3. Proposed Revisions to Basin Plan Section 3 (Water Quality Objectives)

This chapter of the Staff Report presents the rationale for the recommended revisions to Section 3 of the Basin Plan (Water Quality Objectives). The actual prposed language is included in Appendices A and B (strikethrough/underline copy and clean copy, respectively). As needed for clarity, excerpts of the prposed language are included in the discussion below. Many of the water quality objectives described in Section 3 were developed in the 1970s or 1980s and have not been revised since. Some of these are outdated, with respect to the findings of current scientific literature.

This prposed amendment seeks to clarify the longstanding procedures for implementing water quality objectives within the framework of the Basin Plan so as to provide regulatory transparency. The goal of the prposed revisions is to elaborate on existing authorities so as to make clear and transparent the process staff has been using and will continue to use when identifying the most appropriate numeric threshold when protecting beneficial uses.

Below is a general explanation for the proposed major revisions, including revisions to the objectives for chemical constituents, revisions to the dissolved oxygen objective, and the inclusion of a narrative groundwater toxicity objective. A more detailed discussion follows for each of the proposed revisions, including editorial and other minor proposed alterations.

3.1 Chemical Constituents

The existing water quality objectives for chemical constituents do not reflect current scientific understanding for all parameters. The objectives for chemical constituents apply to surface water and groundwater, both of which can be sources of drinking water and can support numerous other beneficial uses. The specific objectives of numeric chemical constituents contained in the Basin Plan are the drinking water standards developed by the California Department of Public Health (CDPH), now the State Water Board Division of Drinking Water (DDW) and described in the California Code of Regulations, Title 22, at the time the objectives were adopted in 1975 and modified in 1993, which are now outdated.

These drinking water standards, also known as Maximum Contaminant Levels (MCLs), do not include consideration of other human health exposures (e.g., contact, recreation or fish consumption), aquatic life exposures (e.g., migration, feeding, and early development exposures), or agricultural crop impacts (e.g., plant growth interference or increased mortality) despite the fact that these other beneficial uses are designated for surface water and groundwater in the North Coast Region. Furthermore, while the existing objectives for chemical constituents specify numeric values for MUN and a general narrative objective for AGR, the existing objectives are silent on values to protect uses other than MUN and AGR. With respect to these beneficial uses, ambient groundwater quality conditions must not result in exceedances of agricultural crop criteria or human health exposure criteria for drinking water.

Water quality objectives, on the other hand, are intended to describe the ambient water quality condition necessary to support and maintain all beneficial uses. Other beneficial uses of water that may be more sensitive to chemical exposures than MUN and AGR include, but are not limited to: COMM, SHELL, FISH, CUL, COLD, SPWN, WILD and RARE (See Section 1.1 of this staff report for more discussion on Beneficial Uses). The absence of explicit language in the objectives for chemical constituents with respect to beneficial uses other than AGR and MUN does not abrogate the Regional Water Boards authority nor nullify the applicability of objectives for chemical constituents to protect other beneficial uses.

All surface and ground waters of the state are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Water Board except those excluded by the State Water Board Resolution No. 88-63, Sources of Drinking Water Policy. Individual water supplies commonly include the use of raw untreated groundwater and to a lesser extent include raw untreated surface water. The MUN use must be supported by objectives that protect beneficial uses and prevent nuisance (Wat. Code § 13241) independent of treatment by a water supplier**.**

The existing objective for chemical constituents is both narrative and numeric. The first portion applies MCLs as the upper most limits to waters with the municipal and domestic water supply (MUN) beneficial use. The section portion is narrative and protects from adverse impacts to the agricultural beneficial use. The third portion applies waterbody-specifc objectives, as listed in Table 3-1, for specific conductance, total dissolved solids (TDS), DO, pH, hardness, and boron.

Therefore, the proposed revisions to the objectives for chemical constituents include:

1. Revising the narrative objectives for chemical constituents to clearly apply to the protection of all beneficial uses, not just AGR.
2. Adding language regarding the prevention of nuisance, as required in Porter-Cologne.
3. Deleting the outdated Table 3-2, *Inorganic, Organic, and Fluoride Concentrations Not to be Exceeded in Domestic or Municipal Supply*.
4. Prospectively incorporating the Primary and Secondary MCLs listed in California Code of Regulations, Title 22 as the minimum water quality objectives for chemical constituents to protect the MUN beneficial use.

To further elaborate, the drinking water standards described in Title 22 as referenced above, are given as primary MCLs and secondary MCLs. Primary MCLs are health protective drinking water standards to be met by public water supply systems. Secondary MCLs are established to be protective of aesthetic or nuisance conditions such as taste, odor and color. Primary MCLs take into account not only the health risks of chemicals, but also factors such as their detectability and treatability including:

> "the costs of compliance to public water systems, customers, and other affected parties with the proposed primary drinking water standard, including the cost per customer and aggregate cost of compliance, using best available technology".[1]

MCLs are required to be established at a level no less stringent than the primary drinking water standards established by the United States Environmental Protection Agency's (USEPA) and as close to the established public health goal (PHG) as is technologically and economically feasible [2]. PHGs are established by California Environmental Protection Agency's (Cal/EPA) Office of Environmental Health Hazard Assessment (OEHHA). PHGs are concentrations of drinking water contaminants that pose no significant health risk if consumed/exposed for a lifetime, based on current risk assessment principles, practices, and methods. OEHHA establishes PHGs for contaminants with MCLs, and for those for which MCLs will be adopted[3]. However, due to the economic factors for public water systems and aggregate costs using best available technology, many MCLs are established at levels well above PHGs.

3.2. Groundwater Toxicity

Regional Water Board staff has identified the need to develop language that clearly articulates the process, required by existing state and federal law, that staff utilizes when translating narrative water quality objectives into numeric values to be implemented in permits, orders, and other regulatory actions. The development of the clarifying language is an attempt to reduce confusion and disagreement on Regional Water Board implementation of water quality objectives.

