

Responses to February 23, 2012 Comments - EPA-Region 9¹

<p>#1. p. 1, ¶ 1: “The Regional Board’s submission arrives at an inopportune time. As you know, the United States Environmental Protection Agency (USEPA), as required by the Clean Water Act (CWA), developed and published draft Recreational Water Quality Criteria (Office of Water 820-D-11-002) in 2011. This document provided USEPA’s recommended CWA Section 304(a) Recreational Water Quality Criteria.”</p>	<p>The draft 2011 Recreational Water Quality Criteria published by the Office of Water includes the following disclaimer: “This information is distributed solely for the purpose of obtaining scientific views on the content of this document. It does not represent and should not be construed to represent any final agency determination or policy.” [emphases added] Furthermore, in subsequent commentary in its February 23, 2012 letter, EPA Region 9 refers to the USEPA’s “Ambient Water Quality Criteria for Bacteria – 1986” as the “current” guidance, and to the draft 2011 Recreational Water Quality Criteria document as “proposed” guidance, or “draft proposed guidance”. Regional Board staff agrees that the applicable guidance is currently found in the approved and published 1986 guidance.</p>
<p>#2. p.1, ¶ 1: "EPA Region 9 has concerns with some of the Regional Board's proposed amendments. Our primary concern is that human health may not be adequately protected under the proposed revisions."</p>	<p>EPA Region 9 does not explain or substantiate the basis of this public health concern and does not identify the specific proposed amendments that trigger it. The proposed amendments implement USEPA’s 1986 Ambient Water Quality Criteria for Bacteria – 1986 (1986 criteria) in a manner consistent both with USEPA guidance (e.g., EPA Fact Sheets concerning the selection of risk levels and using single sample maximum values (both August 2006; see references in the January 12, 2012 staff report, Section 12)) and with EPA regulation implementing the 1986 criteria for the Great Lakes and coastal recreation waters (BEACH Act Rule, 2004). The federal guidance explicitly states that adoption of EPA’s recommended criteria will adequately protect human health. Presumably, EPA’s promulgation of these criteria in the BEACH Act Rule fulfilled or was intended to fulfill this purpose. In addition, EPA has previously approved nearly identical standards in numerous other states. Is it now EPA Region 9’s contention that the criteria recommended in EPA’s 1986 guidance, promulgated in the BEACH Act Rule and approved in other states, are not fully protective of human health?</p> <p>Board staff believes that the proposed amendments, if approved and implemented, would provide superior public health protection to the recreation standards now</p>

¹ Note: On two occasions shortly after receipt of the EPA Region 9 comments, Regional Board staff requested that EPA Region 9 staff retract their February 23, 2012 comment letter on the grounds that many of the comments provided were not clear or substantiated, making responses by Regional Board staff speculative. These requests were declined (see March 1, 2012 e-mail correspondence between Joanne Schneider (Regional Board staff) to Janet Hashimoto (EPA Region 9)). A meeting of Regional Board, State Board and EPA Region 9 staff was held on April 10, 2012 to discuss the comments. In part, this discussion formed the basis for a number of the changes to the January 12, 2012 draft Basin Plan amendments that are shown in an Errata Sheet (dated April 23, 2012). These responses are directed to the February 23, 2012 comment letter. However, where appropriate, references to changes made in response to further consideration, including the April 10, 2012 discussion, are also included.

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	<p>established in the Basin Plan, for two main reasons. First, the Basin Plan bacteria quality objectives based on fecal coliform, now disavowed by USEPA (as reflected in USEPA's 1986 bacteria guidance), would be replaced with objectives based on one of the bacteria indicators (<i>E. coli</i>) now recommended by USEPA. Second, the proposed amendments include a suite of other recommended recreation standards changes (e.g., changes in REC1 designations, supported by Use Attainability Analyses) and implementation strategies (including the temporary, high flow suspension of recreation standards) that would allow and encourage priority actions to protect public health and recreation uses where people are most likely to be exposed.</p> <p>Assertions regarding a possible failure to protect public health are serious and not responsible unless accompanied by specific and detailed substantiation, which EPA Region 9 failed to provide.</p>
<p>#3. p. 1, ¶ 2, re REC1 definition: "We recommend that the Regional Board not change the Beneficial Use name from "Water Contact Recreation" to "Primary Contact Recreation." Retaining the current name and definition would be consistent with the SWRCB name and definition for REC1. The current REC1 definition was developed through an extensive collaborative effort between the State Board and USEPA in order to have a consistent statewide definition of REC1."</p>	<p>Recommendation noted. Based on discussion with EPA Region 9 staff, Regional Board staff understands that EPA Region 9 would not object to the revised definition proposed in the January 12, 2012 Basin Plan amendment documentation, provided that the revised definition would be applied on a statewide basis. We agree that the REC1 definition should be revised on a statewide basis: the changes to the definition proposed in the January 12, 2012 documentation provide clarification of terms that may otherwise be misinterpreted. We believe that the January 12, 2012 recommended changes should be considered on a statewide basis. It should be noted that the amendments proposed in the January 12, 2012 Basin Plan amendment documentation would not result in any substantive changes to the definition of REC1. Board staff believes that the phrase "reasonably possible" in the current statewide definition has long been understood to convey the same level of probability and is synonymous with the term "likely" in the definition of primary contact recreation used in federal guidance and regulation. However, in practice, the latter term has been shown to be more precise and less vulnerable to misinterpretation. Therefore, the sole purpose of the revisions proposed in the January 12, 2012 Basin Plan amendment documentation is to express the original meaning and intent of the original definition more clearly. Doing so would ensure that USEPA's recommended bacteria criteria are applied in a manner consistent with federal guidance and with the conditions and assumptions underlying the epidemiology studies that USEPA relied on to derive the recommended <i>E. coli</i> criteria. Board staff believes that more precise language is needed to "avoid different definitions, interpretations and implementation" just as EPA Region 9 suggests in the last paragraph of its comment letter.</p>

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	<p>[Note: At the April 10, 2012 meeting, EPA Region 9 staff acknowledged that the principal party with regard to approval of the proposed revisions to the REC1 definition is the State Board. In response to comments provided by State Board staff at the April 10, 2012 meeting that consideration of changing the definition should be considered on a statewide basis to assure consistency, a revised approach is now being recommended, as reflected in the Errata Sheet. The name “Primary contact recreation” would be added as an optional way to identify this use, rather than as a replacement to the current name of the REC1 use (i.e., Water contact recreation). No clarifications of the definition itself would be made. Instead, narrative language is proposed to clarify what is understood with regard to the nature of recreational activities that constitute REC1 use.]</p>
<p>#4. p.1, ¶ 3, re re-designation based on UAAs: "EPA is not opposed to reclassification of recreational water bodies. However, we find that the rationale in most instances was not clear or substantiated."</p>	<p>EPA Region 9 does explain or substantiate this finding. This statement raises the question of what documentation associated with the proposed amendments implementing UAAs has been reviewed by EPA Region 9. A comprehensive Use Attainability Analysis (UAA) was performed on all waterbodies where the Regional Board proposes to revise the designated recreational uses. UAA Technical Reports, providing basic technical data (channel morphology, water quality, flow characterization, recreational use survey information (including the results of extensive photographic surveys), etc.) were prepared by CDM, one of the Task Force consultants. These reports are part of the administrative record for this matter. CDM was charged with assembling the relevant data and information, but <u>not</u> to draw any conclusions regarding the propriety of the designated uses. Interpretation of the data was left to Regional Board staff. Using the information provided in each of these technical reports, Regional Board staff prepared stand-alone UAA staff reports for each of the waters considered, with appropriate cross-references to other detailed reports in the administrative record. These UAA reports are subsections to the January 12, 2012 staff report for the proposed amendments. Each of these UAA staff reports identifies the specific factor(s) used to justify the reclassification as required by 40 CFR 131.10(g). The UAA Technical and Board staff Reports also provide extensive evidentiary support for each factor cited. Historical records were reviewed and extensive video surveys were conducted at each location to confirm that, in fact, REC1 is not an existing use, as defined in federal regulation, and that no water contact recreation was occurring in the stream segments recommended for re-designation. The level of UAA documentation collected and reviewed by the Santa Ana Regional Board is equal to or exceeds that which the State</p>

