CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION

NPDES PERMIT NO. CA0110116

ORDER NO. R2-2004-0036

WASTE DISCHARGE REQUIREMENTS FOR:

U.S. NAVY, NAVAL SUPPORT ACTIVITY
TREASURE ISLAND

SAN FRANCISCO COUNTY

ADOPTED: MAY 19, 2004
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REISSUING WASTE DISCHARGE REQUIREMENTS FOR:

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FINDINGS

The California Regional Water Quality Control Board, San Francisco Bay Region, hereinafter called the Board, finds that:

1. *Discharger and Permit Application.* The United States Navy (hereinafter called the Discharger) has applied to the Board for reissuance of waste discharge requirements and a permit to discharge treated wastewater from the Naval Support Activity, Treasure Island, to waters of the State and the United States under the National Pollutant Discharge Elimination System (NPDES).

Facility Description

2. *Facility Location, Service Area, and Population.* The Discharger owns a Wastewater Treatment Plant (the plant), located on the north side of Treasure Island (TI), San Francisco County, California. Sewage system functions are performed by the City and County of San Francisco (City) under a 1997 Cooperative Agreement (CA) between the Discharger and the City. Pursuant to the CA, the City agreed to operate and maintain the utility systems at TI, including the plant, while the Discharger retains ownership of all the utility systems. It is anticipated that ownership of the utility systems, including the plant, will be transferred to the City after the property is conveyed.

   The plant provides secondary-level treatment for domestic wastewater from facilities on Treasure and Yerba Buena Islands (the Islands) located in San Francisco Bay. A location map of the Discharger's facility is included as Attachment A of this Order. Most of the facility has become inactive during the past several years, although several ongoing activities remain at the site. These include rental residential, businesses leases, firefighter training, Coast Guard Base on Yerba Buena Island, and Job Corps facilities. The current population is about 3,000. The facility ultimately is anticipated to be redeveloped by the City's Treasure Island Development Authority. Also, in the future, a pipeline may be constructed to divert wastewater from the islands to other treatment facilities.

3. The U.S. Environmental Protection Agency (U.S. EPA) and the Board have made the determination that this is a major facility.

Purpose of Order

4. This NPDES Order regulates the discharge of effluent from the plant. This discharge is currently governed by the Waste Discharge Requirements specified in Order No. 95-126 (the previous Order) adopted by the Board on June 21, 1995.

Discharge Description

5. *Plant Capacity and Discharge Volume.* The plant has capacity to provide secondary-level treatment for 2.0 million gallons per day (MGD) of domestic wastewater. The plant's peak wet weather design flow is 8.0 MGD. With the reduced population on the Islands, the typical dry weather flows during 2002 were approximately 0.2 to 0.4 MGD. The upcoming redevelopment of the Islands will increase the population that is served by the plant. The City predicts the Islands' population will increase from approximately 3,000 people (current level) to approximately 9,000 people (full build-out). The average dry weather flow will be approximately 1.1 MGD at full build-out.

6. *Discharge Location.* Treated, disinfected, and dechlorinated effluent from the plant is discharged into San Francisco Bay. The effluent is discharged through a submerged diffuser at latitude 37° 49' 50" and longitude 122° 21' 25". The outfall is 400 feet offshore at a depth of 30 feet. The previous Order granted a 10:1 dilution credit. Just prior to Board adoption of this Order, the City submitted a Dilution Study (using U.S. EPA Visual Plume UM3) to model the discharge from this plant. Results included a determination that dilution factors for the zone of initial dilution range from 110 to 270. Due to technical deficiencies within the study, we are unable to grant these factors for dilution. Because a greater dilution credit was not currently justified, dilution will remain 10:1.

Treatment Process Description

7. *Treatment Process.* The Discharger's treatment process consists of screening, grit removal, and primary clarification; secondary treatment by trickling filter; secondary clarification; chlorination; and dechlorination. A process flow diagram is included as Attachment B of this Order.

8. *Solids Treatment, Handling, and Disposal.* Solids removed from the wastewater stream are anaerobically digested prior to disposal or beneficial re-use at an authorized sanitary landfill.

9. Table 1 provides the effluent discharge characteristics based on monitoring data from January 2001 through December 2003 for conventional and non-conventional pollutants, and certain priority pollutants (metals and cyanide).

Table 1. Effluent Discharge Description

Parameter	Average of All Measured Values, including ND[1]	Daily Maximum
BOD_5 (mg/L)	6	23
BOD_5 Removal (%)	97	95[2]
TSS (mg/L)	9	68
TSS Removal (%)	94	89[2]
Settleable Solids (ml/L-hr)	<3	0.0
Oil and Grease (mg/L)	<5[3]	<5
Residual Chlorine (mg/L)	0	0
pH (s.u.)	6.0 (minimum)	8.0
Temperature (°C)	17.7	26.5
Ammonia (mg/L)	0.88	19.42

Parameter	Average of All Measured Values, including ND[1]	Daily Maximum
Total Coliform (mpn/100 ml)	<10 (minimum)	800
Arsenic (µg/L)	2.17	4.62
Cadmium (µg/L)	0.19	1.03
Chromium VI (µg/L)	0.83	2.53
Copper (µg/L)	11.87	21.77
Lead (µg/L)	3.07	13.88
Mercury (µg/L)	0.020	0.0591
Nickel (µg/L)	2.11	5.23
Selenium (µg/L)	0.35	1.07
Silver (µg/L)	0.24	3
Zinc (µg/L)	30.4	67.2
Cyanide (µg/L)	2.94	2.6[4]

BOD_5 = 5-day biochemical oxygen demand; TSS = total suspended solids; s.u. = standard units; ND = nondetect.

[1] ND indicates non detected values and are averaged at half the detection limit, except for BOD_5, TSS, and Oil & Grease, where detection limits are used to calculate the average values.

[2] These values represent the minimum percent removals for BOD_5 and TSS.

[3] Grease & Oil - all ND, detection limit is 5 mg/L

[4] Cyanide - only one value detected, but not quantified.

Treatment Plant Storm Water Discharges

10. *Regulations.* Federal regulations for storm water discharges were promulgated by U.S. EPA on November 19, 1990. The regulations (Title 40 Code of Federal Regulations [40 CFR] Parts 122, 123, and 124) require specific categories of industrial activity (industrial storm water) to obtain an NPDES permit and to implement Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to control pollutants in industrial storm water discharges.

11. *Coverage under Statewide Storm Water General Permit.* The State Water Resources Control Board's (the State Board's) statewide NPDES permit for storm water discharges associated with industrial activities (the General Permit) was adopted on November 19, 1991, amended on September 17, 1992, and reissued on April 17, 1997. Industrial activities on the Islands are covered under the General Permit. All storm water runoff from the plant is treated prior to discharge.

Regional Monitoring Program

12. On April 15, 1992, the Board adopted Resolution No. 92-043 directing the Executive Officer to implement a Regional Monitoring Program for the San Francisco Bay. Subsequent to a public hearing and various meetings, the Board requested major permit holders in this region, under authority of Section 13267 of the California Water Code, to report on the water quality of the San Francisco Bay Estuary. These permit holders, including the Discharger, responded to that request by participating in a collaborative effort, through the San Francisco Estuary Institute (formerly the Aquatic Habitat Institute). This effort is known as the San Francisco Bay Regional Monitoring Program for Trace

Substances (the RMP). The Discharger has agreed to continue to participate in the RMP, which includes collection of data on pollutants and toxicity in water, sediment, and biota of the estuary.

Applicable Plans, Policies, and Regulations

13. Water quality objectives (WQOs), water quality criteria (WQC), effluent limitations, and calculations contained in this Order are based on the statutes, documents, and guidance detailed in Section III of the attached Fact Sheet, which is incorporated here by reference.

Beneficial Uses

14. The beneficial uses for the San Francisco Bay receiving water, as identified in the Board's June 21, 1995 *Water Quality Control Plan San Francisco Bay Basin (Region 2)* (the Basin Plan) (Table 2-3 on p. 2-15), and based on known uses of the receiving waters in the vicinity of the discharge, are as follows:

- Industrial Service Supply
- Industrial Process Supply
- Navigation
- Water Contact Recreation
- Noncontact Water Recreation
- Commercial and Sport Fishing
- Wildlife Habitat
- Preservation of Rare and Endangered Species
- Fish Migration
- Fish Spawning
- Shellfish Harvesting
- Estuarine Habitat

Bases for Effluent Limitations

General Basis

Applicable WQOs

15. The WQOs and WQC applicable to the receiving water of this discharge are from the Basin Plan, the U.S. EPA's May 18, 2000 *Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* (the California Toxics Rule, or the CTR), and U.S. EPA's *National Toxics Rule* (the NTR).

    a. The Basin Plan specifies numeric WQOs for 10 priority toxic pollutants, as well as narrative WQOs for toxicity and bioaccumulation in order to protect beneficial uses. The pollutants for which the Basin Plan specifies numeric objectives are arsenic, cadmium, chromium (VI), copper in fresh water, lead, mercury, nickel, silver, zinc, and total polynuclear aromatic hydrocarbons (PAHs) in salt water. The narrative toxicity objective states in part "[a]ll waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms." The bioaccumulation objective states in part "[c]ontrollable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife,

and human health will be considered." Effluent limitations and provisions contained in this Order are designed to implement these objectives, based on available information.

b. The CTR specifies numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries such as San Francisco Bay, except where the Basin Plan's Tables 3-3 and 3-4 specify numeric objectives for certain of these priority toxic pollutants, the Basin Plan's numeric objectives apply over the CTR (except in the South Bay south of the Dumbarton Bridge).

c. The NTR established numeric aquatic life criteria for selenium, numeric aquatic life and human health criteria for cyanide, and numeric human health criteria for 34 toxic organic pollutants for waters of San Francisco Bay upstream to, and including, Suisun Bay and the Sacramento-San Joaquin Delta. This includes the receiving water for this Discharger.

16. Where numeric effluent limitations have not been established or updated in the Basin Plan, 40 CFR Part 122.44(d) specifies that water quality-based effluent limitations (WQBELs) may be set based on U.S. EPA criteria, supplemented where necessary by other relevant information, to attain and maintain narrative WQC to fully protect designated beneficial uses. The Fact Sheet for this Order discusses the specific bases and rationales for effluent limitations, and is incorporated as part of this Order.

Basin Plan Receiving Water Salinity Policy

17. The Basin Plan states that the salinity characteristics of the receiving water shall be considered in determining the applicable WQOs. Freshwater objectives apply to discharges to waters both outside the zone of tidal influence and with salinities lower than 5 parts per thousand (ppt) at least 75 percent of the time in a normal water year. Marine water objectives shall apply to discharges to waters with salinities greater than 5 ppt at least 75 percent of the time in a normal water year. For discharges to waters with salinities in between these two categories or tidally influenced fresh waters that support estuarine beneficial uses, the objectives shall be the lower of the marine water or freshwater objectives, based on ambient hardness, for each substance (BP, pp. 4–13). For constituents with WQOs specified in the Basin Plan, it is appropriate to use the Basin Plan definition for determining whether the receiving water is fresh water, marine water, or estuarine.

CTR Receiving Water Salinity Policy

18. The CTR states that the salinity characteristics (i.e., freshwater versus saltwater) of the receiving water shall be considered in determining the applicable WQC. Freshwater criteria shall apply to discharges to waters with salinities equal to or less than 1 ppt at least 95 percent of the time in a normal water year. Saltwater criteria shall apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to waters with salinities in between these two categories, or tidally influenced fresh waters that support estuarine beneficial uses, the criteria shall be the lower of the salt- or freshwater criteria (the freshwater criteria are calculated based on ambient hardness), for each substance. In applying CTR criteria, it is appropriate to use the CTR definition for determining whether the receiving water is fresh, marine, or estuarine.

Receiving Water Salinity

19. The receiving waters for the subject discharge are the waters of Central San Francisco Bay. The Board evaluated RMP salinity data (by SCT- Salinity, Conductivity, and Temperature) from the three nearest receiving water stations: Richardson Bay, Point Isabel, and Yerba Buena Island, for the period from February 1993 to August 2001. During that period, the receiving water's minimum salinity was 11.6 ppt, its maximum salinity was 31.6 ppt, and its average salinity was 23.5 ppt. These data are all well above both the Basin Plan and CTR thresholds for salt water; therefore, the reasonable potential analysis (RPA) and limitations in this Order are based on marine or saltwater WQOs/WQC.

Technology-based Effluent Limitations

20. Order effluent limitations for conventional pollutants are technology based. Technology-based effluent limitations are put in place to ensure that full secondary treatment is achieved by the wastewater treatment plant, as required under 40 CFR Part 133.102. Effluent limitations for these conventional pollutants are defined by the Basin Plan. Further, these conventional effluent limits are the same as those from the previous Order for the following constituents:

    - Biochemical oxygen demand (BOD)
    - BOD percent removal
    - Total suspended solids (TSS)
    - TSS percent removal
    - pH
    - Oil and grease, and
    - Total chlorine residual

    The Basin Plan Amendment, adopted by the Board on January 21, 2004, removed the settleable matter (SM) effluent limitations for secondary sewage treatment plants because it was not an appropriate indicator of sewage plants. Although the amendment does not become effective until it is approved by the Office of Administrative Law (OAL), this Order does not impose the SM limits based on the same reasons they were removed from the Basin Plan. Should this change not be approved by the OAL, the Board will amend this Order to reinstate this requirement as appropriate.

Water Quality-Based Effluent Limitations

21. Toxic substances are regulated by WQBELs derived from the Basin Plan, Tables 3-3 and 3-4, the CTR, the NTR, and/or best professional judgment (BPJ) as defined in Section IV of the attached Fact Sheet. WQBELs in this Order are revised and updated from the limits in the previous Order, and their presence in this Order is based on the evaluation of the Discharger's data as described below under the Reasonable Potential Analysis. Numeric WQBELs are required for all constituents that have a reasonable potential to cause or contribute to an excursion above any State water quality standard. Reasonable potential is determined and final WQBELs are developed using the methodology outlined in the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (the State Implementation Plan or the SIP). If the Discharger demonstrates that the final limits will be infeasible to meet and provides justification for a compliance schedule, then interim limits are established, with a compliance schedule to achieve the final limits. Further details about the effluent limitations are given below and in the associated Fact Sheet.

    a. Maximum Daily Effluent Limitations (MDELs) are used in this Order to protect against acute water quality effects. It is impracticable to use weekly average limitations to guard against acute

effects. Although weekly averages are effective for monitoring the performance of biological wastewater treatment plants, the MDELs are necessary for preventing fish kills or mortality to aquatic organisms.

b. NPDES regulations, the SIP, and U.S. EPA's Technical Support Document (TSD) provide the basis to establish MDELs. NPDES regulations at 40 CFR 122.45(d) state:

"For continuous discharges all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall *unless impracticable* be stated as:

(1) Maximum daily and average monthly discharge limitations for all discharges other than publicly owned treatment works; and

(2) Average weekly and average monthly discharge limitations for POTWs." (Emphasis added.)

c. The SIP (p. 8, Section 1.4) requires that WQBELs be expressed as MDELs and average monthly effluent limitations (AMELs).

d. The TSD (p. 96) states a maximum daily limitation is appropriate for two reasons:

i. The basis for the 7-day average for POTWs derives from the secondary treatment requirements. This basis is not related to the need for assuring achievement of water quality standards.

ii. The 7-day average, which could comprise up to seven or more daily samples, could average out peak toxic concentrations and therefore the discharge's potential for causing acute toxic effects would be missed. A maximum daily limitation would be toxicologically protective of potential acute toxicity impacts.

Receiving Water Ambient Background Data Used in Calculating WQBELs

22. Ambient background values are used in the RPA and in the calculation of effluent limitations. For the RPA, ambient background concentrations are the observed maximum water column concentrations. The SIP states that for calculating WQBELs, ambient background concentrations are either the observed maximum ambient water column concentrations or, for criteria/objectives intended to protect human health from carcinogenic effects, the arithmetic mean of observed ambient water concentrations. The RMP station at Yerba Buena Island, located in the Central Bay, has been sampled for most of the inorganic (CTR constituent numbers 1–15) and some of the organic (CTR constituent numbers 16–126) toxic pollutants. Not all the constituents listed in the CTR were analyzed by the RMP during this time.

These data gaps are addressed by the Board's August 6, 2001 Letter titled "Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy" (hereinafter referred to as the Board's August 6, 2001 Letter—available online; see Standard Language and Other References Available Online, below). The Board's August 6, 2001 Letter formally requires the Discharger (pursuant to Section 13267 of the California Water Code) to conduct ambient background monitoring and effluent monitoring for those constituents not currently sampled by the RMP and to provide this technical information to the Board. On May 15, 2003, a group of several San Francisco Bay Region dischargers (known as the Bay Area Clean Water Agencies, or BACWA) submitted a collaborative receiving water study, entitled the *San Francisco*

Bay Ambient Water Monitoring Interim Report. This study includes monitoring results from sampling events in 2002 and 2003 for the remaining priority pollutants not monitored by the RMP. The RPA was conducted and the WQBELs were calculated using RMP data from 1993 through 2001 for inorganics and organics at the Yerba Buena Island RMP station, and additional data from the BACWA *Ambient Water Monitoring Interim Report* for the Yerba Buena Island RMP station. The Discharger may utilize the receiving water study provided by BACWA to fulfill all requirements of the August 6, 2001 letter for receiving water monitoring in this Order.

Constituents Identified on the 303(d) List

23. On June 6, 2003, U.S. EPA approved a revised list of impaired waterbodies prepared by the State. The list (hereinafter referred to as the 2002 303(d) list) was prepared in accordance with Section 303(d) of the Federal Clean Water Act to identify specific waterbodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. Central San Francisco Bay is listed as an impaired waterbody. The pollutants impairing Central San Francisco Bay include chlordane, DDT, diazinon, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, PCBs, dioxin-like PCBs, and selenium. Copper and nickel, which were previously identified as impairing Central San Francisco Bay, were not included as impairing pollutants in the 2002 303(d) list and have been placed on the new Monitoring List.

Dilution and Assimilative Capacity

24. In response to the State Board's Order No. 2001-06, the Board has evaluated the assimilative capacity of the receiving water for 303(d)-listed pollutants for which the Discharger has reasonable potential to cause or contribute to an excursion above any State water quality standard in its discharge. The evaluation included a review of RMP data (local and Central Bay stations), effluent data, and WQOs/WQC. From this evaluation, it is determined that the assimilative capacity is highly variable because of the complex hydrology of the receiving water. Therefore, there is uncertainty associated with the representative nature of the appropriate ambient background data to conclusively quantify the assimilative capacity of the receiving water. Pursuant to Section 1.4.2.1 of the SIP, "dilution credit may be limited or denied on a pollutant-by-pollutant basis...."

    a. For certain bioaccumulative pollutants, based on BPJ, dilution credit is not included in calculating the final WQBELs. This determination is based on available data on concentrations of these pollutants in aquatic organisms, sediment, and the water column. The Board placed selenium, mercury, and polychlorinated biphenyls (PCBs) on the CWA Section 303(d) list. U.S. EPA added dioxin and furan compounds, chlordane, dieldrin, and 4,4'-DDT to the CWA Section 303(d) list. Dilution credit is not included for the following pollutants: mercury, dieldrin, 4,4'-DDE, and dioxins and furans. The following factors suggest that there is no more assimilative capacity in the Bay for these pollutants.

        i. San Francisco Bay fish tissue data show that these pollutants exceed screening levels. The fish tissue data are contained in *Contaminant Concentrations in Fish from San Francisco Bay 1997* (May 1997). Denial of dilution credits for these pollutants is further justified by fish advisories to the San Francisco Bay. The Office of Environmental Health and Hazard Assessment (OEHHA) performed a preliminary review of the data from the 1994 San Francisco Bay pilot study, *Contaminated Levels in Fish Tissue from San Francisco Bay*. The results of the study showed elevated levels of chemical contaminants in the fish tissues. Based on these results, OEHHA issued an interim consumption advisory covering certain fish

species from the Bay in December 1994. This interim consumption advice was issued and is still in effect owing to health concerns based on exposure to sport fish from the Bay contaminated with mercury, dioxins, and pesticides (e.g., DDT).

b. Furthermore, Section 2.1.1 of the SIP states that for bioaccumulative compounds on the 303(d) list, the Board should consider whether mass-loading limits should be limited to current levels. The Board finds that mass-loading limits are warranted for mercury for the receiving waters of this Discharger. This is to ensure that this Discharger does not contribute further to impairment of the narrative objective for bioaccumulation.

c. For nonbioaccumulative constituents, a conservative allowance of 10:1 dilution for discharges to the Bay is necessary for protection of beneficial uses. Limiting the dilution credit is based on SIP provisions in Section 1.4.2. The following outlines the basis for derivation of the dilution credit.

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

   ii. Because of the complex hydrology of the San Francisco Bay, a mixing zone cannot be accurately established.

   iii. Previous dilution studies do not fully account for the cumulative effects of other wastewater discharges to the system.

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

   The main justification for using a 10:1 dilution credit is the uncertainty in accurately determining both ambient background and the mixing zone in a complex estuarine system with multiple wastewater discharges. The detailed rationale is described in the Fact Sheet.

Total Maximum Daily Loads (TMDLs) and Waste Load Allocations (WLAs)

25. The Board plans to adopt Total Maximum Daily Loads (TMDLs) for pollutants on the 303(d) list in Central San Francisco Bay within the next ten years, with the exception of dioxin and furan compounds. For dioxins and furans, the Board intends to consider this matter further after U.S. EPA completes its national health reassessment. Future review of the 303(d) list for Central San Francisco Bay may result in revision of the schedules and/or provide schedules for other pollutants.

26. The TMDLs will establish waste load allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources, and will result in achieving the water quality standards for the waterbodies. Final WQBELs for 303(d)-listed pollutants in this discharge will be based on WLAs contained in the respective TMDLs.

27. The Board's strategy to collect water quality data and to develop TMDLs is summarized below:

    a. *Data collection*—The Board has given the dischargers the option to collectively assist in developing and implementing analytical techniques capable of detecting 303(d)-listed pollutants to at least their respective levels of concern or WQOs. This collective effort may include development of sample concentration techniques for approval by U.S. EPA. The Board will

require dischargers to characterize the pollutant loads from their facilities into the water quality-limited waterbodies. The results will be used in the development of TMDLs, and may be used to update or revise the 303(d) list and/or change the WQOs for the impaired waterbodies including Central San Francisco Bay.

b. *Funding mechanism*—The Board has received, and anticipates continuing to receive, resources from Federal and State agencies for TMDL development. To ensure timely development of TMDLs, the Board intends to supplement these resources by allocating development costs among dischargers through the RMP or other appropriate funding mechanisms.

