Tri-TAC
Jointly Sponsored by:
League of California Cities
California Association of Sanitation Agencies
California Water Environment Association
Reply to: Jim Colston, OCSD
10844 Ellis Ave., Fountain Valley, CA 92708

September 10, 2010

Charles Hoppin, Chair, and Members
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Attention: Jeanine Townsend, Clerk to the Board
commentletters@waterboards.ca.gov

Via Electronic Mail

Re: Comment Letter – California Ocean Plan, Triennial Review

Dear Chair Hoppin and Members:

The California Association of Sanitation Agencies (CASA) and Tri-TAC appreciate the opportunity to provide comments on the triennial review of the California Ocean Plan (COP). Our associations represent municipal wastewater collection, treatment and water recycling agencies, which have a significant stake in this policy and its proper implementation. We plan to provide brief oral comments at the September 22, 2010 SWRCB public hearing, and these written comments are submitted for your consideration as you move forward with prioritization of the COP amendments.

Comments on Proposed Amendments

We understand from the Notice of Public Hearing that staff is currently preparing amendments for model monitoring, replacing the radioactivity numeric objective, and adopting objectives for salinity/desalination. We support the process to develop amendments for the first two of these items, but we have concerns over the development of the objectives for salinity/desalination. We believe these objectives need to be developed along with a broader policy supporting water recycling.

With ever increasing pressure on water resources in California, from balancing in-stream uses, population increase, and the effects of drought, water providers are interested in developing new water supply projects. Additionally, improvements in the energy efficiency of membrane technology will facilitate the cost-effective development of desalination projects of brackish groundwater,

seawater, as well as recycled water, over the next decade. These are virtually the only new sources of water supply available, and will be essential to meet California's ongoing water needs.

The need to protect California's groundwater aquifers from the impacts of high salinity is a major tenet of the 2009 Recycled Water Policy. The development of the required basin salinity management plans coupled with the need for increased water resources will result in a greater demand for safe ocean disposal of brine. The State and Regional Water Board's approach to permitting of brine disposal will be critical to the success of the salt management planning processes and the ability to meet the recycled water goals you established for California.

There are few viable options for brine disposal other than the ocean so, over the next decade, ocean outfalls that have traditionally been used exclusively for safe disposal of wastewater effluent will increasingly be relied upon to dispose of brine wastes from brackish groundwater treatment, desalination, and recycled water projects. Given the vital need for new water resources and the significant cost of this public infrastructure, it is imperative that California has a clear regulatory approach to brine disposal. The State can support increased water resource production from such facilities by establishing consistent regulations that call for reasonable and representative water quality testing at the end of the ocean outfall, rather than at multiple input points along the outfall, and by establishing that such facilities should not be regulated under the scheme for industrial facilities, but rather in a more appropriate category of municipal water supply facilities.

Also, to encourage the development of needed local water supply sources, the State should avoid the creation of a patchwork of regulatory approaches in various state planning documents, including the current review of the California Ocean Plan. Instead, the State should undertake a separate policy initiative to address brine discharges from wastewater recycling, the de-salting of brackish groundwater, and ocean desalination. The brine policy for wastewater recycling and brackish groundwater desalting should consider the technological and process differences between these beneficial water uses and ocean desalination, as these processes provide new resources with less energy use, no take of marine life associated with water intake, and most significant for a brine policy, less brine produced per gallon treated. Recognizing these differences, a California brine policy can be drafted that adequately protects the environment while providing agencies with certainty that their wastewater recycling and brackish groundwater clean-up facilities can be permitted in a fair and predictable manner.

In the absence of a separate policy, the current narrative objectives in the California Ocean Plan are sufficiently protective of brine discharge impacts to marine communities so the SWRCB should amend the California Ocean Plan to encourage water recycling, proper brine discharge, and recognize the value that existing dischargers bring to the State by allowing brines to be discharged to the ocean without construction of new outfalls for this purpose. Previously, some parties have advocated to the SWRCB for a Categorical or Case-by-Case exception to the COP for Water Recycling. All of these comments point to the need to better address salinity, brine, and water recycling either directly through the COP, adoption of a new policy or by amending the existing Water Recycling Policy.