Regional Water Board staff has relied on alternative justifications and authority for establishing cleanup levels and permit limits to address toxic constituents of concern, such as the federal and state antidegradation policies and State Water Board's Resolution 92-49 *Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under Water Code section 13304* (Cleanup Policy). The Cleanup Policy directs cleanup and abatement activities to be performed in a manner that either achieves background water quality, or the best water quality which is reasonable taking all demands being made and to be made on those waters and the total values involved. In practice, attainment of background is not feasible in many cases and the cleanup goals are rarely set to background in the North Coast Region.

Section 3 of the Basin Plan, which lists objectives for chemical constituents, includes an introductory section and footnote 2 in Table 3-2, which explicitly states,

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[1] California Health & Safety Code section 116365 subdivision(b)(3)
[2] California Health & Safety Code section116365 subdivision (b)
[3] California Health & Safety Code section 116365 subdivision (c)

"Other water quality objectives (e.g. taste and odor thresholds or other secondary MCLs) and policies (e.g., State Water Board "Policy With Respect to Maintaining High Quality Waters in California") that are more stringent may apply".

The Regional Water Board has relied on footnote 2 to Table 3-2 and the existing State Water Board policies to establish the most protective and attainable cleanup goal, often lower than the MCL. The Regional Water Board regularly adopts discharge permits and orders that implement taste and odor criteria as currently listed in Title 22, PHGs, and aquatic life criteria that are more stringent than current MCL values. Adopting a specific groundwater toxicity objective will provide a more sound and more transparent regulatory standard to address the cleanup of toxic substances in groundwater for the protection of human health and the environment. However, adding the toxicity objective for groundwater will not fundamentally alter the limits that are included in future permits, orders, and other regulatory actions compared to the limits that have been included in existing permits to date using existing authorities and alternative justifications.

At issue is that in some cases, the MCL is significantly higher than the *de minimis* risk level (1-in-a-million increased cancer risk) for a carcinogen. As one example, the primary MCL (both California and Federal) for tetrachloroethane (a.k.a. perchloroethylene or PCE) is 5 micrograms per liter (µg/L), while the *de minimis* risk level set by OEHHA with its public health goal is 0.06 µg/L. As such, other toxicity numeric criteria, such as the cancer potency factors developed by OEHHA, may provide greater protection of drinking water for some constituents than does application of the MCL.

The existing Water Quality Objective for Taste and Odor provides another example of the logic for adopting a groundwater toxicity objective and clarifying how water quality objectives are implemented:

> *Waters shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or that cause nuisance or adversely affect beneficial uses.*
>
> *Numeric water quality objectives with regards to taste and odor thresholds have been developed by the State Department of Health Services and the U.S. EPA. <u>These numeric objectives, as well as those available in the technical literature, are incorporated into waste discharge requirements and cleanup and abatement orders as appropriate.</u>*

The language included in this objective furthers the point that staff uses numeric values from other sources as appropriate. When developing permits, orders and other regulatory actions, Regional Water Board staff identifies the numeric values necessary to protect the most sensitive beneficial uses of the water in question.

3.3. Dissolved Oxygen

The proposed revision to the Dissolved Oxygen (DO) objectives is intended to: 1) better protect sensitive aquatic organisms from depressed DO; 2) better ensure that the natural pattern and range of DO variation is maintained in those waterbodies unable to meet the aquatic life-based objectives due to natural conditions; and 3) reduce the possibility that natural variation in DO is erroneously identified as DO impairment. It is possible that more waterbodies will be listed on the 303(d) list for impairment of DO conditions due to this revision. But, it is also likely that fewer waterbodies will be erroneously listed.

The aquatic life-based objectives are designed for the protection of sensitive aquatic organisms in fresh, free-flowing waters. They are generally based on laboratory studies in which ambient water quality conditions are controlled, so as to test individual variables. The proposed objectives are designed, according to USEPA's DO criteria document (USEPA 1986), to ensure no production impairment. USEPA (1986) also suggests criteria that allow slight production impairment or moderate production impairment. The "no production impairment" criteria were chosen because of the number of key aquatic organisms in the North Coast Region that are listed by state and/or federal natural resource agencies as threatened or endangered.

Natural conditions that might prevent the attainment of aquatic life-based objectives include such things as: naturally high primary production, naturally ephemeral flow conditions, wetland conditions, or estuarine conditions. It also includes conditions of altitude and natural temperature that may physically preclude the attainment of high DO conditions, even with 100% DO saturation. A natural conditions clause is also proposed which is accompanied by a method for numerically calculating the natural pattern and range of DO in fresh, free-flowing waters. The proposed DO objective also includes a narrative DO objective for estuaries.

Regional Water Board staff has prepared the *Peer Review Draft Staff Report for the Revisions of Dissolved Oxygen Water Quality Objectives*, March 2009 (Appendix C), which has undergone scientific peer review, as required by law. The two reviewers generally concurred with the scientific assumptions, assertions, and conclusions that this revision to the DO objective reflects, although each had suggestions for strengthening the discussion and expanding the scope of the amendment. Staff provided responses to the peer review comments (Appendix D) including explanations for those recommendations that were viewed as out of the scope of the proposed amendment. Staff also revised the recommendations in the peer review draft staff report based on peer review comments, when applying the principles of the approach to the development of site specific DO objectives for the Klamath River mainstem. The modeling conducted of conditions in the Klamath River, which formed the basis for adopted site specific DO objectives, informs this proposed regionwide objective for DO. Most notably, the Klamath River modeling indicated that while 85% DO saturation (under natural temperatures) reasonably

represents natural dry season conditions, 90% DO saturation (natural temperatures) better represents natural wet season conditions. The peer reviewers' specific comments and Regional Water Board staff's response can be found in Appendix F of this document. Key elements of the staff report for the Proposed Site Specific Dissolved Oxygen Objectives for the Klamath River in California (2010) are included in Appendix E. The full report can be found on the Regional Water Board's website at http://www.waterboards.ca.gov/northcoast/water_issues/programs/tmdls/klamath_river/100927/staff_report/13_Appendix1_Site-SpecificDOObjStaffReport.pdf

