NORTH SAN MATEO COUNTY SANITATION DISTRICT
a subsidiary of the City of Daly City
333 - 90TH STREET, DALY CITY, CALIFORNIA 94015-1895
(650) 991-8127

September 7, 2010

Jeanine Townsend
Clerk to the Board
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100

SUBJECT: Comment Letter – California Ocean Plan

Dear Ms. Townsend:

The North San Mateo County Sanitation District (District) appreciates the opportunity to comment on the State Water Resources Control Board's (State Water Board) Triennial Review of the California Ocean Plan (Ocean Plan). Based on our review of the Ocean Plan as well as the State Water Board's Scoping Document for Amendment of the Water Quality Control Plan for Ocean Waters of California (Scoping Document), the District submits the following comments.

I. Comments on Ocean Plan

A. Change Water Quality Objectives for Tetra Chloro Dibenzo- p-Dioxin (TCDD) Equivalents to Include Bioaccumulation Equivalency Factors (BEFs)

The District encourages the State Water Board to amend the Ocean Plan with respect to the definition of TCDD equivalents. Specifically, the District recommends that the Ocean Plan be amended to be consistent with the approach taken by the San Francisco Regional Water Quality Control Board (San Francisco Regional Board) in Order R2-2010-0054 (Amendment of Waste Discharge Requirements for Municipal and Industrial Dischargers). In Order R2-2010-0054, the San Francisco Regional Board revised its method for calculating dioxin-Toxic Equivalent (TEQ) to incorporate BEFs. The equation used by the San Francisco Regional Board is as follows:

Dioxin-TEQ = Σ (Cx x TEFx x BEFx) where:
Cx = concentration
Toxic Equivalency Factors (TEF) x = TEF for congener x
(BEF) x = BEF for congener x

The approach adopted by the San Francisco Regional Board followed work done by an expert panel assembled by the San Francisco Estuary Institute. The Panel determined that the calculation of dioxin TEQs without BEFs may mischaracterize the significance of dioxin and furan discharges by two orders of magnitude. In order to adopt meaningful permit limitations, the District recommends that the Ocean Plan be amended accordingly.

B. Exclude Estimated Values Below Minimum Levels When Calculating Dioxin Toxic Equivalency Factors (TEFs)

In addition to including BEFs as part of the dioxin-TEQ calculation, the District recommends that the Ocean Plan also be amended to include compliance language that specifically states that where there are estimated values (i.e., estimated congener concentrations) below the minimum levels for dioxins and furans, such values shall be excluded when calculating dioxin-TEQs for determining compliance. This approach is also consistent with that adopted by the San Francisco Regional Board in Order R2-2010-0054.

C. Clarify Location of Waste Discharge Assessment Language

Section III.A.1.d requires that the location of waste discharges be determined after a detailed assessment of the oceanographic characteristics and current patterns. This provision should be amended to clarify that it does not apply to existing discharges that maintain current discharge locations. Without clarification, it appears that this assessment would be required with each permit renewal even though the discharge location has not changed.

D. Mixing Zones and Definition of Initial Dilution

The definition of initial dilution does not currently allow for the consideration of ocean currents in dilution modeling. Specifically, the definition states that initial dilution is complete when wastewater ceases to rise in the water column and begins to spread horizontally. In other words, the zone of initial dilution by definition cannot include any horizontal movement of wastewater that is spread horizontally from ocean currents. The District believes that this definition is overly stringent because it does not take into account dilution that occurs as a result of ocean currents. When establishing appropriate mixing zones, the Ocean Plan should allow National Pollutant Discharge Elimination System (NPDES) Permittees to consider ocean currents in dilution modeling to set acute and chronic mixing zones.

E. Redefine Chronic Toxicity Calculations

The Ocean Plan currently defines and expresses Toxicity Units, chronic (TUc) as TUc = 100/No Observable Effect Level (NOEL). NOEL is defined to mean the maximum percent effluent or receiving water that causes no observable effect on a test organism, as determined by the result of a critical life stage toxicity test listed in Appendix III, Table III-1. (Ocean Plan at p.25.) The District recommends that the Ocean Plan be amended to redefine chronic toxicity from NOEL to Effect Concentration 25 (EC25) and Inhibition Concentration 25 (IC25) Point Estimates, consistent with NPDES Permittees who discharge into the San Francisco Bay system.