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	<p>Board relied on to reclassify Ballona Creek. It may be noted that EPA Region 9 approved the redesignations for Ballona Creek without reservation.</p>
<p>#5. p. 1, last ¶, p.2, first ¶, re MUN exceptions: "Federal regulations prohibit removal of designated uses which are existing uses, as defined in 40 CFR Sect. 130.3, unless a use requiring more stringent criteria is added, or another provision of 40 CFR Sect. 131.11(h) is shown to be applicable. Documentation is lacking showing the newly excepted waterbodies do not have existing MUN use designations."</p>	<p>It should be self-evident that the significant influence of marine waters makes certain of the waters proposed to be added to the list of surface waters identified in the Basin Plan unsuitable as a source for municipal drinking water supply, now and historically. These waters include: the tidal prisms of the Santa Ana Delhi and Greenville-Banning channels, the Huntington Beach wetlands, and the Los Cerritos wetlands. As indicated in the January 12, 2012 staff report, there is no evidence that MUN is an existing use in any of the other waters proposed to be added, i.e., other reaches of the Santa Ana Delhi and Greenville-Banning channels, Mystic Lake, Goodhart Canyon Creek, St. John's Canyon Creek and Cactus Valley Creek.</p> <p>[Note: At the April 10, 2012 meeting, EPA Region 9 staff expressed their belief that the matter of the MUN designations for the waters proposed to be added to the Basin Plan rests with the State Board, pursuant to the Sources of Drinking Water Policy. State Board staff indicated their concurrence with the recommendations regarding the marine-influenced waters and advised that the State Board is considering carefully exceptions based on the exception criterion for channels modified to convey stormwater runoff that is specified in the Sources of Drinking Water Policy. (This criterion is one basis for recommended MUN exceptions for the Santa Ana Delhi Channel and Greenville-Banning Channel.) Board staff advised that we propose to revise the recommendation to except the MUN designation for Mystic Lake, Goodhart Canyon Creek, St. John's Canyon Creek and Cactus Valley Creek to specify intermittent MUN as an existing or potential use since we lack adequate data to assert a compelling case that these waters are incapable of supplying a water supply well that can produce a minimum of 200 gallons per day on a sustained basis (this is another of the exception criteria specified in the Sources of Drinking Water Policy). The propriety of this MUN designation for these waters should be re-evaluated based on additional data in the future.]</p>

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<p>#6. p.2, ¶ 2, re deletion of fecal coliform and addition of <i>E. coli</i> objectives: "EPA's 1986 guidance recommends that states and tribes replace existing fecal coliform bacteria standards with <i>E. coli</i> criteria. We support the criteria submitted for the <i>E. coli</i> geometric mean. We support the use of UAAs to classify waters as REC2. However, we do not support the elimination of the REC2 objectives."</p>	<p>Regional Board staff propose to replace existing fecal coliform bacteria objectives with <i>E. coli</i> objectives based on USEPA's 1986 recommended criteria. EPA Region 9's support for the proposed <i>E. coli</i> geometric mean is noted. However, EPA Region 9 does not explain the basis for declining to support the elimination of the REC2 objectives. This position is inconsistent with the explicit acknowledgment by USEPA that there are insufficient scientific data to establish an appropriate <i>E. coli</i> (or any other bacterial indicator) standard for REC2 (effectively, 'secondary contact' waters in federal parlance).</p> <p><i>"EPA explored the feasibility of scientifically deriving criteria for secondary contact waters and found it infeasible for several reasons. In reviewing the data generated in the epidemiological studies conducted by EPA that formed the basis for its 1986 recommendations, EPA found these data would be unsuitable for development of a secondary contact criterion. Secondary contact recreation activities generally do not involve immersion in the water, unless it is incidental (e.g. slipping and falling into the water or water being inadvertently splashed in the face). While the main illness likely to be contracted during primary contact recreation is gastrointestinal illness, illness contracted from secondary contact recreation activities may just a likely be diseases and conditions affecting the eye, ear, skin, and upper respiratory tract. Because of the different exposure scenarios and the different exposure routes that are likely to occur under the two different types of uses, EPA is unable to derive a national criterion for secondary contact recreation based upon existing data."</i>²</p> <p>The REC2 objectives currently included in the Basin Plan are based on arbitrary multiplication of the fecal coliform objectives for REC1 waters. Applying this approach to the establishment of REC2 objectives would not now likely pass requisite scrutiny by independent peer reviewers. Further, per EPA's criteria guidance, reliance on fecal coliform objectives to protect even REC1 waters is no longer appropriate. Because EPA has repudiated the relationship between fecal coliform and exposure-related illness among swimmers, there is no defensible scientific basis to retain the current REC2 objectives.</p>
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2 U.S. EPA. Implementation Guidance for Ambient Water Quality Criteria for Bacteria [Draft]. May, 2002; pg. 39; draft document was cited by EPA in 69 FR 220, 67218 (Nov. 16, 2004). Moreover, EPA offers this as a statement of fact not policy and later reaffirmed this factual conclusion in the BEACH Act Rule.

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<p>#6. p.2, ¶ 2: (continued)</p>	<p>"In EPA's view, it would not be reasonable to rely on the equivocal discussion regarding after-the-fact approximation of an illness rate for fecal coliform in light of the unequivocal conclusion of the entire document [Ambient Water Quality Criteria for Bacteria – 1986]: That the fecal coliform criteria for recreation is (<i>sic</i>) not a reliable indicator of illness to swimmers."³</p> <p>It should be noted that 2 of the nine Regional Boards in California have not specified numeric bacteria objectives in their respective Basin Plans to protect REC2 uses. To date, EPA Region 9 has apparently accepted these omissions.</p>
<p>#7. p. 2, ¶ 3, re REC1 Tiers: "EPA's current guidance allows for the adjustment of single sample maxima for waters where use is not frequent. However, in the 2011 Recreational Water Quality Criteria Guidance we are no longer recommending multiple "use intensity" values, in an effort to increase national consistency across bodies of water and ensure equivalent health protection in all waters. EPA's proposed criteria remove the tiering component partly because of confusion by the states on its application."</p>	<p>Comment noted. See also response to comment #1. The draft 2011 guidance to which EPA Region 9 refers is a draft document that has no legal authority. In addition, although the draft 2011 guidance no longer recommends multiple use intensity values, the draft guidance also does NOT prohibit the states from continuing to do so. USEPA promulgated the exact same use intensity values in the BEACH Act Rule that the Regional Board staff now recommends. EPA Region 9 staff advised Regional Board staff that the BEACH Act Rule provided the most relevant guidance with respect to USEPA's expectations regarding implementation of the current and applicable 1986 criteria guidance.</p> <p>The argument for "national consistency" does not comport with explicit, contrary language in the BEACH Act Rule:</p> <p><i>"EPA does not consider the benefits of identical standards in the States and Territories covered by this rule to outweigh the negative effects of unnecessarily constraining the flexibility that the Clean Water Act and EPA's rules give States and Territories in establishing water quality standards..."⁴</i></p> <p>This conflict should be addressed explicitly in any final, revised bacteria quality criteria guidance that is issued.</p>

3 U.S. EPA. Water Quality Standards for Coastal and Great Lakes Recreational Waters – Final Rule. 69 FR 220, 67230 (Nov. 16, 2004).

