Appendix E

Comment Letters

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Bay Area Clean Water Agencies
A Joint Powers Public Agency
Leading the Way to Protect our Bay

March 22, 2010

Mr. Richard Looker
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street
Oakland, CA 94612

Via electronic mail to rlooker@waterboards.ca.gov

Re: Proposed Amendment the San Francisco Bay Basin's Bacteria Objectives for Marine and Estuarine Waters Designated for Contact Recreation in the San Francisco Bay Region

Dear Mr. Looker,

The Bay Area Clean Water Agencies (BACWA) appreciate the opportunity to comment on the proposed Basin Plan Amendment establishing enterococcus water quality objectives for marine and estuarine waters. BACWA is a joint powers agency whose members own and operate publicly-owned treatment works (POTWs) and sanitary sewer systems that collectively provide sanitary services to over 6.5 million people in the nine county San Francisco Bay Area. BACWA members are public agencies, governed by elected officials and managed by professionals charged with protecting the environment and public health.

BACWA generally supports this Amendment, which updates the San Francisco Bay Basin Plan (Basin Plan) water quality objectives used to protect water contact recreation (REC1). Disinfection of sanitary waste is one of the most fundamental pollution prevention services that POTWs provide to their communities. Current disinfection technologies are very effective in inactivating pathogenic organisms, but have related environmental impacts associated with energy consumption, chemical manufacturing and transport, and potential disinfection byproducts. POTWs daily balance the need to protect San Francisco Bay users against the broader impacts that can result from increased disinfection. Because it is a better indicator of water contact-related illness, the use of enterococcus will help agencies ensure a level of disinfection that accounts for multiple important considerations.

The proposed amendment makes substantial improvements to the Basin Plan by adding enterococcus and providing additional detail about how water quality objectives will be implemented in permits. BACWA requests several changes to the proposed amendment to provide clarity and to make the Basin Plan water quality objectives fully consistent with the United States Environmental Protection Agency (EPA) approved ambient bacteriological water quality criteria. These changes include (1) incorporating into Table 3-1 all of EPA's ambient bacteriological criteria for the protection of recreational waters, and (2) removing Table 4-2A and the total coliform limits in Table 4-2 to eliminate the confusion inherent in the proposed

implementation regime. These changes are similar to those requested by the City of Sunnyvale in their concurrently submitted comments, of which BACWA is supportive.

A. Table 3-1 should include all of EPA's applicable water quality objectives to protect water-contact recreational use.

BACWA requests that the San Francisco Bay Regional Water Quality Control Board (Water Board) incorporate into Table 3-1 all of EPA's approved bacteriological criteria to protect water contact recreation, which include fresh water criteria and single sample maximums to protect varying levels of use. These national criteria are accepted as being the most protective for water contact recreation and should replace the existing outdated fecal and total coliform objectives for water contact recreation currently listed in Table 3-1. Section 3.1.1 of the Basin Plan lists EPA's criteria and – somewhat confusingly – states that they "will be used to differentiate between pollution sources or to supplement objectives for water contact recreation." It does not offer further explanation or explicitly indicate whether and under what circumstances EPA's objectives will apply. Including all of EPA's criteria will afford greater protection for Bay users while also resolving uncertainty resulting from the current Basin Plan provisions.

Additional changes should also be made to Table 3-1 to elucidate how the objectives will apply. First, remove the fecal and total coliform objectives in Table 3-1. EPA's 1986 Ambient Water Quality Criteria for Bacteria states that, in marine waters "enterococci showed the strongest relationship to gastroenteritis…and all of the other indicators, including total coliforms and fecal coliforms showed very weak correlations to gastroenteritis."[1] The correlation between fecal coliforms and swimming-related illness is particularly poor, leading EPA to conclude that "the fecal coliform criteria for recreation is not a reliable indicator of illness to swimmers."[2] If the Water Board chooses to retain objectives based on the somewhat better indicator total coliform, footnote "a" should include an explanation that the enterococcus and total coliform objectives are each individually sufficient to protect the water contact recreation designated use. This change will make it clear that water quality based effluent limitations are not required for both enterococcus and total coliforms in order to protect REC-1.

Second, footnote "b" should include an explanation that the National Shellfish Sanitation Program (NSSP) guidelines are intended to protect areas where recreational or commercial shellfishing occurs.[3] The NSSP is a federal and state cooperative program, first established by the U.S. Public Health Service in response to a recognized need to control disease associated with the consumption of raw shellfish. Its stated purpose is to "promote and improve the sanitation of shellfish…moving in interstate commerce."[4] The water quality standards established in the NSSP's model ordinance are intended to apply to state classified shellfish growing areas for which the state must also perform regular sanitary surveys and develop

[1] USEPA, Ambient Water Quality Criteria for Bacteria, EPA 440/5-84-002 (January 1986); 69 Fed. Reg. 67217, 67220 (November 16, 2004).
[2] *Id.* at 67230.
[3] National Shellfish Sanitation Program Guide for the Control of Molluscan Shellfish, 2007 ("NSSP Guidance").
[4] NSSP Guidance, Section IX. History of the National Shellfish Sanitation Program.

management plans. These standards are not intended to apply broadly to ambient surface waters where no harvesting occurs.[5] Nor are they intended to apply concurrently: the NSSP allows states to apply either a total or a fecal coliform standard.[6]

Finally, add a new footnote that explains that the tiered single sample maximum value for enterococcus or *E.coli*, depending on the receiving water, is "best used for making beach notification and closure decisions."[7] As explained in the EPA rule promulgating these national criteria, the geometric mean is the better value for determining whether appropriate actions are being taken to protect and improve water quality because it is "less subject to random variation, and more directly linked to the underlying studies upon which the 1986 bacteria criteria were based."[8] Currently the entire San Francisco Bay is designated for primary water contact recreation, which is arguably appropriate considering the prevalence of windsurfing, swimming, kiteboarding, surfing and other activities that occur throughout much of the Bay. The intensity of use in the Bay, however, varies widely, depending on water and wind conditions, maritime traffic, and access. Single sample maximums are intended to provide a level of protection that takes into account the number of people potentially exposed so that management efforts can be appropriately directed. Incorporating only the single sample maximum for designated beaches (heavy recreational use) introduces the possibility that this objective could be applied to areas of the Bay infrequently used and potentially result in impaired water body listings and the misdirection of management resources.

The staff report considers and dismisses inclusion of the single sample maximums on the grounds that doing so would require investigations or judgments concerning the intensity of water contact recreation. We recognize that this is a valid concern, especially considering the current level of staff resources available, but suggest that such judgments are unnecessary. If the single sample maximums are included in Table 3-1, no obligation is created for the Water Board to identify patterns of water contact recreation throughout the Bay or to attempt to quantify the level of use at each location. Rather, their inclusion gives the Water Board flexibility to consider the intensity of use – and therefore the degree of threat posed—before undertaking specific regulatory or management actions.

B. Remove the proposed Table 4-2A and the Table 4-2 coliform limits.

The proposed amendment does not fully resolve existing ambiguities about implementation or clearly demonstrate how the proposed effluent limits are protective of various beneficial uses. BACWA suggests that a more straightforward approach is to remove the total coliform

[5] The NSSP Guidance contains further evidence that the fecal and coliform standards are intended to protect actual shellfish consumers rather than ambient surface waters: "Shellfish from waters meeting approved area criteria are unlikely to be involved in the spread of disease that can be attributed to fecal contamination of the shellfish." Section III. Public Health Reasons and Explanations, Chapter IV. Shellstock Growing Areas.
[6] NSSP Guidance, Section II. Model Ordinance, Chapter IV. Shellstock Growing Areas.
[7] 69 FR 67217, 67225 (November 16, 2004).
[8] USEPA, Office of Water, Water Quality Standards for Coastal Recreation Waters: Using Single Sample Maximum Values in State Water Quality Standards, EPA-823-F-06-013 (August 2006).

objectives from Table 4-2, and the entire proposed Table 4-2A. Calculation of effluent limits for each permit would then be based on the new and existing objectives in Table 3-1 and the methodologies for calculating effluent limits specified in the State Implementation Plan.[9] This approach would allow the Water Board to determine which set of objectives is most appropriate to protect beneficial uses considering the circumstances of each discharge, including the use and conditions of the receiving waters.

