April 22, 2004

Comments on Tentative Order and Tentative Self-Monitoring Program for U.S. Navy, Naval Support Activity Waste Water Treatment Plant, Treasure Island, San Francisco County, NPDES No. CA0110116 (*Issued approximately March 22, 2004 for public comment)*

Submitted by the San Francisco Public Utilities Commission
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General Comments (These comments are in addition to the specific comments which are listed later)

1. **Dilution credits.**

   The draft permit limits the allowable dilution for the discharge, contrary to the State Implementation Policy. As a result, the permit must include interim limits because the "final limits" cannot be achieved by the current discharge. Some of the identified final limits may require the future application of tertiary treatment for this small and mainly residential discharge. Neither the Fact Sheet nor the Findings justify this method of determining effluent limitations for this site.

   San Francisco proposes that the limitations in the permit be based on actual dilution. The rationale for this proposal is included in Attachment A to these comments. As discussed in the Attachment, the use of the Board's 10:1 cap on dilution is particularly inappropriate for this discharge because of the co-location of the site used for background samples.

2. **Interim Limits/Compliance Schedules/Final Limits –**

   The draft permit proposes interim limits for copper, mercury, cyanide, DDE, and Dieldrin. The permit and Fact Sheet also include compliance schedules and identify final limits. The proposed compliance schedules and final limits potentially may have a significant financial impact on the Discharger. The interim limits are inappropriate because they are not necessary; attainable final limits based on actual dilution can be used in the permit. Our rationale for each pollutant is summarized below.

   Copper: Interim Limit / 5-year Compliance Schedule/Final Limit – Using real dilution in the calculation of a final limitations, as allowed by the SIP, will produce effluent limitations that are attainable by the discharge. The Fact Sheet identifies a final limit that will likely require the construction of additional treatment unless this proposed final limit is changed.

   Mercury: Interim Limit / 6-year Compliance Schedule/Final Limit[1] - As discussed in comment #1, use of actual dilution rather than assuming no dilution, will mean that interim limits are not required. (See Attachment B for a discussion of additional issues related to mercury.)

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[1] Compliance for mercury is required by March 31, 2010.

Cyanide: Cyanide is a non-persistent pollutant. The available monitoring showed only one positive analysis for this chemical. Use of actual dilution, rather than the 10:1 factor will result in this pollutant not requiring interim limits.

DDE and Dieldrin – These compounds have never been detected in the effluent and are very unlikely to be present. Neither interim nor final effluent limits are appropriate since neither demonstrates "reasonable potential" to exceed standards (see 40 CFR 122.44). The presence of these substances in the waters of San Francisco is not adequate justification for assuming that these substances are in the effluent and that limitations are required. (See the discussion under comment #4)

Comments referenced to specific pages

3. Daily Maxima Limitations

Finding #21.a. (page 12): This finding provides a lengthy discussion of the need to apply daily maximum limits to POTWs. However, the federal regulations [40 CFR 122.45(d)(2)] specifically state that limitations for POTWs shall be specified only in terms of weekly and monthly averages *unless impracticable*. The permit finding cites NPDES regulations, the SIP, and U.S. EPA guidance in the Technical Support Document to provide the basis to establish MDELs, specifically in relation to acute water quality effects, yet it provides no explanation of its rationale. The permit argument is that less than weekly or monthly averages would be *impractical* to protect against "acute toxicity impacts." This interpretation is unsubstantiated. Based on federal regulations, there is no justification to apply daily maximum limits to Oil and Grease or priority pollutants. If the regulations did not intend to include priority pollutants for POTW discharges, this intent would have been specified.

Recent court decisions support the removal of Maximum Daily Effluent Limits in NPDES permits for POTWs. One of the appeal issues in the LA and Burbank POTW permits was the presence of less than weekly limits. LA and Burbank brought suit against the State Water Resources Control Board and the Los Angeles Regional Water Quality Control Board. The trial court determined that the Boards were in error.

