorophenol	10	10		
2,6 Dinitrotoluene		5		
2- Nitrophenol		10		
2-Chloroethyl vinyl ether	1	1		
2-Chloronaphthalene		10		
3,3' Dichlorobenzidine		5		
3,4 Benzofluoranthene		10	10	
4 Chloro-3-methylphenol	5	1		
4,6 Dinitro-2-methylphenol	10	5		
4- Nitrophenol	5	10		
4-Bromophenyl phenyl ether	10	5		
4-Chlorophenyl phenyl ether		5		
Acenaphthene	1	1	0.5	
Acenaphthylene		10	0.2	
Anthracene		10	2	
Benzidine		5		
Benzo(a) pyrene(3,4 Benzopyrene)		10	2	
Benzo(g,h,i)perylene		5	0.1	
Benzo(k)fluoranthene		10	2	
bis 2-(1-Chloroethoxyl) methane		5		
bis(2-chloroethyl) ether	10	1		
bis(2-Chloroisopropyl) ether	10	2		
bis(2-Ethylhexyl) phthalate	10	5		
Butyl benzyl phthalate	10	10		
Chrysene		10	5	
di-n-Butyl phthalate		10		
di-n-Octyl phthalate		10		
Dibenzo(a,h)-anthracene		10	0.1	
Diethyl phthalate	10	2		

Table 2b - SEMI-VOLATILE SUBSTANCES*	GC	GCMS	LC	COLOR
Dimethyl phthalate	10	2		
Fluoranthene	10	1	0.05	
Fluorene		10	0.1	
Hexachloro-cyclopentadiene	5	5		
Hexachlorobenzene	5	1		
Hexachlorobutadiene	5	1		
Hexachloroethane	5	1		
Indeno(1,2,3,cd)-pyrene		10	0.05	
Isophorone	10	1		
N-Nitroso diphenyl amine	10	1		
N-Nitroso-dimethyl amine	10	5		
N-Nitroso -di n-propyl amine	10	5		
Naphthalene	10	1	0.2	
Nitrobenzene	10	1		
Pentachlorophenol	1	5		
Phenanthrene		5	0.05	
Phenol **	1	1		50
Pyrene		10	0.05	

* With the exception of phenol by colorimetric technique, the normal method-specific factor for these substances is 1000, therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance multiplied by 1000.

** Phenol by colorimetric technique has a factor of 1.

Table 2c – INORGANICS*	FAA	GFAA	ICP	ICPMS	SPGFAA	HYDRIDE	CVAA	COLOR	DCP
Antimony	10	5	50	0.5	5	0.5			1000
Arsenic		2	10	2	2	1		20	1000
Beryllium	20	0.5	2	0.5	1				1000
Cadmium	10	0.5	10	0.25	0.5				1000
Chromium (total)	50	2	10	0.5	1				1000
Chromium VI	5							10	
Copper	25	5	10	0.5	2				1000
Cyanide								5	
Lead	20	5	5	0.5	2				10,000
Mercury				0.5			0.2		
Nickel	50	5	20	1	5				1000
Selenium		5	10	2	5	1			1000
Silver	10	1	10	0.25	2				1000
Thallium	10	2	10	1	5				1000
Zinc	20		20	1	10				1000

* The normal method-specific factor for these substances is 1, therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance.

Table 2d - PESTICIDES – PCBs*	GC
4,4'-DDD	0.05
4,4'-DDE	0.05
4,4'-DDT	0.01
a-Endosulfan	0.02
a-Hexachloro-cyclohexane	0.01
Aldrin	0.005
b-Endosulfan	0.01
b-Hexachloro-cyclohexane	0.005
Chlordane	0.1
d-Hexachloro-cyclohexane	0.005
Dieldrin	0.01
Endosulfan Sulfate	0.05
Endrin	0.01
Endrin Aldehyde	0.01
Heptachlor	0.01
Heptachlor Epoxide	0.01
Lindane(g-Hexachloro-cyclohexane)	0.02
PCB 1016	0.5
PCB 1221	0.5
PCB 1232	0.5
PCB 1242	0.5
PCB 1248	0.5
PCB 1254	0.5
PCB 1260	0.5
Toxaphene	0.5

* The normal method-specific factor for these substances is 100, therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance multiplied by 100.