Prioritization of Issues for Future Amendments to the California Ocean Plan

The following issues are important priorities for future amendments to the COP for the POTW community. POTWs have developed extensive experience with NPDES permitting under the requirements of the COP. Based on this experience, these proposed amendments would address regulatory challenges that we have experienced in the permitting process while maintaining the water quality, and human health and marine life protection that is vital to the COP.

Issue 1 **– Calculation of dilution.**

Our primary request is that the COP include updates of the implementation procedures for determining a mixing zone and identifying the dilution factor to be used in calculating effluent limitations for Table B constituents. The current approach of assuming the absence of ocean currents is not scientifically-based and conflicts with USEPA models as well as other text in the Plan. In limited situations, an assumption of zero currents may be appropriate (limits for the instantaneous maxima objectives), but for the other objectives (daily, 6-month median, 30-day average) currents should be incorporated into the models. Currents obviously exist in the ocean and strongly affect receiving water characteristics. Because currents increase dilution, the assumption of no currents has the effect of unnecessarily decreasing the zone of initial dilution and resulting dilution factor.

The COP specifies that the water quality objectives shall not be exceeded in the receiving water upon completion of initial dilution (III.C.3). The area in which the dilution takes place is also called the mixing zone. The mixing zone and dilution factor are determined using mathematical models (typically those developed by USEPA), and characteristics of the discharge: salinity (receiving water, effluent), temperature profiles, currents, volume, etc.

The dilution factor identified by the model is used in the following equation to calculate effluent limits (Ce).[1]

***Equation 1*: Ce = Co + Dm (Co - Cs)**

where:

Ce = the effluent concentration limit used in the permit

Co = the concentration (water quality objective) to be met at the completion of initial dilution

Cs = background seawater concentration (from COP Table C)

Dm = minimum probable initial* dilution expressed as parts seawater per part wastewater

In Appendix I, *initial dilution* is defined as follows:

> Initial Dilution "the process which results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge.
>
> For a submerged buoyant discharge, characteristic of most municipal and industrial wastes that are released from the submarine outfalls, the momentum of the discharge and its initial buoyancy act together to produce turbulent mixing. Initial dilution in this case is completed when the diluting wastewater ceases to rise in the water column and first begins to spread horizontally.

The point at which the wastewater ceases to rise is influenced by currents. Unfortunately, the use of currents in the models used to calculate dilution is precluded by a provision in the implementation section (III.C.4.d):

> For the purpose of this Plan, minimum initial* dilution is the lowest average initial* dilution within any single month of the year. Dilution estimates shall be based on observed waste flow characteristics, observed receiving water density structure, and **the assumption that no currents, of sufficient strength to influence the initial* dilution process, flow across the discharge structure**. [*emphasis added*]

Ignoring currents conflicts with common sense: obviously currents exist in the ocean and have a major impact on dilution. This proscription on using currents in the model also conflicts with other portions of the COP that assume currents are present. For example, the General Requirements for Management of Waste Discharge to the ocean require that location of waste discharges "*must be*

[1] Equation 1 does not apply to acute toxicity or radioactivity,

determined after a detailed assessment of the oceanographic characteristics and current patterns" to assure that the marine environment is protected (III.A.2.d).

In addition, the assumption that currents are not present conflicts with standard approaches for assessing dilution including the procedures discussed in the *Technical Support Document for Water Quality-based Toxics Control* (EPA, 1991).[2] USEPA also has developed several mathematical models for ocean discharges (Visual Plumes[3]) that take into account current speeds. USEPA requires the use of the Plume models, including currents, for the California offshore oil platforms. For these facilities, the NPDES permit specifies that the dilution factor should be calculated using the locally measured current speed or a default value identified in the permit.[4]

California ocean dischargers have conducted dye studies in conjunction with USEPA and the National Oceanic and Atmospheric Administration (NOAA) under worst case field conditions and calculated nearfield initial dilutions; the results correspond well with the mathematical models using currents in the calculation. Some dischargers are also planning a new monitoring program to provide comprehensive data on marine conditions in the vicinity of the outfall. This data should be assessed and applied to models in as accurate a manner as possible. Consequently, we request that an COP amendment remove the prohibition on the use of currents in models and replace it with an instruction to utilize current scientifically-based modeling approaches, such as those developed by USEPA for marine discharges. The staff effort needed to assess and implement this change should be limited.