From the decision of the Appeals Court (J. Kitchen): *"The trial court also sustained the petitions on the grounds that the Regional Board failed to adequately show how numerical permit effluent limitations were derived from the narrative criteria; the effluent limitations are not supported by adequate findings and evidence in the administrative record; the permits improperly impose daily maximum limits rather than average weekly and average monthly limits; and 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." (2002 WL 31867863 (Cal.App. 2 Dist.)) [emphasis added]*

4. Compliance Schedules, Interim and Final Limits and Mass Loadings for "legacy pesticides"

Findings #29 (page 16), #41 & #51 - Limits and compliance schedules for legacy pesticides: 4,4-DDE, dieldrin. The federal regulations at 40 CFR 122.44(d)(1)(i) specify that permits are required to include WQBELs for all pollutants "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard." These pollutants (4,4-DDE, dieldrin)

have not been detected in the effluent; regardless, the draft permit has determined that these constituents cause, have the reasonable potential to cause, or contribute to an excursion above standards. We understand that this positive RPA determination is based on the presence of these pesticides at background levels in the Bay above standards and an interpretation of the SIP. However, this determination is simply not reasonable and flies in the face of common sense. A positive RPA determination incurs costs (monitoring, analytical method development, pollution prevention, etc.) that are not warranted because there is no evidence that the pollutants are even present. The small volume and domestic nature of this discharge suggest that it would be unlikely that these pollutants would be found in the effluent.

We are also concerned that future monitoring will identify more legacy pesticides and other organics which are present at background levels above Bay standards but which have never been or are not currently detected in the effluent. Our concern is that the pollution prevention program will have to focus on these pollutants to the detriment of real pollutants of concern. Thus, not only are costs incurred with no benefit but also environmental programs will be misdirected to non-problems.

5. Interim Limits for Copper

Finding #29 (page 24) & #45 - Interim Limit / Compliance Schedule/Final Limit for Copper - Compliance with a final limit within 5 years could potentially require the construction of additional treatment. The Regional Board, however, is proposing to remove copper from the list of substances causing impairment in San Francisco Bay, based on the rationale that there is no evidence that copper at current ambient levels represents a threat to water quality. Another option proposed by the Board is the establishment of a site-specific objective. Since there is no assurance that either of these efforts will succeed, the TI facility and the other POTWs may be forced to achieve a copper limitation which, it is generally agreed, is unnecessarily stringent. Use of real dilution avoids this problem

6. Interim Limits for Mercury

Finding #29 (page 16) & #47; also Provision 8 - Interim Limit / Compliance Schedule/Final Limit for Mercury; Mass Emission Limitation – By accepting this draft permit and the proposed final limits, the Discharger is agreeing that it has the responsibility to attain these limits and will initiate the necessary interim activities including, as necessary, planning, designing, and building additional treatment facilities. Consequently, these final limits are very important. Although it has been suggested that the TMDL will provide relief and result in less stringent final limits this outcome is unlikely. (CWA section 303 (d)(4)(A) provides for revisions only in the case of attainment of standards. Attainment for mercury is problematic given that the primary sources are Bay muds and inflow from the delta. It is also not clear that limitation revisions can allow exceedance of standards at the point of discharge.) Use of actual dilution, as discussed in Attachment A will allow the discharge to comply with the final limitations.

7. Interim Limits for Cyanide

Finding #29 (page 16) and #50 – Cyanide: The permit does not include adequate justification for requiring a compliance schedule and an interim limit for cyanide. As stated in the permit, cyanide is a region-wide problem and there are analytical issues associated with matrix interferences. The permit indicates there is evidence to suggest that the cyanide measured in the effluent may be an artifact of the analytical method or a result of analytical interferences.

Furthermore cyanide is not known to cause toxicity in the environment and ambient samples collected in the vicinity of the discharge were non-detect. Although there were two measured cyanide values in the TI effluent, it cannot be determined that those values are verifiable due to possible interferences. Known interferences include sulfides, fatty acids, aldehydes, carbonates, glucose, nitrates, etc. In addition, cyanide monitoring results tend to be ephemeral and difficult to reproduce.

Since cyanide is not a persistent pollutant, and due to the very limited data indicating the presence of cyanide, the permit should not have an effluent limit or compliance schedule at this time. If subsequent monitoring shows it is actually present and a site specific objective is developed for the Bay then a limitation may be appropriate. The potential risk of problems is very low from this pollutant from a low flow discharge into a highly mixed receiving water.