Techniques:

GC - Gas Chromatography
GCMS - Gas Chromatography/Mass Spectrometry
HRGCMS - High Resolution Gas Chromatography/Mass Spectrometry (i.e., EPA 1613, 1624, or 1625)
LC - High Pressure Liquid Chromatography
FAA - Flame Atomic Absorption
GFAA - Graphite Furnace Atomic Absorption
HYDRIDE - Gaseous Hydride Atomic Absorption
CVAA - Cold Vapor Atomic Absorption
ICP - Inductively Coupled Plasma
ICPMS - Inductively Coupled Plasma/Mass Spectrometry
SPGFAA - Stabilized Platform Graphite Furnace Atomic Absorption (i.e., EPA 200.9)
DCP - Direct Current Plasma
COLOR - Colorimetric

APPENDIX 5

Special Studies

Pre-Evaluation for Special Studies
Decision Tree with Attached Narrative Discussion

A special study is sometimes conducted as part of a regulatory process (standard setting and permit writing) and may be conducted as part of a collaborative watershed planning effort. Special studies can provide site-specific data that can assist in decision-making regarding water quality and beneficial use issues.

Many water quality problems may be best addressed on a watershed or water body basis. The SWRCB believes that stakeholders should be able to develop flexible and innovative solutions for water quality problems in their watershed. For special studies conducted as part of a watershed management plan, the watershed management group should be involved in the design of the study, and study information should be provided back to the committee. Watershed or water body studies may gather data regarding topics such as:

- TMDLs, WLAs, and LAs (see Appendix 6);
- Regional ambient monitoring (regional ambient monitoring is the collection of scientific information regarding water quality and impacts to beneficial uses for a specified portion of, or an entire, watershed or water body); and
- Contaminant fate and transport monitoring (contaminant fate and transport monitoring is the gathering of scientific information regarding how a specific pollutant[s] moves through the environment and how the pollutant[s] degrades or is otherwise transformed in the environment).

These types of studies are useful to collect integrated, comprehensive, and systematic data regarding:

- Baseline concentrations of toxic pollutants in the water and sediment;
- Seasonal, annual, and long-term trends in water quality;
- Causes and effects of water quality problems;
- Effectiveness of a water quality control effort;

- Greater certainty regarding existing monitoring data; etc.

Any of the studies discussed below may be undertaken as part of a watershed approach to addressing regional water quality issues. Information collected as part of a watershed or water body study can be used as a way to define parameters (e.g., ambient background concentrations, mixing zones, etc.) related to the development of effluent limitations as part of the permitting process or to evaluate whether changes in water quality standards are appropriate. A watershed or water body approach is also useful to dischargers because information collected as a part of one effluent limitation or standard-setting study can be shared with other stakeholders in the same water body.

Studies for Setting Effluent Limitations

Studies regarding establishing effluent limitations can be done as part of the permitting process. Such studies may be simpler and there may be fewer interested stakeholders than studies involving more than one discharger, or an entire water body or watershed. However, when such studies are undertaken individually, the discharger, the RWQCB, and other stakeholders do not gain the benefit of data collected from others in the watershed.

Special studies may address topics such as the following:

- Determining pollutants requiring effluent limitations (see section 1.3);
- Metals translators (see section 1.4.1); or
- Mixing zones (see section 1.4.2).

Studies For Changes to Water Quality Standards

Establishing or modifying water quality standards (i.e., beneficial uses and water quality criteria/objectives) may involve complex and resource intensive studies. A detailed workplan will normally be needed because early planning and coordination with the RWQCB and U.S. EPA is critical to the development of a successful study. In addition, a workplan will normally be appropriate because there will be more stakeholder interest and involvement of other public agencies (e.g., Department of Fish and Game, U.S. Fish and Wildlife Service, etc.). Involvement in a watershed management planning effort would facilitate the sharing of information among stakeholders in the watershed, both in gathering information for the study and in sharing the results. Studies related to changes in water quality standards may address topics such as the following:

- Site-specific objective studies (see section 5.2); and

- Use attainability analysis (UAA) (see section 5.2).