BACWA recommends that Table 4-2A be replaced with narrative text describing how objectives in Table 3-1 will be used to generate permit effluent limitations. Following on the recommended additions to the footnotes in Table 3-1 above, clarify that either enterococcus or *E. coli* effluent limitations will be included in NPDES permits to protect REC-1, depending on whether the discharge goes into fresh or estuarine or marine waters. Permit limits based on EPA's enterococcus or *E. coli* criteria are sufficient to protect REC-1, meaning that limits for total or fecal coliform are unnecessary, except to protect another designated use for which no enterococcus objective exists (such as shellfishing). This text should also include clarification from the current footnotes to Table 4-2 that one indicator organism may be substituted with another when it can be demonstrated that such a substitution will not result in unacceptable adverse impacts on the beneficial uses of the receiving water, and that the Water Board may consider establishing less stringent requirements for any discharges during wet weather.

If the preferred approach requested above is not adopted, BACWA suggests the following revisions to the implementation section to reduce confusion about the bases of the limitations and how they will be implemented.[10]

> **Section 4.5.5.1. Limitations for Conventional Pollutants**
> Table 4-2 contains effluent ~~Effluent~~ limitations for technology based conventional pollutants ~~are contained in Table 4-2~~ for discharges to inland surface waters and enclosed bays and estuaries within the region.
> Table 4-2A contains ~~both daily maximum and longer-term~~ effluent limitations for bacteriological indicator organisms. All NPDES permits for discharges that contain sanitary waste shall include the applicable effluent limitations from Table 4-2A. The water quality-based effluent limitations in Table 4-2A may be adjusted to account for dilution in a manner consistent with procedures in the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* ~~(see footnotes 'a' and 'e' in Table 4-2A)~~.
>
> **Table 4-2A Footnote b.**
> ~~These effluent limitations apply to all sewage treatment facilities that discharge to inland surface waters and enclosed bays and estuaries.~~ For discharges ~~in~~to ~~marine and estuarine~~ receiving waters with the water contact recreation beneficial use, the Water Board will implement the enterococcus effluent limitation. ~~For such discharges,~~ On a case-by-case basis, the Water Board ~~will~~ may implement ~~the~~ a total coliform effluent limitation in place of the enterococcus effluent limitation. This may occur, for example, ~~when~~ for discharges to fresh receiving waters, surface water

[9] State Water Resources Control Board, *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, 2005.
[10] BACWA's suggested edits are in red and the Water Board's proposed revisions are in blue.

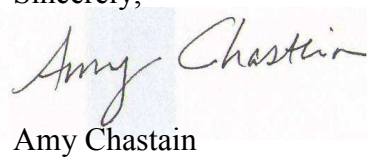
> discharges of ~~wastewater treatment plants must also meet total coliform limits to achieve water quality objectives for recycled~~ reclaimed water, or for intermittent wet weather discharges. For discharges to receiving waters with the shellfish harvesting and water contact recreation beneficial uses~~, or to receiving waters designated as freshwater,~~ the Water Board will implement ~~the~~ total coliform and enterococcus limitations. ~~For intermittent discharges that occur only during wet weather, the Water Board will implement the total coliform maximum daily effluent limitation.~~ For combined sewer overflows, not withstanding any other provisions of this plan, discharges from the City of San Francisco's combined sewer system are subject to the US EPA's Combined Sewer Overflow Policy. Furthermore, ~~T~~the Water Board may ~~also~~apply ~~some of~~ these limitation selectively to ~~certain other~~ non-sewage discharges, but these limitations shall not~~they will not be used to~~ preempt Effluent Guideline Limitations established pursuant to Section 301, 302, 304, or 306 of the federal Water Pollution Control Act, as amended. ~~(Such Effluent Guideline Limitations are included in NPDES permits for particular industries.)~~

Additionally, BACWA requests the following change to footnote "a" of Table 4-2A to indicate that the use of EPA Method 1600, which reports results as colony forming units (CFU) per 100 mL, is acceptable:

> **Table 4-2A, footnote "a".**
> This water quality-based effluent limitation shall be implemented as a geometric mean of a minimum of 5 effluent samples spaced over a calendar month. Fewer samples may be used on a case by case basis if allowed in the waste discharge requirements. Equivalent test results based on other analytical methods approved in 40 CFR 136.3(a) are acceptable.

Thank you for the opportunity to comment on this proposed Basin Plan Amendment. We thank the Water Board and its staff for their efforts to ensure that the Basin Plan incorporates water quality objectives that reflect the best available understanding of how to protect San Francisco Bay beneficial uses.

Sincerely,



Amy Chastain
Executive Director
Bay Area Clean Water Agencies

March 22, 2010

Attn: Richard Looker
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Sent via electronic mail: rlooker@waterboards.ca.gov

RE: Proposed Basin Plan Amendment for Bacteria Objectives to Protect Recreation Beneficial Uses

Dear Board Members and Staff of the Regional Board:

On behalf of San Francisco Baykeeper and our 1,500 members, I respectfully submit the following comments on the proposed Basin Plan Amendment to add *Enterococcus* water quality objectives and revise effluent limitations for bacteria in NPDES permits. Baykeeper would like to thank you for your hard work in strengthening the Basin Plan, making it more protective of the San Francisco Bay water quality. We approve of this proposed Basin Plan Amendment, and view it as an improvement in several ways.

First of all, this amendment will make the Basin Plan consistent with the current recommendations of the EPA and California Department of Public Health. It will also introduce consistent effluent limitations to NPDES permits where currently several different bacteria standards may or may not apply. Also, current scientific literature suggests that *Enterococci* are more accurate than Total Coliform and Fecal Coliform bacteria as an indicator of disease causing pathogens[1,2]. By adding *Enterococcus* objectives to NPDES permits, the Board ensures that dischargers strive to meet standards that will be the most beneficial for protecting water contact recreational use of the resource.

Baykeeper also approves of the plan to implement an ambient and effluent monitoring program for pathogens in the Bay. We hope that this monitoring program will include collection efforts in recreation areas beyond the Beach Watch Monitoring stations – such as the Berkeley Aquatic Center - and conduct monitoring year round. Preliminary recreation monitoring data gathered by San Francisco Baykeeper has shown that people engage in water contact recreation in the Bay year-round, even under the threat of pathogen inputs from sewage spills. We also hope that the ambient monitoring program will include collection efforts from open water marine and estuarine segments in the region in an effort to fill that current data gap. Monitoring data should be used to notify the public when *Enterococcus* numbers reach unsafe levels, similar to the Beach Watch surveillance program.

[1] Guang, Jin, A.J. Englande, Henry Bradford, Huei-Wang Jeng. 2004. Comparison of E.Coli, Enterococci, and Fecal Coliform as Indicators for Brackish Water Quality Assessment. Water Environ Res. 76(3): 245-255
[2] Griffin, Dale W., Erin K. Lipp, Molly R. McLaughlin, and Joan B. Rose. 2001. Marine Recreation and Public Health Microbiology: Quest for the Ideal Indicator. BioScience. 51(10): 817-826

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While we applaud the proposed Basin Plan amendment as a whole, we are concerned about some of the flexibility it allows. We are primarily concerned about the potential use of dilution credits when applying *Enterococcus* effluent limitations[3]. Baykeeper wants to remind the Board that water contact recreation in the San Francisco Bay is not restricted to beaches and marinas; in fact, people may canoe, kayak, or windsurf very close to effluent discharge points. If a dilution credit is to be applied, dischargers must be required to demonstrate that *Enterococcus* levels do not exceed the proposed effluent limitations at the surface of the water directly adjacent to the discharge point.

Baykeeper would also like to receive clarification regarding the use of a Total Coliform single sample standard in the case of intermittent discharges[4]. We understand that the thirty-day geometric mean is the preferred method of calculating pathogen indicator bacteria and that in some cases the requirement to sample five times within thirty days may be infeasible. In this scenario, why is the discharger required to meet the Total Coliform single sample standard of 240MPN/100mL instead of the more conservative *Enterococcus* single sample limit of 104MPN/100mL?

Finally, while we approve of the proposed effluent limitation for NPDES permits where bacteria limits are nonexistent or too lax, we question the application of new effluent limits in instances where they are less stringent than a permit's existing limits. For instance, according to its NPDES permit, the Napa Sanitary District must achieve a geometric mean *Enterococcus* limit of 33 MPN/100 mL and a single sample *Enterococcus* limit of 89 MPN/100 mL[5]. Changing this permit, or other permits with bacteria effluent limits more stringent than the proposed, would be contrary to the Clean Water Act's anti-backsliding provision. Please provide justification for proposing effluent limitations higher than the lowest limit currently in place. Anti-degradation analysis was not included in the proposed amendment on the basis that proposed *Enterococcus* objectives are as stringent as or more stringent than existing water quality objectives. However, this does not appear to be the case for all NPDES permits considered under this amendment.