8. Mercury Mass Emissions

Effluent Limitations #47 – *Interim Mass Emission Limitation for M*ercury - page 23 - For Mercury, change the Interim Limit to Design Flow 2.0 MGD (from Discharge Description #5, page 7), rather than the average flow data. The federal regulations specify that mass limits for POTWs must be based on design flow:

> *In the case of POTWs, permit limitations, standards, or prohibitions shall be calculated based on design flow* [40 CFR 122.45(b)]

9. Mercury Source Control Special Project

Finding 47. *Mercury*, item j. (page 23) – Change as follows:

> *Mercury Source Control Strategy*. As a prerequisite to being granted the compliance schedule and interim limits described above, the Discharger will implement <u>the</u> mercury source control <u>special project detailed in PROVISION 3</u> <u>and mercury source control</u> strategies consisting of those ~~detailed~~ <u>to be developed</u> in the Treasure Island Wastewater Pollution Prevention Program.

Then in E. PROVISIONS on page 36 add "and Projects" to the heading:

> **Special Studies <u>and Projects</u>**

On page 37 insert a new #3, and also renumber the remaining Provisions.

> <u>3. Mercury Source Control Special Project</u>
>
> <u>The Discharger will develop a mercury source control special project for fluorescent bulb collection and diversion from the solid waste stream. The Discharger shall submit the project outline to the Board with in six months of permit approval and initiate the project within 12 months of permit approval</u>.

10. Special Studies

Special Studies - Provision E.3 (Ambient Background), E.4 (Cyanide Compliance Schedule), E.5. (Pollution Prevention and Pollutant Minimization Program) (page 43)

Based on the small volume of this discharge, the permit should indicate that independent studies by the Discharger are not required, and that the Discharger will implement findings conducted, reviewed and accepted through regional and independent studies of other Bay Area dischargers.

Some of the studies and special conditions are inappropriate. For example, Provision E.5.c.iii. (page 45) requires an expansion of the Pollution Prevention Program if the dioxin TEQ exceeds the Bay objective (0.014 pg/L). As shown by the Board's dioxin monitoring program stormwater runoff contains in the range of 0.1 to 68 pg/L (e.g., 10% inflow with 10 pg/L will result in an effluent with 1 pg/L which exceeds the standards). Even a very small amount of leakage of stormwater into a sanitary sewer will cause an exceedance. In these situations, it is not appropriate to waste effort amending the Pollution Prevention Program to somehow address this ubiquitous pollutant.

11. Pollution Prevention and Pollutant Minimization Program

Page 38, Provisions Item #5 (to be renumbered as 6.)

As discussed with the Board, we recommend replacing "a." with:

a. The Discharger shall develop and design a Treasure Island Pollution Prevention Program to reduce pollutant loadings to the treatment plant and therefore to the receiving waters within 12 months from the date of adoption of this Permit. Development of the Program shall include a target audience assessment, consisting of identification of POCs and surveying of businesses and the public in order to determine which behaviors or actions might contribute to the disposal of POCs to the wastewater stream. The Treasure Island Pollution Prevention Program shall be developed to include messages and materials developed specifically to address the findings of the target audience assessment.

Comments on the Self Monitoring Program

12. Dioxin

Dioxin– 2,3,7,8-TCDD and Congeners [11]: Effluent is required to be monitored twice per year. Footnote 11 indicates that "Chlorinated dibenzodioxins and chlorinated dibenzofurans shall be analyzed using the latest version of U.S. EPA Method 1613; the analysis shall be capable of achieving one-half of the U.S. EPA MLs and the Discharger shall collect 4-liter samples to lower the detection limits to the greatest extent practicable…

Footnote 1 of the Self-Monitoring Program of this order requires "The Discharger shall use U.S. EPA Methods with the lowest Minimum Levels (MLs) specified in the SIP and described in footnote 1 of effluent limitations B.7, and in the August 6, 2001 Letter." The SIP does not