Issue 2 **– Dioxin assessment procedures.**

We propose an updating of the COP provisions related to TCDD equivalents (dioxins). COP Table B includes a 30-day average objective of 3.9×10^{-9} for TCDD equivalents. We suggest the triennial review examine the following issues:

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[2] EPA/505/2-90-001 is posted here.
[3] USEPA's Visual Plumes models are available for download.
[4] The General Permit for Oil and Gas Facilities specifies the use of currents in the discharge modeling:

> 1. Determination of the Dilution Ratio Using PLUMES. The permittee shall use site specific values for the following discharge and ambient conditions: …
>
> **Ambient Conditions**. Current speed (median value is acceptable), ambient density at the port, ambient density gradient
>
> **Typical Conditions**. In lieu of using site specific ambient conditions, a permittee may utilize the following typical Southern California OCS ambient conditions in the model**: current speed = 0.115 m/s**, ambient density at discharge port = 1025.6 kg/m3, ambient density gradient = 0.01 kg/m3/m. [*emphasis added*]

Excepted from General Permit No. CAG280000; see pages 47 and 48.

- **Updated *toxicity equivalence factors* (TEF)** - In Appendix I, the COP identifies toxicity equivalence factors to be used in the calculation of TCDD equivalents (which is a sum of the TEFs multiplied by the concentration of the 18 individual congeners). TEFs are used worldwide to assess dioxin risks and have been updated twice since the version currently used in the COP. There is no reason to use the outdated TEFs and the Plan should be modified to include the latest TEFs (and ideally a statement that future TEF updates should be used when developed and approved by USEPA).

  The specific ratios used as TEFs have evolved over time as better risk information was developed, and at least three major sets have been in general use. The COP uses the oldest (1989) set sometimes called the "International" TEFs.[5] In the 2000 California Toxics Rule,[6] USEPA recommended use of the updated 1998 World Health Organization TEFs. In 2007, USEPA recommended the 2005 WHO TEFs for Chemical Release Reporting under EPCRA.[7] We presume that updating to the 2005 TEFs and providing for the automatic use of future updates would not be a significant or controversial modification.

- **Application of *Bioaccumulation Equivalency Factors* (BEF)** - USEPA's assessment of dioxin uptake by biological systems has shown that each dioxin congener's assimilation is individually definable. These bioaccumulation factors, when converted to a 2,3,7,8 -TCDD equivalency, are referred to as bioaccumulation equivalency factors, or BEFs. BEFs account for the biological uptake from the water column of the various dioxin congeners and correct the TEQ-based water quality objectives that would otherwise suggest complete and equal biological assimilation of each dioxin congener. USEPA supports the modification of TEFs using BEFs for dioxin-TEQ. Regarding assessment of dioxins in the Great Lakes, USEPA has stated, "*TEFs and BEFs shall be used when calculating a 2,3,7,8-TCDD toxicity equivalence concentration when implementing both human health noncancer and cancer criteria.*" [40 CFR,

[5] See California Ocean Plan, page 27. Although not stated, these are the 1989 "International" TEFs.

[6] California Toxics Rule (2000): "EPA intends to use the 1998 WHO TEF scheme in the near future. At this point however, EPA will support the use of either the 1989 interim procedures or the 1998 WHO TEF scheme but encourages the use of the 1998 WHO TEF scheme in State programs." [CTR page 31696]

[7] In May 2007, for Chemical Release Reporting under EPCRA, EPA stated "In computing TEQs, the agency will use the WHO 2005 TEF values" and listed the values.

Part 132, Appendix F].[8] We suggest that Appendix I of the COP reference the current BEFs and stipulate their use or the use of any later BEFs approved by USEPA.

- **Reassessment of the objective** – The California Toxics Rule (CTR) establishes a numeric water quality criterion for 2,3,7,8-TCDD of 1.4×10^{-8} µg/L for the protection of human health and proposed that this number be used as the objective for the regulated dioxin/furans using TEQs.[9] The EPA criterion was based on the latest risk data pertaining to the protection of human health via bioaccumulation, but is less restrictive than the older value used in the COP: 3.9×10^{-9} µg/L. The SWRCB should re-consider the appropriateness of the current standard.