Regional Water Board staff recommends a revision to the existing dissolved oxygen objectives. The proposed revision includes eliminating the column with site specific DO objectives from Table 3-1; moving the daily minimum DO objectives for Bodega Bay, Humboldt Bay, and ocean waters to a location under the "Dissolved Oxygen" objectives heading; and retaining the site specific objectives for the Klamath River which are contained in Table 3-1a. The proposed revision also includes retaining the existing daily minimum aquatic life objectives for WARM, MAR, SAL, and COLD. It modifies the SPWN daily minimum objective by eliminating the less protective objective (7.0 mg/L), retaining the more protective objective (9.0 mg/L), and expanding the applicability of the more protective objective to the entire period during which eggs are in the intergravel environment, from spawning through emergence. As described in peer review draft staff report (Appendix D), this period is generally understood to come as early as September 15th and last as late as June 4th.

The proposed revision also includes adding 7-day average DO objectives for the protection of WARM, COLD, and SPWN beneficial uses. The proposed average objectives are based on ensuring no production impairment to threatened and endangered species as a result of DO deficiencies, as defined by USEPA in its DO criteria document from 1986. This is a 6.0 mg/L 7-day average for WARM waters, 8.0 mg/L for COLD waters, and 11.0 mg/L for SPWN waters during spawning, incubation through emergence. The 7-day average is a rolling average of the daily average.

To address other unnamed estuaries, the proposed revision includes a narrative objective for estuaries that ensures that the DO in estuaries is not depressed to levels adversely affecting beneficial uses as a result of controllable water quality factors.

Finally, the proposed revision allows for the Executive Officer to approve the application of adjusted DO objectives based on natural temperatures and altitudes as shown in Figure 3-2. Other natural conditions that could preclude attainment of aquatic life objectives include, but are not limited to: naturally nutrient-rich waters, ephemeral conditions, and others. Therefore, waterbody-specific DO objectives can be developed by calculating the minimum DO necessary to maintain 85% DO saturation in the dry season and 90% DO saturation in wet season.

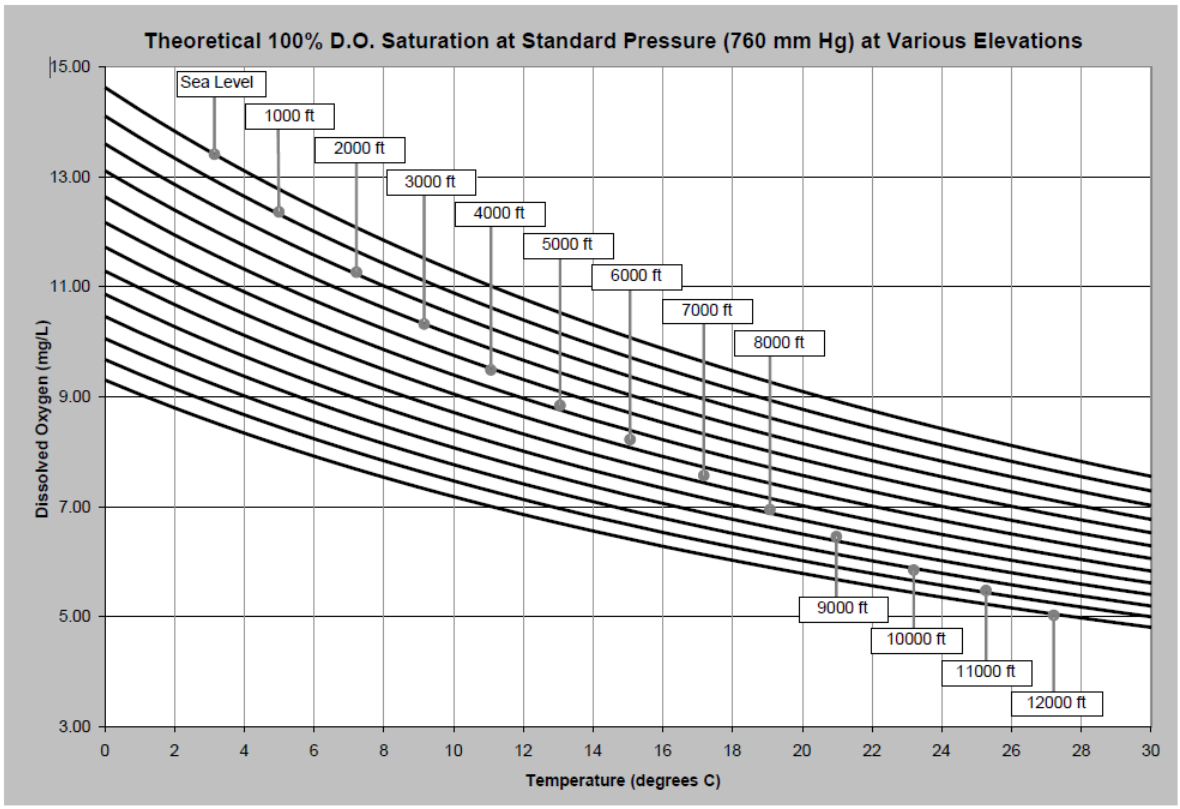

Figure 3-1 Theoretical DO at 100% Saturation (produced by Rich Fadness of the Regional Water Board)

3.4. Revisions to the Introduction

Various substantive and editorial changes are proposed for the introductory section including:

- Addition of explanatory language generally describing narrative and numeric water quality objectives.
- Addition of a footnote clarifying that the terms "designated use" and "water quality criteria" are based in federal law.
- Addition of a footnote clarifying that "beneficial use" and "water quality objectives" are terms derived from state law.
- Relocation of the existing text describing controllable factors to its own section in Chapter 4. In addition, the phrase "human caused" will be substituted for "man caused."
- Deletion of outdated or redundant text such as the reference to expired waivers, the description of classes of water (which is presented in Chapter 2 – Beneficial Uses) and the superseding of water quality objectives contained in earlier editions of the Basin Plan.
- Removal of references to appendices no longer proposed for inclusion in the Basin Plan.