Interim Limitations and Compliance Schedules

28. Section 2.1.1 of the SIP states:

"the compliance schedule provisions for the development and adoption of a TMDL only apply when: ...(b) the Discharger has made appropriate commitments to support and expedite the development of the TMDL. In determining appropriate commitments, the RWQCB should consider the discharge's contribution to current loadings and the Discharger's ability to participate in TMDL development."

The Discharger agreed to assist the Board in TMDL development through active participation in and contribution to the BACWA. The Board adopted Resolution No. 01-103, on September 19, 2001, authorizing the Executive Officer of the Board to enter into a Memorandum of Understanding with BACWA and other parties to accelerate the development of Water Quality Attainment Strategies (WQAS), including TMDLs, for the San Francisco Bay-Delta and its tributaries.

29. The SIP and the Basin Plan authorize compliance schedules in a permit if an existing discharger cannot immediately comply with a new and more stringent effluent limitation. Compliance schedules for limitations derived from CTR or the NTR WQC are based on Section 2.2 of the SIP, and compliance schedules for limitations derived from Basin Plan WQOs are based on the Basin Plan. Both the SIP and the Basin Plan require the discharger to demonstrate the infeasibility of achieving immediate compliance with the new limitation to qualify for a compliance schedule. The SIP and Basin Plan require the following documentation to be submitted to the Board to support a finding of infeasibility:

- Descriptions of diligent efforts the discharger has made to quantify pollutant levels in the discharge, sources of the pollutant in the waste stream, and the results of those efforts.

- Descriptions of source control and/or pollution minimization efforts currently under way or completed.

- A proposed schedule for additional or future source control measures, pollutant minimization, or waste treatment.

- A demonstration that the proposed schedule is as short as practicable.

For limitations based on CTR or NTR criteria (i.e., copper, cyanide, 4,4'-DDE, and dieldrin), this Order establishes a 5-year compliance schedule as allowed by the CTR and SIP. For limitations based on the Basin Plan numeric objectives (i.e., mercury), this Order establishes a compliance schedule until March 31, 2010. The Basin Plan provides for a 10-year compliance schedule to implement measures to comply with new standards as of the effective date of those standards. This provision has

been construed as authorizing compliance schedules for new interpretations of existing standards (such as the numeric WQOs specified in the Basin Plan) resulting in more stringent limitations than in the previous Order. Since the SIP has been adopted, the Board has newly interpreted these objectives. As a result of applying the SIP methodologies, the effluent limitations for some pollutants are more stringent than the previous Order limits, and compliance schedules may be appropriate for the new limitations for those pollutants. The Board may take appropriate enforcement actions if interim limitations and requirements are not met. The general basis for final compliance dates is included as an attachment to the Fact Sheet.

30. Until final WQBELs or WLAs are adopted for 303(d)-listed pollutants, State and Federal anti-backsliding and antidegradation policies and the SIP require that the Board include interim effluent limitations for them. The interim effluent limitations will be the lower of the current performance or the previous Order's limitations.

    In addition to interim concentration limitations for copper and mercury, this Order establishes an interim performance-based mass limitation to maintain the Discharger's current loading of mercury, a 303(d)-listed bioaccumulative pollutant that has reasonable potential. This interim performance-based mass limitation is based on recent discharge data.

31. On March 5, 2004, the Discharger submitted a feasibility study (the 2004 Feasibility Study), asserting it is infeasible to immediately comply with the WQBELs calculated according to SIP Section 1.4 for copper, mercury, cyanide, 4,4'-DDE, and dieldrin. Board staff conducted a statistical analysis of recent plant performance data with respect to copper and mercury (see the attached Fact Sheet for detailed results of this analysis). Based on that statistical analysis, the Board concurs with the 2004 Feasibility Study for copper and mercury. Since there is only one detected value for cyanide after the Discharger switched to the analytical method with a lower detection limit, Board staff cannot perform a valid statistical analysis to determine feasibility to comply. However, using BPJ, Board staff also concurred that an interim limit for cyanide is necessary. There is infeasibility for immediate compliance with the 4,4'-DDE and dieldrin WQBELs, as both pollutants were not detected in the effluent with method detection limits (MDLs) above the SIP specified minimum levels (MLs), in addition, the MLs are above the WQC for 4,4'-DDE and dieldrin, therefore, immediate compliance cannot be determined at this time. Therefore, this Order establishes compliance schedules for copper, mercury, cyanide, 4,4'-DDE, and dieldrin. The SIP and 40 CFR Part 122.47 require that the Board shall establish interim numeric limitations and interim requirements to control these pollutants. Specific bases for these interim limitations are described in the findings for each pollutant, below. This Order also establishes interim requirements in a provision for development of a Pollution Prevention and Minimization Program to reduce pollutant loadings to the plant, and for submittal of annual reports on this Program.

Antibacksliding and Antidegradation

32. The limitations in this Order are in compliance with the Clean Water Act Section 402(o) prohibition against establishment of less stringent WQBELs for the following reasons:

    (1) For impairing pollutants, the revised final limitations will be in accordance with TMDLs and WLAs once they are established.

    (2) For nonimpairing pollutants, the final limitations are or will be consistent with current State WQOs/WQC.

(3) Antibacksliding does not apply to the interim limitations established under previous Orders.

(4) If antibacksliding policies apply to interim limitations under 402(o)(2)(c), a less stringent limitation is necessary because of events over which the Discharger has no control and for which there is no reasonable available remedy, and/or new information is available that was not available during previous permit issuance.

The interim limitations in this Order are in compliance with antidegradation requirements and meet the requirements of the SIP because the interim limitations hold the Discharger to performance levels that will not cause or contribute to water quality impairment or further water quality degradation.

Specific Basis

Reasonable Potential Analysis

33. As specified in 40 CFR 122.44(d)(1)(i), 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." Using the method prescribed in Section 1.3 of the SIP, the Board has analyzed the effluent data to determine whether the discharge, which is the subject of this Order, has a reasonable potential to cause or contribute to an excursion above a State water quality standard (RPA). For all parameters that have reasonable potential, numeric WQBELs are required. The RPA compares the effluent data with numeric and narrative WQOs in the Basin Plan and numeric WQC from the U.S. EPA Gold Book, the NTR, and the CTR.

RPA Methodology

34. The method for determining reasonable potential involves identifying the observed maximum pollutant concentration in the effluent (MEC) for each constituent, based on effluent concentration data. The RPA for all constituents is based on zero dilution, according to Section 1.3 of the SIP. There are three triggers in determining reasonable potential.

    (1) The first trigger is activated when the MEC is greater than the lowest applicable WQO/WQC, which has been adjusted for pH, hardness (for freshwater WQO/WQC only), and translator data, if appropriate. If the MEC is greater than the adjusted WQO/WQC, then that pollutant has reasonable potential and a WQBEL is required.

    (2) The second trigger is activated if the observed maximum ambient background concentration (B) is greater than the adjusted WQO/WQC (B>WQO/WQC), and either:

        i. The MEC is less than the adjusted WQO/WQC (MEC<WQO/WQC) or

        ii. The pollutant was not detected in any of the effluent samples and all the detection levels are greater than or equal to the adjusted WQO/WQC.

    (3) The third trigger is activated if a review of other information determines that a WQBEL is required even though both MEC and B are less than the WQO/WQC, or effluent and background data are unavailable or insufficient (e.g., all non-detects). A limit is required only under certain circumstances to protect beneficial uses.

RPA Determinations

35. The MECs, WQOs/WQC, bases for the WQOs/WQC, background concentrations used, and reasonable potential conclusions from the RPA are listed in Table 2 for all constituents analyzed. The RPA results for some of the constituents in the CTR were not determined because of the lack of objectives/criteria or effluent data. (Further details on the RPA can be found in the Fact Sheet.)

36. *Summary of RPA Results.* The RPA was based on the effluent monitoring data from January 2001 through December 2003 for metals and inorganic priority pollutants, and from January 1998 through February 2003 for certain organic toxic pollutants. Based on the RPA methodology described above and in the SIP, the following constituents have been found to have reasonable potential to cause or contribute to an excursion above WQOs: copper, lead, mercury, silver, zinc, cyanide, dioxins, 4,4'-DDE, and dieldrin. Based on the RPA, numeric WQBELs are required for these constituents (except for dioxins).

Table 2. Summary of Reasonable Potential Analysis Results

CTR No.	Constituent[1]	WQO/ WQC (µg/L)	Basis[2]	MEC (µg/L)	Maximum Ambient Background Conc. (µg/L)	Reasonable Potential (Trigger Type[3])
2	Arsenic	36	BP	4.62	2.46	No
4	Cadmium	9.3	BP	1.03	0.1268	No
5b	Chromium (IV)	50	BP	2.53	4.4	No
6	Copper	3.73	CTR	21.77	2.45	Yes (Trigger 1)
7	Lead	5.6	BP	13.88	0.8	Yes (Trigger 1)
8	Mercury*	0.025	BP	0.0591	0.0086	Yes (Trigger 1)
9	Nickel	7.1	BP	5.23	3.7	No
10	Selenium*	5.0	NTR	1.07	0.39	No
11	Silver	2.3	BP	3	0.0516	Yes (Trigger 1)
13	Zinc	58	BP	67.2	4.4	Yes (Trigger 1)
14	Cyanide	1.0	NTR	2.6[2]	<0.4	Yes (Trigger 1)
	TCDD TEQ*	1.4×10^{-8}	BP, hh	$<9.5\times10^{-7}$	7.1×10^{-8}	Yes (Trigger 2)
109	4,4'-DDE*	0.00059	CTR, hh	<0.00183	0.000693	Yes (Trigger 2)
111	Dieldrin*	0.00014	CTR, hh	<0.00193	0.000264	Yes (Trigger 2)
	Total PAHs	15	BP	0.155	Not Available	No
	CTR nos. 17–126 except 109 and 111	Various or NA	CTR, hh	Non-detect, less than WQO, or no WQO	Less than WQO or not available	No or undetermined[4]

[1] * Indicates constituents on 303(d) list, dioxin applies to Toxicity Equivalent Factors (TEQs) of 2,3,7,8-TCDD.

Footnotes continued next page

[2] BP = Basin Plan; Basin Plan WQOs are for the protection of saltwater aquatic life.
CTR = California Toxics Rule
NTR = National Toxics Rule
hh = human health

[3] See Finding 34 for the definition of three trigger types.

[4] Undetermined because of the lack of objectives/criteria and/or lack of effluent data (see Table B of the Fact Sheet for full RPA results).

RPA Results for Impairing Pollutants

37. While TMDLs and WLAs are being developed, interim concentration limitations are established in this Order for 303(d)-listed pollutants that have a reasonable potential to cause or contribute to an excursion above the water quality standard. In addition, mass limitations are required for bioaccumulative 303(d)-listed pollutants that can be reliably detected. Constituents on the 303(d) list for which the RPA determined a need for effluent limitations are mercury, 4,4'-DDE (chemically linked to DDT), dieldrin, and dioxins. Final determination of reasonable potential for some other constituents identified on the 303(d) list could not be performed owing to the lack of an established WQO or WQC.

Specific Pollutants

38. *Phenols.* This Order implements the policy and regulations of the CTR and SIP in regard to phenolic compounds. The previous Order contained a monthly average effluent limitation for total phenols of 500 µg/L. The CTR specifies criteria for individual phenolic compounds, which are a subset of total phenols. The previous total phenols limitation may be more restrictive for several phenolic compounds (e.g., phenol and 2,4-dimethylphenol) than the WQBELs calculated from the SIP, owing to their high CTR criteria. However, for most of the phenolic compounds in the CTR, the WQBELs would be more restrictive. Retaining limitations for both total and individual phenolics would potentially limit and count the same pollutants twice. Therefore, this Order follows the requirements of the CTR and SIP in lieu of the Basin Plan limitation because (1) the WQC of the CTR and SIP are generally more restrictive and (2) the concentrations of total phenols in the discharge are historically low. Self-monitoring data from December 2000 through December 2002 show total phenol levels of < 50 µg/L (all nine samples). No reasonable potential, therefore, is shown at this time. This Order requires the Discharger to collect additional data for individual phenolic compounds with a permit reopener to establish limitations, if new data show that there is reasonable potential and limitations are necessary.

39. *Polynuclear Aromatic Hydrocarbons (PAHs).* Because this Order implements the policy and regulations of the CTR, SIP and Basin Plan, reasonable potential is determined for both individual and total PAHs (16 compounds). Effluent data for the individual and total PAHs are available for the period from January 1998 through February 2003.

    a. Individual PAHs - Anthracene was detected at a concentration of 0.005ug/L, which is well below the CTR WQC of 110,000 ug/L. The Discharger is required to collect data for all individual PAH constituents in the effluent and the receiving water, as noted in Provision E.2. of this Order. When these data become available, the Board will reevaluate reasonable potential for PAH compounds and determine the need for effluent limitations, if appropriate.

b. Total PAHs - The Basin Plan contains a WQO for total PAHs for the protection of saltwater aquatic life of 15 µg/L, as a 24-hour average. The MEC for total PAHs was 0.155 ug/L, which is well below the Basin Plan WQO. Because there is no reasonable potential for total PAHs, there is no total PAH limitation in this Order.

40. *Dioxin*

a. The CTR establishes a numeric human health WQC of 0.014 picogram per liter (pg/L) for 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD) based on consumption of aquatic organisms. The preamble of the CTR states that California NPDES permits should use toxicity equivalents (TEQs) where dioxin-like compounds have a reasonable potential with respect to narrative criteria. In U.S. EPA's National Recommended WQOs, December 2002, U.S. EPA published the 1998 World Health Organization Toxicity Equivalence Factor (TEF)[1] scheme. In addition, the CTR preamble states U.S. EPA's intent to adopt revised WQC guidance subsequent to their health reassessment for dioxin-like compounds. The SIP applies to all toxic pollutants, including dioxins and furans. The SIP requires a limitation for 2,3,7,8-TCDD, if a limitation is necessary, and requires monitoring for a minimum of 3 years by all major NPDES dischargers for the other 16 dioxin and furan compounds.

b. The Basin Plan contains a narrative WQO for bioaccumulative substances:

"Many pollutants can accumulate on particulates, in sediments, or bioaccumulate in fish and other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered."

This narrative WQO applies to dioxin and furan compounds, based in part on the consensus of the scientific community that these compounds associate with particulates, accumulate in sediments, and bioaccumulate in the fatty tissue of fish and other organisms.

c. U.S. EPA's 303(d) listing determined that the narrative objective for bioaccumulative pollutants was not met because of the levels of dioxins and furans in the fish tissue.

d. The Discharger has monitored for dioxins and furans. The limited data set is all nondetect, although all detection limits have been above the WQC. As shown in Table 2, 2002–2003 ambient receiving water quality data provided in the May 15, 2003 BACWA report show TCDD TEQ levels exceeding the WQC; therefore, there is a reasonable potential for TCDD TEQ.

41. *4,4'-DDE and Dieldrin*

a. Board staff could not determine MECs for 4,4'-DDE and dieldrin because the effluent data consisted of all nondetect values, and all the detection limits were reported higher than the WQC (Section 1.3 of the SIP). The Board conducted the RPA by comparing the WQC with RMP

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[1] The 1998 WHO scheme includes TEFs for dioxin-like PCBs. Since dioxin-like PCBs are already included within "Total PCBs," for which the CTR has established a specific standard, dioxin-like PCBs are not included in this Order's version of the TEF scheme.

ambient background concentration data gathered using research-based sample collection, concentration, and analytical methods. This analysis concluded that the background concentrations are greater than the WQC and, therefore, that 4,4'-DDE and dieldrin have a reasonable potential, and numeric WQBELs are required. Although 4,4'-DDE maximum background data are questionable owing to blank contamination, these data were used to evaluate the reasonable potential for 4,4'-DDE, based on the following considerations: (1) other RMP monitoring data from stations close to the Discharger's outfall show elevated 4,4'-DDE concentration (e.g., Pinole Point station); (2) 4,4'-DDE in fish tissue in the Bay has exceeded the fish advisory level; and (3) elevated 4,4'-DDE levels have also been observed at the stations located in the estuarine portion of the Bay (such as San Pablo Bay, Sacramento River stations, and the like).

b. The current 303(d) list includes the Bay as impaired for dieldrin and DDT; 4,4'-DDE is chemically linked to the presence of DDT. The Board intends to develop TMDLs that will lead to the overall reduction of dieldrin and 4,4'-DDE. The WQBELs specified in this Order may be changed to reflect the WLAs from this TMDL. Ongoing studies are investigating the feasibility and reliability of different methods of increasing sample volumes to lower the detection limits for pesticides. If analytical methodologies improve and the detection levels decrease to a point that show discharge concentrations above the limitations in this Order, the Board will reevaluate the Discharger's feasibility to comply with the limitations and determine the need for a compliance schedule and interim performance-based limitations at that time. Since dieldrin and 4,4'-DDE are both bioaccumulative and on the 303(d) list owing to fish tissue concentrations, there is no assimilative capacity, and no dilution credit was allowed in the final limitation calculations.

42. *Other Organics.* The Discharger has performed sampling and analysis for most of the organic constituents listed in the CTR. This data set was used to perform the RPA. The full RPA is presented as an attachment in the Fact Sheet. In some cases, reasonable potential cannot be determined because detection limits are higher than the lowest WQC, and/or ambient background concentrations are not available. The Discharger will continue to monitor for these constituents in the effluent and the receiving water using analytical methods that provide the best feasible detection limits. When additional data become available, further RPA will be conducted to determine whether to add numeric effluent limitations to the Order or to continue monitoring.

43. *Effluent Monitoring.* This Order does not include effluent limitations for constituents that do not show a reasonable potential, but continued monitoring for these pollutants is required by Provision E.2. of this Order. If concentrations of these constituents increase significantly or if constituents are detected in the effluent at levels above the applicable WQOs/WQC, the Discharger will be required to investigate the source of the increases and establish remedial measures, if the increases result in a reasonable potential to cause or contribute to an excursion above the applicable WQO/WQC.

44. *Permit Reopener.* This Order includes a reopener provision to allow numeric effluent limitations to be added or deleted for any constituent that exhibits or does not exhibit, respectively, reasonable potential. The Board will make this determination based on monitoring results.

Development of Specific Effluent Limitations

45. *Copper*

a. *Copper WQOs.* The saltwater criteria for copper in the CTR are 3.1 µg/L for chronic protection and 4.8 µg/L for acute protection. Included in the CTR are translator values to convert the dissolved criteria to total criteria. The Discharger may also perform a translator study to determine a more site-specific translator, as allowed by the SIP (Section 1.4.1). Using the CTR translator of 0.83, translated criteria of 3.73 µg/L for chronic protection and 5.8 µg/L for acute protection were used to determine reasonable potential and calculate effluent limitations.

b. *RPA Results.* This Order establishes effluent limitations for copper because the 21.77 µg/L MEC exceeds the governing WQC of 3.73 µg/L, demonstrating reasonable potential by Trigger 1, above.

c. *Water Quality-based Effluent Limitations.* The copper WQBELs calculated according to SIP procedures are 20.4 µg/L maximum daily (MDEL) and 13.8 µg/L average monthly (AMEL).

d. *Immediate Compliance Infeasible.* The March 5, 2004, Feasibility Study asserts the Discharger cannot immediately comply with these WQBELs. Board staff statistically analyzed the Discharger's effluent data from January 2001 through December 2003 and determined that the assertion of infeasibility is substantiated for copper (see Section IV.A.6 and Table D of the attached Fact Sheet for detailed results of the statistical analysis).

e. *Interim Performance-based Effluent Limitation (IPBL).* Because it is infeasible for the Discharger to immediately comply with the copper WQBELs, an IPBL is required. Board staff conducted a statistical analysis of recent plant effluent data. Historically, IPBLs have been referenced to the 99.87th percentile value of recent effluent data. Statistical analysis indicates that the 99.87th percentile of the plant's recent copper effluent data is 25 µg/L. The previous Order included a WQBEL of 37 µg/L as a daily average, which is less stringent than the 99.87th percentile of the recent effluent data. Therefore, 25 µg/L is established in this Order as the interim effluent limitation, expressed as a daily maximum. Because the Discharger samples only once per month for copper, when determining compliance with the daily average it is equivalent to daily maximum.

f. *Plant Performance and Attainability.* During the period January 2001 through December 2003, the plant's effluent concentrations were in the range of 8.1 µg/L to 21.77 µg/L (39 samples). Statistical analysis of the effluent data shows that it is expected that the Discharger can comply with the interim limitation for copper.

g. *Term of Interim Limitation.* The copper interim effluent limitation shall remain in effect until July 31, 2009, or until the Board amends the limitations based on a copper site-specific objective (SSO).

h. *Antibacksliding/Antidegradation.* Antibacksliding and antidegradation requirements are satisfied, since the effluent limit is more stringent than the previous Order limit.

46. *Lead*

a. *Lead WQOs.* To protect saltwater aquatic life, the Basin Plan specifies WQOs for lead of 5.6 µg/L for chronic protection (as a 4-day average) and 140 µg/L for acute protection (as a 1-hour average).

b. *RPA Results.* This Order establishes effluent limitations for lead because the 13.88 µg/L MEC exceeds the governing WQO of 5.6 µg/L, demonstrating reasonable potential by Trigger 1, above.

c. *WQBELs.* The lead WQBELs calculated according to SIP procedures are 89 µg/L as MDEL and 36 µg/L as AMEL.

d. *Plant Performance and Attainability.* During the period January 2001 through December 2003, the plant's effluent concentrations were in the range of <0.99 to 13.88 µg/L (39 samples). Statistical analysis of the effluent data shows that it is feasible for the Discharger to comply with the WQBELs for lead.

e. *Antibacksliding/Antidegradation.* The previous Order contained a WQBEL of 53 µg/L as a daily average limitation. This number is lower than the calculated MDEL, above, but is higher than the AMEL. Because the SIP derived WQBELs are based on the same criterion as the previous Order limit, they are equally protective and may be more stringent considering the monthly monitoring frequency required in this permit. Therefore, the antibacksliding and antidegradation requirements are satisfied.