Pre-Evaluation

As a first step in determining whether and how to conduct a special study, the RWQCB or other stakeholders may want to evaluate whether it would be appropriate to address a water quality issue through a watershed management approach. To do that, the factors in the following flowchart may be considered:

1. Is there a watershed management group?[a]

↓ Yes

2. Has a watershed management approach been developed?[b] →→→→→ No → GO TO start of Decision Tree[d] if water issue involves toxics.

↓ Yes

3. Are toxic pollutants part of the reason beneficial uses are impaired or water quality objectives are exceeded?[c] →→→→→ No → Issue is outside scope of this Policy.

↓ Yes

GO TO #9 in Decision Tree[d], or other point in Decision Tree as determined by stakeholders.

[a] Is there a committee of local interests in both the public and private sectors that are actively involved in the management of the watershed area?

[b] Has a watershed management approach that identifies key issues, boundaries, objectives, and early actions been developed?

[c] A study may be necessary to determine whether toxics are part of the cause of the impairment of beneficial uses. This Policy applies only to the CTR and NTR criteria; and applicable chemical-specific basin plan objectives for priority toxic pollutants.

[d] The decision tree is on page DRAFT APPENDIX 5 - 6.

The decision tree and associated narrative discussion in Appendix 5 are provided to assist RWQCBs and stakeholders in identifying whether there is a current or potential water quality issue requiring attention [Compliance Status], the nature of the identified water quality issue [Screening-level Evaluation], and possible action to address the issue [Potential Options].

Based on this information, the RWQCB and stakeholders can determine whether a special study is needed and the scope of the study. This approach can help avoid initiation of costly and time-consuming studies which are not appropriately designed to resolve the specific issue in question. The decision tree is not meant to preclude the exploration of any other creative solutions; it is meant to encourage constructive dialogue among stakeholders.

Two specific considerations should be kept in mind when conducting the pre-evaluation suggested by this decision tree. First, users must be familiar with the quality of the data under review and the potential need to augment data which are not of adequate quality. Second, users should know what the existing beneficial uses are (i.e., uses attained since 1975).

Special Studies Process

A. Workplan

If appropriate, the RWQCB may participate in developing a detailed workplan with interested persons (which can include, but are not limited to, U.S. EPA, the RWQCB, the SWRCB, and affected dischargers) prior to proceeding with a special study. The workplan may include the following elements:

(1) Formation of a project team for the workplan, which may include the Department of Fish and Game, the U.S. Fish and Wildlife Service, and other stakeholders;

(2) Purpose of the workplan;

(3) Responsibilities of the persons associated with the workplan;

(4) Budget and cost-sharing plan. This plan must be determined on a case-by-case basis; however, the SWRCB encourages sharing of costs (based on availability of funding), where there are multiple persons who wish to support the goals of the study;

(5) Development of the following elements:

(a) Identification of tasks(s),
(b) Purpose of tasks(s),
(c) Method by which task(s) will be implemented,
(d) Products of the tasks(s),
(e) Schedule for the task(s),
(f) Responsibility for implementing the task(s), and
(g) Budget and funding for the task(s);

(6) Administrative policies and procedures to govern oversight of the special studies process (e.g., amending the workplan, conflict resolution, etc.); and

(7) Project schedule.

B. Scientific Review Panel

If, during the data interpretation phase of a special study, the RWQCB, SWRCB, U.S. EPA, or other stakeholders have differing opinions with regard to the interpretation of data, the RWQCB and stakeholders may want to seek the advice of an independent scientific review panel. The method of selecting the panel, cost reimbursement, and other details regarding the conflict resolution process could be included in the workplan.