4 U.S. EPA. Water Quality Standards for Coastal and Great Lakes Recreational Waters – Final Rule. 69 FR 220, 67227 (Nov. 16, 2004).

#7. p. 2, ¶ 3 (continued):

Moreover, USEPA/EPA Region 9's supposition that using only one single sample maximum value (proposed in the draft 2011 guidance to be called a "Statistical Threshold Value" (STV)) for all waters will provide "equivalent health protection for all waters" is only true if the underlying variability in bacteria densities in all waters is the same as that identified in USEPA's original epidemiology studies. Site-specific data from numerous creeks and streams throughout the Santa Ana Region show this assumption is demonstrably false. This should come as no surprise because the original epidemiology studies were conducted on freshwater lakes and reservoirs where bacteria levels vary far less than in the flashy western streams common to the Santa Ana Region. Application of a single "STV" that is derived after severely underestimating the true log standard deviation will result in water quality standards that are far MORE restrictive than intended as watersheds with naturally high levels of variability in bacteria densities will be forced to achieve much lower geometric means in order to assure compliance with BOTH the geomean and STV criteria that USEPA is proposing in the draft 2011 guidance. The practical effect will be anything but "equivalent" between states with vastly different stream characteristics.

USEPA's desire to address confusion in OTHER states does not provide a technical or legal basis to disapprove the application of use intensity tiers in the Santa Ana Region. The sole question for USEPA at this time is whether the proposed tier definitions are consistent with the applicable federal guidance. Since Regional Board staff proposes to rely on definitions essentially the same as those provided by USEPA in the BEACH Act Rule, there can be no question that the proposed Basin Plan amendments meet federal requirements. In addition, the Board staff has recommended to interpret USEPA's tier definitions very conservatively so that high intensity streams need not reflect the same level of use as nearby ocean beaches in order to qualify for the same tier protection. Specifically, as described in the January 12, 2012 staff report, Reach 3 of the Santa Ana River was used to define a high intensity (Tier A) REC1 water. Reach 3 of the River was then used as the baseline for determination of relative use intensity in other freshwater streams. An alternative and arguably appropriate approach would have been to assign Tier A status to ocean beaches, with actual REC1 use that is orders of magnitude greater than Reach 3 of the River, and to rank inland freshwater streams with lower use intensity (including Reach 3 of the River itself) accordingly. Thus, if anything, the proposed Basin Plan amendments provide greater health protection than might be accepted if EPA's definitions of high intensity use were applied more literally.

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<p>#8, p.2, ¶4, re temporary suspension: "We support lifting the REC uses for a specified amount of time after storms, but only at certain intensities and durations of rainfall and only in concrete-lined channels."</p>	<p>EPA Region 9 does not specify the "certain intensities and durations of rainfall" that it believes would support lifting REC uses. Regional Board staff is proposing a high flow suspension that is specified for a limited amount of time, under specified flow and/or rainfall conditions that result in hazardous conditions that, in turn, prevent attainment of REC uses on a temporary basis. While the suspension could arguably apply to any surface water when such hazardous conditions exist, the recommended suspension would apply to engineered channels, including concrete-lined channels, and other stream channels that have been heavily modified to convey flow downstream as quickly as possible.</p>
<p>#9, p. 2, ¶4, re temporary suspension: "The language the Regional Board uses to define where lifting of REC uses will occur is too broad. The definition of 'modified channels' can lead to use suspension in any water body where any vegetation has been removed or had any small modifications."</p>	<p>The language was not meant to convey that the suspension would apply to any surface stream that had minor modification or vegetation removal. As described to the Regional Board at the March 16, 2012 public hearing (no EPA Region 9 representative was present) and reflected in the Errata sheet, Board staff proposes to modify the terminology to indicate that the suspension would apply to streams that have been heavily modified so as to hasten downstream flow such that hazardous conditions that preclude attainment of REC uses occur. The manner in which the high flow suspension has been applied to Reach 2 of the Santa Ana River, a segment that is concrete-lined and very heavily modified, provides strong evidence of the Regional Board's good faith intent to be both reasonable and responsible on this matter.</p>
<p>#10, p.2, ¶4, re temporary suspension: "The maps provided by the Regional Board in Appendix VIII are riddled with red delineations and lack sufficient justification for selecting these waterbodies."</p>	<p>The large number of red delineations in the maps provided in Appendix VIII accurately reflects the very large number of concrete-lined flood control channels found throughout the Santa Ana Region. These are relatively low resolution maps comparable to some other figures in the Basin Plan and are intended to give a reader a general idea. Far more detailed maps are found in Appendix IX, which provides ArcGIS files of the streams to which the temporary suspension would apply. The decision criteria used to determine the streams to which the suspension should apply are nearly identical to those adopted by the Los Angeles Regional Board and subsequently approved by EPA Region 9. As noted in the accompanying staff report, federal guidance explicitly recommends the use of broad categorical exceptions where waterbodies share substantially similar characteristics.</p>
<p>#11, p. 2, ¶5, re enterococcus criteria: "The proposed amendment indicates that the Regional Board would implement the 2004 EPA enterococci criteria for coastal recreation waters (40 CFR 131.41)[BEACH Act rule] promulgation "on a best</p>	<p>Regional Board staff understands that the BEACH Act rule established numeric enterococcus objectives for coastal recreation waters, and nothing in the proposed amendments is intended to suggest otherwise. Rather, the use of the phrase "best professional judgment" is intended to reflect the fact that the BEACH Act rule did not provide specificity regarding the averaging period for those criteria, nor did the rule identify the REC1 use tiers to which each of the coastal recreation waters should be</p>