47. *Mercury*

a. *Mercury WQOs.* Both the Basin Plan and the CTR include objectives and criteria for mercury in the receiving water. The Basin Plan specifies objectives for the protection of aquatic life of 0.025 µg/L for chronic protection (as a 4-day average) and 2.1 µg/L for acute protection (as a 1-hour average). The CTR specifies a long-term average criterion for protection of human health of 0.051 µg/L.

b. *RPA Results.* This Order establishes effluent limitations for mercury because the 0.0591 µg/L MEC exceeds the governing WQO of 0.025 µg/L, demonstrating reasonable potential by Trigger 1, above.

c. *WQBELs.* The mercury WQBELs calculated according to SIP procedures are 0.039 µg/L as MDEL and 0.021 µg/L as AMEL.

d. *Immediate Compliance Infeasible.* The March 5, 2004, Feasibility Study asserts the Discharger cannot immediately comply with the mercury WQBELs. Board staff statistically analyzed the Discharger's effluent data from January 2001 through December 2003 and determined that the assertion of infeasibility is substantiated for mercury (see Section IV and Table D of the attached Fact Sheet for detailed results of the statistical analysis).

e. *IPBL.* Because it is infeasible that the Discharger will immediately comply with the mercury WQBELs, this Order establishes a mercury IPBL of 0.087 µg/L. The Board considered a 2001 staff report that identified two statistically derived interim performance-based effluent limitations for mercury—0.023 µg/L for advanced secondary treatment plants and 0.087 µg/L for secondary

treatment plants. Since the Discharger operates a secondary treatment plant, the appropriate IPBL is 0.087 µg/L, expressed as a monthly average. The previous Order included a mercury effluent limitation of 0.21 µg/L as a monthly average and 1 µg/L as a daily average. The IPBL is more stringent than the previous Order limits and is established as the IPBL in this Order.

f. *Interim Mercury Mass Emission Limitation.* In addition to the pooled performance-based mercury effluent limit, this Order establishes an interim mass-based mercury effluent limitation of 0.0058 kg/month. This limitation is calculated based on the WQO of 0.025 ug/L and the dry weather design capacity of the WWTP (2 mgd), and applies only during the dry weather season (May through October). The previous Order did not include a mass-based effluent limitation for mercury. The mass-based effluent limitation in this Order, 0.0058 kg/month, maintains current loadings and is consistent with state and federal antidegradation and antibacksliding requirements.

g. *Mercury Mass Emission Limitation Based on Design Capacity.* The Board has determined that the mass-based limitation calculated as described in the previous finding is appropriate for this Discharger for the following reasons: (1) recent monitoring flow data show that the WWTP is operating at greatly reduced flows relative to design capacity. These flow levels reflect the Islands' reduced population size due to the fact the facility is in transition between military base closure and civilian reuse and redevelopment, (2) the Discharger will continue to identify and, to the extent feasible, address mercury sources under its pollution prevention program, and (3) the interim mass limitation based on the design flow will preclude any significant increases in mass loadings from the WWTP.

h. *Mercury TMDL.* This mass-based effluent limitation maintains current loadings until a TMDL is established. The final mass-based effluent limitation will be based on the WLA derived from the mercury TMDL.

i. *Plant Performance and Attainability.* During the period January 2001 through December 2003, the Discharger's effluent concentrations ranged from 0.0065 µg/L to 0.0591 µg/L (35 samples). All 35 samples were below the interim limitation of 0.087 µg/L. It is therefore expected that the plant can comply with the interim limitation of 0.087 µg/L for mercury.

j. *Term of IPBL.* The mercury IPBL shall remain in effect until March 31, 2010, or until the Board amends the limitations based on the WLA in the TMDL. During the next permit reissuance, Board staff may, however, reevaluate the mercury IPBL.

k. *Mercury Source Control Strategy.* As a prerequisite to being granted the compliance schedule and interim limits described above, the Discharger will implement the mercury source control special project detailed in Provision E.3 and mercury source control strategies consisting of those to be developed in the Treasure Island Wastewater Pollution Prevention Program. This should benefit overall mercury loadings to the Bay by reducing tube breakage during household garbage collection, which contributes mercury to storm runoff and the atmosphere.

l. *Expected Final Mercury Limitations.* The final mercury WQBELs and the interim mass emission limitation will be revised to be consistent with the WLA assigned in the adopted mercury TMDL. Based on the June 30, 2000 Board staff report titled *Watershed Management of Mercury in the San Francisco Bay Estuary: Total Maximum Daily Load Report to U.S. EPA*, municipal sources are a very small contributor of the mercury load to the Bay. Because of this, it is unlikely that the TMDL will require reduction efforts beyond the source controls required by this Order.

m. *Antibacksliding/Antidegradation.* The antibacksliding and antidegradation requirements are satisfied since the interim effluent limit is more stringent than the previous Order limits. The previous Order does not contain a mass emission limit; therefore, the antibacksliding and antidegradation rule does not apply to the mass limit.

48. *Silver*

a. *Silver WQOs.* To protect saltwater aquatic life, the Basin Plan specifies a WQO for silver of 2.3 µg/L for acute protection (as an instantaneous maximum).

b. *RPA Result.* This Order establishes effluent limitations for silver because the 3 µg/L MEC exceeds the governing WQO of 2.3 µg/L, demonstrating reasonable potential by Trigger 1, above.

c. *WQBELs.* The silver WQBELs calculated according to SIP procedures are 22 µg/L as MDEL and 7.3 µg/L as AMEL.

d. *Plant Performance and Attainability.* During the period January 2001 through December 2003, the plant's effluent MEC for silver was 3 µg/L. Board staff conducted a statistical analysis, and the results showed that the Discharger can comply with the WQBELs for silver (see the Fact Sheet for detailed results of this analysis).

e. *Antibacksliding/Antidegradation.* The previous Order contained a WQBEL for silver of 23 µg/L as a daily average limitation. The new WQBELs are more stringent than this previous Order limit. Therefore, the antibacksliding and antidegradation requirements are satisfied.

49. *Zinc*

a. *Zinc WQOs.* To protect saltwater aquatic life, the Basin Plan specifies objectives for zinc of 58 µg/L for chronic protection (as a 24-hour average) and 170 µg/L for acute protection (as an instantaneous maximum).

b. *RPA Results.* This Order establishes effluent limitations for zinc because the 67.2 µg/L MEC exceeds the governing WQO of 58 µg/L, demonstrating a reasonable potential by Trigger 1, above.

c. *WQBELs.* The zinc WQBELs calculated according to SIP procedures are 740 µg/L as MDEL and 490 µg/L as AMEL.

d. *Plant Performance and Attainability.* During the period January 2001 through December 2003, the plant's effluent concentrations were in the range of 17.2 to 67.2 µg/L (39 samples). Board staff conducted a statistical analysis, and the results showed that the Discharger can comply with the WQBELs for zinc (see the Fact Sheet for detailed results of this analysis).

e. *Antibacksliding/Antidegradation.* The previous Order contained a WQBEL of 580 µg/L as a daily average limitation. This number is lower than the calculated MDEL, above, but is higher than the AMEL. Because the SIP derived WQBELs are based on the same criterion as the previous Order limit, they are equally protective and may be more stringent considering the monthly monitoring frequency required in this permit. Therefore, the antibacksliding and antidegradation requirements are satisfied.

50. *Cyanide*

a. *Cyanide WQC.* The NTR includes WQC that govern cyanide for the protection of aquatic life in surface water. The NTR specifies the saltwater Criterion Maximum Concentration (CMC) and Criterion Chronic Concentration (CCC) of 1 µg/L. These CMC and CCC values are below the presently achievable reporting limits (range from about 3 to 5 µg/L).

b. *RPA Results.* This Order establishes effluent limitations for cyanide because the 2.6 µg/L MEC exceeds the governing WQC of 1 µg/L, demonstrating a reasonable potential by Trigger 1, above

c. *WQBELs.* The cyanide WQBELs calculated according to SIP procedures are 6.4 µg/L MDEL and 3.2 µg/L AMEL.

d. *Immediate Compliance Infeasible.* The March 5, 2004, Feasibility Study asserts that the Discharger cannot immediately comply with these WQBELs. During the January 2001 through December 2003, the Discharger's effluent monitoring data resulted in only one detected value out of 12 samples for cyanide. This one detection was made after the Discharger switched to an analytical method with a lower detection limit. The Board finds this small number of detected data precludes any meaningful statistical evaluation to determine feasibility to comply or to calculate an interim performance-based limit. Until sufficient effluent and background data is collected, an interim limit is necessary. As the previous Order includes a cyanide effluent limit of 10 µg/L as a daily average limit, this limit is retained as the interim limit. This Order contains a provision requiring the Discharger to participate in a regional discharger-funded effort to conduct a study for development of a SSO.

e. *Term of Interim Effluent Limitation.* The cyanide interim effluent limitation shall remain in force until July 31, 2009. Cyanide is a regional problem, and a national research study sponsored by the Water Environment Research Foundation (WERF) is exploring its potential sources. The outcome of this research may affect the Discharger's limits in the future. Therefore, based on this new data or SSO, during the next permit reissuance the Board may re-evaluate the cyanide interim effluent limitation and compliance deadline.

f. *Plant Performance and Attainability.* During the period January 2001 through December 2003, the MEC for cyanide was 2.6 µg/L, all other 11 samples were non-detect at method detection limits of 10, 5, and 0.4 µg/L, respectively, which are all below the interim limit of 10 µg/L. Therefore, it is expected that the Discharger can comply with this interim limit.

g. *Anti-backsliding/Anti-degradation.* The anti-backsliding/anti-degradation requirements are satisfied as the interim limit is unchanged from that of the previous Order.

51. *4,4'-DDE and Dieldrin*

a. *WQC.* In the CTR, the lowest criteria for 4,4'-DDE and dieldrin are the human health values of 0.00059 µg/L and 0.00014 µg/L, respectively.

b. *RPA Results.* This Order establishes limitations for 4,4'-DDE and dieldrin because the ambient background concentrations (0.000693 µg/L and 0.000264 µg/L, respectively) exceed the governing WQC of 0.00059 µg/L and 0.00014 µg/L, respectively, demonstrating a reasonable potential by Trigger 2, above.

c. *WQBELs.* The 4,4'-DDE and dieldrin WQBELs calculated according to SIP procedures are 0.00059 µg/L as AMEL and 0.00118 µg/L as MDEL for 4,4'-DDE, and 0.00014 µg/L as AMEL and 0.00028 µg/L as MDEL for dieldrin.

d. *Immediate Compliance Infeasible.* Compliance with the final WQBELs cannot be determined at this time as the MLs for 4,4'-DDE and dieldrin identified in Appendix 4 of the SIP, are higher than the final calculated WQBELs.

e. *Interim Effluent Limitations.* The interim limitations are established at the respective MLs. The interim limitations are as follows: 4,4'-DDE is 0.05 µg/L and dieldrin is 0.01 µg/L expressed as MDELs.

f. *Plant Performance and Attainability.* Self-monitoring effluent data are available from September 1999 through February 2003. Neither pollutant was detected in the effluent in any of the samples (11 samples).

g. *Term of Interim Effluent Limitations.* The 4,4'-DDE and dieldrin interim effluent limitations shall remain in effect until July 31, 2009, or until the Board amends the limitations based on additional data or the WLA in the TMDL.

52. *Dioxin TEQ*

a. *Dioxin WQC.* The CTR establishes a numeric human health WQC of 0.014 pg/L for 2,3,7,8-TCDD based on consumption of aquatic organisms. The preamble of the CTR states that California NPDES permits should use TEQs where dioxin-like compounds have reasonable potential with respect to narrative criteria. The preamble further states that U.S. EPA intends to use the 1998 World Health Organization TEF scheme in the future and encourages California to use this scheme in State programs. In addition, the CTR preamble states U.S. EPA's intent to adopt revised WQC guidance subsequent to their health reassessment for dioxin-like compounds. Staff used TEQs to translate the narrative WQOs to numeric WQOs for the other 16 congeners.

b. *RPA Results.* The dioxin TEQ maximum background concentration is above the governing WQC, which triggers reasonable potential using Trigger 2, above.

c. *Dioxin Effluent Limits.* The final limits for dioxin TEQ will be based on the waste load allocated to the Discharger from the TMDL. All effluent data were nondetects. The detection limits historically used by the Discharger, however, are insufficient to accurately determine the concentrations of the dioxin congeners in the discharge. Therefore, there is insufficient information to calculate an interim limit. This Order requires additional dioxin monitoring to complement a special dioxin project being conducted by the Clean Estuary Partnership (CEP). The special dioxin project will consist of impairment assessment and a conceptual model for dioxin loading into the Bay. The CEP report will be submitted by mid-2004. The permit will be reopened, as needed, to include interim dioxin limitations.

Whole Effluent Acute Toxicity

53.a. *Order Requirements.* This Order includes effluent limits that are unchanged from the previous Order for whole-effluent acute toxicity. Compliance evaluation is based on 96-hour flow-through bioassays, however as indicated in the Self Monitoring Plan (SMP), the Discharger may comply

using static renewal testing as long as average dry weather flows remain below 1 MGD. All bioassays shall be performed according to the U.S. EPA-approved method in 40 CFR Part 136, currently "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water, 5th Edition."

b. *Test Species.* The previous Order specified acute toxicity testing requirements and limitations, which required testing of two species, stickleback and rainbow trout. During the period of 2000 through 2002, the Discharger's eleven-sample median survival of both species was between 95 and 100 percent, and the 90th percentile survival for both species was between 80 and 100 percent. Since the stickleback test cannot be performed using the 5th Edition method, this Order requires the Discharger conduct screening tests using fathead minnow and rainbow trout. As provided in the Basin Plan and as allowed in this Order, the Executive Officer may consider allowing compliance monitoring with only one fish species, either fathead minnow or rainbow trout, if the Discharger runs concurrent tests, which may be conducted as static renewal tests, to determine the most sensitive species.

c. *Ammonia Toxicity.* It is possible that an observed acute toxicity is a result of elevated un-ionized ammonia level in the effluent sample. The Discharger utilizes static renewal for the acute toxicity testing and static renewal testing sometimes results in an upward pH drift that changes the existing form of ammonia from ionized (non-toxic) to unionized (toxic) ammonia. If the Discharger demonstrates to the satisfaction of the Executive Officer that exceedance of the toxicity limits is caused by ammonia and that the ammonia in the discharge is not adversely impacting receiving water quality or beneficial uses, then such toxicity does not constitute a violation of this effluent limit. If ammonia toxicity is established through a Toxicity Identification Study (TIE) acceptable to the Executive Officer, the Discharger may utilize pH adjustment protocol for the testing.

Whole Effluent Chronic Toxicity

54. Typically, in accordance with U.S. EPA and State Board Task Force guidance, Section 4 of the SIP, and based on BPJ, NPDES Permits include requirements for chronic toxicity monitoring based on the Basin Plan narrative toxicity objective. However, the Basin Plan also describes the type of facility that his applies to: one in which the dischargers have completed or are currently participating in the Effluent Toxicity Characterization Program; municipal facilities with pretreatment programs; all major industrial facilities; and selected groundwater dischargers. None of these situations or conditions apply to the Discharger.

    Additionally, and perhaps most importantly, this discharge will only occur when there is at least 10:1 dilution. Chronic toxicity testing of similar, dilute, or deep-water discharges have frequently exhibited confounding, low levels of chronic toxicity (1-4 TUc); however, toxicity identification evaluations of these discharges have generally, if not always, been inconclusive.

    Furthermore, given the relatively small volume of this discharge, and the relatively large expenditure of resources that would be required to complete chronic toxicity screening and monitoring, chronic toxicity screening and monitoring are not a requirement of this Order at this time. However, the State Board is in the process of developing a policy on chronic toxicity monitoring and screening requirements. Therefore, this permit may be amended in the future to incorporate this policy once it becomes effective.

Bacteria Limitations

55. This Order retains the same total coliform limitations included in the previous Order, which are based on Table 4-2 of the Basin Plan. The Discharger may use alternative limitations of bacteriological quality instead of meeting the total coliform limitations in Section B.4. of this Order if the Discharger can establish to the satisfaction of the Executive Officer that the use of the enterococcus, *E. coli* or fecal coliform limitations will not result in unacceptable adverse impacts on the beneficial uses of the receiving water. The Discharger will be granted a short-term exception to the total coliform limits during the study. The requirements are specified in Provision E.10.

Pollution Prevention

56. The Discharger shall establish a Pollution Prevention Program under the requirements specified by the Board.

    a. Section 2.4.5 of the SIP specifies under what situations and for which priority pollutant(s) (i.e., reportable priority pollutants) the Discharger shall be required to conduct a Pollutant Minimization Program in accordance with Section 2.4.5.1.

    b. There may be some redundancy between the Pollution Prevention Program and the Pollutant Minimization Program requirements.

    c. Where the two programs' requirements overlap, the Discharger is allowed to continue, modify, or expand its existing Pollution Prevention Program to satisfy the Pollutant Minimization Program requirements.

    d. For constituents identified under Effluent Limitations, Section B, the Discharger will conduct appropriate source control or pollutant minimization measures that are consistent with its approved Pollution Prevention Program. For constituents with compliance schedules under this Order, the applicable source control and pollutant minimization requirements of Section 2.1 of the SIP will also apply.

57. On October 15, 2003, the Board adopted Resolution R2-2003-0096 in support of a collaborative working approach between the Board and BACWA to promote Pollution Prevention Program development and excellence. Specifically, the Resolution embodies a set of 11 guiding principles that will be used to develop tools such as "P2 menus" for specific pollutants, as well as provide guidance in improving P2 program efficiency and accountability. Key guiding principles in the Resolution include promoting watershed, cross-program, and cross-media approaches to pollution prevention, and jointly developing tools to assess an individual Discharger's program performance, which may include peer reviews, self-audits, or other formats.

Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy

58. *Insufficient Effluent and Ambient Background Data.* The Board staff's review of the effluent and ambient background monitoring data found that there were insufficient data to determine reasonable potential and calculate numeric WQBELs, where appropriate, for some of the pollutants listed in the CTR.

59. *SIP-Required Dioxin Study.* The SIP states that each Board shall require major and minor publicly owned treatment works (POTWs) and industrial dischargers in its region to conduct effluent monitoring for the 2,3,7,8-TCDD congeners, whether or not an effluent limitation is required for 2,3,7,8-TCDD. The monitoring is intended to assess the presence and amounts of the congeners being discharged to inland surface waters, enclosed bays, and estuaries. The Boards will use these monitoring data to establish strategies for a future multimedia approach to control these chemicals.

60. On August 6, 2001, the Board sent a letter to all the permitted dischargers pursuant to Section 13267 of the California Water Code requiring the submittal of effluent and receiving water data on priority pollutants. This formal request for technical information addresses the insufficient effluent and ambient background data and the dioxin study. This letter is referenced throughout the Order as the "August 6, 2001 Letter."

61. Pursuant to the August 6, 2001 Letter from the Board staff, the Discharger submitted workplans and sampling results for characterizing the levels of selected constituents in the effluent and ambient receiving water. For the receiving water, the Discharger utilized the sampling plan submitted by BACWA on October 1, 2001, and used the BACWA receiving water reports to comply with these requirements.

Monitoring Requirements (Self-Monitoring Program)

62. The SMP includes monitoring at the outfall for conventional, non-conventional, and toxic pollutants, and acute toxicity. This Order requires monthly monitoring for lead, silver, and zinc to demonstrate compliance with final effluent limitations. For copper, mercury, and cyanide the Discharger will also perform monthly monitoring to demonstrate compliance with interim limitations. For dioxin, 4,4'-DDE, and dieldrin, twice-yearly monitoring is required because they were not observed in the effluent during 1999–2003. In lieu of nearfield discharge-specific ambient monitoring, it is generally acceptable that the Discharger participate in collaborative receiving water monitoring with other dischargers under the provisions of the August 6, 2001 Letter and the RMP.

Optional Studies

63. *Optional Mass Offset.* This Order contains requirements to prevent further degradation of the impaired waterbody. Such requirements include the adoption of interim mass limitations that are based on treatment plant performance, provisions for aggressive source control, feasibility studies for wastewater reclamation, and treatment plant optimization. After implementing these efforts, the Discharger may find that further net reductions of the total mass loadings of the 303(d)-listed pollutants to the receiving water can be achieved only through a mass offset program. This Order includes an optional provision for a mass offset program.

64. *Copper Translator Study.* The Basin Plan does not establish a saltwater WQO for copper. Therefore, the CTR WQC for copper, 3.1 µg/L dissolved, is the applicable standard. Since NPDES permit limitations must be expressed as a total recoverable metal value, a translator is required to convert the dissolved objective into a total recoverable objective. Per Appendix 3 of the SIP, the default translator used in this Order is 0.83, which converts the 3.1 µg/L dissolved criterion to the 3.7 µg/L total criterion. An optional copper translator study is included in this Order to encourage the Discharger to develop a local translator value for copper in place of the default translator value of 0.83 established in the SIP.

Other Discharge Characteristics and Order Conditions

O & M Manual

65. The Discharger maintains an Operations and Maintenance Manual (O & M Manual) to provide the plant and regulatory personnel with a source of information describing all equipment, recommended operational strategies, process control monitoring, and maintenance activities. To remain a useful and relevant document, the manual shall be kept updated to reflect significant changes in treatment facility equipment and operation practices.

NPDES Permit and CEQA

66. This Order serves as an NPDES permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (California Environmental Quality Act—CEQA) pursuant to Section 13389 of the California Water Code.

Notification

67. The Discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharge and have been provided an opportunity to submit their written views and recommendations. Board staff prepared a Response to Comments, which is hereby incorporated by reference as part of this Order.

Public Hearing

68. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code, regulations, and plans and policies adopted thereunder, and to the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, that the U.S. Navy, Naval Support Activity (the Discharger), shall comply with the following:

A. DISCHARGE PROHIBITIONS

1. Discharge of treated wastewater at a location or in a manner different from that described in this Order is prohibited.

2. Discharge of wastewater at any point where it does not receive an initial dilution of at least 10:1 is prohibited.

3. The bypass or overflow of untreated or partially treated wastewater to waters of the State, either at the plant or from the collection system or pump stations tributary to the plant, is prohibited, except as provided for bypasses under the conditions stated in 40 CFR 122.41(m)(4) and in Standard Provisions A.13.

   The discharge of blended wastewater, that is, biologically treated wastewater blended with wastewater that has been diverted around biological treatment units or advanced treatment units, is allowable only (1) during wet weather and (2) when the discharge complies with the effluent and receiving water limitations contained in this Order. Furthermore, the Discharger shall operate the plant as designed and in accordance with the O & M Manuals developed for the plant. This

means that the Discharger shall optimize storage and use of equalization units, and shall fully utilize the biological treatment units and advanced treatment units, if applicable. The Discharger shall report these incidents of blended effluent discharges in routine monitoring reports, and shall conduct monitoring of this discharge as specified elsewhere in this Order.

4. The discharge of average dry weather flows greater than 2.0 MGD is prohibited. The average dry weather flow shall be determined over 3 consecutive dry weather months each year.

B. EFFLUENT LIMITATIONS

The following effluent limitations apply to effluent discharged to Central San Francisco Bay through the discharge outfall (Sampling Station E-001 as defined in the SMP).