C. Compliance Schedule

A permit compliance schedule (as described in section 2.1) may allow sufficient time for collection of data, completion of a study, and determination of compliance measures. While special studies are being conducted, interim requirements may be established by the RWQCB (as described in section 2.2). However, in no event may a compliance schedule exceed the time period allowed in this Policy, unless an exception has been granted.

D. Environmental and Economic Impacts

To ensure that environmental and economic impacts are adequately addressed, the RWQCB staff shall, as part of the special study workplan:

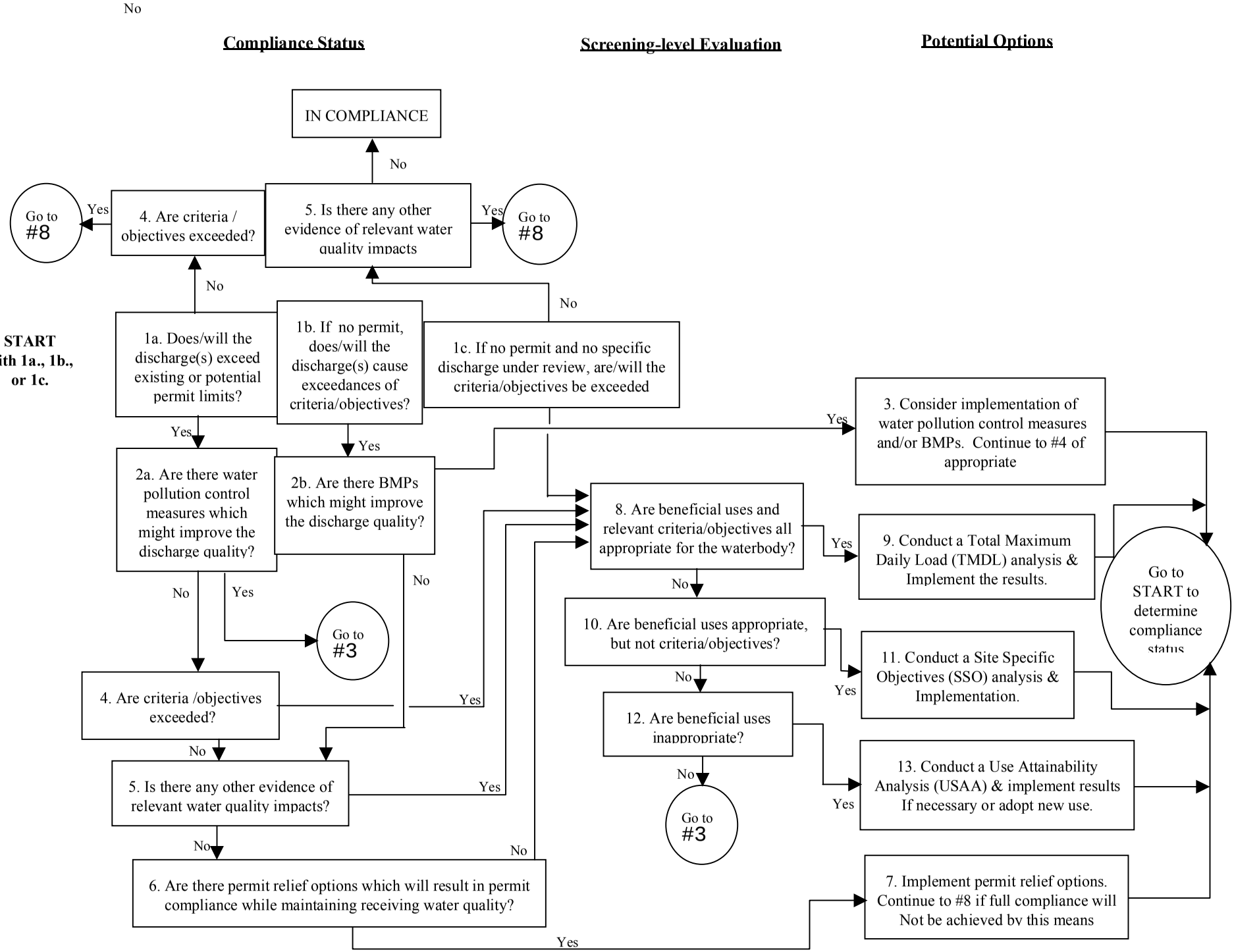
(1) Comply with CEQA, if applicable; and

(2) Direct the preparation of an analysis documenting economic impacts if site-specific objectives or a change in designated beneficial uses is being considered under 40 CFR 131.10(g)(6), revised as of July 1, 1997.