There are recognized problems with the use of the (NOEL) as a regulatory benchmark, which make it inappropriate to define chronic toxicity. The issues of concern include:

1. The typical NPDES chronic whole effluent toxicity (WET) test consists of the evaluation of 5 or 6 specific effluent concentrations that are generally decided upon in an arbitrary manner (e.g., the *a priori* decision to use 5%, 10%, 25%, 50%, and 100% effluent as the test treatments). As a result, and by definition, the NOEL will almost never accurately identify the actual effluent concentration at which there is "no effect," but rather will be limited to the identification of the highest test treatment at which there is no effect. For instance, in the example test concentrations described above, it would be possible to have a slight but statistically significant effect at the 100% concentration for an effluent sample that would have no significant effect at the 90% effluent concentration. However, since the next highest test treatment is 50% effluent, the NOEL will be 50% effluent, and not the true no effect concentration of 90% effluent.

In contrast, point estimates (e.g., the Effect Concentration (EC) and Inhibition Concentration (IC) point estimates) are empirically-derived estimates of the actual effluent concentration at which some magnitude of response occurs. For instance, the kelp IC25 would be the effluent concentration at which there is expected to be a 25% reduction in growth. The EC25 and IC25 can therefore be used to establish a regulatory limit based upon the degree of response that is determined to be acceptable by the regulatory agency (e.g., the EC25 and IC25 are the basis used for calculation of Toxic Units (TU) by the San Francisco Regional Board).

2. The potential NOEL's are limited to the test concentrations being tested. If the test concentrations are not specified, then the concentrations used by various labs may differ, resulting in different NOEL's due strictly to lab practice and not effluent variability.

In contrast, the EC and IC point estimates are independent of the test concentrations used.

3. The statistical methods for determining NOEL's are limited to using only the data for the control treatment and the effluent treatment in question. None of the other test data are used in that statistical comparison. As result, other relevant test data that helps to characterize concentration-response, etc., are not used.

In contrast, the calculation of the EC and IC point estimate use all of the test data to empirically model the concentration-response curve from which the point estimates are derived.

4. The statistical calculation of the NOEL is strongly determined by the inter-replicate variability that is achieved by the testing lab. Statistical power (i.e., the ability to detect "significant" differences between test treatments) is a direct function of inter-replicate variability: the lower the variability, the more powerful the statistics, and the greater the ability to identify an increasingly smaller difference between treatments as being "significant". As a result, for a given effluent sample, the NOEL could be expected to vary from lab to lab (or from test to test), depending upon each lab's ability to achieve precision in each test.

In contrast, the role of inter-replicate variability in concentration-response modeling is limited to the determination of the confidence limits—the determination of an EC or IC point estimate is relatively independent of inter-replicate variability.

Although NOEL is a statistical benchmark that is easy to calculate and easy to understand, most scientists agree that there are serious problems with using NOEL's to interpret toxicity tests. Instead, most scientists agree that a regression-based approach such as the EC and IC point estimation approach is a better alternative. In fact, regulatory programs that have conducted serious workshops and overhauled their statistical methodologies have abandoned the NOEL approach to adopt the regression-based approach. Similarly, the District recommends that the State Water Board consider using the EC25 and IC25 point estimates, and modify the Ocean Plan accordingly.

II. Comments on Scoping Document

A. Fecal Coliform Standard for Shellfish

The Scoping Document identifies as a primary issue for consideration changes to the shellfish harvesting standard. Specifically, three alternatives are proposed. Alternative 1 is the "no action" alternative. Alternative 2 would add the Department of Public Health fecal coliform standard of 14 per 100 milliliters (ml) to waters where shellfish may be harvested. Alternative 3 would add this same standard to all areas. The District is concerned with alternatives 2 and 3.