- Addition of new sub-section describing terminology for water quality standards.
- Addition of new sub-section describing terminology for water quality objectives and effluent limitations.
- Other minor editorial changes, such as capitalization, punctuation, grammar, and other minor revisions to improve clarity.

3.4.1 Water Quality Objectives

A revision to the Water Quality Objectives subsection is a key element in the proposed WQO Update Amendment, as this section includes new proposed language regarding the selection of appropriate criteria to implement narrative objectives. Implementation of water quality objectives is a dynamic process which takes into account the complexity of the discharge of pollutants, site-specific factors that affect water quality and the existing laws and regulations. To determine whether a particular waste management activity or discharge may cause or threaten to cause adverse effects on water quality, it is necessary to review the beneficial uses and apply both narrative and numeric water quality objectives. As noted throughout this Staff Report, numeric objectives may include values derived from MCLs, CTR, or other general or specific scientific research of literature review (e.g., USEPA criteria guidance documents or watershed-specific data analyses). Narrative objectives include descriptions of conditions that are protective of beneficial uses, which in turn require the selection of appropriate and scientifically defensible numeric values to implement.

As previously noted, all relevant statewide policies must be implemented including the state and federal antidegradation policies and state Cleanup Policy. Together these policies establish natural background as the desired condition or the best water quality that is attainable considering social, economic and technical factors. Regardless of all factors, water quality may not be degraded to levels less than prescribed in Basin Plans. Figure 3-2 below is a general illustration of how MCLs, CTR, NTR and other water quality objectives are considered the "ceiling" in preventing pollution while natural background and zero concentrations represent the "floor". In between these values are numerous other values that may represent toxicity to humans, taste and odor impairments, nuisance or other criteria relevant to the protection of beneficial uses.

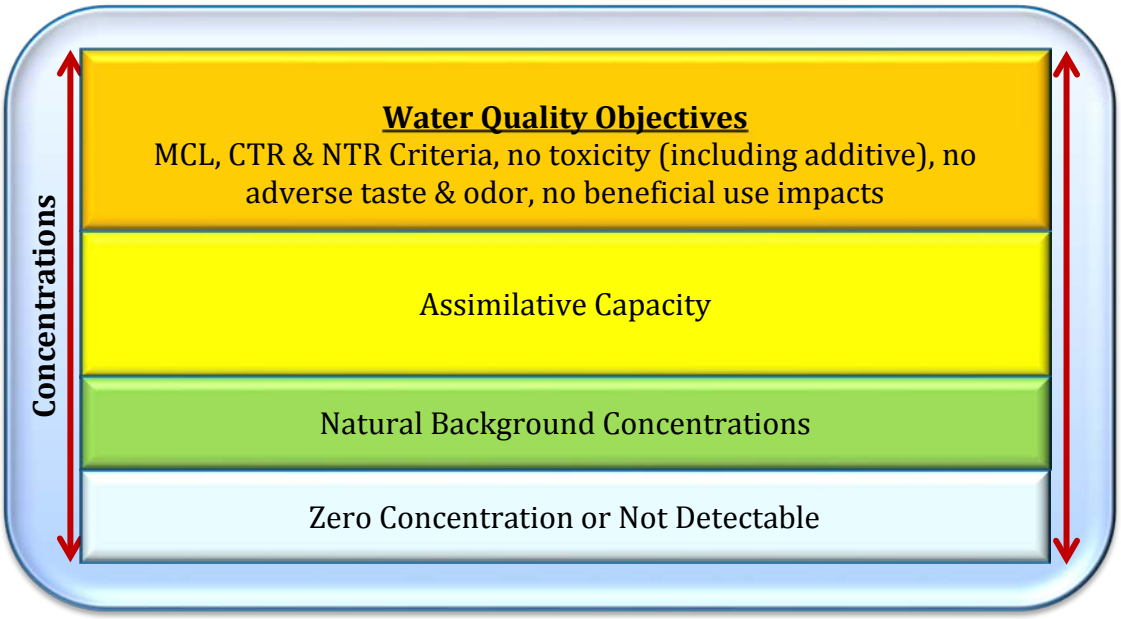

Figure 3-2. This schematic generally depicts the potential range of water quality objectives. It must be noted that some MCLs are at concentrations lower than some CTR, NTR, and taste and odor criteria. The specific criteria chosen depend on the most sensitive beneficial use being considered.

When staff recommends a constituent value for inclusion in a permit, cleanup order, or other board action, staff must first select the value that protects the beneficial uses of water, including the use that is most sensitive to the constituent of concern. Often the most sensitive beneficial use is related to aquatic species protection as aquatic species are frequently affected by lower levels of a given chemical constituent than that required for drinking water supply protection. In other cases, isolated plumes of contaminated groundwater may not pose a threat to surface waters and aquatic ecosystems. In such a case, the most sensitive beneficial use might be a domestic water supply well from which water is used untreated. While existing authorities allow the Regional Water Board to establish natural background conditions as the presumptive cleanup level, the Regional Water Board sometimes identifies levels protective of human health as more reasonable and feasible. The value that protects the most sensitive use is then used to derive the numeric limits used in permits, cleanup orders, or other regulatory actions as appropriate. Implementation of narrative water quality objectives requires staff to identify applicable sources for relevant numeric values that are appropriate for protecting beneficial uses. This list includes, but is not limited to, the following:

- United States Environmental Protection Agency (USEPA)
- California State Water Resources Control Board (State Water Board)
- California Department of Public Health, now the State Water Board Division of Drinking Water (DDW)
- California Office of Environmental Health Hazard Assessment (OEHHA)

- California Department of Toxic Substances Control (DTSC)
- University of California Cooperative Extension (UCCE)
- California Department of Fish and Wildlife (CDFW)
- United States Food and Drug Administration (USFDA)
- National Academy of Sciences (NAS)
- United States Fish and Wildlife Service (USFWS)
- Food and Agricultural Organization of the United Nations (UNFAO)
- World Health Organization (WHO)

The State Water Board has compiled numeric water quality values from the literature for over 860 chemical constituents in a document entitled *A Compilation of Water Quality Goals*. A searchable *Water Quality Goals* database is accessible on the State Water Board website. The Water Quality Goals staff report contains information to help users to understand California's water quality objectives adopted to protect the beneficial uses of surface water and groundwater resources, available criteria and guidance for evaluating water quality, and to help users select defensible numeric values based on applicable water quality standards. To use this information correctly, it is necessary to read *Selecting Water Quality Goals* carefully before using numeric criteria from the database. It is also important to note that it is the main principal of this document which applies and not necessarily the numbers in the staff report or database. In other words, the most important parts of the document are the established algorithms or process for identifying water quality objectives to protect beneficial uses. Of secondary importance, though highly relevant, are the sources of numeric values that protect beneficial uses. While the database may produce numeric values, it is prudent to double check the sources of those values for any potential updates or changes. Narrative objectives that are translated through this step-wise process include, but are not limited to, chemical constituents, pesticides, sediment, toxicity, and radioactivity. An outline of this process is provided below in Figure 3-3.

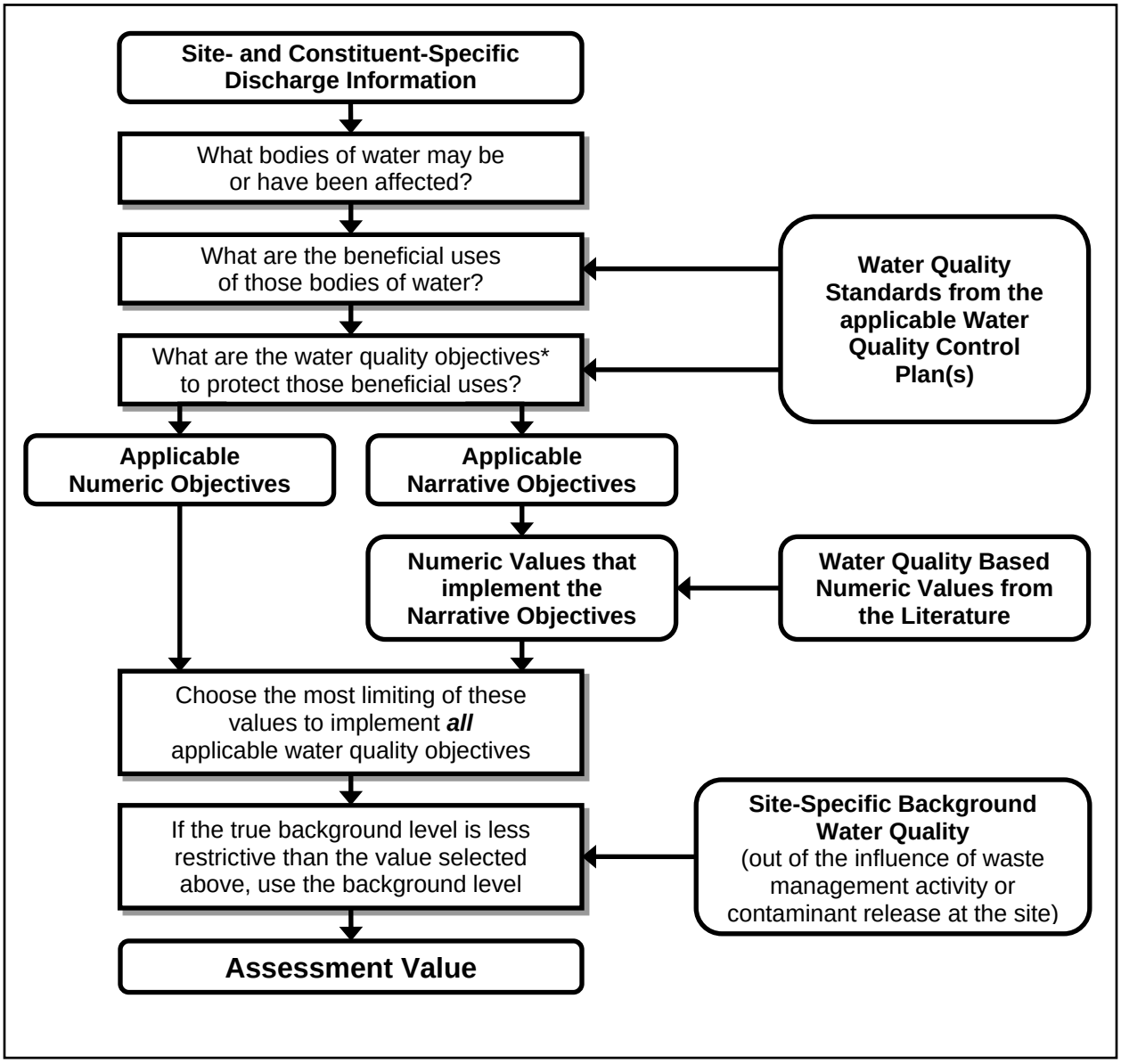

Figure 3-3. Numeric Value Selection Process for Narrative Water Quality Objectives[4]
*Practical quantitation limits are based on current technology. Some WQOs are below reasonable analytical equipment detection limits, and in those cases the practical quantitation limit is used as the WQO.