E. Antidegradation and Other Legal Requirements

RWQCB staff shall, as part of the special study workplan, ensure compliance with SWRCB Resolution No. 68-16 (Statement of Policy with Respect to Maintaining High Quality of Waters in California) and any other applicable legal requirements.

Pre-Evaluation for Special Studies
Decision Tree with Attached Narrative Discussion



Narrative Discussion of Decision Tree:

la. Does/will a discharge exceed existing or potential permit limits for toxic pollutants? This question applies to discharges regulated by a National Pollutant Discharge Elimination System (NPDES) permit or Waste Discharge Requirements (WDRs). If the discharge(s) in question is not regulated by a discharge permit, proceed to #1b. It is assumed that data used to answer this question are reliable.

1b. If no permit, does the discharge(s) cause exceedances of criteria/objectives? This question primarily applies to nonpoint discharges, though it could conceivably apply to point source discharges which are not currently permitted. It is assumed that data used to answer this question are reliable.

1c. If no permit and no specific discharge(s) are under review, are criteria/objectives exceeded? It is assumed that data used to answer this question are reliable.

2a. Are there water pollution control measures which might improve the water quality? A water pollution control program may include, as appropriate: pollution control technologies; pretreatment requirements; and pollution prevention, waste minimization, and source control measures. This question is meant to elicit consideration of effluent quality control measures which could be implemented as a full or partial solution to the identified permit noncompliance issue. It is not intended as a barrier to the exploration of other potential forms of regulatory adjustment.

2b. Are there Best Management Practices (BMPs) which might improve water quality? BMPs are pollution management measures designed to reduce the water quality impacts, where they exist, associated primarily with non-point source discharges. As with #2a above, this question is meant to elicit consideration of discharge control measures which could be implemented as a full or partial solution to the identified noncompliance issue. It is not intended as a barrier to the exploration of other potential forms of regulatory adjustment.

3. Consider whether implementation of water pollution control measures and/or BMPs will lead to compliance. Simultaneously, continue to #4 if deemed appropriate, considering such questions as whether or not full compliance will be achieved by these means, or whether it would be cost effective. As stated, the simple determination that implementation of pollution control measures and/or BMPs might improve the discharge or water quality should not preclude the exploration of other potential regulatory adjustment options, as well. For clarity, the reviewer should proceed not to box four prime, but to box four.

4. Are criteria/objectives exceeded? It is assumed that data used to answer this question are reliable and appropriate hardness adjustments have been made.

5. Is there any other evidence of relevant water quality impacts? This question is meant to capture those situations, where the criteria/objective for the pollutant of concern do not exist or appear to be under protective. "Other evidence" might include: bioconcentration or biocriteria data, population studies, food web analyses, etc. Impacts to wildlife should be considered as should impacts to threatened and endangered species. The potential for impacts to be of a seasonal nature should also be considered in this pre-evaluation. "Relevant water quality impacts" are those impacts which have a demonstrable relationship to the pollutant(s) of concern.

6. Are there permit relief options which will result in permit compliance while maintaining receiving water quality? Permit relief options might include, where appropriate: development of a mixing zone, modification of the averaging periods, adoption of a variance, etc. For unpermitted discharges or pre-evaluations involving no specific discharges, the user should continue to box #8.

7. Implement permit relief options. Continue to #8 if full compliance will not be achieved by these means. The development of permit relief options would occur through a request to the RWQCB.