contain an ML for TCDD-TEQ, and the August 6, 2001 Letter requires the use of the most currently approved U.S. EPA methods for analysis. The most current U.S. EPA method for TCDD analysis is method 1613 that requires a 1-liter volume sample. The August 6, 2001 Letter further states that the Discharger has the option of using the current U.S. EPA method or conducting a special study to reduce detection limits by increasing sample volume size. Since it is clearly recognized that POTWs are not significant contributors of dioxon and given the extremely small volume of effluent from this discharge, any special studies associated with dioxin testing are unwarranted. This Discharger chooses to use U.S. EPA Method 1613 for the analysis of 2,3,7,8-TCDD and Congeners. Footnote 11 of the SMP should delete the second component of the first sentence "~~the analysis shall be capable of achieving one-half of the U.S. EPA MLs and the Discharger shall collect 4-liter samples to lower the detection limits to the greatest extent practicable~~". Compliance testing must retain comparability to existing methods in order to justifiably evaluate individual contributions. Special studies to determine if method analyses require modifications should and have been conducted outside the realm of compliance monitoring. Changes to compliance monitoring analytical requirements should be effected only after method changes have been tested and approved by the U.S. EPA.

13. Acute Toxicity Testing:

Effluent monitoring in this Order is required on a monthly frequency. There have been 94 acute toxicity effluent tests performed on this discharge from June 1996 through March 2004 on a monthly frequency using threespine stickleback and rainbow trout. Aside from one survival percentage of 85% for rainbow trout in December 2000, all other survival results ranged between 90% and 100%. Survival for threespine stickleback, which are not approved for 5th edition testing, was reported at 80% for the same December 2000 sampling event, with all other survival results ranging between 85% and 100%. The Discharger has begun concurrent acute toxicity testing using threespine stickleback, rainbow trout and fathead minnow in March 2004 and will continue to conduct concurrent testing using rainbow trout and fathead minnow once the new Order is approved. Results from the first test showed 100% survival for both rainbow trout and fathead minnow. These results strongly and clearly indicate there is no acute toxicity concern with this effluent.

The Discharger will submit a work plan to address concurrent testing using rainbow trout and threespine stickleback once the new Order is approved. The testing frequency following the concurrent testing results should be reduced to twice per year, once during the wet weather season and once during the dry weather season, as long as the volume of effluent remains below 1 MGD. More frequent monitoring of acute toxicity is not warranted and results in a waste of resources (organisms) for no apparent reason.

Attachment A – Discussion of Appropriate Dilution Factor

The draft permit uses a maximum assumed dilution of ten parts Bay water to one part effluent for deep water discharges when calculating effluent limitations. (This results in a dilution factor D = 9.) This policy is apparently based on the Basin Plan, page 4-11. The Basin Plan acknowledges that actual dilution may be greater than 10:1 but gives several reasons for using the lower number: concern over cumulative mass loading, the detection of toxicity in some effluents, and the difficulty in calculating dilution. The statement in the Plan that limitations "were calculated" (paste tense) using an assumed 10:1 dilution implies that the policy may only apply to the effluent limitations for selected toxic pollutants in Table 4-3. In other words, the text in the Basin Plan is apparently the justification for the Table 4-3 limitations. The Basin Plan does not state that all future permit limitations will be determined this way. Nevertheless, the Board staff have adopted a general policy of not allowing more than 10:1 dilution for all NPDES permit limitations.

This approach conflicts with that in the *State Implementation Policy* (SIP)[2] which allows the use of site-specific information (see SIP pg. 14 – *Completely Mixed Discharges* and pg. 15 - *Incompletely Mixed Discharges*). The SIP explicitly supercedes Basin Plan mixing zone (dilution factor) provisions to the extent that they apply to the standards for priority pollutants

> Except as provided in section 4, this Policy supersedes basin plan provisions to the extent that (1) they apply to implementation of water quality standards for priority pollutants, and (2) they regard the same subject matter as that addressed in this Policy with respect to priority pollutant standards. For example, *the Policy supersedes basin plan mixing zone provisions* to the extent that they apply to implementation of water quality standards for priority pollutants. [*emphasis added*]
> (Excerpted from *State Implementation Policy*, pg. 2):

The SIP applies to the determination of appropriate dilution credits for this permit. The State Board 's position in its proposed remand of the EBMUD NPDES permit is in agreement:

> Numeric objectives exist for each of the disputed pollutants for which the Regional Board applied a 10:1 dilution ratio. Consequently, these pollutants are subject to the Implementation Policy. Since it appears the Regional Board may have mechanically applied the 10:1 Basin Plan dilution ratio without considering the Policy provisions, we remand the permit to the Regional Board for further consideration or clarification.[3]