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<p>professional judgment basis". The enterococci criteria were promulgated as numeric objectives and are applicable for all designated marine recreational waters."</p>	<p>assigned for the purposes of identifying applicable single sample maximum (SSM) values. (Numeric SSM values are identified in the BEACH Act rule for four tiers of REC1 waters, which vary based on known or anticipated REC1 use.) Therefore, until such time as an appropriate averaging period and REC1 use tiers are assigned through a formal Basin Plan amendment process, it is necessary to apply best professional judgment to the application of the promulgated enterococcus criteria. The proposed amendment simply states this basic fact.</p> <p>[Note: During the April 10, 2012 meeting, EPA Region 9 staff indicated their expectation that the averaging period employed to express the enterococcus objective would be the same as that now typically employed, i.e., as a 30 day running average. This expectation is itself based on best professional judgment since, as stated above, there is no explicit statement of the appropriate averaging period in the BEACH Act rule. Further, both EPA Region 9 and State Board staff opined that in the absence of a standards setting process, tier decisions could not be made on a best professional judgment basis. Rather, under these circumstances, the applicable SSM would need to be assumed to be that for designated beaches/heavily used REC1 areas, i.e., the most stringent SSM. The Errata sheet proposes the removal of the reference to the application of best professional judgment, but Board staff has requested that State Board staff (and/or EPA Region 9 staff) provide the explicit statutory, regulatory or policy basis for the presumption that REC1 waters are designated beaches unless it is determined otherwise through a standards setting process. Such a presumption can lead to clearly inappropriate results. For example, part of Upper Newport Bay is an ecological reserve and REC1 activities are prohibited in the interest of wildlife/habitat preservation. It is not logical to presume that this area is a designated beach area, unless determined otherwise through a standards process.]</p>
<p>#12, p. 2, ¶5, p.3 top, re enterococcus criteria:"The 2011 EPA proposed guidance for marine waters suggests that the applicable criteria protective of recreation are: cultural enterococci at a geometric mean of 35 cfu per 100 mL and a Statistical Threshold Value (STV) of 104 cfu per 100 mL."</p>	<p>See response to comment #1, above.</p>
<p>#13, p.3, ¶1, re REC2 targets: "The procedures for the use of antidegradation to</p>	<p>This comment is not clear. Both the proposed amendments and the accompanying January 12, 2012 staff report make clear the expectation that the proposed REC2</p>

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<p>maintain water quality in REC2 waters is (<i>sic</i>) not clearly specified. Given the variability in bacterial counts, it is unclear how these waterbodies would be monitored to assess compliance with the narrative objective, or how the Regional Board could assure that this would be protective."</p>	<p>targets will be used to assess whether water quality conditions in REC2 only waters (of which there would be a very limited number, assuming that the UAA-based recommendations for these designations are approved) are declining over time. The specific procedures for calculating the targets are identified in both the staff report and proposed amendments. Monitoring will be required to assess whether these targets are being met (see the proposed monitoring language to be added to Chapter 5 IMPLEMENTATION of the Basin Plan – <i>Monitoring Plan for Pathogen Indicator Bacteria in Freshwaters</i>). This proposed language also speaks to the steps the Regional Board will follow should there be credible evidence that the targets are being exceeded. This follow-up is the appropriate and typically employed method to address evidence of water quality problems. It is not clear in what manner EPA Region 9 believes that this approach would not implement antidegradation requirements or fail to be protective of water quality conditions.</p> <p>It should be noted that the Regional Board approved a detailed bacteria monitoring and source identification program as part of the Middle Santa River bacteria TMDL, now being implemented, and more recently (February 2012) approved monitoring programs that are part of Comprehensive Bacteria Reduction Plans for Riverside and San Bernardino counties (part of the MS4 permit requirements). These are examples of the type of monitoring effort we expect to see expanded to protect REC1 uses throughout the watershed. Results to date have demonstrated the efficacy of these programs in directing control efforts.</p>
<p>#14, p.3, ¶ 2, re establishing REC2 targets: "The [antidegradation] procedures outlined do not provide assurance that water quality will be attained."</p>	<p>See response to comment #13. It should be noted that a similar antidegradation policy implementation approach has been used by the Santa Ana Regional Board to successfully prevent degradation in local groundwaters. Regional Board staff are not aware of any procedure adopted elsewhere to prevent water quality degradation by bacteria. Arguably then, the proposed Basin Plan amendment provides the highest level of assurance in the state.</p>
<p>#15, p.3, ¶ 2, re establishing REC2 targets: "Exceedence of the antidegradation-based objectives is when at least 5% of the samples exceed the 95% upper confidence interval of the data used in the original UAA. As water quality data are highly variable, this can lead to extremely high upper</p>	<p>First, Regional Board staff proposes that antidegradation targets, not objectives, apply to REC2- only waters. As USEPA and EPA Region 9 have acknowledged, there is no scientific basis for setting objectives to protect REC2 uses.</p> <p>It is well recognized that bacteria data are highly variable, which is what can result in very high, calculated 95% upper confidence level values. The values shown in the</p>

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<p>confidence limits (UCLs). For instance, for the Santa Ana River- New Delhi Channel tidal prism the UCL is greater than 6,000 cfu per 100 mL." To establish exceedances of this number, 5% of samples must exceed this value and the exceedance is only established after removal of outliers and establishment of a true trend."</p>	<p>proposed amendments, including those for the Santa Ana Delhi Channel tidal prism (this reach is mis-cited by EPA Region 9 as the "Santa Ana River – New Delhi Channel tidal prism"), are mathematical calculations based on the available data for this channel and reflect the variability of those data. Given the highly variable nature of bacteria concentrations in the flashy flows of local streams, it is not surprising that the 95% UCL is often quite high.</p> <p>The high degree of variability is presumably the basis for the preference stated in USEPA's 1986 bacteria criteria document for the use of site-specific log standard deviations when calculating applicable single sample maximum values. The procedure used to calculate the antidegradation targets is comparable.</p> <p>Regional Board staff does not understand EPA Region 9's apparent concern about establishing a true trend. The point of the targets and subsequent monitoring is to establish a true trend so that the need for corrective action can be ascertained properly. The inclusion of outliers in the target calculation would be likely to drive the upper confidence levels higher and mask the true trend, which would be counterproductive.</p> <p>[Note: as discussed at the March 16, 2012 Regional Board hearing concerning the proposed recreation standards amendments, Regional Board staff recognizes that very high upper confidence levels/REC2 targets, though calculated through a straightforward mathematical process using actual ambient quality data, can create the perception that water quality is not being adequately protected. Therefore, Board staff advised the Board at the March 16, 2012 hearing that we would revise the targets to reflect the 75% upper confidence level. This approach results in lower target values. From an implementation perspective, there is no substantive difference. The revised targets are shown in the April 23, 2012 Errata sheet]</p>
<p>#16, p. 3, ¶2 re establishing REC2 targets: "It is unclear how [the proposed antidegradation-based] standard could be evaluated when only periodic monitoring of REC2 waters is recommended."</p>	<p>Pursuant to the proposed amendments, a monitoring program would be developed and implemented upon Regional Board approval. The monitoring program must identify specific recommendations re REC2 targets. Where the results of periodic monitoring indicate that an antidegradation target is being exceeded, the Regional Board would require appropriate follow-up action, including supplemental accelerated monitoring to determine whether water quality degradation has, in fact, occurred. If there is credible evidence of a declining trend, then further investigation would be required. See also response to comment # 13.</p>