[4] Adapted from the State Water Board's *A Compilation of Water Quality Goals*, 16th Edition, April 2011

For an additional source of numeric criteria for sediment, the Regional Water Board has compiled water quality values from the literature for sediment-related indices and published them in a peer-reviewed report entitled *Desired Salmonid Freshwater Habitat Conditions for Sediment-Related Indices* (July 2006). This document can be found on the Regional Water Board website.

Other regional water boards including the San Francisco Bay Region, Central Coast Region, Central Valley Region, and Lahontan Region have adopted similar policies or clarifying language into their Basin Plans that either explain the method for selecting applicable numeric values for implementing narrative water quality objectives or cite the *Compilation of Water Quality Goals* and other relevant sources of information necessary to implement water quality standards.

3.4.2 Water Quality Objectives vs. Effluent Limitations

It is important to distinguish the difference between effluent limitations and water quality objectives. Again, a water quality objective is a numeric value or a narrative statement both of which describe a condition of ambient water quality necessary to protect beneficial uses. When implementing state and federal authorities in permits, orders, and other regulatory actions, it is first necessary to identify the existing beneficial uses and then translate all applicable narrative objectives into numeric values. It is also important to note the term Water Quality Standards is a federal term that includes water beneficial uses, water quality objectives, and antidegradation.

The Clean Water Act (CWA) addresses the conversion of narrative objectives into effluent limitations:

CFR Title 40, Section 122.44(d) Water Quality Standards and State Requirements
(6) Where a State has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits using one or more of the following options:

> (A) Establish effluent limits using a calculated numeric water quality criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and will fully protect the designated use. Such a criterion may be derived using a proposed State criterion, or an explicit State policy or regulation interpreting its narrative water quality criterion, supplemented with other relevant information which may include: EPA's Water Quality Standards Handbook, October 1983, risk assessment data, exposure data, information about the pollutant from the Food and Drug Administration, and current EPA criteria documents; or

(B) Establish effluent limits on a case-by-case basis, using EPA's water quality criteria, published under section 304(a) of the CWA, supplemented where necessary by other relevant information; or

(C) Establish effluent limitations on an indicator parameter for the pollutant of concern, provided:

(*1*) The permit identifies which pollutants are intended to be controlled by the use of the effluent limitation;

(*2*) The fact sheet required by § 124.56 sets forth the basis for the limit, including a finding that compliance with the effluent limit on the indicator parameter will result in controls on the pollutant of concern which are sufficient to attain and maintain applicable water quality standards;

(*3*) The permit requires all effluent and ambient monitoring necessary to show that during the term of the permit the limit on the indicator parameter continues to attain and maintain applicable water quality standards; and

(*4*) The permit contains a reopener clause allowing the permitting authority to modify or revoke and reissue the permit if the limits on the indicator parameter no longer attain and maintain applicable water quality standards.

As noted above one option is to establish effluent limits on a case-by-case basis, using USEPA water quality criteria, supplemented where necessary by other relevant information. Another option in the NPDES wastewater program is described in the SIP for priority pollutants in surface waters. However, the SIP does not address all potential pollutants in all waste streams or in all circumstances and is therefore periodically augmented with criteria or numeric values from other relevant and credible sources.

Staff has consistently interpreted the SIP and State Water Board Resolution Nos. 68-16 and 92-49 to allow the establishment of numeric limits in order to protect the applicable and most sensitive beneficial use by using relevant sources other than the existing water quality objectives in the Basin Plan. As noted in the Basin Plan, SIP, State Administrative Procedures Manual (APM), and as specified in Water Code section 13263 subdivision (b),

> "a regional board, in prescribing requirements, need not authorize the utilization of the full waste assimilation capacities of the receiving waters".

Therefore, staff can establish effluent limitations or cleanup levels in Regional Water Board orders lower than the established water quality objectives in order to maintain water quality supportive of beneficial uses and assimilative capacity of the receiving waters.

3.5 General Organizational and Editorial Changes

Major portions of the Basin Plan are currently identified as "sections" within the table of contents and the text of the Basin Plan. No numbering system is currently applied to the

subsections contained in these "sections." As part of this amendment, staff proposes to replace the term "section," where appropriate, with "chapter" to clearly indicate the overall framework of the Basin Plan. Sections and subsections are used as appropriate, and a numbering system is introduced to identify individual parts within each chapter for the user's convenience. This is consistent with formatting revisions made to Chapters 1 and 2 of the Basin Plan during earlier editorial amendments.

The current page numbering system used in the Basin Plan (e.g., "3-9.00" and "3-10.00.") was implemented to accommodate updating of hard copy Basin Plans on a page-by-page basis before the routine utilization of computer technology. The use of this expanded numbering system allowed a new page to be easily inserted between existing pages (e.g., "3-9.01") without having to repaginate the remaining portion of the Basin Plan. This expanded numbering system has not been used in the North Coast Region's Basin Plan for several revisions. As part of this amendment, staff proposes to replace this numbering scheme with a "3-x" format.

3.5.1 Revisions to the "Antidegradation Policies" Section

This section discusses the state and federal antidegrdation policies. The header "General Objective" will be retitled "Antidegradation Policies." The inclusion of the commonly used phrase "antidegradation" in the section heading will make it easy for the user to locate this section in either hard copy or electronic format.

Minor editorial changes are proposed by staff to improve the clarity and readability of the Antidegradation Policies section. Substantive public comments were received in early February 2012, requesting several additional changes to the Antidegradation Policies section. Given the larger scope of the additional requested revisions, and the current statewide effort examining the state Antidegradation Policy with respect to its application to groundwater, staff has instead placed review and update of the content contained in the antidegradation discussion of the Basin Plan on the 2014 Triennial Review list and prioritized for future Basin Plan amendment.