8. Are beneficial uses and criteria/objectives both appropriate for the water body? To answer this question, a screening-level evaluation may be necessary, including an evaluation of the associated regulatory history; the site-specific conditions; and the status of current, applicable scientific understanding. It is assumed that data used to answer this question are reliable.

   This question is best answered when a watershed stakeholder group has formed and collectively either: 1) evaluated the condition of the watershed through a watershed management plan, 2) evaluated the condition of the watershed through less formal means, or 3) convened discussions regarding the condition of the watershed. If one does not currently exist, a watershed stakeholder group should be formed if it appears to be a useful forum for discussion and review. The following more specific questions may apply:

   - Is the water effluent dominated, agricultural drainage water dominated, etc.? These water bodies may be likely candidates for the appropriate application of regulatory adjustments (e.g., SSO or UAA).

   - Were the current beneficial uses applied on a national, state-wide, or region-wide basis or have they been specifically designated for the water body in question? While not the only candidates, water bodies for which beneficial uses have been applied on a national, state-wide, or region-wide basis may be candidates for the appropriate application of regulatory adjustments (e.g., SSO).

   - Are there rare, threatened, or endangered species, or ecological conditions which the currently applied beneficial uses do not adequately describe or the water quality objectives do not fully protect?

- Has the beneficial use and the water quality necessary to maintain the beneficial use been attained since 1975?

- How do anti-degradation requirements apply?

- Are elevated constituents the result of 1) natural phenomena or 2) anthropogenic activities that ceased prior to 1975?

- Do the currently designated beneficial uses protect all existing and appropriate potential uses?

- Are natural, ephemeral, intermittent, or low flow conditions or water levels preventing the attainment of the designated non-existing uses?

- Are there human-caused conditions or sources of pollution which prevent attainment of the uses but either cannot be remedied or would cause greater environmental damage if corrected?

- Does the presence of dams, diversions, or other types of hydrologic modifications preclude the attainment of designated non-existing beneficial uses?

- Do the physical conditions of the water body preclude attainment of aquatic life protection uses (i.e., lack of proper substrate, cover, flow, depth, pools, riffles, and the like)?

- Does attainment of designated beneficial uses require the application of controls which would result in substantial and widespread economic and social impact?

- Have the appropriate water characteristics (e.g., hardness, pH) been accounted for in the CTR criteria?

- Has an appropriate set of species been evaluated in setting the CTR criteria and toxicity objective?

9. Conduct a total maximum daily load analysis and implement the results. Conducting a TMDL could result in, among other things, waste load allocations, BMP implementation for non-point dischargers, and/or effluent trading options for point and non-point source dischargers. (See Appendix 6 regarding TMDLs.)

10. Are beneficial uses appropriate but not criteria/objectives for toxic pollutants? See #8 above.

11. Conduct a site-specific objectives analysis. An SSO study will include one or more of the following activities:

- Recalculation of objective;
- Water effects ratio or other similar method; or
- Any scientifically defensible process.

U.S. EPA's "Guidelines for Deriving Numerical Aquatic Site Specific Water Quality Criteria by Modifying National Criteria," dated 1984 (EPA-600/3-84-099) provides guidance for conducting an SSO study.

U.S. EPA's "Water Quality Standards Handbook" dated 1994 also provides general guidance in this area.

12. Are beneficial uses inappropriate? See #8 above.

13. Conduct a use attainability analysis (UAA) and implement the results. When a use is proposed for dedesignation, i.e., removed or replaced with a subcategory requiring less stringent standards, a UAA is necessary. In a case where a use is proposed to be added, a UAA is not necessary. A new use designation can be added for a water body following the normal public review process. A UAA will determine if physical, chemical, and/or biological factors affect the attainability of a designated use via a water body survey and assessment. An analysis of economic factors can also be included to determine whether substantial and widespread economic and social impacts would be caused by stringent pollution control requirements.

    U.S. EPA's "Technical Support Manual: Water body Survey and Assessment for Conducting Use Attainability Analyses" dated 1983 provides guidance for conducting a UAA as does Region 9's Interim Final "Guidance for Modifying Water Quality Standards and Protecting Effluent-Dependent Ecosystems" dated 1992. U.S. EPA's "Water Quality Standards Handbook" dated 1994 also provides general guidance in this area.