Conventional and Non-conventional Pollutants

1. *Conventional Pollutants*

Table 3 lists the effluent limits for conventional pollutants.

Table 3. Effluent Limitations for Conventional Constituents

Constituent	Units	Monthly Average	Weekly Average	Daily Maximum	Instantaneous Maximum
a. Biochemical Oxygen Demand (BOD)	mg/L	30	45		--
b. Total Suspended Solids (TSS)	mg/L	30	45		--
c. Oil and Grease	mg/L	10		20	
e. Total Chlorine Residual[1]	mg/L				0.0

[1] This effluent limit is defined as below the limit of detection in standard test methods defined in the 18th edition of the *Standard Methods for the Examination of Water and Wastewater*. The Discharger may elect to use a continuous online monitoring system(s) for measuring flows, chlorine and sodium bisulfite dosage (including a safety factor), and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Board staff may conclude that these false positive chlorine residual exceedances are not violations of this Order limit.

2. *pH*

The pH of the effluent shall not exceed 9.0 s.u. nor be less than 6.0 s.u. If the Discharger employs continuous pH monitoring, the Discharger shall be in compliance with the pH limitation specified herein, provided that both of the following conditions are satisfied:

a. The total time during which the pH values are outside the required range shall not exceed 7 hours and 26 minutes in any calendar month.

b. No individual excursion from the required range of pH values shall exceed 60 minutes.

3. *85 Percent Removal, BOD_5 and TSS*

The arithmetic mean of the biochemical oxygen demand (BOD_5 20°C) and Total Suspended Solids (TSS) values for effluent samples collected in each calendar month shall not exceed 15 percent of the arithmetic mean of the respective values for influent samples collected at approximately the same times during the same period.

4. *Total Coliform Bacteria*

The treated wastewater, at some point in the treatment process prior to discharge, shall meet the following limitations of bacteriological quality:

a. The moving median value for the Most Probable Number (MPN) of total coliform bacteria in five consecutive samples shall not exceed 240 MPN/100 ml.

b. Any single sample shall not exceed 10,000 MPN/100 ml.

The Discharger may conduct a bacteriological assessment study, as specified in Provision E.10 of this Order, to evaluate the feasibility of using an alternate bacteria limitation. During the study period, the Discharger is exempt from the coliform limit in 4a. and 4b.above for the term of the study as long as the Discharger can demonstrate that the exceedences of the total coliform limits are solely due to the study, and that there is compliance in the receiving water with the bacteriological objectives specified in the Basin Plan.

Toxic Pollutants

5. *Whole Effluent Acute Toxicity*

Representative samples of the effluent shall meet the following limitations for acute toxicity. Compliance with these limitations shall be achieved in accordance with Provision E.7 of this Order.

a. The survival of bioassay test organisms in 96-hour bioassays of undiluted effluent shall be as follows:

i. 11-sample median value of not less than 90 percent survival, as defined in subsection b.i., below, and;

ii. 11-sample 90th percentile value of not less than 70 percent survival, as defined in subsection b.i.i., below.

b. Acute toxicity limitations are further defined as follows:

i. 11-sample median limitation:

Any bioassay test showing survival of 90 percent or greater is not a violation of this limitation. A bioassay test showing survival of less than 90 percent represents a violation of this effluent limitation, if 5 or more of the past 10 or fewer bioassay tests also show less than 90 percent survival.

ii. 90th percentile limitation:

Any bioassay test showing survival of 70 percent or greater is not a violation of this limitation. A bioassay test showing survival of less than 70 percent represents a violation of this effluent limitation, if 1 or more of the past 10 or fewer bioassay tests also show less than 70 percent survival.

c. Bioassays shall be performed using the most current U.S. EPA promulgated protocol. Based on the most recent screening test results with fathead minnow and rainbow trout, test species shall be the most sensitive of either fathead minnows or rainbow trout. Bioassays shall be conducted in compliance with "Methods for Measuring The Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms," currently 5th Edition, with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP) upon the Discharger's request with justification.

Toxic Substances

6. The effluent shall not exceed the limitations shown in Table 4.

Table 4. Effluent Limits for Toxic Pollutants [1][2]

Constituents		WQBELs		Interim Limits	
Pollutants	**Notes**	**Daily Maximum (MDEL) µg/L**	**Monthly Average (AMEL) µg/L**	**Daily Maximum µg/L**	**Monthly Average µg/L**
Copper	[3]			25	
Lead		89	36		
Mercury	[4]				0.087
Silver		22	7.3		
Zinc		740	490		
Cyanide	[5]			10	
4,4,'-DDE	[6]			0.05	
Dieldrin	[6]			0.01	

[1] a. Compliance with these limitations is intended to be achieved through secondary treatment and, as necessary, pretreatment and source control.

b. All analyses shall be performed using current U.S. EPA methods, or equivalent methods approved in writing by the Executive Officer. The Discharger is in violation of the limitation if the discharge concentration exceeds the effluent limitation and the reported ML for the analysis for that constituent.

c. Limitations apply to the average concentration of all samples collected during the averaging period (daily = 24-hour period; monthly = calendar month).

[2] A daily maximum or average monthly value for a given constituent shall be considered noncompliant with the effluent limits only if it exceeds the effluent limitation and the reported ML for that constituent. Table 5 below indicates the lowest minimum level that the Discharger's laboratory must achieve for compliance determination purposes.

[3] This interim limitation for copper shall remain in effect until July 31, 2009, or until the Board amends the limitation based on additional data or SSOs.

[4] Effluent mercury monitoring shall be performed by using ultra-clean sampling and analysis techniques, with a method detection limit of 0.002 µg/L or lower. The interim limitation for mercury shall remain in effect until March 31, 2010, or until the Board amends the limitation based on a WLA in the TMDL for mercury. However, during the next permit reissuance, the Board may reevaluate the interim mercury limitation.

[5] Compliance may be demonstrated by measurement of weak acid dissociable cyanide. The interim limitation shall remain in effect until July 31, 2009, or until the Board amends the limitation based on SSOs for cyanide. However, during the next permit reissuance, the Board may reevaluate the interim limitation.

[6] These interim limitations shall apply until July 31, 2009, or until the Board amends the limitation based on additional data, or the WLAs in respective TMDLs. However, during the next permit reissuance, the Board may reevaluate the interim limitations.

Table 5. Minimum Levels for Pollutants with Effluent Limits

Constituent	ML (µg/L)
Cyanide	5
Copper	0.5
Mercury	0.002
Silver	0.25
Zinc	1
4,4'-DDE	0.05
Dieldrin	0.01

7. Dry Weather Interim Mass Emission Limitation for Mercury

Until the mercury TMDL and Waste Load Allocation are adopted, the Discharger shall demonstrate that the total mercury mass loading from its discharges to Central San Francisco Bay have not increased by complying with the following conditions:

a. During dry weather months (May through October), the total mercury mass load shall not exceed the mercury mass emission limitation of 0.0058 kilograms per month (kg/month), as computed as follows:

Monthly Total Mass Load, kg/month = **Q*C*0.1151**, where

Q = monthly average WWTP dry weather effluent flow (May-Oct), MGD, as reported

C = effluent concentration, µg/L, corresponding to each month's flow.

If more than one concentration measurement is obtained in a calendar month, the average of these measurements is used as the monthly concentration value for that month. If test results are less than the method detection limit used, the concentration value shall be assumed to be equal to the method detection limit.

0.1151 = unit conversion factor to obtain kg/month using monthly average flow in MGD and concentration in µg/L.

b. The mercury TMDL and WLAs will supersede this interim mass emission limitation upon their completion. The Clean Water Act's anti-backsliding rule, Section 402(o), indicates that this Order may be modified to include a less stringent requirement following completion of the TMDL and WLA, if the requirements for an exception to the rule are met.

c. The Discharger shall submit a cumulative total of mass loadings for the previous 12 months with each monthly Self-Monitoring Report. Compliance each month will be determined based on the 12-month moving averages over the previous 12 months of monitoring. The Discharger may use monitoring data collected under accelerated schedules (i.e., special studies) to determine compliance.

d. The mercury TMDL and WLAs will supersede this mass emission limitation upon their completion. The Clean Water Act's antibacksliding rule, Section 402(o), indicates that this Order may be modified to include a less stringent requirement following completion of the TMDL and WLA, if the requirements for an exception to the rule are met.

C. RECEIVING WATER LIMITATIONS

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

   a. Floating, suspended, or deposited macroscopic particulate matter or foam.

   b. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses.

   c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels.

   d. Visible, floating, suspended, or deposited oil or other products of petroleum origin.

   e. Toxic or other deleterious substances to be present in concentrations or quantities that will cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or which render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limitations to be exceeded in waters of the State at any one place within 1 foot of the water surface:

   a. Dissolved Oxygen: 5.0 mg/L, minimum

   The median dissolved oxygen concentration for any three consecutive months shall not be less than 80 percent of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, then the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.

   b. Dissolved Sulfide: 0.1 mg/L, maximum.

   c. pH: Variation from normal ambient pH by more than 0.5 pH unit.

d. Un-ionized Ammonia: 0.025 mg/L as N, annual median,

0.16 mg/L as N, maximum.

e. Nutrients: Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

3. The discharge shall not cause a violation of any particular water quality standard for receiving waters adopted by the Board or the State Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

D. BIOSOLIDS MANAGEMENT PRACTICES

1. All biosolids generated by the Discharger must be disposed of in a municipal solid waste landfill, reused as alternate daily cover at a landfill, reused by land application, or disposed of in a biosolids-only landfill. U.S. EPA regulates this disposal practice under the 40 CFR 503 regulations (Standards for the Use or Disposal of Sewage Sludge; February 19, 1993 final rule). All the requirements in 40 CFR 503 are enforceable by U.S. EPA whether or not they are stated in an NPDES permit or other permit issued to the Discharger. If the Discharger desires to dispose of biosolids by a different method, the Discharger shall notify the Board and U.S. EPA in writing before start-up of the alternative disposal practice.

2 The Discharger is required to submit an annual report to U.S. EPA regarding its sewage biosolids disposal practices in accordance with the requirements of 40 CFR 503. The Discharger shall submit a copy of the report to the Board.

3. Biosolids treatment, storage, and disposal or reuse shall not create a nuisance, such as objectionable odors or flies, or result in groundwater contamination.

4. The treatment and temporary storage of sewage biosolids at the Discharger's plant shall not cause waste material to be in a position where it will be carried from the biosolids treatment and storage site and deposited in the waters of the State.

5. Permanent on-site storage or disposal of sewage biosolids at the Discharger's plant is not authorized by this Order. A report of Waste Discharge shall be filed and the site brought into compliance with all applicable regulations prior to commencement of any such activity by the Discharger.

6. The Board may amend this Order prior to expiration if changes occur in applicable State and Federal regulations.

E. PROVISIONS

1. Order Compliance and Rescission of Previous Waste Discharge Requirements

The Discharger shall comply with all sections of this Order beginning on the effective date of this Order (see later Provision). Requirements prescribed by this Order supersede the requirements

prescribed by Order No. 95-126. Order No. 95-126 is hereby rescinded upon the effective date of this Order.

Special Studies and Projects

2. Effluent Characterization for Selected Constituents

The Discharger shall monitor and evaluate the discharge from Outfall E-001 for the constituents listed in Enclosure A of the Board's August 6, 2001 Letter. Compliance with this requirement shall be achieved in accordance with the specifications stated in the Board's August 6, 2001 Letter under Effluent Monitoring for Major Dischargers. Reports shall be submitted to the Board in accordance with the schedule specified below (the same schedule is also specified in the August 6, 2001 Letter).

Reporting: On an annual basis, the discharger shall summarize the data collected, evaluate the sampling frequency and propose any recommended changes in the SMR annual report submittal. A final report that presents all the data shall be submitted to the Board no later than 180 days prior to the Order expiration date. This final report shall be submitted with the application for permit reissuance.

3. Mercury Source Control Special Project

The Discharger shall 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 within six months of permit adoption for approval by the E.O. and initiate the project within 12 months of permit adoption.

4. Ambient Background Receiving Water Study

The Discharger shall continue to collect or participate in collecting background ambient receiving water data with other Dischargers and/or through the RMP. This information is required to perform RPAs and to calculate effluent limitations. To fulfill this requirement, the Discharger shall submit data sufficient to characterize the concentration of each toxic pollutant listed in the CTR in the ambient receiving water. The data on the conventional water quality parameters (pH, salinity, and hardness) shall also be sufficient to characterize these parameters in the ambient receiving water at a point after the discharge has mixed with the receiving waters.

The sampling frequency and sampling station locations shall be specified in the sampling plan. The frequency of the monitoring shall consider the seasonal variability of the receiving water. It would be acceptable to select stations representative of incoming ocean waters because the combined effluent discharges to the Bay through deepwater diffusers. The Discharger can utilize the sampling plan submitted to the Board by BACWA on September 28, 2001 for a collaborative group monitoring program.

Final Report: The Discharger shall submit a final report that presents all the data to the Board 180 days prior to Order expiration. This final report shall be submitted with the application for permit reissuance. The final report generated from the BACWA study can be used for submission.

5. Cyanide Compliance Schedule and SSO Study

The Discharger shall comply with the following tasks and deadlines:

Tasks	Compliance Date
a. *Compliance Schedule.* The Discharger should track relevant national studies, and participate in regional studies as described in findings (under Cyanide) above. Results from these studies should enable the Board to determine compliance with final WQBELS during the next permit reissuance.	Annual progress reports as part of annual self-monitoring reports.
b. *SSO Study.* The Discharger shall actively participate in the development of regional SSOs for cyanide. Participation through BACWA studies satisfies this task.	Annual progress reports by cyanide work group due January 31st of each year until completion
c. Conduct evaluation of compliance attainability with limitations derived using new objectives.	Within 3 years of effective date of this Order.

6. Pollution Prevention and Pollutant Minimization Program

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 Order. Development of the Program shall include a target audience assessment, consisting of identification of Pollutants of Concern and surveying of businesses and the public in order to determine which behaviors or actions might contribute to the disposal of pollutants of concern 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.

b. The Discharger shall submit an annual report, acceptable to the Executive Officer, no later than February 28th of each year. Annual reports shall cover January through December of the preceding year. Annual reports shall include at least the following information:

i. *A Brief Description of the Plant, Plant Processes, and Service Area.*

ii. *A Discussion of the Current Pollutants of Concern.* Periodically, the Discharger shall analyze its own situation to determine which pollutants are currently a problem and/or which pollutants may be potential future problems. This discussion shall include the reasons why the pollutants were chosen.

iii. *Identification of Sources for the Pollutants of Concern.* This discussion shall include how the Discharger intends to estimate and identify sources of the pollutants. The Discharger shall also identify sources or potential sources not directly within the ability or authority of the Discharger to control, such as pollutants in the potable water supply and air deposition.

iv. *Identification of Tasks to Reduce the Sources of the Pollutants of Concern.* This discussion shall identify and prioritize tasks to address the Discharger's pollutants of concern. The Discharger may implement tasks itself or participate in group, regional, or national tasks that will address its pollutants of concern. The Discharger is strongly encouraged to participate in group, regional, or national tasks that will address its pollutants of concern whenever it is efficient and appropriate to do so. A time-line shall be included for the implementation of each task.

v. *Outreach to Employees.* The Discharger shall inform employees about the pollutants of concern, potential sources, and how they might be able to help reduce the discharge of these pollutants of concern into the plant. The Discharger may provide a forum for employees to provide input to the Program.

vi. *Public Outreach Program.* The Discharger shall conduct public outreach to communicate pollution prevention to its service area. Outreach may include participation in existing community events such as county fairs, initiating new community events such as displays and contests during Pollution Prevention Week, conducting school outreach programs, conducting plant tours, and providing public information in newspaper articles or advertisements, radio, television stories or spots, newsletters, utility bill inserts, and a web site. Information shall be specific to the target audiences. The Discharger shall coordinate with other agencies as appropriate.

vii. *Discussion of Criteria Used to Measure the Program's and Tasks' Effectiveness.* The Discharger shall establish criteria to evaluate the effectiveness of its Pollution Prevention Program. This shall also include a discussion of the specific criteria used to measure the effectiveness of each of the tasks in item b. (iv), b. (v), and b. (vi).

viii. *Documentation of Efforts and Progress.* This discussion shall detail all the Discharger's activities in the Pollution Prevention Program during the reporting year.

ix. *Evaluation of Program's and Tasks' Effectiveness.* The Discharger shall use the criteria established in b. (vii) to evaluate the Program's and tasks' effectiveness.

x. *Identification of Specific Tasks and Time Schedules for Future Efforts.* Based on the evaluation, the Discharger shall detail how it intends to continue or change its tasks to more effectively reduce the amount of pollutants to the plant, and subsequently in its effluent.

c. According to Section 2.4.5 of the SIP, when there is evidence that a priority pollutant is present in the effluent above an effluent limitation and either:

i. A sample result is reported as detected, but not quantified (less than the ML) and the effluent limitation is less than the reported ML; or

ii. A sample result is reported as not detected (less than the MDL) and the effluent limitation is less than the MDL.

The Discharger shall expand its existing Pollution Prevention Program to include the reportable priority pollutant. A priority pollutant becomes a reportable priority pollutant (1) when there is evidence that it is present in the effluent above an effluent limitation and either (c)(i) or c(ii) is triggered or (2) if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported ML.

d. If triggered by the reasons in c. above and notified by the Executive Officer, the Discharger's Pollution Prevention Program shall, within 6 months, also include the following:

i. An annual review and semiannual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling, or

alternative measures approved by the Executive Officer when it is demonstrated that source monitoring is unlikely to produce useful analytical data.

ii. Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system, or alternative measures approved by the Executive Officer when it is demonstrated that influent monitoring is unlikely to produce useful analytical data.

iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation.

iv. Development of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy.

v. An annual status report that shall be sent to the RWQCB including the following:

(1) All Pollution Prevention monitoring results for the previous year

(2) A list of potential sources of the reportable priority pollutant(s)

(3) A summary of all actions undertaken pursuant to the control strategy

(4) A description of actions to be taken in the following year.

e. To the extent that the requirements of the Pollution Prevention Program and the Pollutant Minimization Program overlap, the Discharger is allowed to continue, modify, or expand its existing Pollution Prevention Program to satisfy the Pollutant Minimization Program requirements.

f. These Pollution Prevention/Pollutant Minimization Program requirements are not intended to fulfill the requirements in the Clean Water Enforcement and Pollution Prevention Act of 1999 (Senate Bill 709).

Toxicity Requirements

7. Acute Toxicity

Compliance with acute toxicity requirements of this Order shall be achieved in accordance with the following:

a. Compliance with the acute toxicity effluent limitations of this Order shall be evaluated by measuring survival of test organisms exposed to 96-hour continuous flow-through or static renewal bioassays. The Discharger may comply with the acute toxicity limits using static renewal bioassays as long as the average dry weather flows remain below 1 MGD. However, if the average dry weather flows exceed 1 MGD, the Discharger shall comply with the acute toxicity limits with flow-through bioassays. If dry weather flows approach 0.95 MGD, the Discharger shall notify the Executive Officer of plans to change testing methodology to flow-through.

b. Test organisms shall be rainbow trout and fathead minnow tested concurrently during a screening period. Following receipt of the acute toxicity screening study, the Executive Officer will allow

compliance monitoring with only one fish species (the most sensitive, if determined), if the Discharger can also document that the acute toxicity has been observed in only one fish species. If neither fish shows sensitivity, the Discharger may continue routine compliance testing using either fathead minnow or rainbow trout.

c. All bioassays shall be performed according to the CFR Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms, currently 5th Edition. Upon the Discharger's request, with justification, exceptions may be granted to the Discharger by the Executive Officer and ELAP.

Ongoing Programs

8. Regional Monitoring Program

The Discharger shall continue to participate in the RMP for trace substances in San Francisco Bay in lieu of more extensive effluent and receiving water self-monitoring requirements that may be imposed.

Optional Studies

9. Optional Mass Offset

The Discharger may submit to the Board for approval a mass offset plan to reduce 303(d)-listed pollutants to the same watershed or drainage basin. The Board may modify this Order to allow an approved mass offset program.

10. Optional Receiving Water Beneficial Use and Alternative Bacteriological Limits Study

To develop information that may be used in a subsequent Order amendment to establish alternative bacteria limits, the Discharger may conduct a receiving water beneficial use study to assess the appropriateness of testing for enterococci, fecal coliform and/or *E. coli* instead of total coliform concentrations in compliance with Basin Plan bacteriological objectives. Depending on the results of the final study, the Order may be amended to specify total coliform, enterococci, fecal coliform, or *E. coli* limits.

Tasks	Compliance Date
a. Develop a study plan, acceptable to the Executive Officer, to include, a receiving water bacteria study, selection and justification for alternative bacteriological limit (enterococci, fecal coliform, or *E. coli*), and tasks and schedules necessary to assess the beneficial uses attributed to the outfall location.	At the Discharger's discretion during the Order term.
b. Following approval by the Executive Officer, commence work in accordance with the study plan and time schedule submitted pursuant to the approved plan.	As specified in the study plan.
c. Submit a final report, acceptable to the Executive Officer, documenting the results of the beneficial use investigation described above.	As specified in the study plan.

During the study, the Discharger is exempt from the total coliform limit during the data collection period. If there is a total coliform exceedance during the data collection period, the Discharger shall demonstrate that the exceedance is due to the study in order for the exemption to apply.

11. Optional Copper and Nickel Translator Study and Schedule

To develop information that may be used to establish WQBELs based on dissolved criteria for copper and nickel. Copper and nickel translators will be calculated as part of the technical work being conducted for the North of Dumbarton copper/nickel TMDL/SSO project. Optionally, the Discharger may implement a sampling plan to collect data for development of dissolved-to-total translators for copper and nickel. If the Discharger chooses to proceed with the study, which may be conducted in cooperation with other dischargers, the work shall be performed in accordance with the following tasks:

Tasks	Schedule
a. Copper and nickel translator study plan: the study plan shall be acceptable to the Executive Officer and shall outline data collection for establishment of dissolved-to-total copper and nickel translators, as discussed in the findings. The study plan shall provide for development of translators in accordance with the State Board's SIP, U.S. EPA guidelines, California Department of Fish and Game approval, and any relevant portions of the Basin Plan, as amended.	At the Discharger's discretion during the Order term.
b. Implementation of the plan: if the Discharger conducts a translator study, it will use field sampling data approximate to the discharge point and in the vicinity of the discharge point, or as otherwise provided for in the approved workplan.	As specified in the study plan.
c. Final report: A final report, acceptable to the Executive Officer, should be submitted, documenting the results of the copper and nickel translator study.	As specified in the study plan.

The study may be conducted in coordination with other dischargers and may also include any other site-specific information that the Discharger would like the Board to consider in development of a water quality-based effluent limitation for copper and nickel.