In addition to the editorial changes, staff proposes at this time to remove existing language referring readers to the Antidegradation Policies as Appendices 6 and 6B of the Basin Plan and refer the reader, instead, to the State Water Board website. This is the approach staff recommends for all state policies now appended to the Basin Plan, as a way of ensuring the reader is directed to the most up-to-date information. Advances in technology make inclusion of these documents as appendices to the Basin Plan unnecessary as they are easily accessed via the internet.

3.5.2 Revision to Water Quality Objectives for Surface Waters

The Water Quality Objectives for surface waters section contains seventeen water quality objectives that apply to the protection of surface waters in the Region. Nine of these

objectives require minor revisions for the reasons detailed below. Additionally, the objectives will be rearranged and presented in alphabetical order for the user's convenience.

3.5.3 Revisions to "Objectives for Ocean Waters" Section

Staff recommends that the "Objectives for Ocean Waters" heading be changed to "Water Quality Objectives for Ocean Waters" for consistency. In addition, reference to the *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California* (Thermal Plan) in the appendix section of the Basin Plan is revised to direct the reader to the State Water Board's website.

3.5.4 Revisions to "Objectives for Inland Surface Waters, Enclosed Bays, and Estuaries" Section

The introductory language in this section is revised to include a reference to the State Water Board *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries* (SIP) to inform the reader that this policy is applicable to waters in the North Coast Region. This revision is consistent with the information on applicable state plans and policies presented in the section on ocean waters. References to the National Toxics Rule (NTR) and the California Toxics Rule (CTR) are added to inform the reader that these regulations are applicable to waters in the North Coast Region as well as adding a statement that these regulations address human health and aquatic life protection. References to the other tables containing site-specific objectives (i.e., Tables 3-1a and 3-1b) will be added after the reference to Table 3-1. Other minor editorial revisions, such as revision to the heading for consistency with other headings, are also proposed to improve readability.

3.5.5 "Bacteria" Objective

A minor editorial change from the State Department of Health Services to the State Water Board Division of Drinking Water is the only proposed modification to the objective for bacteria. No substantive revisions to the bacteria objective are proposed as part of this amendment. Significant substantive revisions are required to appropriately update this objective. Such revisions have been postponed until an objective with statewide applicability is adopted by the State Water Board as part of their ongoing effort to update freshwater bacteria standards for the protection of recreation. The statewide effort does not include consideration of bacteria objectives appropriate for the protection of shellfish harvesting (SHELL).

The issue of updating the bacteria objective for surface waters has been included on the Triennial Review list since 2001 and its importance was reaffirmed on the 2011 Triennial Review list.

3.5.6 "Biostimulatory Substances" Objective

No revisions proposed to the existing language.

3.5.7 "Color" Objective

No revisions proposed to the existing language.

3.5.8 "Floating Material" Objective

No revisions proposed to the existing language.

3.5.9 "Oil and Grease" Objective

No revisions proposed to the existing language.

3.5.10 Revisions to "Pesticides" Objective

The narrative portion of this objective will be maintained and will include new language regarding the prevention of nuisance. References to Title 22 will be modified to keep consistent with prospective updates referenced under the objective for chemical constituents. Table 3-2 will be deleted.

3.5.11 Revisions to "pH" Objective

Minor revisions proposed for the pH objective include removal of the word "designated" and the use of complete beneficial use names (e.g., inland saline water habitat), along with abbreviations (SAL), instead of abbreviations alone. Elimination of the word "designated" is necessary to make clear that all existing beneficial uses are protected, whether or not they are listed in Table 2-1 as "designated." Complete beneficial use names will be added throughout the proposed amendment as appropriate.

3.5.12 Revisions to "Radioactivity" Objective

The narrative portion of this objective will be maintained and will include new language regarding the prevention of nuisance. References to Title 22 will be modified to keep consistent with prospective updates referenced under the objective for chemical constituents. Table 3-2 will be deleted.

3.5.13 "Sediment" Objective

No revisions proposed to the existing language.

3.5.14 "Settable Material" Objective

No revisions proposed to the existing language.

3.5.15 "Suspended Sediment" Objective

No revisions proposed to the existing language.

3.5.16 Revisions to "Tastes and Odors" Objective

The narrative portion of this objective will be maintained. References to Title 22 will be modified to keep consistent with prospective updates referenced under the objective for chemical constituents.

References to numeric water quality objectives established by Department of Health Services and the U.S. EPA, as well as the reference to waste discharge requirements and other orders, will be removed from this objective to provide a more concise definition.

3.5.17 Revisions to "Temperature" Objective

Minor revisions to the existing temperature objective are proposed to improve readability and correct outdated information. The reference to the State Water Board's *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays of California* as an appendix to the Basin Plan will be deleted. Instead, the reader will be referred to the State Water Board website as state plans and policies will no longer be included as appendices to the Basin Plan. A reference to the existing site-specific temperature objectives for the Upper Trinity River is also proposed for inclusion in the objective to provide clarity to the user.

3.5.18 Revisions to "Toxicity" Objective

The existing toxicity objective for surface waters will be refined to clarify that the objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances. This language is similar to the language used in the Central Valley Region Basin Plan (Region 5).

In addition, the reference to a specific edition of *Standard Methods for the Examination of Water and Wastewater* will be changed to "latest edition." This revision will ensure that the most current version provides the regulatory framework, not an outdated version, as can occur if a specific edition is referenced without qualification.

Additionally, a punctuation error made in the 1993 Basin Plan amendment will be addressed. This proposed change as detailed below will prevent the interpretation that numeric receiving water objectives for specific toxicants must be established. Also, it limits the prescription of bioassays to situations where appropriate.

Proposed Strikeout Underline Changes:
In addition, effluent limits based upon ~~acute~~ bioassays of effluents will be prescribed~~.~~, ~~W~~where appropriate~~,~~. ~~a~~Additional numeric~~al~~ receiving water objectives for specific toxicants will be established as sufficient data become available~~,~~ and source control of toxic substances ~~will~~ may be ~~encouraged~~ required.