Overall Baykeeper is happy with the proposal because it applies the most accurate pathogen indicator standards, consistent with existing state and federal regulations, to protect water contact recreation. Also, it will introduce an ambient and effluent monitoring program that will track attainment and compliance with the new standards, with the potential to protect recreationalists from direct risk of pathogen exposure. We hope that this work will also open up the door for pathogen limits in stormwater. Thank you once again for the opportunity to comment on this process.

Sincerely,

Rosalind Becker

Rosalind Becker, Field Coordinator
San Francisco Baykeeper

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[3] Proposed Basin Plan and Draft Staff Report at p. 18
[4] Proposed Basin Plan and Draft Staff Report at p. 18 and Appendix A p. 4
[5] NPDES Permit No. CA0037575. Order No. R2-2005-0008 at p. 31

NOVATO SANITARY DISTRICT

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March 22, 2010

VIA EMAIL: To: rlooker@waterboards.ca.gov
Cc: bwolfe@waterboards.ca.gov; ltang@waterboards.ca.gov; wjohnson@waterboards.ca.gov; tyin@waterboards.ca.gov

Mr. Richard Looker
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Subject: Water Quality Objectives for Bacteria in Marine and Estuarine Waters Designated as Water Contact Recreation in the San Francisco Bay Region

Dear Mr. Looker:

The Novato Sanitary District appreciates the opportunity to comment on the proposed water quality objectives for bacteria in marine and estuarine waters designated as water contact recreation in the San Francisco Bay region. The District owns and operates two WWTPs which provide secondary level treatment for the City of Novato and adjacent areas. The population served is approximately 60,000.

In 2001, the District prepared a strategic plan which concluded that treatment plant upgrades and expanded capacity were needed to accommodate limited future growth within the service area and to reliably comply with existing effluent limitations. In addition, the District wanted to be proactive and addressed various existing (at the time) regulatory issues with increased sophistication in treatment processes. The District has since completed engineering analyses and environmental reviews and is nearing completion of construction, expected for June 2011. The cost to rate payers for this project is approximately $90 million. As you can see the process for making upgrades of this magnitudes takes approximately ten years from start to finish.

However, the current tentative order issued for the NPDES permit renewal contains a 30-day geometric mean enterococcus bacteria effluent limit PLUS a new median fecal coliform limit of 14 MPN/100 mL and a new 90th percentile fecal coliform limit of 43 MPN/100 mL. The existing permit only contains enterococcus limits. The District is very concerned that it will not be able to meet the proposed fecal coliform effluent limits in the current permit.

While the basin plan amendment purports to not address shellfish beneficial uses, the District is very concerned that it in fact does exactly address shellfish beneficial uses, *because in recent years there has been an alternative approach to addressing shellfish beneficial uses that does not appear to be available since the release of this public draft basin plan amendment.* The District's outfall is located 950 feet offshore in mudflats that are subject to daily tidal fluctuations. It would be impossible to even access the vicinity of the discharge, let alone harvest shellfish.

The District has acted in good faith to construct serious improvements to the wastewater treatment plant at a cost of $90 million to District rate payers. Yet a permit is being issued with bacteria effluent limits for which compliance does not appear attainable. The District has never measured fecal coliform in its effluent and therefore there is no information about compliance attainability even available.

As a result, the District requests that this bacteria basin plan amendment either (1) be delayed until after the State Water Board completes its shellfish studies, or (2) address water quality objectives to protect shellfish beneficial uses in this basin plan amendment, or (3) delay inclusion of effluent limits related to shellfish uses until after the State Water Board concludes its shellfish studies.

Thank you again for the opportunity to comment. Please feel free to contact me at (415) 892-1694 or bevj@novatosan.com with any questions or if you would like additional information.

Sincerely,

Beverly B James

Beverly James
Manager-Engineer

cc: Bruce Wolfe, Regional Water Board
Lila Tang, Regional Water Board
Bill Johnson, Regional Water Board
Tong Yin, Regional Water Board
Monica Oakley, Oakley Water Strategies

Santa Clara Valley
Urban Runoff
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Campbell • Cupertino • Los Altos • Los Altos Hills • Los Gatos • Milpitas • Monte Sereno • Mountain View • Palo Alto
San Jose • Santa Clara • Saratoga • Sunnyvale • Santa Clara County • Santa Clara Valley Water District

Submitted via email and hard copy on March 22, 2010

Mr. Richard Looker
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Re: Proposed Amendments to the Water Quality Control Plan for the San Francisco Bay Basin - *Water Quality Objectives for Bacteria in Marine and Estuarine Receiving Waters*

Dear Richard:

This letter is submitted on behalf of the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP or Program) regarding the proposed amendments to the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) that would incorporate water quality objectives (WQOs) for enterococci bacteria in marine and estuarine waters. The SCVURPPP is an association of 13 cities and towns in the Santa Clara Valley, the Santa Clara County and the Santa Clara Valley Water District.[1] Program participants are regulated under a common NPDES permit to discharge municipal stormwater to South San Francisco Bay. Since its inception, SCVURPPP has been a recognized leader in stormwater management and monitoring in the San Francisco Bay region, and continues to be dedicated to improving the quality of our water bodies.

The Program appreciates the opportunity to submit comments regarding the proposed amendments. As a municipal stormwater program, our technical comments are largely focused on the amendments to WQOs proposed to be included in Chapter 3 of the Basin Plan, but we also have serious concerns about: 1) the application of the WQOs in the form currently proposed to urban runoff in the Bay Area, and 2) the approach staff has taken in the proposed Implementation Plan (Chapter 4) which effectively puts off until a later day any meaningful analysis or consideration of the practical and economic effects on municipal stormwater dischargers of adopting the WQOs as currently proposed.[2]

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[1] Campbell, Cupertino, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga and Sunnyvale.

[2] "Potential control measures to control urban runoff as well as non-point sources may be implemented *after determining* that specific areas are not meeting bacteriological water quality standards . . . . Control of

As you may know, as the result of its prior work in many parts of the State on both the wastewater and stormwater sides of pathogen-related issues, Program staff is very familiar with both the science behind the development of the *Enterococcus* criteria (now proposed as WQOs) and the implementation of bacteria WQOs in the SF Bay Region. With that in mind, we provide these technical comments and recommended improvements to the proposed WQOs from an stormwater perspective.

1. Adopt *Enterococcus* Single Sample Maximums (SSMs) Based on Levels of Use

The San Francisco Bay (Bay) is over 600 mi^2 in area, but as described in the Staff Report, the Bay has ***only 12 designated beaches***. Recreational use levels at these beaches and waters adjacent to these locations and throughout the Bay likely change dramatically depending on the particular location in question and seasonal conditions. To account for the variability in both recreational use levels and in water quality conditions at different locations, rather than pursuing a one size fits all approach to the WQOs of Enterococcus, the Water Board should adopt four Single Sample Maximum (SSM) criteria as promulgated by USEPA on November 16, 2004 (USEPA 2004a)[3]. In promulgating a multi-set *range* of criteria, USEPA recognized that uses of a water body vary with location and season/climate and therefore may require differing levels of protection in order to uphold a recreational use designation. It specifically defined a Designated Beach Area as only "those recreation waters that, during the recreation season, are *heavily* used (based upon a comparison of use within the state) and may have a lifeguard, bathhouse facilities, or public parking for beach access." By foregoing a multi-criteria approach and instead specifying a single WQO, the proposed Basin Plan Amendment would, in effect, raise the level of protection for all of San Francisco Bay (shoreline and offshore) to the standard EPA only intended to be applied to Designated Beach Areas. This approach goes beyond what USEPA believes is protective of public health, conflicts with actual uses and conditions in San Francisco Bay, and could impose significant and unnecessary costs for municipal stormwater dischargers.

A multi-SSM approach to an Enterococcus WQO would instead provide sufficient levels of protection against illness in a more sensibly targeted fashion because all SSMs for *Enterococcus* as developed by USEPA are ultimately based on the standard deviation of values around the geometric mean (USEPA 2004a). Varying SSMs can be applied at different locations to ensure adequate levels of public protection based on anticipated use levels and likely recreational and

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bacteria from urban runoff and non-point sources is not a required regulatory element of the current project. However, because it is possible that some areas where water contact occurs are influenced by such sources, it is foreseeable that some control of non-point sources of bacteria will be necessary. *The scope of this project does not include identification of those areas that are not attaining the enterococcus criteria. Thus, it is not possible to specify in detail which measures will be necessary to control such sources in order to attain water quality standards in all locations.* (Staff Report pp. 17, 22, emphasis added.)