APPENDIX 6

Watershed Management and TMDLs

Watershed Management

The SWRCB will utilize and promote, to the extent feasible, a watershed approach to address water quality issues involving toxic pollutants. Compared to the more traditional, programmatic approach to water management, the watershed approach can look at all types of pollution and all sources of pollution. One consequence of the more global perspective is that attention can be trained on the most effective strategies for management (rather than the most programmatically expedient). Another consequence is that a much larger universe of interested persons becomes important to the management of water quality, and the ability to work with these people creates added value for water management. In utilizing the watershed approach, the SWRCB will work to marshall the expertise and resources of other agencies and the private sector to collaboratively manage water quality.

In a collaborative, stewardship effort, local interests are engaged with State and federal interests, and land managers, to work with water managers to solve complex resource management problems. A watershed perspective can also enhance interagency coordination by focusing programs on resource needs throughout the watershed.

Watershed management is an integrated holistic approach for restoring and protecting aquatic ecosystems and protecting human health in a geographic area. Watershed management may include diverse issues as defined by the watershed's stakeholders (persons with some interest in the watershed) to ensure comprehensive solutions. It reflects a growing consensus that many of the existing water quality problems can be best addressed by a more integrated, basin-wide approach. The purpose of watershed management is variously viewed as (1) a method for increasing participation at the local level in water quality protection, (2) an approach to reducing the impact of nonpoint sources, (3) a strategy for integrating management of all components of aquatic ecosystems, and (4) a process for optimizing the cost effectiveness of a blend of point and nonpoint source control efforts.

Whichever purpose or blend of purposes predominates, watershed management is not a new centralized program that competes with or replaces existing programs. The significant advantage of the watershed management approach is that it encourages a collaborative, stewardship-driven process where diverse interests (individuals, landowners, farmers, POTWs, industries, environmentalists, and agencies) can work in conjunction with SWRCB and RWQCB staff to develop a consensus on, and share responsibility for, addressing water quality problems. The watershed approach assumes all stakeholders are brought to the table; therefore, there should be one watershed group that can develop a plan for the watershed that addresses the interests of stakeholders in the watershed. Furthermore, watershed management provides a mechanism for considering social and economic interests, in the context of resolving water quality issues. The SWRCB and RWQCBs will work to preserve the integrity of the watershed process and facilitate an open and timely resolution of issues.

In some cases, there is no active watershed management group that has evolved far enough to have identified key issues, boundaries, objectives, and early actions. In these instances, a group of government agencies may work together to define the conditions in a water body and to identify the specific parameters contributing to beneficial use impairments. In any event, the RWQCBs may have to act more or less independently to meet legal requirements using primarily in-house staff. Participation from other interested persons, under these circumstances, is accomplished through the SWRCB and RWQCB public hearing processes.

Watershed management planning and implementation actions will occur primarily at the RWQCB and local level. However, the SWRCB will provide training in stewardship and watershed management, and support educational efforts involving K through 12 programs as well as land owners/managers.

TMDLs and Watershed Management

TMDLs are required for all waters listed pursuant to CWA Section 303(d)(1)(A). The SWRCB is committed to expeditiously addressing these water quality problems.

A TMDL establishes the amount of a pollutant that may be discharged into a water body and still maintain water quality standards with seasonal variations and a margin of safety that takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality. The TMDL process is defined in federal regulations (40 CFR 130.7, revised as of July 1, 1996) and generally consists of five steps:

(1) Identification by each state of water quality-limited waters that do not now, or are not expected to, attain state water quality standards after implementation of technology-based effluent limitations, more stringent effluent limitations required by federal, State, or local authority, and other pollution control requirements (e.g., best management practices) required by local, State, or federal authority, and identification of impairment;

(2) Establishment of priority rankings for the development of TMDLs;

(3) Development of waste load allocations (WLAs), load allocations (LAs), and TMDLs;

(4) Incorporation of the loadings in the RWQCB basin plans; and

(5) Submittal of segments identified, priority ranking, and loads established to U.S. EPA for approval.