Proposed Clean Copy:
In addition, effluent limits based upon bioassays of effluents will be prescribed, where appropriate. Additional numeric receiving water objectives for specific toxicants will be established as sufficient data become available, and source control of toxic substances may be required.

3.5.19 "Turbidity" Objective

No revisions proposed to the existing language.

3.6 Revisions to Tables 3-1 and 3-1a - "Specific Water Quality Objectives"

Table 3-1 footnote 5 currently contains the waterbody-specific temperature objectives for the Upper Trinity River. The information presented in this footnote will be reformatted as a stand-alone table (Table 3-1b), similar to the format used for the waterbody-specific Klamath River dissolved oxygen (DO) objective. This change will require renumbering of the remaining Table 3-1 footnotes.

The title, Waterbody-*Specific Objectives (WSOs) for Dissolved Oxygen in the Mainstem Klamath River*, will be added to Table 3-1a for clarity and to facilitate placement into the Table of Contents.

Table 3-1 Specific Water Quality Objectives for the North Coast Region, Table 3-1a Waterbody-Specific Objectives for Dissolved Oxygen (DO) in the Mainstem Klamath River, and Table 3-1b Waterbody-Specific Objectives for Temperature in the Upper Trinity River will be relocated to the end of the chapter to improve readability.

3.7 Deletion of Table 3-2 - "Inorganic, Organic, and Fluoride Concentrations Not to be Exceeded in Domestic or Municipal Supply"

The deletion of Table 3-2 is consistent with the revisions and updates made to the objective for chemical constituents for both surface waters and groundwaters. Fifty-one numeric objectives adopted to protect waters with the beneficial use municipal and domestic supply (MUN) are identified in Table 3-2 - *Inorganic, Organic and Fluoride Concentrations Not to Be Exceeded in Domestic or Municipal Water Supply.* The numeric objectives in Table 3-2 are based upon the MCLs that were specified in Title 22 of the California Code of Regulations at the time Table 3-2 was adopted or last revised. MCLs are established for drinking water protection only and are not necessarily protective of aquatic life or other beneficial uses. Updates that have been made to these regulations, such as additional constituents and changes to MCL values, have not been explicitly incorporated into the Basin Plan. In addition, only 27 of the 126 priority pollutants included in the NTR and CTR are included in this table of chemical constituents that affect waters with the beneficial use municipal and domestic supply.

The presence of the outdated and incomplete information contained in Table 3-2, *Inorganic, Organic, and Fluoride Concentrations Not to be Exceeded in Domestic or Municipal Supply*, of the Basin Plan results in confusion and inefficiencies affecting staff and the public's time and resources. To alleviate this problem, staff recommends updating the references, making them prospective and removing the outdated Table 3-2.

3.8 Revision to Water Quality Objectives for Groundwaters

The water quality objectives for groundwaters section contain four water quality objectives that apply to the protection of groundwater in the Region. Three of these objectives require minor revisions while a new narrative toxicity objective is proposed for the reasons detailed throughout this chapter. Additionally, the objectives will be rearranged and presented in alphabetical order for the user's convenience.

3.8.1 "Bacteria" Objective

A minor editorial change from the State Department of Health Services to the State Water Board Division of Drinking Water is the only proposed modification to the objective for bacteria. No substantive revisions to the bacteria objective are proposed as part of this amendment. Significant substantive revisions are required to appropriately update this objective. Such revisions have been postponed until an objective with statewide applicability is adopted by the State Water Board as part of their ongoing effort to update freshwater bacteria standards. Please see Section 3.5.5 above for further discussion.

3.8.2 Revisions to "Radioactivity" Objective

The current objective for radioactivity refers to groundwaters with the beneficial use municipal and domestic supply (MUN). To ensure that this objective appropriately applies to all beneficial uses of groundwaters, Regional Water Board staff proposes to alter the language to more broadly refer to beneficial uses, so as to encompass all beneficial uses of waters. Reference to Title 22 will be deleted from this objective. Additionally, staff recommends updating the references, making them prospective and removing the outdated values from the Basin Plan.

3.8.3 Revisions to "Tastes and Odors" Objective

Staff proposes to remove the language stating that State Department of Health Services and U.S. EPA numeric objectives are incorporated into waste discharge requirements and cleanup and abatement orders. To accomplish this, the proposal is to update the references, make the incorporation prospective and eliminate the second paragraph of the current objective.

3.9 Revisions to "Compliance with Water Quality Objectives" Section

The Compliance with Water Quality Objectives section of the Water Quality Objectives chapter of the Basin Plan (Chapter 3) has been revised. Revisions are made to ensure the section is consistent with the State Water Board's *Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits,*[5] adopted in 2008, which upon adoption superseded the *Compliance with Water Quality Objectives* contained within Chapter 3 of the Basin Plan and *Schedules of Compliance* section presented in Chapter 4.

The proposed proposed changes are for the purpose of providing the necessary context by which the Regional Water Board achieves compliance with water quality objectives. In

[5] State Water Board Resolution 2008-0025.

combination with the changes made to water quality objectives), greater clarity is provided on the multiple layers of laws, regulations, plans and policies that are applicable and considered when determining numeric limits in Regional Water Board permits, orders or other regulatory actions. To determine such limits, it is first necessary to understand all such influencing factors, including site-specific technical factors.

The 2012 and 2013 amendment packages included a draft Translation Policy for the purpose of explaining how the applicable laws, regulations and policies are generally applied to determine numeric limits in Regional Water Board actions. As an alternative, the current amendment package simply elaborates on the existing laws, regulations, and policies to achieve the goal of clarity. The actual proposed language is included in Appendices A and B (strikethrough/underline copy and clean copy, respectively).