[3] On November 16, 2004 the US EPA promulgated a final rule for "Water Quality Standards for Coastal and Great lakes Recreation Waters." That final rule promulgated bacteria limits that apply to costal and fresh waters designated for recreational activities (full-body contact or REC-1). Further, the SWRCB initiated, in September 2008, development of statewide effort to develop and approve bacterial objectives for fresh waters. It is not clear why the Water Board staff can not simply modify the Basin Plan to directly incorporate and implement the current US EPA water quality bacterial standards and believes it is necessary to selectively implement portions of the US EPA water quality standards (as noted in footnote 4 below, the USEPA bacteria criteria have been in the Basin Plan, as criteria, since 1986).

water quality conditions.[4] Determinations to apply an appropriate SSM to recreational use levels at non-beach sites can also be made more specific to protect the public as necessary on a case-by-case basis based on the magnitude and extent of use data available. Adopting the four SSMs promulgated by USEPA therefore would allow the Water Board *more flexibility* in implementing WQOs appropriately, while still fully protecting all intended recreational beneficial uses of the Bay.

If the Water Board instead chooses to follow the Staff Report's current recommendation and adopt only a single WQO applicable to all areas within the Bay, it would do so with the potential for significant costs to local public agencies and the Water Board itself, with little to no water quality protection. For example, it is foreseeable that bacteria water quality data collected from wetland areas where swimming is prohibited could have significant natural sources of *Enterococcus* and easily exceed the SSM for designated bathing beaches (104MPN/100mL), while consistently meeting the infrequently used recreational water SSM (504MPN/100mL). If this case would arise, the Water Board would be required to enforce the criteria for bathing beaches at sites where swimming is prohibited, which would in turn require the listing of the water body on the 303(d) list and a TMDL to be developed and implemented, all of which require significant resources of the Water Board and local agencies.[5] Alternatively, adopting all four SSMs would allow the Water Board the flexibility in applying these criteria in a more appropriate manner.

Recommendation: Instead of a single WQO, adopt all four *Enterococcus* SSMs promulgated by USEPA to allow for flexibility in implementing water quality standards, while protecting beneficial uses in San Francisco Bay.

2. Explicitly State that the *Enterococcus* Geometric Mean is the Water Quality Objective and Reserve the Application of Single Sample Maximums to Designated "Swimming" Beaches

The proposed Basin Plan Amendment includes WQOs based on the *Enterococcus* Geometric Mean and SSMs. According to the USEPA (40 CFR Part 131 and EPA-440/5-84-002, and EPA-823-D-00-001), the geometric mean is more relevant than the SSM because it is a more reliable measure of water quality, being less subject to random variation, and more directly linked to the underlying studies upon which the 1986 and 2004 *Enterococcus* Water Quality Criteria are based. That said, USEPA did intend the SSMs to be used for making beach notification and beach closure decisions.

Recommendation: Explicitly include language in the proposed WQO or implementation chapter that states: *"The Enterococcus geometric mean is the preferred WQO for assessing water quality*

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[4] Since 1986, the Basin Plan has contained the full range of (i.e., designated, moderately, lightly, and infrequently used beach areas). SSMs have also been noted as criteria as shown in Table III-1A (1986 Basin Plan) and in Table 3-2 (in the 2007 Basin Plan).

[5] In 1997, the California Legislature and the Governor approved AB 411 to address Beach Water Quality Monitoring. The legislation and subsequent regulations were specifically developed to address designated beach areas and not all locations where incidental contact recreation activities may occur, as proposed by the Water Board staff in the above draft Basin Plan amendment. Therefore, use of AB 411 and subsequent regulations as support for the proposed staff recommendations, beyond designated beach areas, is not consistent with the original legislation and therefore, should not be relied upon to support the proposed staff recommendations.

conditions in the San Francisco Bay Region and appropriate SSMs should only be used when making beach notification and closure decisions or in cases where less than 5 samples were taken over a 30-day period" at a particular site."

3. Remove the Total and Fecal Coliform Water Quality Objectives

The current WQOs based on total or fecal coliforms are outdated and not supported by our current understanding of epidemiology and potential public health risks associated with recreating in marine, estuarine or fresh water bodies. The following information is provided as background to support this statement.

Around 1950, several proposed guidelines for recreational waters were being developed throughout the U.S. The most common standard at that time was a requirement that total coliforms not exceed 1,000 per 100 mL (NRC 2004). In an effort to review the methodologies used to establish the total coliform standards, a National Technical Advisory Committee (NTAC) was convened by the U.S. Federal Water Pollution Control Administration in 1968 and charged with proposing microbiological criteria for recreational waters. Through this effort, the NTAC determined that a fecal coliform measurement was more appropriate than a total coliform measurement, and recommended a fecal coliform criteria for recreational waters of log mean of 200/100mL and 90th percentile of 400/100mL (USEPA 1986).

Due to inconsistencies in the design, results, and conclusions of the epidemiology study used to derive the total and fecal coliform criteria, the National Research Council (NRC) in 1972 issued an opinion that "no specific recommendation is made concerning the presence or concentrations of microorganisms in bathing water because of the paucity of valid epidemiological data" (NRC 1972). The NRC also criticized the fecal coliform measurement itself because thermotolerant bacteria, such as *Klebsiella* spp. are included in this group but are not necessarily fecal in origin. As a result, the USEPA initiated a series of studies in 1972 at marine and fresh water bathing beaches, designed to correct the perceived deficiencies of the original epidemiology studies. One goal of the USEPA studies was to determine if swimming in sewage-contaminated water carries a health risk for bathers; and, if so, to what type of illness. If a quantitative relationship between water quality and health risk was obtained, two additional goals were to determine which bacterial indicator is best correlated to swimming-associated health effects and if the relationship is strong enough to provide a criterion (USEPA 1986).

The marine studies were conducted at bathing beaches in New York City, New York, Boston, Massachusetts, and at Lake Pontchartrain, near New Orleans, Louisiana. Results showed that *Enterococcus*[6] had the strongest relationship to illness. *E. coli* was a very poor second and all of the other indicators, including total coliforms and fecal coliforms showed very weak correlations to illness.

Recommendation: Based on the summary provided above and UESPA funded epidemiological studies, we recommend that the fecal and total coliform WQOs currently in the Basin Plan be

[6] The above cited Enterococcus objectives were originally published by USEPA in 1986 in the "Ambient Water Quality Criteria for Bacteria – 1986 (EPA 440/5-84-002). They were developed to update and replace existing total and fecal coliform criteria. The criteria document (p. 11) states that "*EPA believes that the newly recommended indicators are superior to the fecal coliform group. Therefore, EPA strongly recommends that states begin the transition process to the new indicators. While either E. coli or enterococci may be used for fresh waters, only enterococci is recommended for marine waters.*"

removed as the *Enterococcus* WQOs are adopted; at a minimum, if fecal and total coliform WQOs are retained, the Water Board should clarify that they are not appropriately applied in terms of municipal stormwater where compliance with the *Enterococcus* geometric mean is being met.

4. Expand the Implementation Plan Section of the Basin Plan Amendment to include Consideration of Natural Sources.

As with all water bodies, uncontrollable natural sources of *Enterococcus* exist in the San Francisco Bay and its watershed. Recent studies have shown that exceedances of bacteria WQOs frequently occur in water bodies that receive runoff from predominately undeveloped watersheds (Tiefenthaler et al. 2009). This indicates that natural uncontrollable sources of *Enterococcus* such as wildlife feces, sediment re-suspension, tidal washing of sediments, re-growth on beach wracks, vegetation, biofilm and algal mats can cause exceedances of bacteria WQOs on their own, without contributions from anthropogenic sources.

To account for contributions of *Enterococcus* to the Bay from uncontrollable natural sources, two approaches have been developed and implemented in Southern California[7]. The first is a Reference System Anti-degradation Approach (RSAA), which is generally based on the concept of controlling *Enterococcus* from anthropogenic sources so that bacteriological water quality is at least as good as that in a reference system. A reference system is a watershed and the beach to which the watershed discharges that is minimally impacted by anthropogenic activities that can affect bacterial densities in the water body (Regional Board 2008). Under the reference system and anti-degradation approach, a certain frequency of exceedances of bacteria water quality objectives is allowed. The allowed frequencies of exceedances are either the observed frequency of exceedances in the selected reference system or the targeted water body, whichever is less.

The second approach used in Southern California to consider natural sources of *Enterococcus* when implementing WQOs is the Natural Source Exclusion Approach (NSEA). Implementation of bacteria water quality objectives using the NSEA is generally based on the concept that all anthropogenic sources of *Enterococcus* to a water body must be controlled and the working assumption that the remaining indicator bacteria do not pose an unacceptable health risk to those recreating in the water body.