***Issue 3* – Site Specific Objectives (*Issue 12 from 2005-2008 Workplan*)**

We believe this issue is still relevant and should be considered during this review. The COP should have the same flexibility as provided to inland waters by the State Implementation Policy.

***Issue 4* – Application of Daily Maxima and Instantaneous Maxima to POTW Discharges**

Table A and Table B in the COP impose limitations for time intervals (daily, instantaneous) contrary to the regulations for permitting publicly owned treatment works (POTW).

The NPDES regulations at 40 CFR 122.45(d) require that all permit limits be expressed, unless impracticable, as both average monthly limits and maximum daily limits for all discharges other than publicly owned treatment works (POTWs), and as average weekly limits and average monthly for POTWs. The only exception is for constituents for which weekly and monthly limitations are demonstrated to be impracticable. However, the Regional Water Boards often impose daily and instantaneous limitations on POTWs that are not in accordance with federal regulations.

No evidence has been presented in permit Fact Sheets indicating that weekly and monthly limitations "are impracticable" as cited by the regulations and that

[8] These regulations discussing BEFs establish the *Great Lakes Water Quality Initiative Implementation Procedures.*

[9] For California waters, USEPA stated specifically, "*if the discharge of dioxin or dioxin-like compounds has reasonable potential to cause or contribute to a violation of a narrative criterion, numeric WQBELs for dioxin or dioxin-like compounds should be included in NPDES permits and should be expressed using a TEQ scheme.*" [65 Fed. Reg. 31682, 31695 (2000)]

these other limitations are necessary. In fact, the standard inclusion of weekly and monthly limitations for these parameters demonstrates that they are not impracticable. Since weekly/monthly limitations are obviously practicable, the Maximum Daily and Instantaneous Maximum limitations are clearly prohibited by regulations.

Some years ago, the Cities of Burbank and Los Angeles challenged their POTW permits and one of the issues was the presence of less than weekly limits. Los Angeles and Burbank brought suit against the SWRCB and the Los Angeles Regional Water Board and the trial court determined that the Boards were in error. The Los Angeles Board and SWRCB appealed portions of the decision, but did not appeal the decision on the less than weekly limitations.

From the decision of the Appeals Court (J. Kitchen; filed 8/14/03)[10]:

> The trial court also sustained the petitions on the grounds that Regional Board failed to adequately show how numerical permit effluent limitations were derived from the narrative criteria; that adequate findings and evidence in the administrative record do not support the effluent limitations; **that the permits improperly impose daily maximum limits rather than average weekly and average monthly limits**; and that the permits improperly specify the manner of compliance. Water Boards do not challenge this latter group of rulings on appeal and acknowledge that they must issue new permits in compliance with these rulings. [*emphasis added*].

The COP should comply with the federal regulations and this binding court decision, and specify that the only limitations applicable to POTWs are the weekly and monthly limitations (with the exception of those demonstrated by substantial evidence in the record to be impracticable).

Issue 5 – Table C (background values)

The Table C values should be updated to reflect the latest data on the background concentration of these constituents in California waters. We understand that the Water Board's ASBS Natural Water Quality Committee[11] will have a similar recommendation. These values are used in the calculation of effluent limits and should reflect actual concentrations in the receiving water.

Issue 6 – Wet Weather Standards

10 Opinion posted here; also see 2002 WL 31867863 (Cal.App. 2 Dist.)
11 This committee was established under State Water Board Resolution 2004-52. More information here.

We suggest the triennial review include an assessment of whether beneficial use designations should be modified to reflect wet and dry period variability, particularly during storm flow conditions. Even with the implementation of best management practices (BMPs), wet weather urban runoff at the point of discharge typically exceeds water quality objectives for many pollutants and the ASBS waste discharge prohibition. The review plan should include an assessment of different approaches to address these intermittent exceedances, including the establishment of a subcategory of wet weather standards. This is an issue that affects all municipal separate sewer systems (MS4s) as well as combined sewer system municipalities.