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<p>#17, p. 3, ¶3, additional comments: "EPA recommends the STV in the 2011 proposed criteria, rather than the term 'single sample maximum' to resolve previous inconsistencies in implementation."</p>	<p>See response to comment #1. If USEPA believes that some states are implementing the SSM improperly, it is incumbent upon USEPA to correct the error. If and when finalized as the official 304(a) criteria, the 2011 proposed criteria would serve as guidance to the states. There is no requirement that states be consistent with one another provided that each is implementing the standard in accordance with federal guidance.</p>
<p>#18, p.3, ¶3, additional comments: "Identical to the derivation of the SSM in the 1986 criteria document, the STV corresponds to an upper percentile (e.g. 75th percentile) of a water-quality distribution around the geometric mean."</p>	<p>EPA Region 9 is correct in noting that the "STV" recommended in the draft 2011 criteria document was calculated using the exact same data and equations that were previously used to derive the SSM values in the 1986 criteria document. As such, there is no new scientific data or analysis that underpins EPA's more recent (2011) recommendations. Nor does USEPA make any claim that the 1986 guidance is in error. Rather, it appears that USEPA merely wishes to standardize on one approach to be used by all states despite previously acknowledging (in the BEACH Act Rule) that the Clean Water Act does not require national consistency with regard to this issue (see response to comment #7). Further, applying the same SSM (or "STV") to all waters does not necessarily provide equivalent water quality and public health protection to all waters (see also response to comment # 7).</p>
<p>#19, p.3, ¶3, additional comments: "In order to be consistent with EPA's recommended criteria, the State standards should include both the geometric mean and STV."</p>	<p>Per published USEPA guidance, it is not necessary to include the SSM (or "STV", if included in final 304(a) guidance on this subject) as a compliance measure provided that the state implementation procedures explicitly describe how compliance will be assessed when there are insufficient data to calculate a geometric mean.⁵ EPA Region 9's assertion is in direct conflict with previous USEPA guidance that states the SSMs (or proposed "STVs") were never intended to be applied as independent water quality standards when there were sufficient data to calculate a proper geometric mean.⁶</p>
<p>#20, p. 3, ¶4 and p. 4, top, additional comments: "The formulation of the SSM the Regional Board uses is a misapplication of the USEPA criteria. The SSM in this formulation is dependent on the variability of the sample which can be very large which is partially why USEPA has abandoned the tiered approach in favor of a statistical approach consistent with the</p>	<p>EPA Region 9 does not explain how the formulation of the SSM in the proposed amendments is a misapplication of the USEPA criteria. Further, it is not clear whether EPA Region 9 refers to the established 1986 criteria or to the proposed 2011 draft criteria. The status of the 2011 draft criteria is described in the response to comment #1. Application of these proposed criteria in making SSM recommendations would be inappropriate at this time.</p> <p>In the established 1986 criteria guidance, USEPA explicitly recognizes sample variability and its importance in determining SSMs. First, USEPA states the preference for use of</p>

5 USEPA. Water Quality Standards for Coastal Recreation Waters: Using Single Sample Maximum Values in State Water Quality Standards. EPA-823-F-06-13 (Aug., 2006)

6 USEPA. Water Quality Standards for Coastal Recreation Waters: Using Single Sample Maximum Values in State Water Quality Standards. EPA-823-F-06-13 (Aug., 2006). Pg. 5

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<p>original epidemiology study."</p>	<p>site-specific data to determine the value of the log standard deviation to be used in the SSM calculation equation. A default value based on USEPA's epidemiology studies is to be used only where data are insufficient to calculate a site-specific value. Second, the SSM calculation equation itself is included in the 1986 guidance document. The BEACH Act rule also includes this equation and provides guidance on the number of samples that should be collected to determine a site-specific log standard deviation. The BEACH Act rule states further that sufficient guidance is provided by USEPA to allow calculation of site-specific SSMs without a standards-setting process. We note that other EPA regions have approved SSMs higher than those based on the default standards deviation values in other states (e.g., Texas). These SSMs were based on real-world data with higher variability. These SSMs were calculated in conformance with the method described in the BEACH Act rule.</p> <p>Consistent with the BEACH Act guidance, the proposed amendments include the SSM equation and require the minimum number of samples identified in the BEACH Act rule in order to justify the site-specific derivation of the log standard deviation (see Table 5-REC1-ssv, notes #2 and 5). Use of a site-specific log standard deviation would be considered through the Regional Board's normal public comment/participation process. (see Table 5-REC1-ssv, note #5).</p> <p>The nature of the argument in the last phrase ("which is partially why USEPA....original epidemiology study") is not clear. Is EPA Region 9 suggesting that the tiered approach that was previously recommended in the 1986 304(a) bacteria criteria document and that USEPA promulgated in the BEACH Act Rule was actually inconsistent with the original epidemiology studies? Regional Board staff understands that USEPA has been unable to locate the original study data when asked to provide copies under the Freedom-of-Information Act (FOIA). If EPA Region 9 is now in possession of that data we hereby request complete copies so that we may confirm what level of variability was present at the time the studies were conducted and how the variability compares to that observed in the Santa Ana Region.</p>
<p>#21, p. 4, top, additional comments: "EPA Region 9 is also concerned that the SSM values are in the implementation section of the Basin Plan. Any derivation of the SSM from the default values are a standards change and should be included in the water</p>	<p>As USEPA explains in its 2006 guidance memorandum concerning the application of SSMs, SSMs should only be used when there are insufficient data available to calculate a proper geomean. The SSM is not a new or different water quality standard, it is an alternative method for evaluating compliance with a geometric mean under certain data-limited conditions. The proposed Basin Plan amendments establish an <i>E. coli</i> objective expressed as a geomean and set forth a mandatory procedure to assess compliance</p>

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<p>quality objectives section and would be subject to EPA approval."</p>	<p>when there are insufficient data to calculate a geomean. This procedure entails the use of SSM values. This proposed procedure is identified both in the water quality objectives chapter of the Basin Plan (see Table 4-pio, note #3) and in the implementation chapter (see Table 5-REC1-ssv, note #1). This approach is entirely consistent with federal guidance which states:</p> <p style="text-align: center;"><i>"States retain discretion to determine whether and how to use the Single Sample Maximums in other Clean Water Act programs"</i></p> <p>The BEACH Act rule makes clear that the derivation of site-specific SSMs is not subject to a standards setting process. (see p. 67227 of the rule; see also the response to comment #20).</p>
<p>#22, p. 4, 1st full ¶, "EPA observes that the Regional Board has struck some language regarding site specific objectives (SSO) for copper, cadmium and lead in the middle Santa Ana River..."EPA Region 9 would like to make clear that EPA did not approve [the metals] SSOs (letter to the Regional Board dated May 30, 2000)."</p>	<p>Substantive changes to the Basin Plan regarding metals objectives for the Santa Ana River are beyond the scope of the proposed amendments. Changes to this language are proposed simply in order to (1) correct the spelling of one word ("formulas" to "formulae") and (2) change footnote notation. The latter change is necessary to accommodate new footnotes that are proposed to be added to the Basin Plan after the metals footnote.</p> <p>In the interest of clarity, it should be noted that EPA Region 9 offered the Santa Ana Region the option of approving the SSOs or accepting the standards proposed in the California Toxics Rule. EPA Region 9 made it very clear that they could and would approve either approach for the Santa Ana. The Santa Ana Regional Board staff consulted with local stakeholders and informed EPA Region 9 that either approach would be acceptable provided that the site-specific metals translators that were developed and approved by the Regional Board at the same time the SSOs were adopted could continue to be used to derive appropriate effluent limits in NPDES permits. EPA agreed and the State Implementation Policy contains a specific provision allowing continued use of metals translators that were developed and approved prior to the adoption of the SIP.</p>
<p>#23, p. 4, ¶2, additional comments: "In 2007, we provided the Regional Board with</p>	<p>EPA Region 9 does not specify those parts of the Strawman proposal that it believes were not addressed. The Strawman Proposal previously submitted for EPA Region 9's</p>