Facilities Status Reports and Order Administration

12 Wastewater Facilities, Review and Evaluation, and Status Reports

a. The Discharger shall operate and maintain its wastewater collection, treatment, and disposal facilities in a manner to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary, in order to provide adequate and reliable transport, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the Discharger's service responsibilities.

b. The Discharger shall regularly review and evaluate its wastewater facilities and operation practices in accordance with section a. above. Reviews and evaluations shall be conducted as an ongoing component of the Discharger's administration of its wastewater facilities.

c. Annually, the Discharger shall submit to the Board a report describing the current status of its wastewater facility review and evaluation, including any recommended or planned actions and an estimated time schedule for these actions. This report shall include a description or summary of review and evaluation procedures, and applicable wastewater facility programs or capital improvement projects. This report shall be submitted in accordance with the Annual Status Report Provision below.

13. Operations and Maintenance Manual, Review and Status Reports

a. The Discharger shall maintain an O & M Manual as described in the findings of this Order for the Discharger's wastewater facilities. The O & M Manual shall be maintained in usable condition, and available for reference and use by all applicable personnel.

b. The Discharger shall regularly review, revise, or update, as necessary, the O & M Manual(s) so that the document(s) may remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and revisions or updates shall be completed as necessary. For any significant changes in treatment facility equipment or operation practices, applicable revisions shall be completed within 90 days of completion of such changes.

c. Annually, the Discharger shall submit to the Board a report describing the current status of its O & M Manual review and updating. This report shall include an estimated time schedule for completion of any revisions determined necessary, a description of any completed revisions, or a statement that no revisions are needed. This report shall be submitted in accordance with the Annual Status Report Provision below.

14. Contingency Plan, Review and Status Reports

a. The Discharger shall maintain a Contingency Plan as required by Board Resolution 74-10 (available online—see Standard Language and Other References Available Online, below), and as prudent in accordance with current municipal facility emergency planning. The discharge of pollutants in violation of this Order where the Discharger has failed to develop and/or adequately implement a contingency plan will be the basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.

b. The Discharger shall regularly review, and update as necessary, the Contingency Plan so that the plan may remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and updates shall be completed as necessary.

c. Annually, the Discharger shall submit to the Board a report describing the current status of its Contingency Plan review and update. This report shall include a description or copy of any completed revisions, or a statement that no changes are needed. This report shall be submitted in accordance with the Annual Status Report Provision below.

15. Annual Status Reports

The annual reports identified in Provisions 12.c, 13.c, and 14.c, above, shall be submitted to the Board by July 15th of each year. Modification of report submittal dates may be authorized, in writing, by the Executive Officer.

16. 303(d)-Listed Pollutants, Site-Specific Objective and TMDL Status Review

The Discharger shall participate in the development of a TMDL or SSO for copper, cyanide, mercury, 4,4'-DDE, dioxin TEQ, and dieldrin. By January 31 of each year, the Discharger shall submit an update to the Board to document its participation efforts toward development of the TMDL(s) or SSO(s). The Discharger can submit updates through the regional BACWA studies for these pollutants. Board staff shall review the status of TMDL development. This Order may be reopened in the future to reflect any changes required by TMDL development.

17. New Water Quality Objectives

As new or revised WQOs come into effect for the Bay and contiguous waterbodies (whether statewide, regional, or site specific), effluent limitations in this Order will be modified as necessary to reflect updated WQOs. Adoption of effluent limitations contained in this Order is not intended to restrict in any way future modifications based on legally adopted WQOs.

18. SMP

The Discharger shall comply with the SMP for this Order as adopted by the Board. The SMPs may be amended by the Executive Officer pursuant to U.S. EPA regulation 40 CFR122.62 and 122.63.

19. Standard Provisions and Reporting Requirements

The Discharger shall comply with all applicable items of the attached Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993 (the Standard Provisions), or any amendments thereafter. Where provisions or reporting requirements specified in this Order are different from equivalent or related provisions or reporting requirements given in the Standard Provisions, the specifications of this Order shall apply.

20. Change in Control or Ownership

In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Board. To assume responsibility for and operations under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order (see Standard Provisions and Reporting Requirements, August 1993, Section E.4.). Failure to submit the request shall be considered a discharge without requirements, and a violation of the California Water Code.

21. Order Reopener

The Board may modify or reopen this Order prior to its expiration date in any of the following circumstances:

(1) If present or future investigations demonstrate that the discharge(s) governed by this Order will or have a reasonable potential to cause or contribute to adverse impacts on water quality and/or beneficial uses of the receiving waters;

(2) If new or revised WQOs come into effect for the San Francisco Bay estuary and contiguous waterbodies (whether statewide, regional, or site specific). In such cases, effluent limitations in

this Order will be modified as necessary to reflect updated WQOs. Adoption of effluent limitations contained in this Order is not intended to restrict in any way future modifications based on legally adopted WQOs or as otherwise permitted under Federal regulations governing NPDES permit modifications;

(3) If translator or other water quality studies provide a basis for determining that a permit condition(s) should be modified.

The Discharger may request Order modification based on (2) and (3) above. The Discharger shall include in any such request an antidegradation and antibacksliding analysis.

22. NPDES Permit

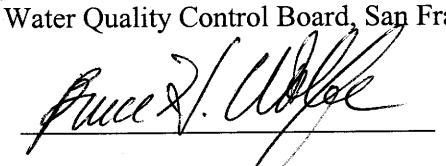
This Order shall serve as an NPDES permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective on August 1, 2004, provided the U.S. EPA Regional Administrator has no objection. If the Regional Administrator objects to its issuance, the Order shall not become effective until such objection is withdrawn.

23. Order Expiration and Reapplication

a. This Order expires June 30, 2009.

b. In accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code, the Discharger must file a report of waste discharge no later than 180 days before the expiration date of this Order as application for reissue of this permit and waste discharge requirements. The application shall be accompanied by a summary of all available water quality data including conventional pollutant data from no less than the most recent three years, and of toxic pollutant data no less than from the most recent five years, in the discharge and receiving water. Additionally, the Discharger must include with the application the final results of any studies that may have bearing on the limits and requirements of the next permit. Such studies include dilution studies, translator studies and alternate bacteria indicator studies.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on May 19, 2004.



BRUCE H. WOLFE

Executive Officer

Attachments

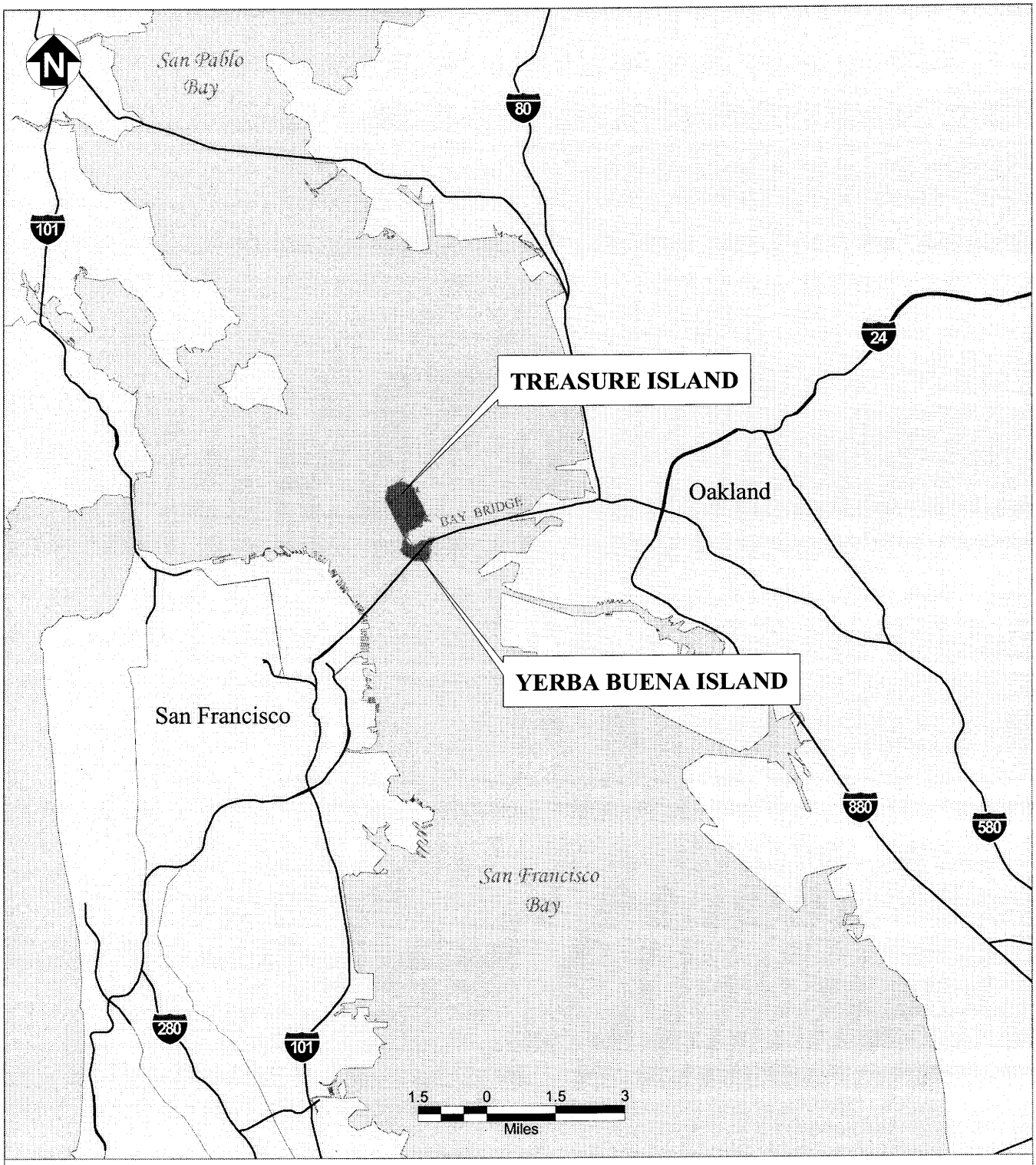
A. Discharge Facility Location Map
B. Discharge Facility Treatment Process Diagram
C. Self-Monitoring Program, Part B
D. Fact Sheet
E. Discharger's Feasibility Study, March 4, 2004

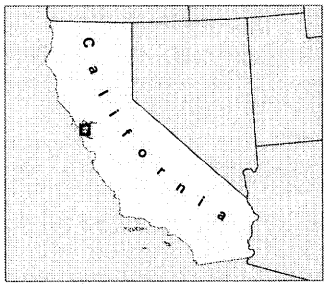
F. The following documents are part of this Order but are not physically attached due to volume. They are available on the internet at: http://www.swrcb.ca.gov/rwqcb2/Download.htm:

- Self-Monitoring Program, Part A (August 1993)
- Standard Provisions and Reporting Requirements, August 1993
- Board Resolution No. 74-10
- Statistical Analysis of Pooled Data from Regionwide Ultraclean Mercury Sampling for Municipal Dischargers, June 2001
- August 6, 2001 Regional Board staff letter, "Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy"

Attachment A

Discharge Facility Location Map





Naval Station Treasure Island
U.S. Navy Southwest Division, NAVFAC, San Diego

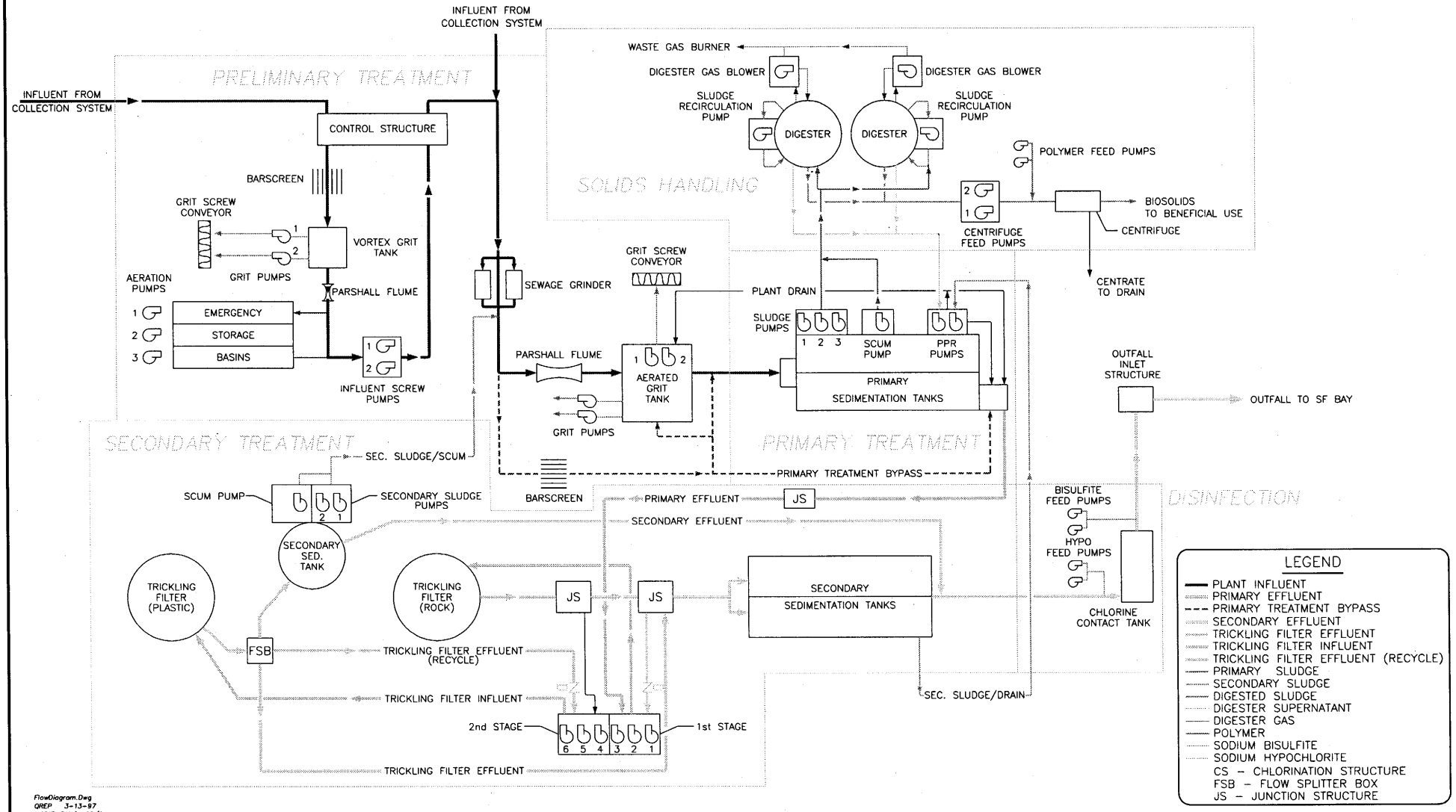
ATTACHMENT A

REGIONAL LOCATION MAP

Attachment B

Discharge Facility Treatment Process Diagram

TREASURE ISLAND WWTP



FlowDiagram.Dwg
QREP 3-13-97
MODIF. BY SJ 02/04

Attachment C

Self-Monitoring Program

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

U.S. NAVY, NAVAL SUPPORT ACTIVITY
TREASURE ISLAND
SAN FRANCISCO COUNTY

NPDES PERMIT NO. CA0110116
ORDER NO. R2-2004-0036

Consists of:
Part A (not attached)
Adopted August 1993

and

Part B (Attached)
Adopted: May 19, 2004
Effective: August 1, 2004

Note: Part A, Standard Provisions and Reporting Requirements for NPDES Surface Water Discharger Permits (dated August 1993), and Resolution No. 74-10 referenced in this Self-Monitoring Program are not attached but are available for review or download on the Board's website at www.swrcb.ca.gov/rwqcb2.

SELF-MONITORING PROGRAM, PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT

Station	Description
A-001	Any point in the treatment plant headworks at which all waste tributary to the system is present and preceding any phase of treatment that may alter influent character.

B. EFFLUENT

Station	Description
E-001	Any point in the treatment plant at which adequate contact with the disinfectant is assured.

Note: The initial SMP report shall include a map and description of each known bypass or overflow location.

Reporting shall be submitted monthly whenever bypass or overflow occurs and shall include date, time, and period of each overflow and/or bypass.

II. SCHEDULE OF SAMPLING, ANALYSIS, AND OBSERVATION

The schedule of sampling, analysis, and observation shall be that given in Table 1 below. Sampling and analysis of additional constituents is required pursuant to Provision E.4, and Table 1 of the Board's August 6, 2001 Letter titled "Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy."

Table 1. Schedule of Sampling, Measurement, and Analysis [1][2]

Sampling Station	**A-001**		**E-001**		
Type of Sample	**C-24**	**Cont.**	**G[3]**	**C-24**	**Cont.**
Flow Rate (MGD) [4]		D			D
BOD, 5-day, 20 °C, or CBOD (mg/L & kg/day)[5][6]	W or 3/W			W or 3/W	
Oil & Grease (mg/L & kg/day)[7]			Q		
Chlorine Residual & Dosage (mg/L & kg/day) [8]			2H or Continuous		
Total Suspended Solids (mg/L & kg/day)[6]	3/W			3/W	
pH (Standard Unit)			3/W		
Total Coliform (MPN/100 ml)			3/W		
Acute Toxicity, 96-hr (% Survival) [9][10]				M	

Sampling Station	A-001		E-001		
Type of Sample	**C-24**	**Cont.**	**G[3]**	**C-24**	**Cont.**
Copper (µg/L & kg/day)				M	
Lead (µg/L & kg/day)				M	
Mercury (µg/L & kg/day) [11]			M		
Silver (µg/L & kg/day)				M	
Zinc (µg/L & kg/day)				M	
Cyanide (µg/L)			M		
4,4'-DDE (µg/L)			2/Y		
Dieldrin (µg/L)			2/Y		
2,3,7,8-TCDD and Congeners (µg/L) [12]			2/Y		
Table 1 Selected Constituents (except those listed above) [13]			As specified in August 6, 2001 Letter		

Legend for Table 1:

Types of Samples
Co = continuous
C-24 = 24-hour composite
G = grab

Types of Stations
A = treatment plant influent
E = treatment plant effluent

Frequency of Sampling
D = once each day
3/W = 3 days per week
W = once each week
M = once each month
Q = once each calendar quarter (with at least 2-month intervals)
2/Y = two times per year

Footnotes for Table 1:

[1] Indicates sampling is required during the entire year. The Discharger shall use approved U.S. EPA Methods with the lowest Minimum Levels (MLs) specified in the SIP and described in effluent limitations B.6. In the case of chlorinated dibenzodioxins and chlorinated dibenzofurans, see footnote 12, below.

[2] Composite sampling: 24-hour composites may be made up of discrete grabs collected over the course of a day and volumetrically or mathematically flow-weighted. Samples for inorganic pollutants may be combined prior to analysis. Samples for organic pollutants should be analyzed separately. If only one grab sample will be collected, it should be collected during periods of maximum peak flows. Samples shall be taken on random days.

[3] Grab samples shall be collected coincident with composite samples collected for the analysis of regulated parameters.

[4] Flow monitoring: Effluent flow shall be measured continuously at Outfall 001 and recorded and reported daily. For effluent flows, the following information shall also be reported, monthly:

Daily:	Daily Flow (MG)
Monthly:	Average Daily Flow (MGD)
Monthly:	Maximum Daily Flow (MGD)
Monthly:	Minimum Daily Flow (MGD)
Monthly:	Total Flow Volume (MG)

[5] If the average dry weather flow exceeds 0.85 MGD, this discharge shall be monitored for BOD three times per week (3/W).

[6] The percent removal for BOD and TSS shall be reported for each calendar month in accordance with Effluent Limitation B.3.

[7] Oil and grease: Each oil and grease sample event shall consist of a composite sample composed of three grab samples taken at equal intervals during the sampling date, with each grab sample being collected in a glass container. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent rinsings as soon as possible after use, and the solvent rinsings shall be added to the composite sample for extraction and analysis.

[8] Chlorine residual: The dechlorinated effluent shall be monitored continuously or, at a minimum, every 2 hours. Report, on a daily basis, both maximum and minimum concentrations, for samples taken both prior to and following dechlorination. If a violation is detected, the maximum and average concentrations and duration of each non-zero residual event shall be reported, along with the cause and corrective actions taken. Total chlorine dosage (gal/day) shall be recorded on a daily basis.

[9] Bioassays: Effluent used for fish bioassays must be dechlorinated prior to testing. Monitoring of the bioassay water shall include, on a daily basis, the parameters specified in the U.S. EPA-approved method, such as pH, dissolved oxygen, ammonia nitrogen, and temperature. These results shall be reported. If the fish survival rate in the effluent is less than 70 percent or if the control fish survival rate is less than 90 percent, the bioassay test shall be restarted with new batches of fish and shall continue as soon as practicable until compliance is demonstrated

[10] Currently, the discharger is permitted to use static renewal tests for Acute Toxicity using. If the average dry weather flow exceeds 1 MGD, this discharge shall be monitored for Acute Toxicity using flow-through bioassays.

[11] The Discharger may, at its option, sample effluent mercury either as grab or as 24-hour composite samples. Use ultra-clean sampling (U.S. EPA 1669) to the maximum extent practicable and ultra-clean analytical methods (U.S. EPA 1631) for mercury monitoring. The Discharger may use alternative methods of analysis (such as U.S. EPA 245), if that alternative method has an ML of 2 ng/L or less.

[12] 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. Also, the Discharger shall participate as appropriate the regional collaborative effort with other POTWs to validate the 4-liter sample methodology for lowering the detection limit for dioxins. At a minimum, the Discharger is required to monitor twice a year for the life of this Order. Alternative methods of analysis must be approved by the Executive Officer.

[13] Sampling for Table 1 Selected Constituents in the SIP is addressed in a letter dated August 6, 2001, from Board Staff: "Requirements for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy" (not attached, but available for review or download on the board's website at www.swrcb.ca.gov/rwqcb).

Table 2 lists the MLs (SIP) of the priority constituents included in Table 1. For compliance monitoring, analyses shall be conducted using the lowest commercially available and reasonably achievable detection levels. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to the MLs given below. All MLs are expressed as µg/L, approximately equal to parts per billion (ppb).