Development of TMDLs can utilize the watershed approach to assess and identify water quality-limited segments and pollutants causing impairment, identify sources, and allocate pollutant loads. The watershed approach may address a broader range of issues than the TMDLs, but the approach can: (1) result in achieving or maintaining water quality standards so that waters are not added to the 303(d) list; (2) result in attainment of water quality standards, through means other than the TMDL process, so that waters can be removed from the 303(d) list; or (3) be used to develop TMDLs. A watershed group can develop a TMDL if the TMDL complies with applicable federal requirements.

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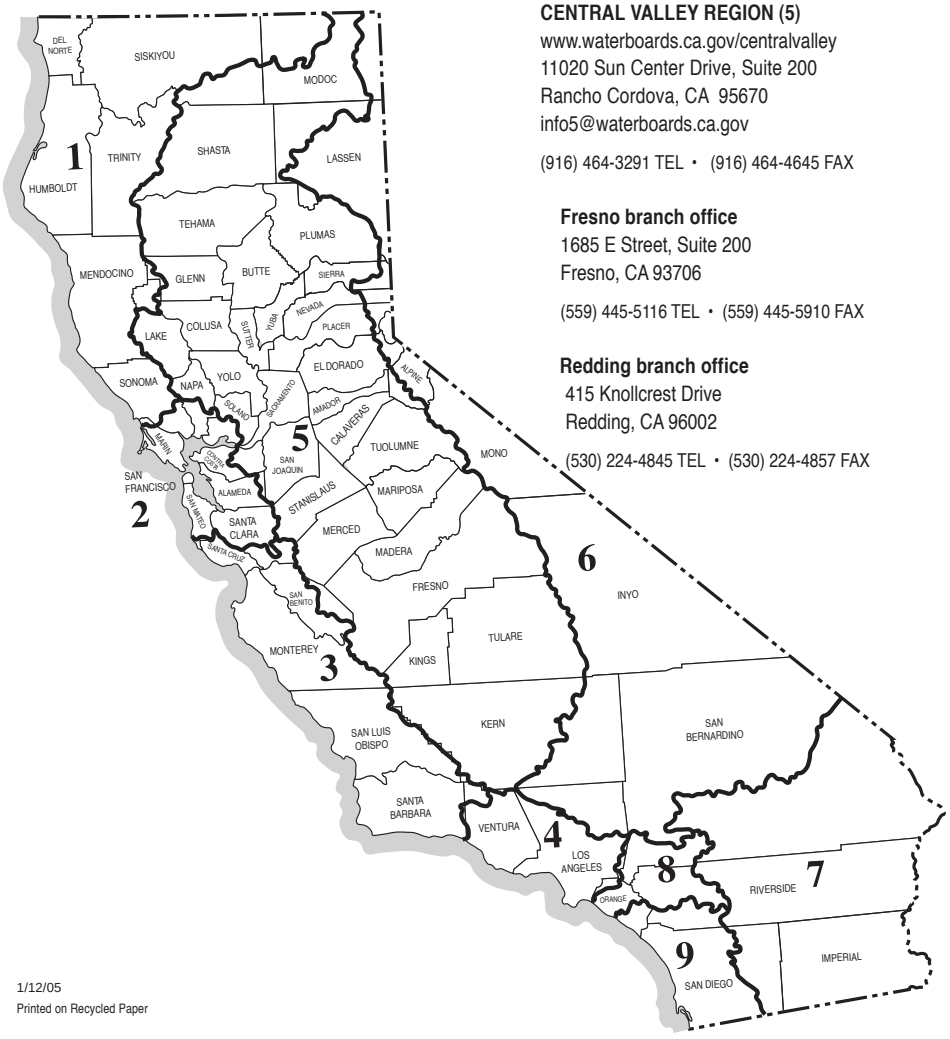

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