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<p>comments on the "Strawman Document: Recommended Revision to Santa Ana Region's Basin Plan for Recreational Use Classification and Related Water Quality Objectives". Many of our comments and recommendation have not yet been addressed."</p>	<p>consideration was substantially revised in direct response to EPA Region 9's comments. A separate document is appended to this response that describes the specific changes made in response to each of the comments we received from EPA Region 9 in 2008 (see below). As reflected therein, Board staff believes that all of the comments and recommendations provided by EPA Region 9 were considered seriously and resulted in substantive changes that are reflected in the proposed amendments.</p>
<p>#24, p. 4, ¶3, additional comments: "EPA supports the State Board's effort to adopt statewide standards for recreational beneficial uses that are consistent statewide. We strongly recommend that the Regional Board work with the State Board on this statewide effort to avoid different definitions, interpretation and implementation of standards to protect human health."</p>	<p>Recommendation noted. Regional Board staff have provided comments to State Board and other regional board staff on preliminary proposals for establishing and implementing bacteria objectives, and we anticipate continuing to participate in this effort.</p> <p>Board staff firmly believes that the proposed amendments are fully consistent with applicable guidance and will result in public health and beneficial use protection that is superior to the established Basin Plan standards. For this reason, it is imperative that consideration and approval of these amendments proceed without delay and ahead of the statewide effort, which has been and will likely be delayed as we await the outcome of USEPA's development of revised bacteria criteria guidance.</p> <p>For the record, we note that the Clean Water Act requires that uses be protected, not that the specific approach to providing that protection be consistent from place to place.</p>

**Comparison of 2007 Strawman Proposal and revised 2012 Recreation Standards Amendments Proposal
Revising the Definition of REC1**

2007 Strawman Proposal	EPA Comments on Strawman Proposal	2012 Basin Plan Amendment	Revisions Made to Address EPA Concern
<p><i>"REC1 - Primary Contact Recreation: waters used for recreational activities involving frequent and prolonged water contact, especially by children, where ingestion of water is likely. Examples of Primary Contact Recreation include, but are not limited to: swimming, water-skiing, surfing, whitewater rafting, float-tubing, bathing in natural hot springs, skin and scuba diving. All defined waters of the U.S. are presumed to be capable of supporting primary contact recreation unless a Use Attainability Analysis (UAA) demonstrates that this use has not been attained and is not attainable and the Basin Plan is revised accordingly."</i></p>	<p>The proposed changes have the effect of altering the thresholds for REC1 use designations, rendering them less protective...</p> <p>1) By using the phrase "frequent and prolonged use" to define REC1...</p> <p>2) By removing "fishing and wading" from the current definition of REC1 activities...</p> <p>3) By changing the threshold for water ingestion from "reasonably possible" to "likely."</p> <p>EPA also notes that:</p> <p>"The current REC1 definition was the product of an intense collaborative effort by the State Water Resources Control Board and the Regional Water Quality Control Boards and the USEPA to develop a consistent statewide definition for the REC1 use."</p>	<p><i>"Primary Contact Recreation (REC 1*) waters are used for recreational activities involving deliberate water contact, especially by children, where ingestion is likely to occur. Examples of REC1 activities may include, but are not limited to, swimming, water-skiing, surfing, whitewater rafting, float tubing, bathing in natural hot springs, skin diving, scuba diving and some forms of wading and fishing. Brief incidental or accidental water contact that is limited primarily to the body extremities (e.g. hands and feet), is not generally deemed Primary Contact Recreation because ingestion is not likely to occur."</i></p> <p><i>"The definition of the REC1 use was also updated to improve clarity and precision, and new bacteria quality objectives, based on USEPA's recommended E. coli criteria (1986), were adopted for fresh inland surface waters (see Chapter 4, pathogen indicator bacteria objectives for inland surface waters). The minor revisions to the REC1 definition neither broadened nor reduced the intended scope of the prior REC1 definition. Rather, the sole purpose was to ensure that objectives based on the USEPA bacteria quality criteria are applied in a manner that is consistent with the specific exposure assumptions (including the nature of recreational activities) described in USEPA's criteria document and related guidance."</i></p>	<p>1) The phrase "frequent and prolonged" use was deleted at EPA's suggestion.</p> <p>2a) All types of fishing where ingestion is likely to occur (e.g. instream fly-fishing) will continue to be included in the definition of REC1 activities as they always have been. Dock-fishing, boat-fishing and shoreline fishing involving only brief incidental water contact to the hands and feet will continue to be considered REC2-type activities as they always have been.</p> <p>2b) Any form of wading where ingestion is likely to occur will continue to be included in the definition of REC1 activities as it always has been. Activities such as beachcombing, tide-pool study, dog-walking, rock-skipping, and similarly brief incidental or accidental water contact limited primarily to the hands and feet will continue to be considered REC2 activities as they always have been.</p> <p>3) The word "reasonably" in the phrase "reasonably possible" was originally intended to convey a level of probability that was synonymous with the term "likely." So, substituting the term "likely" is not meant to alter the threshold for water ingestion but, rather, to use the more precise language suggested in federal guidance to more accurately convey the original meaning and reduce the potential for misinterpretation. Additional explanation was added to the text of the proposed Basin Plan amendment to make this very clear.</p>

2007 Strawman/2012 BPA Comparison: Use Attainability Analyses (UAA)

2007 Strawman Proposal	EPA Comments on Strawman Proposal	2012 Basin Plan Amendment	Revisions Made to Address EPA Concern
<p><i>"The Regional Board will consider a suite of factors when determining how best to classify a waterbody to protect recreational uses. The factors may include but are not limited to: flow conditions, ease of access, adjacent land uses, proximity to parks and/or residences, channel morphology and modifications, naturally-occurring sources of pollution or aesthetic restrictions, public safety concerns, the probable risk of ingesting water, parks and recreation plans, and the type of recreational activities that are occurring or have occurred in the waterbody since November 28, 1975 (i.e. 'existing uses'). Where the Regional Board determines, through a Use Attainability Analysis, that a waterbody cannot support any recreational uses (REC1 or REC2), that stream segment will be designated REC-X."</i></p>	<p>1) RB8 should identify which factors would be used in UAAs and how these relate to the six factors in 40CFR131.10(g).</p> <p>2) Under Factor 1, RB8 would need to show that natural sources prevent attainment of the use. This is similar to the approach used in RB4. For EPA approval, there must be a demonstration that the exceedances are due to natural sources (i.e. all human sources have been controlled).</p> <p>3) Under Factor 4 [EPA] would expect an analysis as to how hydromodification precludes the attainment of the use and why it is not feasible to restore the use to its "original" (i.e., the use that existed in November, 1975) condition.</p> <p>4) Under Factor 6 [EPA] would expect a demonstration that attainment would result in widespread economic and social impact.</p> <p>5) Land use by itself is not a factor in the UAA process.</p>	<p><i>"Pursuant to the federal Clean Water Act and implementing regulation, all defined waters of the United States are presumed to be capable of supporting Primary Contact Recreation and shall be designated REC 1 unless a Use Attainability Analysis (UAA) demonstrates that this use is not an existing use and is not attainable and the Basin Plan is revised accordingly. A suite of factors must be considered when UAAs are conducted to determine whether to downgrade or delete the REC 1 use from any waterbody. The relevant factors are identified in federal and state regulations."</i></p>	<p>1) The Basin Plan now states that the relevant factors that must be considered when conducting a UAA are identified in federal regulations as EPA suggested. The technical support document for each UAA now describes which of the six federal factors, and the specific scientific evidence, that were used to justify downgrading or deleting a recreational use.</p> <p>2) No revisions necessary because none of the UAA's recommended for approval relied on Factor #1 (naturally-occurring sources of pollution) to justify downgrading or deleting a REC1 use.</p> <p>3) The technical support document for each UAA now describes the specific hydromodifications that preclude attainment of the use in any given channel. Many of these channels were modified prior to November, 1975 or were man-made conveyances constructed after that date. In both cases, the current condition is the original condition.</p> <p>4) No revisions were necessary because none of the UAA's recommended for approval relied on Factor #6 (widespread economic and social impact) to justify downgrading or deleting a REC1 use.</p> <p>5) None of the UAA's cite land use, by itself, to justify downgrading or deleting a REC1 use. Land use is only considered as an element of Factor #3 (human caused conditions prevent attainment of the use) and the likelihood of future potential use.</p>