Table 2. Minimum Levels (µg/L or ppb)

CTR #	Constituent [1]	Types of Analytical Methods [2]											
		GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPG FAA	HYD-RIDE	CVAA	DCP
6.	Copper [3]					25	5	10	0.5	2			1,000
7.	Lead					20	5	5	0.5	2			10,000
8.	Mercury[4]												
11.	Silver					10	1	10	0.25	2			1,000
13.	Zinc					20		20	1	10			1,000
14.	Cyanide				5								
109.	4,4'-DDE	0.05											
111.	Dieldrin	0.01											
	TCDD-TEQ[5]												

Footnotes for Table 2:

[1] According to the SIP, method-specific factors (MSFs) can be applied. In such cases, this additional factor must be applied in the computation of the reporting limit. Application of such factors will alter the reported ML (as described in Section 2.4.1). Dischargers are to instruct laboratories to establish calibration standards so that the ML value is the lowest calibration standard. At no time is the discharger to use analytical data derived from the extrapolation beyond the lowest point of the calibration curve.

[2] Laboratory techniques are defined as follows: GC = Gas Chromatography; GCMS = Gas Chromatography/Mass Spectrometry; LC = High Pressure Liquid Chromatography; Color = Colorimetric; FAA = Flame Atomic Absorption; GFAA = Graphite Furnace Atomic Absorption; Hydride = Gaseous Hydride Atomic Absorption; ICP = Inductively Coupled Plasma; ICPMS = Inductively Coupled Plasma/Mass Spectrometry; SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption (i.e., U.S. EPA 200.9); CVAA = Cold Vapor Atomic Absorption; DCP = Direct Current Plasma.

[3] For copper, the Discharger may also use the following laboratory techniques with the relevant ML: GFAA with an ML of 5 µg/L and SPGFAA with an ML of 2 µg/L.

[4] Use ultra-clean sampling (U.S. EPA 1669) to the maximum extent practicable, and ultra-clean analytical methods (U.S. EPA 1631) for mercury monitoring. The Discharger may use alternative methods of analysis (such as U.S. EPA 245), if the alternative method has an ML of 2 ng/L or less.

[5] The SIP does not contain an ML for this constituent, however the Board requires use of one-half those published in U.S. EPA Method 1613.

III. MODIFICATIONS TO PART A OF SELF-MONITORING PROGRAM

A. If any discrepancies exist between Part A and Part B of the SMP, Part B prevails.

B. Sections C.3. and C.5. are satisfied by participation in the Regional Monitoring Program.

C. Modify Section F.1 as follows:

Spill Reports

A report shall be made of any spill of oil or other hazardous material. The spill shall be reported by telephone as soon as possible and no later than 24 hours following occurrence or discharger's knowledge of occurrence. Spills shall be reported by telephone as follows:

During weekdays, during office hours of 8 am to 5 pm, to Ray Balcom at the Board: Current telephone number: (510) 622 – 2312, (510) 622-2460 (FAX).

During non-office hours, to the State Office of Emergency Services:
Current telephone number: (800) 852 - 7550.

A report shall be submitted to the Regional Board within five (5) working days following telephone notification, unless directed otherwise by Board staff. A report submitted by facsimile transmission is acceptable for this reporting. The written report shall contain information relative to: . . .

D. Modify Section F.3 (first paragraph) as follows:

Reports of Plant Bypass, Treatment Unit Bypass and Order Violation

The following requirements apply to all treatment plant bypasses and significant non-compliance occurrences, except for bypasses under the conditions contained in 40 CFR Part 122.41 (m)(4) as stated in Standard Provision A.13. In the event the Discharger violates or threatens to violate the conditions of the waste discharge requirements and prohibitions or intends to experience a plant bypass or treatment unit bypass due to: . . .(remainder of F.3 is unchanged)

E. Modify Section F.4 as follows:

Self-Monitoring Reports

For each calendar month, a self-monitoring report (SMR) shall be submitted to the Board in accordance with the requirements listed in Self-Monitoring Program, Part A. The purpose of the report is to document treatment performance, effluent quality and compliance with waste discharge requirements prescribed by this Order, as demonstrated by the monitoring program data and the Discharger's operation practices. The report shall be submitted to the Board **on the first day of the second month after the reporting period ends** . . .

[And add at the end of Section F.4 the following:]

g. The Discharger has the option to submit all monitoring results in an electronic reporting format approved by the Executive Officer. The ERS format includes, but is not limited to, a transmittal letter, summary of violation details and corrective actions, and transmittal receipt. If there are any discrepancies between the ERS requirements and the "hard copy" requirements listed in the SMP, then the approved ERS requirements supercede.

F. Add at the end of Section F.5, Annual Reporting, the following:

d. A plan view drawing or map showing the Discharger's facility, flow routing and sampling and observation station locations.

G. Add as Section F.6 the following:

Reports of Wastewater Overflows

Overflows of sewage from the Discharger's collection system, other than overflows specifically addressed elsewhere in this Order and SMP, shall be reported to the Board in accordance with the reporting requirements and specifications developed with BACWA pursuant to the Board's Resolution No.R2-2003-0095

H. Amend Section E as Follows:

Recording Requirements – Records to be Maintained

Written reports, electronic records, strip charts, equipment calibration and maintenance records, and other records pertinent to demonstrating compliance with waste discharge requirements including SMP requirements, shall be maintained by the Discharger in a manner and at a location (e.g., wastewater treatment plant or discharger offices) such that the records are accessible to Board staff. These records shall be retained by the Discharger for a minimum of 3 years. The minimum period of retention shall be extended during the course of any unresolved litigation regarding the subject discharges, or when requested by the Regional Board or by the Regional Administrator of U.S. EPA, Region IX.

Records to be maintained shall include the following:

A. Parameter Sampling and Analyses, and Observations

For each sample, analysis, or observation conducted, records shall include the following:

1. Identity of the parameter.

2. Identity of the sampling or observation station, consistent with the station descriptions given in this SMP.

3. Date and time of the sampling or observation.

4. Method of sampling (grab, composite, other method).

5. Date and time the analysis was started and completed, and name of personnel or contract laboratory performing the analysis.

6. Reference or description of the procedure(s) used for sample preservation and handling, and analytical method(s) used.

7. Calculations of results.

8. Analytical method detection limits and related quantitation parameters.

9. Results of the analyses or observations.

B. Flow Monitoring Data

For all required flow monitoring (e.g., influent and effluent flows), records shall include the following:

1. Total flow or volume for each day.

2. Maximum, minimum, and average daily flows for each calendar month.

C. Wastewater Treatment Process Solids

1. For each treatment unit process that involves solid removal from the wastewater stream, records shall include the following:

   a. Total volume and/or mass quantification of solids removed from each unit (e.g., grit, skimmings, undigested sludge), for each calendar month

   b. Final disposition of such solids (e.g., landfill, other subsequent treatment unit).

2. For final dewatered sludge from the treatment plant as a whole, records shall include the following:

   a. Total volume and/or mass quantification of dewatered sludge, for each calendar month.

   b. Solids content of the dewatered sludge.

   c. Final disposition of dewatered sludge (point of disposal location and disposal method).

D. Disinfection Process

For the disinfection process, records shall be maintained documenting process operation and performance, including the following:

1. For bacteriological analyses:

   a. Date and time of each sample collected.

   b. Wastewater flow rate at the time of the sample collection.

   c. Results of the sample analyses (coliform count).

   d. Required statistical parameters of cumulative coliform values (e.g., moving the median or geometric mean for a number of samples or the sampling period identified in waste discharge requirements).

2. For the chlorination process, at least daily average values for the following:

   a. Chlorine residual in contact basin (mg/L).

b. Chlorine dosage (gal/day).

c. Dechlorination chemical dosage (kg/day).

E. Treatment Process Bypasses

A chronological log of all treatment process bypasses, other than wet weather bypasses addressed elsewhere in this Order and SMP, shall include the following:

1. Identification of the treatment process bypassed.

2. Date(s) and times of bypass beginning and end.

3. Total bypass duration.

4. Estimated total volume.

5. Description of, or reference to other report(s) describing, the bypass event, the cause, corrective actions taken, and any additional monitoring conducted.

F. Collection System Overflows

A chronological log of all collection system overflows shall include the following:

1. Location of the overflow.

2. Date(s) and times of overflow beginning and end.

3. Total overflow duration.

4. Estimated total volume.

5. Description of, or reference to other report(s) describing, the overflow event, the cause, corrective actions taken, and any additional monitoring conducted.

IV. MISCELLANEOUS REPORTING

A. The Discharger shall retain and submit (when required by the Executive Officer) the following information concerning the monitoring program for organic and metallic pollutants:

1. Description of sample stations, times, and procedures.

2. Description of sample containers, storage, and holding time prior to analysis.

3. Quality assurance procedures together with any test results for replicate samples, sample blanks, and any quality assurance tests, and the recovery percentages for the internal surrogate standard.

B. The Discharger shall submit in the monthly SMR the metallic and organic test results together with the detection limits (including unidentified peaks) and MLs. All unidentified (non-Priority Pollutant) peaks detected in the U.S. EPA 624, 625 test methods shall be identified and semi-quantified. Hydrocarbons detected at <10 µg/L based on the nearest internal standard may be

appropriately grouped and identified together as aliphatic, aromatic, and unsaturated hydrocarbons. All other hydrocarbons detected at >10 µg/L based on the nearest internal standard shall be identified and semi-quantified.

V. SELECTED CONSTITUENTS MONITORING

A. Effluent monitoring shall include evaluation for all constituents listed in Table 1 by sampling and analysis of final effluent.

B. Analyses shall be conducted using the lowest commercially available and reasonably achievable detection levels. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to respective WQOs.

VI. MONITORING METHODS AND MINIMUM DETECTION LEVELS

The Discharger may use the methods listed in Table 2, above, or alternative test procedures that have been approved by the U.S. EPA Regional Administrator pursuant to 40 CFR 136.4 and 40 CFR 136.5 (revised as of May 14, 1999).

VII. SELF-MONITORING PROGRAM CERTIFICATION

I, Bruce H. Wolfe, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Board Order No. R2-2004-0036.

2. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the Discharger, and revisions will be ordered by the Executive Officer.

3. Is effective as of August 1, 2004.

Bruce H. Wolfe

BRUCE H. WOLFE
EXECUTIVE OFFICER

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
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FACT SHEET
for

NPDES PERMIT AND WASTE DISCHARGE REQUIREMENTS FOR

U.S. NAVY, NAVAL SUPPORT ACTIVITY
TREASURE ISLAND
SAN FRANCISCO COUNTY

NPDES PERMIT NO. CA0110116
ORDER NO. R2-2004-0036

PUBLIC NOTICE:

Written Comments

- Interested persons are invited to submit written comments concerning this Order.
- Comments must be submitted to the Water Board no later than 5:00 p.m. on April 22, 2004.
- Send comments to the Attention of Ann M. Powell.

Public Hearing

- The Order will be considered for adoption by the Board at a public hearing during the Board's regular monthly meeting at: Elihu Harris State Office Building, 1515 Clay Street, Oakland, CA; 1st floor Auditorium.
- This meeting will be held on: May 19, 2004, starting at 9:00 am.

Additional Information

- For additional information about this matter, interested persons should contact Regional Board staff member: Ms. Ann M. Powell, Phone: (510) 622-2474; email: amp@rb2.swrcb.ca.gov

This Fact Sheet contains information regarding a reissuance of waste discharge requirements and National Pollutant Discharge Elimination System (NPDES) permit for the U.S. Navy, Naval Support Activity, Treasure Island for sanitary wastewater discharges. The Fact Sheet describes the factual, legal, and methodological basis for the sections addressed in the Order and provides supporting documentation to explain the rationale and assumptions used in deriving the effluent limitations.

I. INTRODUCTION

The Discharger applied to the Board for reissuance of waste discharge requirements and a permit to discharge sanitary wastewater to waters of the State and the United States under the NPDES. The application and Report of Waste Discharge are dated December 27, 1999.

1. Facility Description

The Discharger owns and operates a Wastewater Treatment Plant (the plant), located on the north side of Treasure Island, San Francisco County, California. Sewage system functions are performed by the City and County of San Francisco (City) under a 1997 Cooperative Agreement (CA) between the U.S. Navy and the City. Pursuant to the CA, the City, agreed to operate and maintain the utility systems at TI, including the plant, while the U.S. Navy retained ownership of all the utility systems. It is anticipated that ownership of the utility systems, including the plant, will be transferred to the City after the property is conveyed.

The plant provides secondary-level treatment for domestic wastewater from facilities on Treasure and Yerba Buena Islands (the Islands) located in San Francisco Bay. A location map of the Discharger's facility is included as Attachment A of this Order. Most of the facility has become inactive during the past several years, although several ongoing activities remain at the site. These include rental residential, businesses leases, firefighter training, Coast Guard Base on Yerba Buena Island, and Job Corps facilities. The current population is about 3,000. The facility ultimately is anticipated to be redeveloped by the City's Treasure Island Development Authority. Also, in the future, a pipeline may be constructed to divert wastewater from the islands to other treatment facilities

The plant has capacity to provide secondary-level treatment for 2.0 million gallons per day (MGD) of domestic wastewater. The plant's peak wet weather design flow is 8.0 MGD. With the reduced population on the Islands, the typical dry weather flows during 2002 were approximately 0.2 to 0.4 MGD. The upcoming redevelopment of the Islands will increase the population that is served by the plant. The Islands' population will increase from approximately 3,000 people (current level) to approximately 9,000 people (full build-out). The average dry weather flow will be approximately 1.1 MGD at full build-out.

2. Treatment Process Description

The Discharger's treatment process consists of screening, grit removal and primary clarification, secondary treatment by trickling filter, secondary clarification, chlorination, and dechlorination. Treated, disinfected and dechlorinated effluent from the plant is discharged into San Francisco Bay. The effluent is discharged through a submerged diffuser at latitude 37 degrees 49 minutes 50 seconds and longitude 122 degrees 21 minutes 25 seconds. The submerged diffuser is 400 feet offshore at a depth of 30 feet. The U.S. EPA and the Board have made the determination that this is a major facility.

3. Receiving Water Beneficial Uses

The receiving waters for the subject discharges are the waters of San Francisco Bay. The beneficial uses for San Francisco Bay, as identified in the Board's June 21, 1995 *Water Quality Control Plan San Francisco Bay Basin (Region 2)* (the Basin Plan) and based on known uses of the receiving waters near the discharge, are:

a. Industrial Service Supply
b. Industrial Process Supply
c. Navigation
d. Water Contact Recreation
e. Non-contact Water Recreation

f. Commercial and Sport Fishing
g. Wildlife Habitat
h. Preservation of Rare and Endangered Species
i. Fish Migration
j. Fish Spawning (potential for San Francisco Bay)
k. Shellfish Harvesting
l. Estuarine Habitat

4. Receiving Water Salinity

Salinity data from three Central San Francisco Bay monitoring stations (Yerba Buena, Point Isabel, and Richardson Bay) monitored through the San Francisco Bay Regional Monitoring Program for Trace Substances (the RMP) are all well above both the Basin Plan and California Toxics Rule (CTR) thresholds for salt water; therefore, the reasonable potential analysis (RPA) and effluent limitations specified in this Order for discharges to San Francisco Bay are based on saltwater Basin Plan water quality objectives (WQOs) and saltwater CTR and National Toxics Rule (NTR) water quality criteria (WQC).

II. DESCRIPTION OF EFFLUENT

The table below presents the quality of the discharge, based on January 2001 through December 2003 monitoring data for conventional and non-conventional pollutants and certain inorganic priority pollutants (metals and cyanide).

Table A. Summary of Discharge Data

Parameter	Average of All Measured Values, including ND[1]	Daily Maximum
BOD_5 (mg/L)	6	23
BOD_5 Removal (%)	97	95[2]
TSS (mg/L)	9	68
TSS Removal (%)	94	89 [2]
Settleable Solids (ml/L-hr)	<3	0.0
Oil and Grease (mg/L)	<5[3]	<5
Residual Chlorine (mg/L)	0	0
pH (s.u.)	6.0 (minimum)	8.0
Temperature (°C)	17.7	26.5
Ammonia (mg/L)	0.88	19.42
Total Coliform (mpn/100 ml)	<10 (minimum)	800
Arsenic (µg/L)	2.17	4.62
Cadmium (µg/L)	0.19	1.03
Chromium VI (µg/L)	0.83	2.53
Copper (µg/L)	11.87	21.77
Lead (µg/L)	3.07	13.88

Parameter	Average of All Measured Values, including ND[1]	Daily Maximum
Mercury (µg/L)	0.020	0.0591
Nickel (µg/L)	2.11	5.23
Selenium (µg/L)	0.35	1.07
Silver (µg/L)	0.24	3
Zinc (µg/L)	30.4	67.2
Cyanide (µg/L)	2.94	2.6[4]

BOD_5 = 5-day biochemical oxygen demand; TSS = total suspended solids; s.u. = standard units; ND = nondetect.

[1] ND indicates non detected values and are averaged at half the detection limit, except for BOD_5, TSS, and Oil & Grease, where detection limits are used to calculate the average values.

[2] These values represent the minimum percent removals for BOD_5 and TSS.

[3] Grease & Oil - all ND, detection limit is 5 mg/L

[4] Cyanide - only one value detected, but not quantified.

III. GENERAL RATIONALE AND REGULATORY BASES

Water quality objectives, criteria, effluent limitations, and calculations contained in the Order are based on:

- Sections 301 through 305, and 307 of the Federal *Water Pollution Control Act*, and amendments thereto, as applicable;

- The Board's June 21, 1995 *Water Quality Control Plan San Francisco Bay Basin (Region 2)* (the Basin Plan);

- The State Board's March 2, 2000 *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (the State Implementation Plan or SIP), and as subsequently approved by the Office of Administrative Law and the U.S. EPA;

- The U.S. EPA's May 18, 2000 *Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* (the California Toxics Rule – the CTR);

- The U.S. EPA's National Toxics Rule as promulgated [Federal Register Volume 57, 22 December 1992, page 60848] and subsequently amended (the NTR);

- The U.S. EPA's *Quality Criteria for Water* [EPA 440/5-86-001, 1986], and subsequent amendments, (the U.S. EPA Gold Book);

- Applicable Federal Regulations [40 CFR Parts 122 and 131];

- 40 CFR Part 131.36(b) and amended [Federal Register Volume 60, Number 86, 4 May 1995, pages 22229-22237];

- U.S. EPA's December 10, 1998 *National Recommended Water Quality Criteria* compilation [Federal Register Vol. 63, No. 237, pp. 68354-68364];

- U.S. EPA's December 27, 2002 *Revision of National Recommended Water Quality Criteria* compilation [Federal Register Vol. 67, No. 249, pp. 79091-79095]; and

- Board staff's Best Professional Judgment (BPJ), as defined by the Basin Plan, involves consideration of many factors, including the following:

  - the Basin Plan;

  - U.S. EPA Region 9's February 1994 *Guidance For NPDES Permit Issuance*;

  - U.S. EPA's March 1991 *Technical Support Document for Water Quality-Based Toxics Control* (the TSD);

  - U.S. EPA's October 1, 1993 *Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria*;

  - U.S. EPA's July 1994 *Whole Effluent Toxicity (WET) Control Policy*;

  - U.S. EPA's August 14, 1995 *National Policy Regarding Whole Effluent Toxicity Enforcement*;

  - U.S. EPA's April 10, 1996 *Clarifications Regarding Flexibility in 40 CFR Part 136 Whole Effluent Toxicity (WET) Test Methods*;

  - U.S. EPA Regions 9 & 10's May 31, 1996 *Guidance for Implementing Whole Effluent Toxicity Programs* Final;

  - U.S. EPA's February 19, 1997 *Draft Whole Effluent Toxicity (WET) Implementation Strategy*.

IV. SPECIFIC RATIONALE

Several specific factors affecting the development of limitations and requirements in the Order are discussed as follows:

1. Recent Plant Performance

Section 402(o) of Clean Water Act (CWA) and 40 CFR § 122.44(l) require that water quality-based effluent limitations (WQBELs) in re-issued permits be at least as stringent as in the previous Order. The SIP specifies that interim effluent limitations, if required, must be based on current treatment facility performance or on previous Order limitations whichever is more stringent (unless anti-backsliding requirements are met). In determining what constitutes "recent plant performance," best professional judgment (BPJ) was used. Effluent monitoring data collected from January 2001 through December 2003 for certain inorganic priority pollutants, and from January 1998 to February 2003 for certain organic pollutants, are considered representative of recent plant performance.

2. Impaired Water Bodies on 303(d) List

On June 6, 2003, the U.S. EPA approved a revised list of impaired water bodies prepared by the State (hereinafter referred to as the 2002 303(d) list), prepared pursuant to provisions of Section 303(d) of the federal CWA requiring identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. The pollutants impairing Central San Francisco Bay include chlordane, DDT, diazinon, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, PCBs, dioxin-like PCBs, and selenium. Copper and nickel, which were previously identified as impairing Central San Francisco Bay, were not included as impairing pollutants in the 2002 303(d) list and have been placed on the new Monitoring List.

The SIP requires final effluent limitations for all 303(d)-listed pollutants to be based on total maximum daily loads (TMDLs) and associated wasteload allocations (WLAs). The SIP and U.S. EPA regulations also require that final concentration-based WQBELs be included for all pollutants having reasonable potential to cause or contribute to an exceedence of applicable water quality standards (having reasonable potential or RP). The SIP requires that where the discharger has demonstrated infeasibility to meet the final WQBELs, interim performance-based limitations (IPBLs) or previous Order limitations (whichever is more stringent) be established in the new Order, together with a compliance schedule that shall remain in effect until final effluent limitations are adopted. The SIP also requires the inclusion of appropriate provisions for waste minimization and source control where interim limitations are established.

3. Basis for Prohibitions

a). Prohibition A.1 (no discharges other than as described in the permit): This prohibition is based on the Basin Plan, previous Order, and BPJ.

b). Prohibitions A.2 (10:1 dilution): These prohibitions are based on the Basin Plan. The Basin Plan prohibits discharges not receiving a minimum initial dilution of 10:1 (Chapter 4, Discharge Prohibition No. 1).

c). Prohibition A.3 (no bypass or overflow): This prohibition is retained from the previous Order and is based on the U.S. EPA prohibition and/or restrictions regarding bypass and overflow contained in 40 CFR 122.41(m).

d). Prohibition A.4 (flow limitation): This prohibition is based on the reliable treatment capacity of the plant. Exceedence of the treatment plant's average dry weather flow design capacity may result in lowering the reliability of compliance with water quality requirements, unless the Discharger demonstrates otherwise through an antidegradation study. This prohibition is based on 40 CFR 122.41(l).

4. Basis for Effluent Limitations

a) Effluent Limitations B.1: Effluent limits for conventional and non-conventional pollutants.