San Francisco has completed a mathematical model to determine the actual dilution achieved by the Treasure Island outfall. (See the dilution modeling report included with the comments.) It is clear that this very small discharge (<1 mgd) to an area with high currents will have a high instantaneous dilution factor. The 10:1 factor applied by an implied Board policy results in a mixing zone of less than 2 meters. Since the effluent is only in this mixing

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[2] This known formally as the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, 2000

[3] State Water Resources Control Board Workshop – Office of the Chief Counsel, May 2, 2002, ITEM 5; dated April 15, 2002.

zone for a few seconds, the dilution factor is wholly inappropriate for using with effluent limitations based on hourly, daily, or 4-day exposures

Since the SIP, in effect, modifies the Basin Plan, San Francisco proposes that the permit apply a site-specific dilution factor (110:1 with D = 109), as allowed by the SIP, rather than the Regional Board default of 10:1. Our basis for this proposal is the following:

(a) *Lack of Fact Sheet justification* - The Fact Sheet does not provide sufficient justification for the use of the 10:1 dilution rather than the actual dilution as provided for by the SIP. The permit documents do not include any technical rationale or assessment of the fiscal and environmental implications of this BPJ decision. It appears that the Board has simply reverted to its prior policy without any new consideration of actual circumstances as now required by the SIP or any consideration of the site-specific nature of this discharge. In fact, by repeating the standard permit "boilerplate" used in all permits to justify the 10:1 dilution factor, the draft permit clearly shows that site specific considerations were not involved since the boilerplate is incorrect for this discharge (see following discussion).

The Fact Sheet addresses dilution in section 4, f), 2 (pg. 13, 14 of 27). It justifies the 10:1 policy for the reasons listed below. Following each justification is a response indicating why the justification is inapplicable to the Treasure Island discharge.

(1) A far-field background station is appropriate because San Francisco Bay is a very complex estuarine system with highly variable and seasonal upstream freshwater inflows and diurnal tidal saltwater inputs.

Response: The use of a far-field background station is not relevant to the *methodology* for determining the dilution factor. However, it is relevant in the calculation of effluent limits. The use of far-field background station rather than local background values can have a significant effect on calculating the effluent limitations, especially if the local water has higher pollutant concentrations. For most dischargers, the use of Yerba Buena results in a less restrictive effluent limit. This is because most other discharges are in more constrained and less well-flushed locations. If true local background values were used (with higher pollutant concentrations) these discharges would have more restrictive limits since high background concentrations mean that there is less dilution capacity in the receiving water. The Yerba Buena sampling site is well-flushed and thus has relatively low background concentrations.

The Board may be implying that because they have benefited (most) dischargers by giving them a lower background values (as measured at Yerba Buena rather than locally) that it is then appropriate to counterbalance this liberality by being overly restrictive with the dilution factor. Regardless of the intent, this approach is wholly inappropriate for Treasure Island which is adjacent to Yerba Buena. The Yerba Buena data represents the "true" background data for this discharge and does not provide the benefit that other dischargers get by being allowed to use a cleaner site for background values than their own "true" background. In other words, other dischargers benefit for being given a distant (clean) background site to use in their calculations. The Treasure Island site receives no similar benefit.

(2) *Due to the complex hydrology of San Francisco Bay, a mixing zone cannot be accurately established.*

Response: It is not apparent what the Board is trying to say with this statement. By using a 10:1 dilution factor the Board is, in effect, establishing a mixing zone that is approximately 2 meters or less. The EPA models in general use for calculating dilution factors can determine a zone of initial dilution (ZID) where turbulent mixing is caused by a combination of the jetting action of the discharge pipe, and the buoyancy of the freshwater discharge. Using conservative current data and receiving water data, these models are able to determine the ZID and the dilution factor within this ZID. There is no unique factor in SF Bay that prevents this determination.

(3) *Previous dilution studies do not fully account for the cumulative effects of other wastewater discharges to the system.*

Response: It is, of course, possible to redo studies so that they take into account current conditions. Regardless, the cumulative effects of other discharges *are* always taken into account because effluent limitations are calculated using background values. High background values limit the dilution available and result in more restrictive effluent limits. Other wastewater discharges, including stormwater runoff, add pollutants to the Bay. These pollutants are present in the receiving water at the point of discharge. When calculating effluent limits, the cumulative effects are taken into account especially when "true" local background values are used as is the case with the Treasure Island discharge.