There are several notable cases in which the RSAA and/or NSEA have been adopted and/or used over the last several years in Southern California. These include in Santa Monica Bay; Malibu Creek; Ballona Creek, Ballona Estuary, Sepulveda Channel, and Los Angeles Harbor; and the multiple watersheds addressed in the recently proposed amendment to the Water Quality Control Plan for the San Diego Region.

Recommendation: Based on the successful application of these approaches in other regions of the State, it is recommended that RSAA and/or NSEA be included in the amendment to the Basin Plan. Example text is included in Attachment A.

[7] Basin Plan Amendment adopted by the San Diego Regional Water Quality Control Board on May 14, 2008 that incorporates a natural sources and reference system approach.

We hope you find these comments and suggested improvements a useful basis for proposed amendments to the Basin Plan. Please contact me at (510) 832-2852 if you have questions regarding the comments or suggested changes. We look forward to continuing to work with you further.

Sincerely,

Adam Olivieri, Dr. PH, P.E.
SCVURPPP Program Manager

cc: Bruce Wolfe, SFB Water Board
Tom Mumley, SFB Water Board
SCVURPPP Management Committee

References

NRC 1972. Drinking Water and Health, Volume 1. National Research Council. Washington, D.C. National Academy Press. 1972.

NRC 2004. Indicators for Waterborne Pathogens. National Research Council. Washington, DC., National Academy Press. 2004.

U.S. EPA. (1986). Ambient Water Quality Criteria for Bacteria. EPA440/5-84-002, 1986.

U.S. EPA (2004a) Water Quality Standards for Coastal and Great Lakes Recreation Waters; Final Rule. Fed Register. 2004, 131 (40). 67218-67243.

U.S. EPA. (2004b). Implementation Guidance for Ambient Water Quality Criteria for Bacteria." EPA-823-B-04-002. March 2004.

Tiefenthaler LL, ED Stein, GS Lyon. (2008). Fecal Indicator Bacteria (FIB) levels during dry weather from southern California reference streams. Southern California Coastal Water Research Project Costa Mesa, CA.. Technical Report 542.

Regional Board (2008). Attachment A: Amendment to the water Quality Control Plan for the San Diego Basin. (R9-2008-0028). Santa Ana Regional Water Quality Control Board. August.

Attachment A

Proposed Amendment to the Basin Plan
Incorporation of Reference System and Natural Source Exclusion Approaches

Implementation Provisions for Indicator Bacteria Water Quality Objectives:

Water quality objectives for indicator bacteria shall be strictly applied except when otherwise provided for in the Basin Plan or in permitting activities where flexibility is allowed by law, such as with respect to municipal stormwater. Within these contexts, the Regional Board may implement the indicator bacteria water quality objectives by using a "reference system and anti-degradation approach" or a "natural sources exclusion approach". There are natural sources of bacteria which may cause or contribute to exceedances of water quality objectives for indicator bacteria. It is not the intent of the Regional Board to require treatment or diversion of natural water bodies or to require treatment of natural sources of bacteria. Such requirements, if imposed by the Regional Board, could adversely affect valuable aquatic life and wildlife beneficial uses supported by water bodies in the Region.

Implementation of indicator bacteria water quality objectives using the reference system and anti-degradation approach requires control of indicator bacteria from anthropogenic sources so that bacteriological water quality in the targeted waterbody is consistent with that of a reference system. The reference system and anti-degradation approach also requires that no degradation of existing bacteriological water quality in the targeted water body occurs when the existing bacteriological water quality is better than that of a water body in a reference system. A reference system is a watershed and the beach to which the watershed discharges that is minimally impacted by anthropogenic activities that can affect bacterial densities in the water body. Under the reference system and anti-degradation approach, a certain frequency of exceedances of the indicator bacteria water quality objectives is allowed. The allowed frequencies of exceedances are either the observed frequency of exceedances in the selected reference system or the targeted water body, whichever is less.

Under the natural sources exclusion approach, dischargers must demonstrate they have implemented all appropriate best management practices to control all anthropogenic sources of indicator bacteria to the target water body such that they do not cause or contribute to exceedances of the indicator bacteria water quality objectives. The requirement to control all sources of anthropogenic indicator bacteria does not mean the complete elimination of all anthropogenic sources of bacteria as this is both impractical as well as impossible. Dischargers must also demonstrate that the residual indicator bacteria densities are not indicative of a human health risk. After all anthropogenic sources of indicator bacteria have been controlled such that they do not cause exceedances of the indicator bacteria water quality objectives, and natural sources have been identified and quantified, exceedances of the indicator bacteria water quality objectives may be allowed based on the residual exceedances in the target water body. The residual exceedances shall define the background level of exceedance due to natural sources.

The Regional Board will evaluate the appropriateness of these approaches and the specific exceedances or exceedance frequencies to be allowed based on reports from the Executive Officer or within the context of permit development or recalculation for a specific water body. If appropriate, the Regional Board staff may select to use one or both of these approaches with regard to developing further implementation guidance or plans for municipal stormwater and discharges from non-point sources.

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March 22, 2010

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Via Email

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Re: Comments on Proposed Amendments to Enterococcus Water Quality Objectives

Dear Mr. Wolfe:

The following are legal comments submitted to the California Regional Water Quality Control Board, San Francisco Bay Region ("Water Board" or "Regional Board") on behalf of the Santa Clara Valley Urban Runoff Pollution Prevention Program ("SCVURPPP" or "Program") and its co-permittees concerning the proposed amendments to the San Francisco Bay Region Water Quality Control Plan ("Basin Plan") to revise the water quality objectives ("WQOs") for enterococcus bacteria.[1]

We submit these comments because the proposed Basin Plan amendment can be better tailored in the manner suggested in the Program's separately submitted technical comments and believe that the analysis set forth in the Staff Report supporting the proposed amendment does not sufficiently consider its implications as is necessary to meet the requirements of the California Environmental Quality Act ("CEQA") and section 13241 et seq. of the Water Code. In brief, we request that the staff provide the public and members of the Water Board with (1) a revised CEQA analysis that considers a more reasonable range of alternatives to the amendment as currently proposed, including one based on the recommendations set forth in the Program's technical comments, and (2) addresses the likely economic burdens on municipal stormwater dischargers and the technical feasibility of the amendment as

[1] The co-permittees are: Campbell, Cupertino, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, Sunnyvale, Santa Clara County, and the Santa Clara Valley Water District. The Program will be submitting additional non-legal comments under its own letterhead.

proposed, compared with that of an alternative form of the amendment based on the recommendations set forth in the Program's technical comments.

A. Staff Have Failed to Conduct Adequate Analysis of Alternatives to the Proposed Amendments Under CEQA.

CEQA requires that an Environmental Impact Report ("EIR") evaluate a "range of reasonable alternatives" to the proposed project. (CEQA Guidelines § 15126.6). Because the Basin Planning process is a certified regulatory program (*see id.* § 15251(g)), a document used in place of an EIR or Negative Declaration also must include reasonable alternatives to the proposed project. (*See id.* § 15252; 27 Cal. Code Regs. § 3777). This range must include alternatives that could "feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects." (CEQA Guidelines § 15126.6(c)).[2] The agency should consider several factors when assessing whether alternatives are feasible, including economic viability. (*Id.* § 15126.6(f)(1)). Additionally, the environmental document must include enough information to allow *meaningful* evaluation, analysis, and comparison with the proposed project. (*Id.* § 15126.6(d)). Such a discussion is necessary to foster informed decision-making and public participation. (*Id.* § 15126.6(a)).

The Draft Staff Report for the proposed Basin Plan Amendment (Feb. 4, 2010) ("Staff Report") includes a cursory alternatives analysis; however, it is not sufficient to meet the requirements of CEQA. In addition to the proposed Basin Plan amendment ("Preferred Alternative"), the Staff Report identifies three potential alternatives, as summarized below:

- ***No action:*** Under this alternative, no Basin Plan amendment would be enacted. The Staff Report rejects this alternative as failing to meet the objectives of the project (i.e., failing to enact WQOs, based on the best available scientific information, to protect water contact recreation beneficial use). (Staff Report at 26).

- ***Enterococcus Objectives as a Function of Level of Use ("Level of Use Alternative"):*** This alternative would adopt the four U.S. EPA single sample maximum ("SSM") criteria as the WQOs, to be applied throughout San Francisco Bay and Tomales Bay based on intensity of use for water contact recreation. Staff rejects this alternative because (1) it would require "investigations or judgments concerning the intensity of water contact recreation" throughout the area covered by

[2] Although "[t]he guidelines for CEQA implementation do not directly apply to a certified regulatory program's environmental document ..., when conducting its environmental review and preparing its documentation, a certified regulatory program is subject to the broad policy goals and substantive standards of CEQA." *City of Arcadia v. State Water Res. Control Bd.*, 135 Cal. App. 4th 1392, 1422 (2006) (internal quotations omitted; citing 2 Kostka & Zischke, *Practice Under the Cal. Environmental Quality Act* § 20.10).

the Basin Plan, which could result in erroneous designations, (2) patterns are not static, so designations would need to be updated periodically, and (3) "there is some doubt whether this approach would fully protect" the beneficial uses. (Staff Report at 26-27).