Constituent	Units	Monthly Average	Weekly Average	Daily Maximum	Instantaneous Maximum
B.1.a. Biochemical Oxygen Demand (BOD)	mg/L	30	45	--	--
B.1.b. Total Suspended Solids (TSS)	mg/L	30	45	--	--
B.1.c. Oil & Grease	mg/L	10	--	20	--
B.1.e. Total Chlorine Residual (1)	mg/L	--	--	--	0.0

These limits are technology-based limits representative of, and intended to ensure, adequate and reliable secondary level wastewater treatment. These limits are based on the Basin Plan (Chapter 4, pg 4-8, and Table 4-2, at pg 4-69). All other limits are unchanged from the previous Order, except that the daily maximum limits for BOD and TSS are removed to be consistent with the Basin Plan. In addition, the Basin Plan Amendment, adopted on January 21, 2004, removed the settleable matter (SM) effluent limitations for secondary sewage treatment plants because they are not an appropriate indicator for secondary sewage treatment plants. Although the amendment does not become effective until it is approved by the Office of Administrative Law (OAL), this Order does not impose the SM limits based on the same reasons they were removed from the Basin Plan. Should this change not be approved by the OAL, the Board will amend this Order to reinstate this requirement as appropriate. Compliance has been demonstrated by existing plant performance.

b) Effluent Limitation B.2 (pH, minimum 6.0, maximum 9.0): This effluent limitation is unchanged from the previous Order. The limitation is based on the Basin Plan (Chapter 4, Table 4-2), which is derived from federal requirements (40 CFR 133.102). This is a previous Order effluent limitation and compliance has been demonstrated by existing plant performance.

c) Effluent Limitation B.3 (BOD and TSS monthly average 85 percent removal): These are technology-based, standard secondary treatment requirements, and are retained from the previous Order. These requirements are based on Basin Plan requirements (Table 4-2, pg. 4–69), which are derived from U.S. EPA requirements at 40 CFR 133.102. Compliance has been demonstrated by existing plant performance for ordinary flows (dry weather flows and most wet weather flows). During the past few years, the Discharger has consistently met these removal efficiency limits.

d) Effluent Limitation B.4 (Bacteria): The purpose of this effluent limitation is to ensure adequate disinfection of the discharge in order to protect beneficial uses of the receiving waters. Effluent limits are based on WQOs for bacteriological parameters for receiving water beneficial uses. WQOs are given in terms of parameters, which serve as surrogates for pathogenic organisms. The traditional parameter for this purpose is coliform bacteria, either as total coliform or as fecal coliform. The U.S. EPA's May 2002 draft implementation guidance for bacteriological water quality criteria recommended either enterococcus or *E. coli*, or both together, as superior to total or fecal coliform as bacteriological indicators for human health pathogenic risk. This recommendation was based on multiple sources of coliform bacteria, including humans, and research results showing that many of these forms are unrelated to human pathogens or risk potential. A growing number of studies (including an 1995 epidemiological study conducted by the Santa Monica Bay Restoration Project and other studies referenced in the May 2002 U.S. EPA Guidance) have indicated that enterococcus and/or *E. coli* counts are more significantly

correlated with human health problems than coliform counts. Thus, enterococcus bacteria are recognized by U.S. EPA and others as an accurate indicator of human health risk potential from water contact.

However, until the Discharger undertakes a bacteriological study to conclusively demonstrate that substitution of fecal coliform, *E. coli*, or enterococcus for total coliform limits would be protective of the beneficial uses of the receiving water, the bacterioligical effluent limitation will continue to be expressed as total coliform. These are previous Order effluent limitations and compliance has been demonstrated by existing plant performance.

e) Effluent Limitation B.5 (Whole Effluent Acute Toxicity): The Basin Plan specifies a narrative objective for toxicity, requiring that all waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental response on aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alternations in population, community ecology, or receiving water biota. These effluent toxicity limitations are necessary to ensure that this objective is protected. The whole effluent acute toxicity limitations for an eleven-sample median and an eleven-sample 90th percentile value are consistent with the previous Order and are based on the Basin Plan (Table 4-4, pg. 4–70). The previous Order required testing of two species (rainbow trout and three-spine stickleback). This Order requires the Discharger to use the U.S. EPA most recently promulgated testing method, currently the 5th edition, with two testing species: rainbow trout and fathead minnow tested concurrently, until a more sensitive species can be identified.

f) Effluent Limitation B.6 (Toxic Substances):

1. Reasonable Potential Analysis (RPA)

Code of Federal Regulations Title 40, Part 122.44(d)(1)(i) (40 CFR 122.44(d)(1)(i)) specifies that permits must 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" (have Reasonable Potential or RP). Thus, assessing whether a pollutant has RP is the fundamental step in determining whether or not a WQBEL is required. The following sections describe the RPA and the results of such an analysis for the pollutants identified in the Basin Plan and the CTR.

i) *WQOs and WQC*: The RPA uses Basin Plan WQOs, including narrative toxicity objectives in the Basin Plan, and applicable WQC in the CTR/NTR, or site-specific objectives (SSOs) if available, after adjusting for site-specific hardness and translators, if applicable. The governing WQOs/WQC are shown in **Attachment 1** of this Fact Sheet.

ii) *Methodology*: The RPA uses the methods and procedures prescribed in Section 1.3 of the SIP. Board staff has analyzed the effluent and background data and the nature of facility operations to determine if the discharge shows reasonable potential with respect to the governing WQOs or WQC. **Attachment 1** of this Fact Sheet shows the step-wise process described in Section 1.3 of the SIP.

iii) *Effluent and background data*: The RPA is based on effluent data collected by the Discharger from January 2001 through December 2003 for inorganic priority pollutants and from January 1998-February 2003 for certain organic priority pollutants. Water quality data collected from San Francisco Bay at the Yerba Buena Island monitoring station through the RMP from March 1993 to August 2001 were reviewed to determine the maximum observed background values. The RMP station at Yerba Buena Island, located in the Central Bay, has been sampled for most of the inorganic and some of the organic toxic pollutants; however, not all the constituents listed in the CTR were analyzed by the RMP during this time. Effluent and RMP data are included in **Attachments 2 and 3, respectively**. On May 15, 2003, a group of several San Francisco Bay Region dischargers (known as the Bay Area Clean Water Agencies, or BACWA) submitted a collaborative receiving water study, entitled the *San Francisco Bay Ambient Water Monitoring Interim Report*. This study summarizes the monitoring results from sampling events in 2002 and 2003 for the remaining priority pollutants not monitored by the RMP. The RPA was conducted and the WQBELs were calculated using RMP data from March 1993 to August 2001 for inorganics and organics at the Yerba Buena Island, and additional data from the BACWA *Ambient Water Monitoring Interim Report* for the Yerba Buena Island RMP station.

iv) *RPA determination*: The RPA results are shown below in Table B and **Attachment 1** of this Fact Sheet. The pollutants that exhibit RP are copper, lead, mercury, silver, zinc, cyanide, 4,4'-DDE, dieldrin, and dioxin TEQ.

Table B. Summary of Reasonable Potential Results

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL[1] (µg/L)	Governing WQO/WQC (ug/L)	Maximum Background or Minimum DL[1] (µg/L)	RPA Results[2]
1	Antimony	1	4300	**1.8**	N
2	Arsenic	**4.62**	36	**2.46**	N
3	Beryllium	1	NA	**0.215**	N
4	Cadmium	**1.03**	9.3	**0.1268**	N
5b	Chromium (VI)	**2.53**	50	**4.4**	N
6	Copper	**21.77**	3.73	**2.45**	Y
7	Lead	**13.88**	5.6	**0.8**	Y
8	Mercury	**0.0591**	0.025	**0.0086**	Y
9	Nickel	**5.23**	7.1	**3.7**	N
10	Selenium	**1.07**	5.0	**0.39**	N
11	Silver	**3**	2.3	**0.0516**	Y
12	Thallium	1	6.3	**0.21**	N
13	Zinc	**67.2**	58	**4.4**	Y
14	Cyanide	**2.6**	1	0.4	Y
16	2,3,7,8-TCDD (Dioxin)	0.00000095	0.000000014	1×10^{-9}	N
	TCDD TEQ	0.00000095	0.000000014	**0.000000071**	Y
17	Acrolein	NA	780	0.5	Ud
18	Acrylonitrile	NA	0.66	**0.03**	Ud
19	Benzene	1	71	0.05	N

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL[1] (µg/L)	Governing WQO/WQC (ug/L)	Maximum Background or Minimum DL[1] (µg/L)	RPA Results[2]
20	Bromoform	NA	360	0.5	Ud
21	Carbon Tetrachloride	NA	4.4	**0.06**	Ud
22	Chlorobenzene	NA	21,000	0.5	Ud
23	Chlorodibromomethane	NA	34	0.05	Ud
24	Chloroethane	NA	NA	0.5	Uo, Ud
25	2-Chloroethylvinyl Ether	NA	NA	0.5	Uo, Ud
26	Chloroform	**5.8**	NA	0.5	Uo
27	Dichlorobromomethane	NA	46	0.05	Ud
28	1,1-Dichloroethane	NA	NA	0.05	Uo, Ud
29	1,2-Dichloroethane	NA	99	**0.04**	Ud
30	1,1-Dichloroethylene	NA	3.2	0.5	Ud
31	1,2-Dichloropropane	NA	39	0.05	Ud
32	1,3-Dichloropropylene	NA	1,700	NA	Ud
33	Ethylbenzene	NA	29,000	0.5	Ud
34	Methyl Bromide	NA	4,000	0.5	Ud
35	Methyl Chloride	NA	NA	0.5	Uo, Ud
36	Methylene Chloride	1	1,600	**0.5**	N
37	1,1,2,2-Tetrachloroethane	NA	11	0.05	Ud
38	Tetrachloroethylene	NA	8.85	0.05	Ud
39	Toluene	1	200,000	0.3	N
40	1,2-Trans-Dichloroethylene	NA	140,000	0.5	Ud
41	1,1,1-Trichloroethane	NA	NA	0.5	Uo, Ud
42	1,1,2-Trichloroethane	NA	42	0.05	Ud
43	Trichloroethylene	NA	81	0.5	Ud
44	Vinyl Chloride	NA	525	0.5	Ud
45	Chlorophenol	10	400	1.2	N
46	2,4-Dichlorophenol	10	790	1.3	N
47	2,4-Dimethylphenol	10	2,300	1.3	N
48	2-Methyl-4,6-Dinitrophenol	NA	765	1.2	Ud
49	2,4-Dinitrophenol	100	14,000	0.7	N
50	2-Nitrophenol	10	NA	1.3	Uo
51	4-Nitrophenol	20	NA	1.6	Uo
52	3-Methyl-4-Chlorophenol	NA	NA	1.1	Uo
53	Pentachlorophenol	0.5	7.9	1	N
54	Phenol	NA	4,600,000	1.3	Ud
55	2,4,6-Trichlorophenol	NA	6.5	1.3	Ud
56	Acenaphthene	0.03	2700	**0.0015**	N
57	Acenaphthylene	0.07	NA	**0.00053**	N
58	Anthracene	**0.005**	110000	**0.0005**	N
59	Benzidine	100	0.00054	0.0015	N
60	Benzo(a)Anthracene	0.007	0.049	**0.0053**	N

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL[1] (µg/L)	Governing WQO/WQC (ug/L)	Maximum Background or Minimum DL[1] (µg/L)	RPA Results[2]
61	Benzo(a)Pyrene	0.01	0.049	**0.00029**	N
62	Benzo(b)Fluoranthene	0.003	0.049	**0.0046**	N
63	Benzo(ghi)Perylene	0.01	NA	**0.0027**	Uo
64	Benzo(k)Fluoranthene	0.001	0.049	**0.0015**	N
65	Bis(2-Chloroethoxy)Methane	20	NA	0.3	Uo
66	Bis(2-Chloroethyl)Ether	20	1.4	0.3	N
67	Bis(2-Chloroisopropyl)Ether	20	170000	NA	N
68	Bis(2-Ethylhexyl)Phthalate	NA	5.9	0.5	Ud
69	4-Bromophenyl Phenyl Ether	10	NA	0.23	Uo
70	Butylbenzyl Phthalate	10	5200	0.52	N
71	2-Chloronaphthalene	10	4300	0.3	N
72	4-Chlorophenyl Phenyl Ether	10	NA	0.3	Uo
73	Chrysene	0.002	0.049	**0.0024**	N
74	Dibenzo(a,h)Anthracene	0.007	0.049	**0.00064**	N
75	1,2 Dichlorobenzene	1	17000	0.8	N
76	1,3 Dichlorobenzene	1	2600	0.8	N
77	1,4 Dichlorobenzene	1	2600	0.8	N
78	3,3-Dichlorobenzidine	100	0.077	0.001	N
79	Diethyl Phthalate	10	120000	0.24	N
80	Dimethyl Phthalate	10	2900000	0.24	N
81	Di-n-Butyl Phthalate	20	12000	0.5	N
82	2,4-Dinitrotoluene	10	9.1	0.27	N
83	2,6-Dinitrotoluene	10	NA	0.29	Uo
84	Di-n-Octyl Phthalate	20	NA	0.38	Uo
85	1,2-Diphenylhydrazine	20	0.54	**0.0037**	N
86	Fluoranthene	0.04	370	**0.011**	N
87	Fluorene	0.008	14000	**0.00208**	N
88	Hexachlorobenzene	10	0.00077	**0.0000202**	N
89	Hexachlorobutadiene	20	50	0.3	N
90	Hexachlorocyclopentadiene	20	17000	0.31	N
91	Hexachloroethane	10	8.9	0.2	N
92	Indeno(1,2,3-cd) Pyrene	0.01	0.049	**0.004**	N
93	Isophorone	10	600	0.3	N
94	Naphthalene	0.06	NA	**0.0023**	Uo
95	Nitrobenzene	10	1900	0.25	N
96	N-Nitrosodimethylamine	10	8.1	0.3	N
97	N-Nitrosodi-n-	10	1.4	0.001	N

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL[1] (µg/L)	Governing WQO/WQC (ug/L)	Maximum Background or Minimum DL[1] (µg/L)	RPA Results[2]
	Propylamine				
98	N-Nitrosodiphenylamine	10	16	0.001	N
99	Phenanthrene	**0.149**	NA	**0.0061**	Uo
100	Pyrene	0.009	11000	**0.0051**	N
101	1,2,4-Trichlorobenzene	10	NA	0.3	Uo
102	Aldrin	0.00202	0.00014	NA	N
103	alpha-BHC	0.00108	0.013	**0.000496**	N
104	beta-BHC	0.00157	0.046	**0.000413**	N
105	gamma-BHC	0.00112	0.063	**0.0007034**	N
106	delta-BHC	0.001	NA	**0.000042**	N
107	Chlordane	0.0034	0.00059	**0.00018**	N
108	4,4'-DDT	0.00329	0.00059	**0.000066**	N
109	4,4'-DDE	0.00183	0.00059	**0.000693**	Y
110	4,4'-DDD	0.00183	0.00084	**0.000313**	N
111	Dieldrin	0.00193	0.00014	**0.000264**	Y
112	alpha-Endosulfan	0.00263	0.0087	**0.000031**	N
113	beta-Endosulfan	0.00183	0.0087	**0.000069**	N
114	Endosulfan Sulfate	0.00217	240	**0.0000819**	N
115	Endrin	0.00208	0.0023	**0.000036**	N
116	Endrin Aldehyde	0.00241	0.81	NA	N
117	Heptachlor	0.001	0.00021	**0.000019**	N
118	Heptachlor Epoxide	0.00123	0.00011	**0.000094**	N
119-125	PCBs	0.1	0.00017	NA	N
126	Toxaphene	0.035	0.0002	NA	N
	Tributyltin	**0.0046**	0.01	0.001	N
	Total PAHs	**0.155**	15	**0.052**	N

1) Values for MEC or maximum background in bold are the actual detected concentrations, otherwise the values shown are the minimum detection levels.
NA = Not Available (there is not monitoring data for this constituent).

2) RP =Yes, if either MEC or Background > WQO/WQC.
RP = No, if both MEC or background < WQO/WQC or all effluent concentrations non-detect and background <WQO/WQC or no background available.
RP = Ud (undetermined due to lack of effluent monitoring data).
RP = Uo (undetermined if no objective promulgated).

v) *Constituents with limited data*: Reasonable potential could not be determined for some of the organic priority pollutants due to the absence of effluent data or applicable WQO/WQC. As required by the Board's August 6, 2001 Letter from Board staff to all permittees, the Discharger is required to continue to monitor for those pollutants in this category using analytical methods that provide the best detection limits reasonably feasible. These pollutants' RP will be reevaluated in the future to determine whether there is a need to add numeric effluent limitations to the Order or to continue monitoring.

vi) *Pollutants with no reasonable potential*: WQBELs are not included in the Order for constituents that do not have reasonable potential to cause or contribute to exceedance of applicable WQOs or WQC. However, monitoring for those pollutants is still required, under the provisions of this Order. If concentrations of these constituents are found to increase significantly, the Discharger will be required to investigate the source(s) of the increase(s). Remedial measures are required if the increases pose a threat to water quality in the receiving water.

vii) *Order reopener:* The Order includes a reopener provision to allow numeric effluent limitations to be added for any constituent that in the future exhibits reasonable potential to cause or contribute to exceedance of a WQO or WQC. This determination, based on monitoring results, will be made by the Board.

2. Dilution

The Board believes a conservative 10:1 dilution credit for discharges of non-bioaccumulative pollutants to San Francisco Bay is necessary for protection of beneficial uses. Just prior to Board consideration, the City submitted a Dilution Study (using U.S. EPA Visual Plume UM3) to model the discharge from this plant. Results included a determination that dilution factors for the zone of initial dilution range from 110 to 270. Due to technical deficiencies within the study, we are unable to grant these factors for dilution. Because a greater dilution credit was not currently justified, dilution will remain 10:1. The basis for limiting the dilution credit is based on SIP provisions in Section 1.4.2. The following outlines the basis for derivation of the dilution credit:

a. 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.
b. Due to the complex hydrology of San Francisco Bay, a mixing zone cannot be accurately established.
c. Previous dilution studies do not fully account for the cumulative effects of other wastewater discharges to the system.
d. The SIP allows limiting a mixing zone and dilution credit for persistent pollutants (e.g., copper, lead, and nickel).

The main justification for using a 10:1 dilution credit is uncertainty in accurately determining ambient background and uncertainty in accurately determining the mixing zone in a complex estuarine system with multiple wastewater discharges.

a. **Complex Estuarine System Necessitates Far-Field Background** - The SIP allows background to be determined on a discharge-by-discharge or water body-by-water body basis (SIP section 1.4.3). Consistent with the SIP, Board staff has chosen to use a water body-by-water body basis because of the uncertainties inherent in accurately characterizing ambient background in a complex estuarine system on a discharge-by-discharge basis.

With this in mind, the Yerba Buena Island Station fits the guidance for ambient background in the SIP compared to other stations in the RMP. The SIP states that background data are applicable if they are "representative of the ambient receiving water

column that will mix with the discharge." Board Staff believe that data from this station are representative of water that will mix with the discharge from Outfall E-001.

b. **Uncertainties Prevent Accurate Mixing Zones in Complex Estuarine Systems** - There are uncertainties in accurately determining the mixing zones for each discharge. The models that have been used by dischargers to predict dilution have not considered the three-dimensional nature of the currents in the estuary resulting from the interaction of tidal flushes and seasonal fresh water outflows. Saltwater is heavier than fresh water. Colder saltwater from the ocean flushes in twice a day generally under the warmer fresh river waters that flow out annually. When these waters mix and interact, complex circulation patterns occur due to the different densities of these waters. These complex patterns occur throughout the estuary but are most prevalent in the San Pablo Bay, Carquinez Strait, and Suisun Bay areas. The locations change depending on the strength of each tide and the variable rate of delta outflow. Additionally, sediment loads to the Bay from the Central Valley also change on a longer-term basis. These changes can result in changes to the depths of different parts of the Bay making some areas more shallow and/or other areas more deep. These changes affect flow patterns that in turn can affect the initial dilution achieved by a discharger's diffuser.

c. **Dye studies do not account for cumulative effects from other discharges** - The tracer and dye studies conducted are often not long enough in duration to fully assess the long residence time of a portion of the discharge that is not flushed out of the system. In other words, some of the discharge, albeit a small portion, makes up part of the dilution water. So unless the dye studies are of long enough duration, the diluting effect on the dye measures only the initial dilution with "clean" dilution water rather than the actual dilution with "clean" dilution water plus some amount of original discharge that resides in the system. Furthermore, both models and dye studies that have been conducted have not considered the effects of discharges from other nearby discharge sources, nor the cumulative effect of discharges from over 20 other major dischargers to San Francisco Bay system. While it can be argued the effects from other discharges are accounted for by factoring in the local background concentration in calculating the limitations, accurate characterization of local background levels are also subject to uncertainties resulting from the interaction of tidal flushing and seasonal fresh water outflows described above.

d. **Mixing Zone Is Further Limited for Persistent Pollutants** - Discharges to the Bay Area waters are not completely-mixed discharges as defined by the SIP. Thus, the dilution credit should be determined using site-specific information for incompletely-mixed discharges. The SIP in section 1.4.2.2 specifies that the Regional Board "significantly limit a mixing zone and dilution credit as necessary... For example, in determining the extent of ... a mixing zone or dilution credit, the RWQCB shall consider the presence of pollutants in the discharge that are ... persistent." The SIP defines persistent pollutants to be "substances for which degradation or decomposition in the environment is nonexistent or very slow." The pollutants at issue here are persistent pollutants (e.g., copper, lead, nickel, silver, and zinc). The dilution studies that estimate actual dilution do not address the effects of these persistent pollutants in the Bay environment, such as their long-term effects on sediment concentrations."

3. Assimilative Capacity, Mass Loading, and Mass Emission Limitations

The Order contains a mass emission limitation for mercury because the Board has determined that there is no additional assimilative capacity for mercury in the San Francisco Bay. This determination is consistent with SIP Section 2.1.1 requirements that the Board consider whether additional assimilative capacity exists for 303(d)-listed bioaccumulative pollutants. That determination also considered the fact that a fish consumption advisory currently exists to protect human health from elevated mercury concentrations in fish taken from San Francisco Bay.

4. Final Water Quality-Based Effluent Limitations

The final WQBELs were developed for the toxic and priority pollutants that were determined to have reasonable potential to cause or contribute to exceedances of the WQOs or WQC. Final effluent limitations were calculated based on appropriate WQOs /WQC and the appropriate procedures specified in Section 1.4 of the SIP (See **Attachment 4** of this Fact Sheet). For the purpose of this Order, final WQBELs refer to all non-interim effluent limitations. The WQOs or WQC used for each pollutant with Reasonable Potential is indicated in Table C below as well as in **Attachment 4**.