Alternative 2 would add the 14 per 100 ml standard to waters where shellfish may be harvested. This alternative would also recommend that the Ocean Plan be amended to address non-human sources of indicator bacteria for all beneficial uses. If the State Water Board considers this alternative, the District would encourage the State Water Board to be certain that this standard clearly applies only to those areas where shellfish is actually being harvested for human consumption. Further, it is difficult to comment on the second part of the alternative to address non-human sources of indicator bacteria without a clearer understanding of what is being considered or its intended objective. The Scoping Document merely states that it would consider amending the Ocean Plan to address non-human sources of indicator bacteria for all beneficial uses. This broad statement is not specific enough to provide comments.

Alternative 3 would add the 14 per 100 ml standard to all coastal ocean water and the District would oppose this alternative as it is overly protective and should not be adopted by the State Water Board. It is not necessary to apply the shellfish harvesting standards to coastal ocean waters where shellfish harvesting for human consumption does not occur.

As a final note on this issue, the District would remind the State Water Board that the adoption of any new standard is an adoption of a water quality objective subject to the Porter-Cologne Water Quality Control Act (Porter-Cologne). Porter-Cologne requires the adoption of water quality objectives that will ensure reasonable protection of beneficial uses. (Water Code, §§ 13050 (h), 13241) In determining if a water quality objective provides reasonable protection, the State Water Board, when adopting such objectives, must consider all beneficial uses of the water, the level of water quality conditions that could *reasonably* be achieved, economics, and other factors. (Water Code, § 13241) Thus, if the State Water Board decides to pursue adoption of a new standard, the State Water Board must prepare an appropriate analysis as required by Water Code section 13241, and determine if the

objective is necessary to ensure reasonable protection of the beneficial use. Without this analysis, any new water quality objective would be unlawful.

B. Review Table B Water Quality Objectives

The Scoping Document identifies as an issue the review of Table B water quality objectives, and specifically, it proposes to review the water quality objectives for radioactivity claiming that the existing objectives are not adequate. Four alternatives are provided and the District wants to ensure that the adoption of any new water quality objective is adopted pursuant to Porter-Cologne. As indicated previously, Porter-Cologne requires the adoption of water quality objectives that will ensure reasonable protection of beneficial uses. Until that analysis is conducted, the District is unable to comment on the appropriateness of any water quality objectives.

C. Monitoring and Reporting Requirements

The Scoping Document identifies four issues related to monitoring. In response to these four issues, the District recommends that a Model Monitoring Approach be developed that includes minimum requirements to provide for consistent statewide ocean monitoring. At this time, the District is unaware of the State Water Board's current status with respect to development of a Model Monitoring Approach. In 2006, a draft Model Monitoring program was circulated for comment. However, since then, the State Water Board has provided little information with respect to the status of this effort. If the State Water Board revives its Model Monitoring Approach, the District requests that the State Water Board provide further opportunity for comment.

D. Expression of Metals in Ocean Plan

The Scoping Document identifies this as an issue. In 2009, the State Water Board adopted minor amendments to the Ocean Plan, including clarification that metals in the Ocean Plan are expressed as total recoverable. As we indicated during the 2009 amendment process, the District does not support the use of total recoverable metals as appropriate water quality objectives. Expressing metals as total recoverable ignores current Environmental Protection Agency (EPA) policy regarding the expression of metals objectives. In the California Toxics Rule (CTR), EPA promulgated toxics criteria for California, including criteria for metals. As part of that rule, EPA specifically states, "[i]t is now the Agency's policy that the use of dissolved metal to set and measure compliance with aquatic life water quality standards is the recommended approach, because dissolved metal more closely approximates the bioavailable fraction of the metal in the water column than does total recoverable metal." (Federal Register, vol. 65, no. 97 (May 18, 2000) at

> p. 31690) Considering EPA's statements in the CTR, the State Water Board should revise the Ocean Plan to include metals criteria that are expressed as dissolved, not as total recoverable. Thus, the District recommends that the State Water Board revise the Ocean Plan accordingly to include dissolved metals criteria.

Again, the District appreciates the opportunity to comment. If you have questions, please feel free to contact DWWR Director Patrick Sweetland by phone at (650) 991-8200 or by email at psweetland@dalycity.org.

Sincerely,

Patricia E. Martel
General Manager