- ***Application of a Single-Sample Effluent Limitation ("SSM Alternative"):*** In this scenario, the implementation plan would not only require an effluent limitation corresponding to a geometric mean of 35 MPN/100 ml for enterococcus, but would also include a short-term daily maximum effluent limitation of 104 MPN/100 ml. This alternative is dismissed on the basis that it would be more stringent that necessary to attain water quality standards, and result in "unreasonable costs relative to [the] environmental benefits," resulting in numerous daily maximum effluent violations and requiring treatment facilities to take costly measures to improve their performance or pay fines. (Staff Report at 27).

Taken together, these alternatives are deficient for two reasons. First, they do not represent a "reasonable range" of feasible alternatives. Second, the analysis is relatively superficial and therefore misleading, depriving the Regional Board members and the public of a meaningful comparison of different policy options upon which to make an informed decision of which manifestation of a WQO should be adopted.

1. These Alternatives Do Not Represent a "Reasonable Range" of Viable Options.

The Staff Report neglects to consider feasible alternatives that could achieve the objectives of the project, while substantially reducing the economic consequences of compliance for public agencies subject to stormwater standards.

For example, staff could evaluate an alternative that would reserve the application of all four U.S. EPA SSMs to designated swimming beach closure decisions only when there are insufficient numbers of samples available to calculate a geometric mean. As it stands, the Staff Report evaluates (1) the Preferred Alternative, in which *both* the geometric mean and SSM standards must be met, and (2) the SSM alternative, which would impose effluent limitations corresponding to the "heavily used beach" SSM (104 MPN/100 ml) to all wastewater discharges, and which staff (rightly) concludes would result in unreasonable compliance costs relative to environmental benefits. However, a reasonable, middle-ground alternative would provide for a WQO consisting of *only* the geometric mean enterococcus objective of 35 MPN/100, and would apply the 104 MPN/100ml SSM *only* to make decisions regarding heavily used designated beach notification and closure. This approach would ensure water quality protection while also avoiding the costly measures necessary to comply with a blanket SSM in areas with less-intensive water contact recreation.

Additionally, staff could have analyzed the potential effects of any number of alternatives that may be effective and feasible, such as applying the proposed WQOs on a seasonal basis, when water contact recreation is most likely, establishing subcategories of uses, or implementing the WQOs only through effluent limitations from wastewater dischargers. Although it is well-established that CEQA does not require detailed consideration of alternatives that are merely speculative or plainly fail to achieve the project objectives, the examples listed here would appear to fall well within the "rule of reason" governing the appropriate range. (*See* CEQA Guidelines § 15126.6(a)).

2. The Alternatives Discussion Fails to Provide for Meaningful Analysis of Different Options.

Even assuming the *range* of alternatives is appropriate, the level of analysis of these alternatives leaves much to be desired. For example, with respect to the Level of Use Alternative, the Staff Report cursorily dismisses it on the basis that it is too difficult. As an initial matter, we note that the entire Basin Planning process "requires investigations [and] judgments concerning the intensity" of beneficial uses, which are never "static," and some possibility *always* exists that such determinations will result in error. Neither the Water Code, Water Board regulations, nor CEQA exempts the Board from conducting the required analysis merely because it is complicated. The uncertainties inherent in this process only counsel in favor of diligent attempts to improve decision-making, not to avoid them. We also question whether, as a factual matter, the Staff Report overstates the intensity of analysis that would be involved in tailoring SSM objectives to particular areas depending on anticipated recreational uses. Because staff does not provide any detail to back up this conclusion, it is difficult to evaluate whether it actually has merit.

Moreover, this analysis ignores the likelihood that the Preferred Alternative would result in some areas (i.e., those other than heavily used designated beach areas) being incorrectly presumed to have *more intensive* water contact recreation than they truly have – a presumption that carries with it potentially significant and unnecessary costs to public agencies. On the other hand, the discussion of the SSM Alternative concludes that the environmental benefits would not be proportional to the economic costs of compliance – but again, the Preferred Alternative glosses over any consideration of whether the relationship between costs and environmental benefits would, by comparison, be a reasonable one (discussed in more detail below).

B. Staff Attempts to Impermissibly Defer Analysis of the Environmental Impacts of Urban Runoff Controls.

The analysis of the Preferred Alternative fails to consider any environmental impacts that may result from municipal stormwater dischargers' need to implement new Best Management Practices. This is clearly inconsistent with CEQA, which requires – even for

expedited review of regulations for pollution control – "[a]n analysis of the reasonably foreseeable environmental impacts of the methods of compliance." (CEQA Guidelines § 21159(a)(1)). Staff simply states that "it is not possible to specify in detail which measures will be necessary to control [urban runoff] sources," and that implementation of these control measures "*may be subject to additional future environmental review*." (Staff Report at 22). This is an impermissible attempt to defer the necessary CEQA review to a later date.

In *City of Arcadia v. State Water Resources Control Board*, the Court of Appeal disapproved a similar approach by the Regional Water Quality Control Board for the Los Angeles Region, in a challenge to the enactment of a TMDL for trash. 135 Cal. App. 4th 1392, 1424-26 (2006). There, the Board failed to include any analysis of the reasonably foreseeable impacts of construction or maintenance of pollution control devices. (*Id.* at 1425). The Court rejected the Board's argument that it "did all it could because there 'is no way to examine project level impacts that are entirely dependent upon the speculative possibilities of how subsequent decision[]makers may choose to comply' with the Trash TMDL." (*Id.* at 1425-26). Even if the Board had, as it claimed, relied on a "tiered" CEQA-equivalent process under Public Resources Code section 21159, it failed to meet the minimum requirements to serve as a CEQA functional equivalent. (*Id.*). It was not enough to argue, as the Board did, that "tier two" review was the responsibility of local agencies who would determine specific methods of compliance with the new performance standards. (*Id.* at 1424).

Here, the staff makes a substantially similar argument. Although the Staff Report lists a variety of compliance strategies that may be employed by local agencies, just as the Los Angeles Board did (*see id.* at 1424-25), it does not discuss *any* reasonably foreseeable (including interim and cumulative) environmental effects of implementing any of these measures. This silence prevents the Staff Report from "afford[ing] the public and other agencies a meaningful opportunity to participate in the environmental review process," as CEQA requires. (*See id.* at 1426).

C. Staff Have Failed to Conduct Adequate Analysis of the Potential Economic Burden and Technical Feasibility of Compliance by Municipal Stormwater Dischargers with New WQO as Currently Proposed.

Water Code section 13241 expressly provides that, in establishing WQOs, each Regional Board is required to take into account, among other factors, the economic reasonableness of compliance. Additionally, CEQA requires that when a Regional Board adopts rules that require the installation of pollution control equipment, or performance standards or treatment requirements, that Board must analyze the reasonably foreseeable methods of compliance; this must include a consideration of "a reasonable range of environmental, economic, and technical factors." (Pub. Res. Code § 21159(c)).

The Staff Report for the Basin Plan amendments gives short shrift to these requirements and the potential economic burdens that could be imposed on Program members and other municipalities if they are required to comply with the new WQOs in the form currently proposed. The Staff Report does contain a discussion that purports to consider "economics relative to the foreseeable measures to control or remedy non-point and urban stormwater runoff sources of bacteria." (Staff Report at 21). However, it does not provide any real analysis of economic reasonableness or technical feasibility, stating that (1) "it is not possible to specify in detail which measures will be necessary to control" bacteria from urban runoff and non-point sources, and (2) the actual compliance strategies will be selected by local agencies. (Staff Report at 22). Nevertheless, speaking from another perspective, the Staff Report acknowledges that foreseeable methods of urban runoff controls are "generally well known" and goes on to list these measures, with their likely associated costs. Because this much *is* known, at a minimum, the Staff Report could and should more meaningfully extrapolate out the reasonably foreseeable large-scale economic impacts of implementing various strategies, in different combinations (*see City of Arcadia*, 135 Cal. App. 4th at 1424-25).