2007 Strawman/2012 BPA Comparison: *E. coli* Objectives for REC1

2007 Strawman Proposal	EPA Comments on Strawman Proposal	2012 Basin Plan Amendment	Revisions Made to Address EPA Concern												
<p>"Pathogen indicator concentrations shall not exceed the values specified in Table 1 (below) as a result of controllable water quality factors unless it is demonstrated to the Regional Board's satisfaction that the elevated indicator concentrations do not result in excessive risk of illness (i.e. greater than 8 gastrointestinal illnesses per 1000 swimmers) among people recreating in or near the water.</p> <p style="text-align: center;">Table 1: Pathogen Indicator Bacteria Objectives for Fresh Waters</p> <table border="1" data-bbox="191 732 630 1190"> <thead> <tr> <th data-bbox="191 732 394 833">Recreational Use Designation</th> <th data-bbox="394 732 630 833">Pathogen Indicator Objective</th> </tr> </thead> <tbody> <tr> <td data-bbox="191 833 394 971">REC1 and REC2</td> <td data-bbox="394 833 630 971"><126 <i>E. coli</i>/100 ml (30-day geometric mean of at least 5 samples)</td> </tr> <tr> <td data-bbox="191 971 394 1190">REC2-only</td> <td data-bbox="394 971 630 1190"><2000 fecal coliform/100 ml (30-day average of at least 5 samples) and <10% of samples >4000 fecal coliform/100ml</td> </tr> </tbody> </table> <p>The water quality objectives specified in Table 1 do not apply when designated uses are temporarily suspended due to unsafe flow conditions in the waterbody.</p>	Recreational Use Designation	Pathogen Indicator Objective	REC1 and REC2	<126 <i>E. coli</i> /100 ml (30-day geometric mean of at least 5 samples)	REC2-only	<2000 fecal coliform/100 ml (30-day average of at least 5 samples) and <10% of samples >4000 fecal coliform/100ml	<p>1) We [EPA] do not believe we can approve the standards change being proposed without a single sample standard for <i>E. coli</i>. In other EPA approvals, we have required adding single sample standards where only a geometric mean has been adopted.</p> <p>2) EPA guidance allows adjustment of single sample maxima for areas where use is less frequent.</p>	<p>"Lakes and Streams: Waste discharges shall not cause or contribute to excessive risk of illness from microorganisms pathogenic to human beings. Pathogen indicator concentrations shall not exceed the values specified in Table 4-pio below as a result of controllable water quality factors: [excerpt of Table; all the notes not included]</p> <table border="1" data-bbox="1043 505 1547 976"> <thead> <tr> <th data-bbox="1043 505 1262 695">Table 4-pio - Pathogen Indicator Bacteria Objectives for Fresh Waters¹ Recreational Use</th> <th data-bbox="1262 505 1547 695">Pathogen Indicator Objective (geometric mean of at least 5 samples in a 30-day period (running))²</th> </tr> </thead> <tbody> <tr> <td data-bbox="1043 695 1262 751">REC1-only or REC1 and REC2</td> <td data-bbox="1262 695 1547 751"><126 <i>E. coli</i> organisms per 100 mL³</td> </tr> <tr> <td data-bbox="1043 751 1262 976">REC2-only⁴</td> <td data-bbox="1262 751 1547 976">N/A; see <i>REC2 Only Freshwaters</i>, below, and Chapter 5, Recreation Water Quality Standards, <i>Antidegradation targets for REC2 only freshwaters</i></td> </tr> </tbody> </table> <p>³ ...For all other purposes related to implementing the Clean Water Act, if there are insufficient data to calculate a representative geometric mean for <i>E. coli</i>, "X%" of the representative sample data collected over a 30 day period (running) shall be less than the applicable Single Sample Maximum value, where X% is the statistical confidence level assigned to a particular waterbody. Where there are sufficient data to calculate a representative geometric mean for <i>E. coli</i>, the applicable Single Sample Maximum value shall not be used to assess compliance with the <i>E. coli</i> objective in Table 4-pio. The intent of Single Sample Maximum values is to inform public notification decisions and to trigger additional follow-up monitoring (see Chapter 5, Recreation Water Quality Standards, Application of Single Sample Maximum Values in REC1 Freshwaters).</p>	Table 4-pio - Pathogen Indicator Bacteria Objectives for Fresh Waters ¹ Recreational Use	Pathogen Indicator Objective (geometric mean of at least 5 samples in a 30-day period (running)) ²	REC1-only or REC1 and REC2	<126 <i>E. coli</i> organisms per 100 mL ³	REC2-only ⁴	N/A; see <i>REC2 Only Freshwaters</i> , below, and Chapter 5, Recreation Water Quality Standards, <i>Antidegradation targets for REC2 only freshwaters</i>	<p>1) The proposed <i>E. coli</i> objective is expressed as a geometric mean of at least 5 data points collected over a 30-day period (rolling average). The amendments now include EPA's recommended procedure for evaluating compliance with that objective when there are insufficient data to calculate a proper geometric mean (see Table 4-pio, note 3; see also Table 5-REC1-ssv, notes 2 and 5)). This approach is consistent with EPA's 2006 guidance regarding the use and application of Single Sample Maximum values. The SSM is not a "separate" water quality standard because none is needed. The SSM is a statistical translation of the geometric mean and is fully enforceable when there are insufficient data to calculate a representative geometric mean. The SSMs thus serve as both a standard (where there are insufficient data to determine a geometric mean) and a public notification tool, as was intended.</p> <p>2) The proposed Basin Plan amendment now includes different SSM values using the adjustments EPA recommended where use is less frequent. Tier assignments based on the known/anticipated frequency of REC1 use are proposed. The equation used to calculate SSMs is also included, with specifics regarding the number of samples that must be collected to justify</p>
Recreational Use Designation	Pathogen Indicator Objective														
REC1 and REC2	<126 <i>E. coli</i> /100 ml (30-day geometric mean of at least 5 samples)														
REC2-only	<2000 fecal coliform/100 ml (30-day average of at least 5 samples) and <10% of samples >4000 fecal coliform/100ml														
Table 4-pio - Pathogen Indicator Bacteria Objectives for Fresh Waters ¹ Recreational Use	Pathogen Indicator Objective (geometric mean of at least 5 samples in a 30-day period (running)) ²														
REC1-only or REC1 and REC2	<126 <i>E. coli</i> organisms per 100 mL ³														
REC2-only ⁴	N/A; see <i>REC2 Only Freshwaters</i> , below, and Chapter 5, Recreation Water Quality Standards, <i>Antidegradation targets for REC2 only freshwaters</i>														