(4) *The SIP allows limiting a mixing zone and dilution credit for persistent pollutants (e.g., copper, lead, and nickel).*

Response: The Fact Sheet discussion states that discharges to Bay Area waters are not completely mixed discharges. The SIP is not clear on this topic, however, the one use of this term (applied to discharges) is usually in reference to situations such as a laminar (non-turbulent) discharge to a stream where the effluent does not fully mix with the receiving water. For the Treasure Island discharge, we used an EPA model to calculate the zone of initial dilution which is defined as the limit of turbulent mixing. Within this turbulent mixing zone, the mixing is complete.

Another use of the term is for incompletely mixed receiving waters (see TSD Section 4.3). Although the Bay is not "completely mixed," this situation is not relevant since the calculated dilution factor only pertains to the zone of instantaneous (turbulent) mixing, not subsequent (far-field) Bay mixing due to currents, wind, etc.

The statement regarding copper, lead, and nickel being "persistent" apparently means that full dilution credit would only go to pollutants such as cyanide or ammonia which are not persistent. This approach does not appear to be supported by EPA's *Technical Support Document for Water Quality-based Toxics Control*. While the SIP requires the Board to consider such pollutants in evaluating mixing zones, it does not require that the Board automatically default to at 10:1 dilution factor when the real dilution is much higher. In addition, the

evaluation needs to be documented – what was the site-specific consideration that was given to these pollutants.

In this permit, it is appears that the Board has "mechanically applied" the 10:1 dilution cap since the permit does not use a greater than 10:1 factor for the non-persistent pollutant – cyanide.

(b) *Conservative approach* – The Board finding refers to a "conservative allowance of 10:1 dilution" as apparent justification (Finding 24.c.). However, conservative approaches are already built into the system. For example:

- Dilution takes into account background values and uses the highest background value[4] measured since the start of the Regional Monitoring Program (1992 or 1993 depending on chemical). In reality, these high values over a twelve-year period likely represent extreme situations of high runoff and are not the average background to which the discharges are exposed.

- The standards are based on EPA's criteria which use the maximum bioaccumulation factors for the pollutant (or similar pollutant). These bioaccumulation factors may not be applicable to the biota in the site-specific waterway. (This may explain the lack of bioaccumulation of PAHs in San Francisco Bay fish even though EPA's criteria assume this will occur.)

- Criteria based on human health risk are derived from EPA's IRIS database that uses very conservative approaches when converting animal risk data to human risk assumptions and when extrapolating risks to very low exposures.

Since lower limits have consequences in terms of substantial public expenditures, the basis for the increased conservatism must be identified and defensible.

(c) *Lack of required economic assessment* - Contrary to the requirements of California Water Code section 13241, the Fact Sheet does not assess the environmental and economic consequences of the mechanical application of the 10:1 cap rather than SIP procedures. The Board always uses this 10:1 value, for discharges with high current speeds and those with low current speeds, for those with elevated "true" local background pollutant levels and those, such as Treasure Island, with low background levels. In effect, the use of the 10:1 factor, and the denial of any dilution for bioaccumulative pollutants, has become Board policy without being formally established. As a policy, it needs to be formally assessed, including the Section 13241 economic review.

(d) *Need for technical accuracy* - Permits should be based on the best scientific information available. Since detailed information is available regarding mixing characteristics at the point of discharge, this information should be used.

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[4] Water quality based effluent limitations intended to protect human health from carcinogenic effects are based on average background values since the risk is generally calculated assuming a 60-year exposure.

For the reasons discussed above, we specifically request that the dilution credit (D) as discussed on page 13 of the Fact Sheet be changed to reflect actual dilution. If this is done, the discharge will comply with most or all of the "final" effluent limits and interim limits will not be necessary.

It is inappropriate to propose a compliance schedule and final limits which will potentially require substantial costs for attainment (facility construction, etc.) when the pollutant in question is either unlikely to be causing any environmental problem (copper, based on Regional Board's rationale for removal from 303(d) list) or for which POTWs are a de minimis contributor (mercury). By using real dilution, instead of an artificial cap, this problem is resolved.