Indeed, staff cannot defer appropriate section 13241 and CEQA analysis from the WQO adoption phase by trying to put it off (as the Staff Report attempts to do here) to the later municipal stormwater permitting process. Both staff and State Board counsel have repeatedly argued in prior public comment and appellate processes that NPDES permits are exempted from 13241 and CEQA analysis requirements and therefore these requirements do not need to be addressed once a WQO has been adopted and incorporated into the Basin Plan. The same types of "we don't have to do it now because our hands are already tied" arguments have also been made at the TMDL phase. Staff simply cannot have it both ways and thereby forever deprive the Board Members and the public from a meaningful consideration of the environmental and economic burdens and benefits of the real implications of implementation of proposed WQOs.

Conclusion

In sum, staff cannot propose the adoption of one-size-fits-all WQOs that will be applied everywhere in the Bay and its shoreline and which will, for years to come, inform permit requirements for municipal stormwater discharges (in addition to those for sewage treatment plants) without conducting a much more meaningful analysis of the technical feasibility and economic reasonableness of the burdens the proposed enterococcus WQO will have on public agencies like the Program's members. Those burdens also need to be compared with those associated with alternative forms of the enterococcus WQO, including the one that would result from incorporating the recommendations set forth in the Program's technical comments.

For the reasons set forth above, we urge you to direct your staff to conduct a fuller analysis of reasonable project alternatives and environmental and economic impacts of its proposal, and to revise its proposed WQOs for enterococcus bacteria in a manner that not only protects beneficial uses but which also does not place unnecessary financial or compliance burdens on public stormwater management programs.

Sincerely yours,

Robert L. Falk

cc: Tom Mumley
Dorothy Dickie
Richard Looker
Adam Olivieri
SCVURPPP Management Committee

Submitted via email and hard copy on March 22, 2010

Mr. Richard Looker
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Re: Proposed Amendments to the Water Quality Control Plan for the San Francisco Bay Basin - *Water Quality Objectives for Bacteria in Marine and Estuarine Receiving Waters*

Dear Richard:

The City of Sunnyvale appreciates the opportunity to submit the following comments regarding the proposed amendments to the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) that would incorporate water quality objectives (WQOs) for Enterococcus bacteria in marine and estuarine waters.

The proposed action would add to the Basin Plan a subset of existing USEPA Enterococcus objectives for marine and estuarine waters used for full body contact recreation (REC-1) consistent with those specified by the existing California Code of Regulations, Title 17, Section 7958 "Bacteriological Standards" (Assembly Bill 411, Statutes of 1997) and the federal BEACH Act of November 16, 2004 "Water Quality Standards for Coastal and Great Lakes Recreation Waters" 69 FR 67217 et seq. also 40 CFR part 131.41; effective date December 16, 2004.

The above cited Enterococcus objectives were originally published by USEPA in 1986 in the "Ambient Water Quality Criteria for Bacteria – 1986 (EPA 440/5-84-002). They were developed to update and replace existing total and fecal coliform criteria. The criteria document (p. 11) states that "*EPA believes that the newly recommended indicators are superior to the fecal coliform group. Therefore, EPA strongly recommends that states begin the transition process to the new indicators. While either E. coli or enterococci may be used for fresh waters, only enterococci is recommended for marine waters.*"

1) Adopt All Four Enterococcus Single Sample Maximum Values in Table 3-1

1) Adopt All Four Enterococcus Single Sample Maximum Values in Table 3-1

The USEPA Enterococcus criteria were developed to be protective of full body contact recreation at designated beach areas based on epidemiological studies relating rates of gastrointestinal illness to levels of specific bacteriological indicators. The 1986 criteria guidance included both a geometric mean and single sample maximum (SSM) values for designated beach waters with different levels of recreational use.

The 1986 criteria guidance was the basis for the 2004 BEACH Act that promulgated bacterial criteria for coastal recreational waters (including San Francisco Bay) and the Great Lakes (i.e. freshwater bacterial criteria). The criteria defined four levels of full body contact recreational use: Designated Beach Area, Moderate Full Body Contact Recreation, Lightly Used Full Body Contact Recreation, and Infrequently Used Full Body Contact Recreation. These same criteria and levels of uses have been included (as guidance) in the Basin Plan since 1986 (in Table III-1A) and currently in the 2007 Basin Plan in Table 3-2 (see Attachment X).

USEPA defined a Designated Beach Area as "those recreation waters that, during the recreation season, are heavily used (based upon a comparison of use within the state) and may have a lifeguard, bathhouse facilities, or public parking for beach access." The proposed BPA would raise the level of protection to that of Designated Beach Area for all of San Francisco Bay (shoreline and offshore). The proposed BPA does not carry forward into Basin Plan Table 3-1 (Bacteriological Water Quality Objectives) the four level of use SSMs. It proposes to only add the Designated Beach Area Enterococcus SSM water quality objective of 104 MPN/100ml and to do so for all marine and estuarine waters, not just heavily used beaches meriting a raised level of protection.

There are only 12 Designated Beach Areas within the Bay (see maps in BPA Staff Report Appendix D). The remainder of the 600 square miles of the Bay is not a Designated Beach Area. Recreational use levels at these designated beaches and otherwise adjacent to and throughout the Bay likely change dramatically depending on the particular location in question (and during different seasons and climatic conditions).

Inclusion of all four level of use SSMs in Table 3-1 and restricting their application to Designated Beach Areas will allow the appropriate level of protection to be matched to the level of use at designated beaches throughout the Region. This will help avoid the potential for higher levels of bacterial control measures being imposed beyond that necessary to protect the level of use in a given area (e.g., via future permit requirements).

This potential use of multiple SSMs is already implied in Basin Plan Section 3.3.1 BACTERIA which states that *"Table 3-2 summarizes U.S. EPA's water quality criteria for water contact recreation based on the frequency of use a particular area receives. These criteria will be used to differentiate between pollution sources or to supplement objectives for water contact recreation."*

Recommendation 1a: Delete the water contact recreation total and fecal coliform objectives from Table 3-1 and incorporate the geometric mean (as proposed) and all four single sample maximum enterococcus values (for differing levels of uses at designated beaches) from Table 3-2 into Table 3-1. Add a footnote to Table 3-1 (and/or the implementation plan) indicating that *"The Enterococcus geometric mean is the WQO for assessing water quality conditions in the San Francisco Bay Region and appropriate SSMs should only be used at Designated Beach Areas depending on level of use, such as when making beach notification and closure decisions or in cases where less than 5 samples were taken over a 30-day period at a particular Designated Beach Area site."*

Recommendation 1b (preferred): As an alternative to Recommendation 1a, delete the existing water contact recreation total coliform, fecal coliform and Enterococcus objectives from the proposed revised Table 3-1. Instead, adopt the entire existing Basin Plan Table 3-2 Enterococcus and E. coli criteria as salt water and fresh water quality objectives. As noted above, these criteria are already in effect through USEPA's adoption of the BEACH act regulations. Furthermore, the State Water Board conducted scoping meetings in October 2008 on statewide adoption of these same USEPA fresh water bacterial objectives for water contact recreation (REC-1) in California. This action would also be consistent with and fulfill the recommended action identified in the 2009 Basin Plan Triennial Review as Project Description 17 "Adopt U.S. EPA Freshwater Contact Recreation Criteria as Objectives" (Triennial Review Appendix B, p. B-17).

2) Delete Table 4-2A and Total Coliform Effluent Limitations in Table 4-2

The proposed BPA would remove the total coliform effluent limitations from Basin Plan Table 4-2 but reincorporate them in a new Table 4-2A. It is acknowledged that it is appropriate for all NPDES discharges to the Bay or inland surface waters that contain sanitary waste to continue, as they have for decades, to include bacteriological effluent limits. However, as USEPA noted above as far back as 1986, total (and fecal) coliform are much poorer pathogen indicators than are Enterococcus and E. coli. We therefore support deletion of total coliform from Table 4-2.

For similar reasons, we see no need for or benefit from the proposed new Table 4-2A. Total coliform organisms have been shown to be a seriously flawed indicator group of organisms since they include soil borne and other organisms from non-human fecal sources. Furthermore, it is redundant, and potentially conflicting, to concurrently impose for POTWs technology based effluent limitations via Table 4-2A and water quality based effluent limits (WQBEL) via Table 3-1. Should exceedances of the bacteriological WQOs ever arise and be associated with POTW discharges, WQBELs can at that point easily be derived for the applicable WQOs in Table 3-1 or Table 3-2 (depending on whether Recommendation 1a or 1b above were adopted) in accordance with the SIP, thereby obviating the need for the Basin Plan to include effluent limits for these constituents.

Addition of Table 4-2A and the associated footnotes (some carried forward from the current Table 4-2) serves to perpetuate the confusion and ambiguity regarding derivation of bacteriological effluent limits that has led in part to this proposed BPA. They should therefore be

eliminated before the Basin Plan Amendment is adopted. Continued inclusion of total coliform effluent limits in Table 4-2 or 4-2A could otherwise result in potential challenges to POTW permits where both total coliform and Enterococcus based effluent limits have not been included.