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			<p>a site-specific log standard deviation (a variable in the SSM equation).</p> <p>3) The SSM method may also be used as an implementation procedure for evaluating compliance with the proposed narrative pathogen objective.</p>
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2007 Strawman/2012 BPA Comparison: Fecal Coliform Objectives for REC2

2007 Strawman Proposal	EPA Comments on Strawman Proposal	2012 Basin Plan Amendment	Revisions Made to Address EPA Concern
<p><i>"The current fecal coliform objective established to protect beneficial uses designated REC2-only should not be changed. However, some clarification from U.S. EPA is required regarding the most appropriate method for calculating an "average" for bacterial data.</i></p> <p><i>The historical record is unclear as to how the term "log-mean" was suggested for the Primary Contact criteria while the word "average" was selected for the Secondary Contact criteria. It is uncertain whether this was a deliberate choice intended to recommend different methods of calculation or not. Nor is it clear why, if the Secondary Contact criteria as originally derived by multiplying the Primary Contact criteria by 5x or 10x, the units should change. Therefore, the Task Force seeks some clarification from EPA:</i></p> <p><i>1) What is the most mathematically correct procedure for calculating the "average" for fecal coliform in order to assess compliance with the Secondary Contact criteria if the underlying data are log-normally distributed?</i></p> <p><i>2) If a footnote is added to the Basin Plan to describe the most mathematically correct procedure for calculating the fecal coliform average, does that constitute a revision of water quality standards or merely a clarification of an existing water quality objective in order to avoid confusion and misinterpretation during the implementation process?"</i></p>	<p>1) It is unclear why RB8 is not replacing the REC2 fecal objective with an E. coli objective.</p> <p>2) Having different indicators for different uses would seem to confuse the issue and could result in increased monitoring costs.</p> <p>3) We [EPA] believe that the term "average" for REC2 can be interpreted as a geomean. This would be consistent with the existing REC1 fecal standard. Such a clarification of the standards language would constitute a standards change.</p> <p>4) Use of the single sample maxima [solely] as a trigger for monitoring would require a standards change. We suggest that the language in the California Ocean Plan regarding single sample maxima could be used as a model.</p>	<p>The current fecal coliform objectives adopted for freshwaters designated REC2 are deleted from the Basin Plan.</p> <p>No numeric pathogen indicator bacteria objectives are proposed to replace the deleted fecal coliform objectives for freshwaters designated REC2.</p> <p>Waters designated both REC1 and REC2 would be governed by the proposed <i>E. coli</i> objectives (see Table 4-pio). For waters designated REC-2 only, bacteria quality targets are proposed in conformance with antidegradation policies. Exceedances of these targets would trigger additional monitoring and investigation.</p>	<p>1) The Regional Board is replacing the REC2 fecal coliform objectives with an E. coli objective because EPA has not yet recommended such a criterion pursuant to Section 304(a) of the Clean Water Act and there are insufficient scientific data available for the Regional Board to develop such an objective.</p> <p>2) The Regional Board agrees that having different pathogen indicators for different recreational uses may confuse the issue. Therefore, the Regional Board now proposes to delete the obsolete fecal coliform objectives from the Basin Plan.</p> <p>3) The clarification previously suggested in the Strawman document is no longer necessary because the obsolete fecal coliform objectives are being deleted in their entirety.</p> <p>4) The proposed Basin Plan amendments no longer limit the use of single sample maxima solely to serve as a trigger for additional monitoring. Instead, the proposed Basin Plan amendment would employ the SSMs as EPA recommends in the 1986 Bacteria criteria and the additional federal guidance published in 2006.</p> <p>5) Fecal coliform data can continue to be used to assess compliance with federal and state antidegradation policies.</p>

2007 Strawman/2012 BPA Comparison: Temporary High Flow Suspension

2007 Strawman Proposal	EPA Comments on Strawman Proposal	2012 Basin Plan Amendment	Revisions Made to Address EPA Concern
<p><i>"A footnote should be added to all freshwater rivers and streams designated as REC1 or REC2 in Table 3-1 of the Basin Plan; said footnote to state:</i></p> <p><i>"The REC1 and REC2 use designations are temporarily suspended when high flows, caused by stormwater runoff, preclude safe recreation in the stream channel. The temporary suspension is automatically terminated when flow conditions have returned to a safe level."</i></p> <p><i>The footnote would <u>not</u> be applied to lakes, reservoirs or ocean waters designated REC1 and/or REC2. The Regional Board will define what constitutes unsafe flow conditions using one or more of the following thresholds: 1) the U.S. Geological Survey's safe sampling standard, 2) the Swift Water Rescue safe access standard, 3) the Los Angeles Regional Water Quality Control Board's use suspension standard for temporary high flows, 4) or other objective indicators."</i></p>	<p>1) This is a reasonable approach, however the proposal is too vague as to what criteria would be used to define high flow... RB8 must provide the threshold hydrologic event values that would be used to initiate the high flow suspension...</p> <p>2) RB8 must provide the threshold values or duration limits that would signal the return of the use.</p> <p>3) We [EPA] are concerned that the high flow exclusion is not confined to specific engineered channels.</p> <p>4) We [EPA] agree that flow and velocity are important factors in estimating potential use of the waterbody for swimming but this is but one factor that should be considered. However, high flows may not preclude other recreational uses of the water where ingestion is possible (e.g. kayaking).</p>	<p><i>"Recreational use of certain inland surface waters is precluded under certain flow conditions that make recreational activities unsafe. Recreation use designations (and the applicable pathogen and pathogen indicator objectives) are temporarily suspended when such conditions exist.</i></p> <p><i>Definition of Unsafe Flows. Flow conditions in freshwater streams in the Santa Ana watershed are presumptively unsafe if either of the following conditions occurs: (1) stream velocity is greater than 8 feet-per-second (fps); or, (2) the product of stream depth (feet) and stream velocity (fps) (the depth-velocity product) is greater than 10 ft²/s. Where representative stream gauge data are not available, unsafe flows are presumed to exist in stream channels that have been engineered or modified for flood control purposes when rainfall in the area tributary to the stream is greater than or equal to 0.5 inches in 24 hours.</i></p> <p><i>Termination of Temporary Suspension. Stream flows will be presumed to return to safe conditions and the temporary suspension of recreation standards will cease 24-hours after the end of the storm event, unless actual flow data demonstrate that the suspension should terminate sooner or later than the default period. In such cases, the suspension terminates once stream flows (measured as cubic-feet/second or (cfs) have returned to the range of normal pre-storm conditions (cfs<98th percentile as calculated from a calibrated hydrograph for the stream).</i></p>	<p>1) The proposed Basin Plan amendment now includes specific threshold values that would be used to initiate the high flow suspension.</p> <p>2) The proposed Basin Plan amendment now includes specific duration limits and specific threshold values for stream flow that would terminate the temporary suspension of water quality standards for recreational uses.</p> <p>3) The proposed Basin Plan amendment now limits application of the temporary high flow suspension to specific channels that have been substantially modified to protect people and property from flooding.</p> <p>4) High flows like those that would trigger a temporary suspension of water quality standards represent such an extreme hazard that they effectively preclude safe recreational water contact of any kind. Kayaking is not known to occur under such conditions in creeks and streams of the Santa Ana region. The intrinsic risk associated with kayaking in channels during high flow conditions is far greater than the potential health hazard associated with temporarily suspending water quality standards during significant storm events.</p>