As part of this effort, the assessment of wet weather standards would also determine whether these standards should explicitly recognize and take into account the physical characteristics and natural variability in watersheds, including climate, meteorology, geology and soils, and hydrologic patterns. This variability can affect compliance with standards even in undeveloped locations. USEPA-sponsored research in California indicates that wet weather stream flows in undeveloped watersheds can also exceed standards.[12]

An initial step in this process is to determine to what extent wet weather runoff exceeds standards. MS4 monitoring and other datasets can be used to make this comparison. For example, USEPA identified pollutants in street dirt in *National Management Measures to Control Nonpoint Source Pollution from Urban Areas, Management Measure 7: Bridges and Highways,* November 2005.[13] This data indicates that even moderate levels of street pollutants incorporated in runoff (e.g., 50 to 100 mg/l TSS) will result in exceedance of objectives.

The issue of compliance of wet weather discharges with standards became more significant with the filing of two lawsuits in March, 2008, by the Natural Resources Defense Council (NRDC) and the Santa Monica Baykeeper against Los Angeles County and the Los Angeles County Flood Control District, and against the City of Malibu. The lawsuits attempt to enforce wet (and dry) weather exceedances of water quality standards (WQS) and discharges to an ASBS. The lawsuits alleged violations of water quality standards extending back five years for a range of constituents, including copper, lead, zinc, cadmium, nickel, aluminum, and bacteria.

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[12] *Quantification of Natural Contributions During Wet and Dry Weather for Derivation of Load Allocations and Numeric Targets*, USEPA Contract No. CP97983901, Eric Stein and Vada Yoon, Southern California Coastal Water Research Project, 7171 Fenwick Lane, Westminster CA 92683, www.sccwrp.org, October 15, 2005.

[13] See Table 7.4: Street dirt chemical quality posted

A Use Attainability Analysis (UAA) may be needed for the implementation of wet weather standards if these standards represent a lessening of requirements. This UAA should be completed on a statewide basis to achieve greater efficiencies and consistency of standards implementation.

It seems reasonable for the SWRCB to develop implementation policies in the COP that address wet weather flows and that would be applicable to MS4 and other wet weather discharges.

Issue 6 - The Ocean Plan needs to address the infeasible prohibition on discharges to ASBS.

Similar to the issue related to wet weather standards is the ASBS Waste Discharge Prohibition in Chapter III.E.1. of the California Ocean Plan, which states:

> Waste* shall not be discharged to areas designated as being of special biological significance. Discharges shall be located a sufficient distance from such designated areas to assure maintenance of natural water quality conditions in these areas.

Because this affects many coastal jurisdictions, we ask that the SWRCB consider alternate permissible means of protecting ASBS against undesirable alterations in natural water quality, such as regulation of these discharges by application of special conditions to the extent necessary to maintain "natural water quality conditions." The State Water Board should, therefore, amend the Ocean Plan to explicitly allow the discharge of stormwater to ASBS and to establish attainable criteria for these discharges. This amendment should be a top priority in order to resolve the current regulatory uncertainty facing hundreds of stormwater discharges to ASBS.

Issue 7 - Compliance schedules

In 2009, the SWRCB made several "non-substantive" changes to the Ocean Plan, including changing the requirements for compliance schedules in ways that may be substantive and should be addressed during the triennial review. The changes related to compliance schedules are the following:

> F. Revision of Waste* Discharge Requirements
> 1. The Regional Board shall revise the waste* discharge requirements for existing* discharges as necessary to achieve compliance with this Plan and shall also establish a time schedule for such compliance.
> ….
> G. Compliance Schedules in National Pollutant Discharge Elimination System (NPDES) Permits

1. Compliance schedules in NPDES permits are authorized in accordance with the provisions of the State Water Board's Policy for Compliance Schedules in [NPDES] Permits (2008).

The Ocean Plan's previous wording allowed compliance schedules for compliance with any requirement imposed under the Ocean Plan. The new language, and its reference to the *Policy for Compliance Schedules,* constrains the use of compliance schedules, only applies to discharges subject to CWA section 301(b)(1)(C), and may adversely impact permits, including those for discharges to ASBS. The State Board should modify this decision and explicitly add a provision to the Ocean Plan to allow use of compliance schedules where immediate compliance with Ocean Plan requirements is demonstrated to be infeasible.

Closing

Please contact the undersigned with any questions regarding these comments. We would be pleased to participate in future efforts to improve the California Ocean Plan.

Bennett Horenstein, Tri-TAC Chair

Roberta Larson, CASA