Recommendation 2: Delete Table 4-2A and its associated footnotes in their entirety and also delete (as proposed) the Total Coliform Effluent Limits in Table 4-2. Also, delete the text preceding Table 4-2 as shown: ~~"Table 4-2A contains both daily maximum and longer-term effluent limitations for bacteriological indicator organisms. All NPDES permits for discharges that contain sanitary waste shall include the applicable effluent limitations from Table 4-2A. The water quality-based effluent limitations in Table 4-2A may be adjusted to account for dilution in a manner consistent with procedures in the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (see footnotes 'a' and 'c' in Table 4-2A.s"~~

3) If Table 4-2A is not deleted, at a minimum, delete portions of Footnote "b" regarding effluent requirements for recycled water production.

The proposed Table 4-2A Footnote "b" states in part that:

"For such discharges, on a case-by-case basis, the Water Board will implement the total coliform effluent limitation in place of the enterococcus effluent limitation. This may occur, for example, when wastewater treatment plants must also meet total coliform limits to achieve water quality objectives for recycled water."

The RWB staff has already addressed the issue that Title 22 recycled water criteria do not apply to NPDES permit regulated surface water discharges. See the November 23, 2009 memo to Sheila K. Vassey, Senior Staff Counsel, State Water Resources Control Board from Bruce H. Wolfe, Executive Officer, SFBRWQCB regarding: Response To California Sportfishing Protection Alliance Petition In The Matter Of Waste Discharge Requirements For The City Of Sunnyvale Wastewater Treatment Plant, Order No. R2-2009-0061, NPDES Permit No. CA0037621, SWRCB/OCC File A-2041(a). Specifically, for sound public policy reasons (i.e., to encourage use of recycled water for appropriate reuse), the staff have rejected that POTWs are or should somehow be required to produce Title 22 unrestricted tertiary recycled water at that same quality (bacteriological and turbidity) for NPDES discharge to surface waters (see Response at pages 3-5:

"It is inappropriate to enforce CCR Title 22 total coliform criteria in a permit for surface water discharge because this regulation applies to recycled water; it does not apply to surface water discharges. . . .Therefore, implementing. . . total coliform effluent limits [based on Title 22 standards] would be overly protective. This unnecessary level of protection would come at the cost of requiring excessive use of chemicals to disinfect and dechlorinate the effluent, unnecessary production of harmful disinfection byproducts such as trihalomethanes, and undesirable public safety concerns associated with chemical handling. . . .

The permit's enterococci limits are therefore appropriate and protective. . . . Enterococci limits are more appropriate than total coliform limits because enterococci are more significantly correlated with human health problems than coliform counts."

Recommendation 3: Delete the following Table 4-2A Footnote "b" text: *This may occur, for example, when wastewater treatment plants must also meet total coliform limits to achieve water quality objectives for recycled water."*

4) Also if Table 4-2A is not deleted, at a minimum, delete Table 4-2A Footnote "b" Text Regarding Imposition of Total Coliform Limits for Shellfish Harvesting Areas

Table 4-2A Footnote "b" states in part that: "*For discharges to receiving waters with the shellfish harvesting beneficial use, or to receiving water designated as freshwater, the Water Board will implement the total coliform effluent limitations.*"

The National Shellfish Sanitation Program (NSSP) 2007 Model Ordinance identifies several classifications of shellfish growing areas defined in large part by the results of site specific sanitary surveys. The Model Ordinance contains a Prohibited Classification that states that "The Authority shall not permit the harvest of shellstock from any area classified as prohibited." The Model Ordinance further states (p. 61) that for:

"(5) Wastewater Discharges. (a) An area classified as prohibited shall be established adjacent to each sewage treatment plant outfall or any other point source outfall of public health significance." The following section (b) provides criteria for determining the size of the prohibited area to be established.

The proposed imposition of a total coliform effluent limitation (in addition to an Enterococcus effluent limitation), to protect shellfish harvesting in areas where that activity is prohibited by the NSSP, would result in POTWs having to significantly increase their levels of disinfection, and incur all the attendant negative environmental impacts noted above (i.e. if having to comply with Title 22 total coliform limits for surface water discharge).

There is limited recent information available as to where in the Bay suitable shellfish growing habitat currently exists and where sustainable quantities of bivalve shellfish exist that could support recreational and/or commercial harvesting. The last know extensive shellfish resource surveys and sanitary surveys to ensure that shellfish harvested would be safe for human consumption were conducted in the late 1970s and early 1980s by the RWB Shellfish Program (see RWB Resolution No. 83-10 "Policy Statement Concerning the Results of the San Francisco Bay Shellfish Program and Measures Needed to Protect Shellfishing as a Beneficial Use of the Bay"). Those surveys found limited areas around the Bay with suitable substrate, public access, acceptable bacterial growing water quality, and numbers of legal size shellfish that would support sustained recreational harvesting.

The June 2007 Ocean Plan Amendments Scoping Document Issue 2 for adoption of a "Fecal Coliform Standard for Shellfish" contains three alternatives. The recommended Alternative, Alternative 2 is to: "Amend the Ocean Plan by adding the DHS fecal coliform standard of 14 organisms per 100 ml for waters where shellfish may be harvested for human consumption, nad amend the Ocean Plan to address non-human sources of indicator bacteria for all beneficial uses." The accompanying analysis also contains the following statement (emphasis added):

"*The standard would not be applicable where shellfish are not harvested for recreational or commercial purposes.*" This recognizes that the SHELL use does not universally exist. The existing definition of the SHELL beneficial use is very broad. The State Water Board (SWB) is in the process of conducting a reassessment of the shellfish harvesting beneficial use definition itself. The scoping document for the May 3, 2010 public scoping meeting states the following:

"The focus has to do with evaluating the use, not the status of the shellfish themselves or water quality. This stems from the fact that bacterial indicators for shellfishing are based on public consumption health standards for commercial growers. These standards are very strict and allow for very little flexibility. This effort will evaluate looking at recreational vs commercial shellfishing uses and whether or not we can differentiate the use." The scoping meeting Public Notice also states the Project Goals include in part to "Better define the geographic extent of recreational shellfish beneficial use" and to "Create flexibility in how shellfish standards for recreational use are implemented by looking at how a Reference System and Antidegradation Approach might apply."

The 2009 Basin Plan Triennial Review Project 6 is to "Evaluate the Shellfish Beneficial Use for San Francisco Bay." The project description refers to the above SWB state-wide shellfish harvesting use study and that "This may result in a refinement of the spatial and temporal patterns of shellfish harvesting uses. This information would be used to subcategorize the SHELL beneficial use of San Francisco Bay for recreational shellfishing."

Given the NSSP Prohibited Classification for shellfish harvesting in the vicinity of POTW outfall, uncertainty as to the extent of shellfish harvesting within the Bay, and the on-going effort of the SWB to revise the definition and application of the SHELL use, it appears inappropriate to impose SHELL based effluent limits in this BPA.

Recommendation 4. If Table 4-2A is not deleted, delete Table 4-2A Footnote "b" text regarding imposition of total coliform limits for discharges to areas with the shellfish harvesting beneficial use. For consistency with the NSSP prohibited classification for shellfish harvesting areas adjacent to POTW outfalls, add the following sentence in italics (from the June 2007 Ocean Plan Amendments Scoping Document cited above) to Footnote b to Table 3-1:

b. Source: National Shellfish Sanitation Program. *The standards would not be applicable where shellfish are not harvested for recreational or commercial purposes.*

5) Additional "Clean-up" Recommendation to Table 4-2: Delete footnote "d" in Table 4-2 for Oil & Grease.

Deletion of footnote "d" (These limitations apply to all treatment facilities) will allow RWB staff the discretion to not include O&G effluent limitations in NPDES permits for POTWs with long periods of consistent compliance with this parameter (i.e. no Reasonable Potential). Similar to changes made to Table 4-2 regarding Settleable Solids, O&G was last a potential compliance concern decades ago prior to the requirement of secondary treatment. More recent SSMP requirements to address FOG has further reduced the already low potential for effluent O&G exceedances (see ERS database). This antiquated effluent limitation no longer provides useful regulatory information for secondary and advanced secondary POTWs. The typical sampling requirement to collect and composite multiple O&G grab samples over the course of a day adds to POTW operating costs without providing water quality benefits.

We appreciate the opportunity to provide these comments. If you have any questions, please contact me at (408) 730 - 7268 or Dr. Tom Hall of EOA at (510) 832 – 2852 x110.

Sincerely,

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