See Attachment B for a discussion of the appropriateness of a dilution allowance for mercury

Attachment B – Additional issues related to the mercury limitation

TMDL relief from water quality based effluent limitations

San Francisco is concerned that the upcoming mercury TMDL will not resolve the compliance problems. Regional Board staff have suggested that the completion of the mercury TMDL will mean that the POTWs will not need to comply with the final limits identified in the permits. Their belief is that the TMDL will identify relatively high mass loadings for allocation to POTWs and this will result in less stringent limitations on mercury concentration. We believe this outcome is unlikely. CWA section 303 (d)(4)(A) provides for revisions only in the case of attainment of standards; attainment for mercury is problematic given that the primary sources are Bay muds and inflow from the delta. In other words, the mercury TMDL is unlikely to provide an assurance of attainment of standards and removal of the cause of the listing: elevated tissue levels of mercury. EPA's comment letter on the draft Mercury TMDL reaffirms this conclusion.

Cumulatively, POTWs account for approximately one percent of the mercury loading in San Francisco Bay. The mercury reductions required of the POTWs by the proposed future permit limits will slightly reduce this 1% loading and will have very little or no observable effect on water quality because the POTWs are such a minor source. However, the costs of attaining the reductions will likely require major public expenditures. Consequently, establishment of an interim limit, with compliance schedule, intermediate compliance steps, and a goal of attaining a future limit is not appropriate because it will force the unsubstantiated expenditure of public funds.

Mass limits for mercury and other pollutants (flow basis)

The approach of basing mass limits on actual flow appears contrary to the regulations:

> In the case of POTWs, permit limitations, standards, or prohibitions shall be calculated based on design flow [40 CFR 122.45(b)]

Allowing a dilution factor for mercury

A remaining issue is the whether dilution should be allowed for mercury, which is a bioaccumulative substance. However, the bioaccumulation has been taken into account in the setting of the objective. The criteria for mercury is very low because of its propensity for bioaccumulation. The bioaccumulation factor for the pollutant causes the pollutant to have a much lower objective than it would otherwise. If bioaccumulation were not considered then the criteria would be much higher. Since, bioaccumulation is accounted for in the criteria, there is no need to include another safety factor in disallowing a dilution factor because of the tendency to bioaccumulate.

In addition, San Francisco Bay is not a closed system. The volume of water moving in and out of San Francisco Bay estuary in each tidal cycle represents approximately 24 percent of its total volume [A.N. Cohen, *An Introduction to the San Francisco Estuary* (2000)]; there are two tidal cycles per day. Thus, the Bay has a reasonable turnover. The ambient background concentration is used in the calculation of limits following SIP procedures and therefore any increased concentration due to previous or other discharges is taken into account.

It is necessary to establish for each specific pollutant under consideration whether the requirements of CWA section 303(d) require that mixing zones be disallowed. This position is supported by the decision of the Superior Court of California, County of Sacramento, in *San Francisco BayKeeper v. California State Water Resources Control Board*, July 27, 2000 (Case No. 99CS01929):

> "So long as pollutants in storm water discharges do not cause or contribute to water quality exceedances, the CWA and implementing regulations do not prohibit the discharges even when the receiving waters are already impaired. (See Arkansas v. Oklahoma (1992) 503 U.S. 91. 108, 113-114 (discharges into waterways already degraded in water quality are not banned so long as the discharges have no actual "detectable" adverse effect on the water quality of the waterway)."

Based on this decision, in the absence of detectable adverse effects, there would be no need for interim limits as a proxy for final limits and no requirement for a compliance schedule since the discharge with final limits issued as part of this permit would be in full compliance with the CWA. Mixing zones should be considered as long as it can be demonstrated that the discharge will have no detectable adverse effect on water quality. The Fact Sheet needs to specifically demonstrate the basis of the allowance or denial of a dilution factor for mercury.

Mercury is a serious environmental problem throughout the United States and is the source of more fish consumption warnings than any other pollutant. However, with the apparent exception of the Bay Area, POTWs discharging to marine waters (and possibly most fresh waters) are not required to plan for tertiary treatment. The Board has other options in setting these effluent limitations. Attainment of mercury final limitations based on the objective in the CTR would likely require the construction of additional treatment facilities. However, the expected mercury reductions from all POTWs combined may not produce identifiable benefits. Consequently, the Board should hold in abeyance the implementation of mercury limitations until a Basin-wide mercury strategy is developed.