Table C. Water Quality Objectives/Criteria for Pollutants with RP

Pollutant	Chronic WQO/WQC (µg/L)	Acute WQO/WQC (µg/L)	Human Health WQC (µg/L)	Basis of Lowest WQO /WQC Used in RP
Copper	3.7	5.8	--	CTR
Lead	5.6	140	--	BP
Mercury	0.025	2.1	0.051	BP
Silver	--	2.3	--	BP
Zinc	58	170	--	BP
Cyanide	1.0	1.0	220,000	NTR
4,4'-DDE	--	--	0.00059	CTR
Dieldrin	0.0019	0.71	0.00014	CTR
TCDD TEQ	--	--	1.4×10^{-8}	BP

5. Comparison to Previous Order Limitations

The effluent limitations for arsenic, cadmium, chromium (VI), nickel, selenium, PAHs, and phenols have been discontinued because there is no demonstration of RP, and therefore, no WQBELs are required. Comparisons to the previous Order limitations for other pollutants are discussed in the following sections.

6. Interim Limitations

Interim effluent limitations were derived for those constituents (copper, mercury, cyanide, 4,4'-DDE, and dieldrin) for which the Discharger has shown infeasibility of complying with the respective final limitations and has demonstrated that compliance schedules are justified based on the Discharger's source control and pollution minimization efforts in the past and continued efforts in the present and future. The SIP requires the interim numeric effluent

limitation for the pollutant to be based on either current treatment facility performance, or on the previous Order's limitation, whichever is more stringent. The interim effluent concentration limitation for copper was based on the previous Order limit. The interim limitation for mercury is based on the limitation developed from a statistical analysis of pooled ultraclean mercury data for POTWs throughout the San Francisco Bay Region. The interim limit for cyanide is based on the previous Order limit. Interim limitations were established for 4,4'-DDE and dieldrin based on their respective method limits (MLs). The interim limitations are also discussed in more detail below.

7. Feasibility Evaluation

The Discharger submitted an infeasibility to comply report on March 5, 2004 for copper, mercury, cyanide, 4,4'-DDE, and dieldrin. For constituents on which Board staff could perform meaningful statistical analysis (i.e., copper and mercury), self-monitoring data from January 2001- December 2003 were used to compare the mean, 95th percentile, and 99th percentile with the long-term average (LTA), AMEL, and MDEL to confirm if it is feasible for the Discharger to comply with WQBELs. If the LTA, AMEL, and MDEL all exceed the mean, 95th percentile, and 99th percentile, it is feasible for the Discharger to comply with WQBELs. Table D below shows these comparisons in µg/L:

Table D: Summary of Feasibility Analysis

Constituent	Mean / LTA	95th / AMEL	99th / MDEL	Feasible to Comply
Copper	11.9> 11	17.6> 13.8	21 > 20.4	**No**
Mercury	0.020 > 0.014	0.037 > 0.021	0.050> 0.039	**No**

Because cyanide was only detected in 1 out of 12 effluent samples, and the detection was made after the Discharger switched to an analytical method with a lower detection limit, Board staff cannot perform meaningful statistical analysis to determine feasibility to comply or to calculate an interim performance-based limit. Until sufficient effluent and background data is collected, an interim limit is necessary.

For 4,4'-DDE and dieldrin, the Discharger could not determine compliance with the final WQBELs as the MLs are higher than the final calculated WQBELs.

This Order establishes a compliance schedule until July 31, 2009 for copper, cyanide, 4,4'-DDE, and dieldrin. This Order establishes a compliance schedule until March 31, 2010 for mercury. These compliance schedules exceed the length of the Order; therefore, the calculated final limitations are intended for point of reference for the feasibility demonstration.

During the compliance schedules, interim limitations are included based on current treatment facility performance or on previous Order limitations, whichever is more stringent, to maintain existing water quality. **Attachment 5** details the general basis for final compliance dates. The Board may take appropriate enforcement actions if interim limitations and requirements are not met.

i. Copper – Further Discussion and Rationale for Interim Effluent Limitation: Interim effluent limitations are required for copper since the Discharger has demonstrated and

the Board verified that the final effluent limitations calculated according to the SIP (AMEL of 13.8 µg/L and MDEL of 20.4 µg/L) will be infeasible to meet. Self-monitoring data from January 2001- December 2003 indicate that effluent copper concentrations ranged from 8.1 µg/L to 21.77 µg/L (39 samples). Board staff calculated an IPBL of 25 µg/L (3 standard deviations above the mean), which is more stringent than the daily average limitation of 37 µg/L contained in the previous Order. Therefore, the 25 µg/L is established in this Order as the interim limitation, and will remain effect until July 31, 2009, or until the Board amends the limitation based on additional data or SSOs.

ii. Mercury – Further Discussion and Rationale for Interim Effluent Limitation: Interim effluent limitations are required for mercury since the Discharger has demonstrated and the Board verified that the final effluent limitations calculated according to the SIP (AMEL of 0.021 µg/L and MDEL of 0.039 µg/L) will be infeasible to meet. The existing monthly and daily average Order limitations for mercury are 0.21 µg/L and 1 µg/L. Effluent concentrations from January 2001 through December 2003 ranged from 0.0065 to 0.0591 µg/L (35 samples). The Board considered a 2001 staff report that identified two statistically derived IPBLs for mercury, 0.023 µg/L for advanced secondary treatment plants and 0.087 µg/L for secondary treatment plants. Since the Discharger operates a secondary treatment plant, the applicable IPBL is 0.087 µg/L. This IPBL shall remain in effect until March 31, 2010, or until the Board amends the limitation based on a WLA in the TMDL for mercury. However, during the next permit reissuance, the Board may reevaluate the interim mercury limitation.

iii. Cyanide – Further Discussion and Rationale for Interim Effluent Limitation: Interim effluent limitations are required for cyanide since the Discharger has demonstrated and the Board verified that the final effluent limitations calculated according to the SIP (AMEL of 3.2 µg/L and MDEL of 6.4 µg/L) will be infeasible to meet. Since Board staff cannot perform a meaningful statistical analysis on the limited effluent data, the previous Order limit of 10 µg/L is retained as the interim limit, and will remain in effect until July 31, 2009, or until the Board amends the limitation based on additional data or SSOs.

iv. 4,4'-DDE and Dieldrin – Further Discussion and Rationale for Interim Effluent Limitations: Interim effluent limitations are required for these pollutants because compliance with the final WQBELs (AMEL of 0.00059 µg/L and MDEL of 0.00118 µg/L for 4,4'-DDE and AMEL of 0.00014 µg/L and MDEL of 0.00028 µg/L for dieldrin) cannot be determined at this time as the MLs are higher than the final calculated WQBELs. Interim limitations are established at the respective MLs. The interim limitations are as follows; 4,4'-DDE is 0.05 µg/L and dieldrin is 0.01 µg/L. These interim limits shall remain in effect until July 31, 2009, or until the Board amends the limitation based on WLAs in the TMDL for 4,4'-DDE or dieldrin.

8. Interim Performance-Based Mercury Mass Emission Limitation

In addition to interim pooled performance-based concentration limitations, the Order includes an interim mercury mass-based effluent limitation of 0.0058 kilograms per month. This mass-based effluent limit is calculated based on the WQO of 0.025 ug/L and the dry weather design capacity of the WWTP (2 mgd), and applies only during the dry weather season (May through October).

2 mgd * 0.025ug/L * 0.1151 = 0.0058 kg/mo

It will maintain current loadings until a TMDL is established. The final mass-based effluent limitation will likely be based on the WLA derived from the mercury TMDL. As a prerequisite to being granted the compliance schedule and interim limits described above, the Discharger will implement a mercury source control special project and mercury source control strategies consisting of those to be developed in the Treasure Island Wastewater Pollution Prevention Program. This should benefit overall mercury loadings to the Bay by reducing tube breakage during household garbage collection, which contributes mercury to storm runoff and the atmosphere.

9. Attainability of Interim Performance-Based Limitations

i. Copper

During the period January 2001 through December 2003, the plant's effluent concentrations for copper ranged from 8.1 to 21.77 µg/L (39 samples). All effluent copper concentrations were below the 25 µg/L interim limitation, it is, therefore, expected that the Discharger can comply with the interim limitation for copper.

ii. Mercury

Self-monitoring data from January 2001 through December 2003 indicate that mercury concentrations ranged from 0.0065 to 0.0591 µg/L. All of the 35 samples were below the interim limitation of 0.087 µg/L. It is, therefore, expected that the plant can comply with the interim concentration limitation of 0.087 µg/L for mercury. During that same period, the 12-month average mercury mass emissions ranged from 0.00058 kg/month to 0.0014 kg/month. Based on these results, the mass emission limitation of 0.0058 kg/mo should be attainable by the plant.

iii. Cyanide

During the period January 2001 through December 2003, the MEC for cyanide was 2.6 µg/L, which is the only detected value. All other 11 samples were non-detect at method detection limits of 10, 5, and 0.4 µg/L, respectively, which are all below the interim limit of 10 µg/L. Therefore, it is expected that the Discharger can comply with this interim limit.

iv. 4,4'-DDE and Dieldrin

Self-monitoring effluent data are available from September 1999 - February 2003. Neither pollutant was detected in any effluent samples. Therefore, it is expected that the Discharger can comply with this interim limit

2. Basis for Receiving Water Limitations

a) Receiving water limitations C.1 and C.2 (conditions to be avoided): These limitations are based on the previous Order and the narrative/numerical objectives contained in Chapter 3 of the Basin Plan, pages 3-2 – 3-5.

b) Receiving water limitation C.3 (compliance with State Law): This requirement is in the previous Order, requires compliance with Federal and State law, and is self-explanatory.

3. Basis for Sludge Management Practices

These requirements are based on Table 4.1 of the Basin Plan and 40 CFR 503.

4. Basis for Self-Monitoring Requirements

The SMP includes monitoring at the outfall for conventional, non-conventional, and toxic pollutants, and acute toxicity. This Order requires monthly monitoring for lead, silver, and zinc to demonstrate compliance with final effluent limitations. For copper, mercury, and cyanide, the Discharger will also perform monthly monitoring to demonstrate compliance with interim limitations. For dioxin, 4,4'-DDE, and dieldrin, twice yearly monitoring is required to demonstrate compliance with the interim limits. In lieu of near field discharge specific ambient monitoring, it is generally acceptable that the Discharger participate in collaborative receiving water monitoring with other dischargers under the provisions of the Board's August 6, 2001 Letter and the RMP.

5. Basis for Provisions

a) Provisions E.1. (Order Compliance and Rescission of Previous Waste Discharge Requirements): Time of compliance is based on 40 CFR 122. The basis of this Order superceding and rescinding the previous Order is on 40 CFR 122.46.

b) Provision E.2 (Effluent Characterization for Selected Constituents): This provision is based on the Basin Plan and the SIP.

c) Provision E.3 (Mercury Source Control Special Project): This provision is based on the Basin Plan and the SIP.

d) Provision E.4 (Ambient Background Receiving Water Study): This provision is based on the Basin Plan and the SIP.

e) Provision E.5 (Cyanide Compliance Schedule and SSO Study). This provision, based on BPJ, requires the Discharger to participate in regional efforts to develop an SSO for cyanide and other ongoing studies to evaluate cyanide analytical methods and control options.

f) Provision E.6 (Pollution Prevention and Pollutant Minimization Program): This provision is based on the Basin Plan, pages 4-25 – 4-28, and the SIP, Section 2.1.

g) Provision E.7 (Whole Effluent Acute Toxicity): This provision establishes conditions by which compliance with Order effluent limitations for acute toxicity will be demonstrated. Conditions initially include the use of 96-hour static renewal bioassays, the use of rainbow trout, and the use of approved test methods as specified, currently 5th Edition U.S. EPA protocol.

h) Provision E.8 (Regional Monitoring Program): This provision, which requires the Discharger to continue to participate in the RMP, is based on the Basin Plan.

i) Provision E.9 (Optional Mass Offset): This option is provided to encourage the Discharger to further implement aggressive reduction of mass loads to San Francisco Bay.

j) Provision E.10 (Optional Receiving Water Beneficial Use and Alternate Bacteriological Limits Study): This provision is based on the SIP. If the Discharger undertakes a bacteriological study to conclusively demonstrate that substitution of fecal coliform, *E. Coli*, or enterococcus for total coliform limits would be protective of the beneficial uses of the receiving water, the Order will be amended to include the new bacteriological limits.

k) Provision E.11 (Optional Copper and Nickel Translator Study and Schedule): This provision allows the Discharger to conduct an optional copper and nickel translator study, based on BPJ and the SIP. This provision is based on the need to gather site-specific information in order to apply a different translator from the default translator specified in the CTR and SIP. Without site-specific data, the default translator of 0.83 has been used with the CTR chronic criterion to obtain a translated total copper criterion of 3.7 µg/L.

l) Provision E.12 (Wastewater Facilities, Review and Evaluation, Status Reports): This provision is based on the previous Order and the Basin Plan.

m) Provision E.13 (Operations and Maintenance Manual, Review and Status Reports), E.14 (Contingency Plan, Review and Status Reports), and E.15 (Annual Status Reports): These provisions are based on the Basin Plan, the requirements of 40 CFR 122, and the previous Order.

n) Provision E.16 (303(d)-listed Pollutants Site-Specific Objective and TMDL Status Review): Consistent with the SIP, the Discharger shall participate in the development of a TMDL or SSO for copper, cyanide, mercury, 4,4'-DDE, dioxin, and dieldrin. By January 31 of each year, the Discharger shall submit an update to the Board to document progress made on source control and pollutant minimization measures and development of TMDL or SSO. Board staff shall review the status of TMDL development. This Order may be reopened in the future to reflect any changes required by TMDL development.

o) Provision E.17 (New Water Quality Objectives): This provision allows future modification of the Order and effluent limitations as necessary in response to updated WQOs that may be established in the future. This provision is based on 40 CFR 123.

p) Provision E.18 (Self-Monitoring Program): The Discharger is required to conduct monitoring of the permitted discharges in order to evaluate compliance with Order conditions. Monitoring requirements are contained in the Self Monitoring Program (SMP) of the Order. This provision requires compliance with the SMP, and is based on 40 CFR 122.44(i), 122.62, 122.63 and 124.5. The SMP is a standard requirement in almost all NPDES permits issued by the Board, including this Order. It contains definitions of terms, specifies general sampling and analytical protocols, and sets out requirements for reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and Board's policies. The SMP also contains a sampling program specific for the facility. It defines the sampling stations and frequency, the pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are specified. Monitoring for additional constituents, for which no effluent limitations are established, is also required to provide data for future completion of RPAs for them.

q) Provision E.19 (Standard Provisions and Reporting Requirements): The purpose of this provision is to require compliance with the standard provisions and reporting requirements given in this Board's document titled *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993* (the Standard Provisions), or any amendments thereafter. That document is incorporated in the Order as an attachment to it. Where provisions or reporting requirements specified in the Order are different from equivalent or related provisions or reporting requirements given in the Standard Provisions, the Order specifications shall apply. The standard provisions and reporting requirements given in the above document are based on various state and federal regulations with specific references cited therein.

r) Provisions E.20 (Change in Control or Ownership): This provision is based on 40 CFR 122.61.

s) Provision E.21 (Order Reopener): This provision is based on 40 CFR 123.

t) Provision E.22 (NPDES Permit): This provision is based on 40 CFR 123.

u) Provisions E.23 (Order Expiration and Reapplication): This provision is based on 40 CFR 122.46(a).

V. WASTE DISCHARGE REQUIREMENT APPEALS

Any person may petition the State Water Resources Control Board to review the decision of the Board regarding the Waste Discharge Requirements. A petition must be made within 30 days of the Board public hearing.

VI. ATTACHMENTS

Attachment 1: RPA Results for Priority Pollutants
Attachment 2: Effluent Data
Attachment 3: RMP Data
Attachment 4: Calculation of Final WQBELs
Attachment 5: General Basis for Final Compliance Dates

Attachment 1

RPA Results for Priority Pollutants

Reasonable Potential Analysis
U.S. Navy-Naval Support Activity
Treasure Island

Beginning			Step 2	Step 3					Step 4		Step 2	Step 3		Step 5		Step 6	Steps 7 & 8	Final Result	
	Constituent name	C (ug/L) Lowest (most stringent) Criteria (Enter "No Criteria" for no criteria)	Effluent Data Available (Y/N)?	Are all data points non-detects (Y/N)?	If all data points ND Enter the min detection limit (MDL) (ug/L)	Enter the pollutant effluent detected max conc (ug/L)	If all data points are ND and MinDL>C, interim monitoring is required	Concentration from the effluent (MEC) (MEC= deteted max value: if all ND & MDL<C then MEC = MDL)	MEC vs. C 1. If MEC> or =C, effluent limitation is required; 2. If MEC<C, go to Step 5		B Available (Y/N)?	Are all B data points non-detects (Y/N)?	If all data points ND Enter the min detection limit (MDL) (ug/L)	Enter the pollutant B detected max conc (ug/L)	If all B is ND, is MDL>C?	B vs. C If B>C, effluent limitation is required	7) Review other information in the SIP page 4. If information is unavailable or insufficient: 8) the RWQCB shall establish interim monitoring requirements	RPA Result	Reason
1	Antimony	4,300	Y	Y	1		All ND, MDL<C, MEC=MDL	1	MEC<C, go to Step 5		Y	N		1.8		B<C, Step 7		No	MEC<C & B<C
2	Arsenic [b]	36	Y	N		4.62		4.62	MEC<C, go to Step 5		Y	N		2.46		B<C, Step 7		No	MEC<C & B<C
3	Beryllium	No Criteria	Y	Y	1		No Criteria	No Criteria	No Criteria		Y	N		0.215		No Criteria	No Criteria	Uo	No Criteria
4	Cadmium [b]	9.30	Y	N		1.03		1.03	MEC<C, go to Step 5		Y	N		0.1268		B<C, Step 7		No	MEC<C & B<C
5a	Chromium (III)	No Criteria	N				No effluent data				N					No detected value of B, Step		Ud	no effluent data & no B
5b	Chromium (VI) [b]	50.00	Y	N		2.53		2.53	MEC<C, go to Step 5		Y	N		4.4		B<C, Step 7		No	MEC<C & B<C
6	Copper (303d listed) [c]	3.73	Y	N		21.77		21.77	MEC>=C, Effluent Limits Required		Y	N		2.45		B<C, Step 7		Yes	MEC>C
7	Lead [b]	5.60	Y	N		13.88		13.88	MEC>=C, Effluent Limits Required		Y	N		0.8		B<C, Step 7		Yes	MEC>C
8	Mercury (303d listed) [b]	0.025	Y	N		0.0591		0.0591	MEC>=C, Effluent Limits Required		Y	N		0.0086		B<C, Step 7		Yes	MEC>C
9	Nickel [b]	7.10	Y	N		5.23		5.23	MEC<C, go to Step 5		Y	N		3.7		B<C, Step 7		No	MEC<C & B<C
10	Selenium (303d listed) [b]	5.00	Y	N		1.07		1.07	MEC<C, go to Step 5		Y	N		0.39		B<C, Step 7		No	MEC<C & B<C
11	Silver [b]	2.30	Y	N		3		3	MEC>=C, Effluent Limits Required		Y	N		0.0516		B<C, Step 7		Yes	MEC>C
12	Thallium	6.30	Y	Y	1		All ND, MDL<C, MEC=MDL	1	MEC<C, go to Step 5		Y	N		0.21		B<C, Step 7		No	MEC<C & B<C
13	Zinc [b]	58.00	Y	N		67.2		67.2	MEC>=C, Effluent Limits Required		Y	N		4.4		B<C, Step 7		Yes	MEC>C
14	Cyanide [b]	1.00	Y	N		2.6		2.6	MEC>=C, Effluent Limits Required		Y	Y	0.4	-	N	No detected value of B, Step		Yes	MEC>C
15	Asbestos	No Criteria	N				No Criteria	No Criteria	No Criteria		N					No Criteria	No Criteria	Uo	No Criteria
16	2,3,7,8 TCDD (303d listed)	0.000000014	Y	Y	0.00000095		All ND, MinDL>C, Go to Step 5				Y	Y	1E-09		N	No detected value of B, Step		No	UD; effluent data and B are ND
	TCDD TEQ	0.000000014	Y	Y	0.00000095		All ND, MinDL>C, Go to Step 5				Y	N		7.1E-08		B>C, Effluent Limit Required		Yes	B>C
17	Acrolein	780	N				No effluent data				Y	Y	0.5		N	No detected value of B, Step		No	Ud, no effluent data & B is ND
18	Acrylonitrile	0.66	N				No effluent data				Y	N		0.03		B<C, Step 7		Ud	no effluent data & B<C
19	Benzene	71	Y	Y	1		All ND, MDL<C, MEC=MDL	1	MEC<C, go to Step 5		Y	Y	0.05		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
20	Bromoform	360	N				No effluent data				Y	Y	0.5		N	No detected value of B, Step		No	Ud, no effluent data & B is ND
21	Carbon Tetrachloride	4.4	N				No effluent data				Y	N		0.06		B<C, Step 7		Ud	no effluent data & B<C
22	Chlorobenzene	21,000	N				No effluent data				Y	Y	0.5		N	No detected value of B, Step		No	Ud, no effluent data & B is ND
23	Chlorodibromomethane	34	N				No effluent data				Y	Y	0.05		N	No detected value of B, Step		No	Ud, no effluent data & B is ND
24	Chloroethane	No Criteria	N				No Criteria	No Criteria	No Criteria		Y	Y	0.5		N	No Criteria	No Criteria	Uo	No Criteria
25	2-Chloroethylvinyl ether	No Criteria	N				No Criteria	No Criteria	No Criteria		Y	Y	0.5		N	No Criteria	No Criteria	Uo	No Criteria
26	Chloroform	No Criteria	Y	N		5.8	No Criteria	No Criteria	No Criteria		Y	Y	0.5		N	No Criteria	No Criteria	Uo	No Criteria
27	Dichlorobromomethane	46	N				No effluent data				Y	Y	0.05		N	No detected value of B, Step		No	Ud, no effluent data & B is ND
28	1,1-Dichloroethane	No Criteria	N				No Criteria	No Criteria	No Criteria		Y	Y	0.05		N	No Criteria	No Criteria	Uo	No Criteria
29	1,2-Dichloroethane	99	N				No effluent data				Y	N		0.04		B<C, Step 7		Ud	no effluent data & B<C
30	1,1-Dichloroethylene	3.2	N				No effluent data				Y	Y	0.5		N	No detected value of B, Step		No	Ud, no effluent data & B is ND
31	1,2-Dichloropropane	39	N				No effluent data				Y	Y	0.05		N	No detected value of B, Step		No	Ud, no effluent data & B is ND
32	1,3-Dichloropropylene	1,700	N				No effluent data				N					No detected value of B, Step		Ud	no effluent data & no B
33	Ethylbenzene	29,000	N				No effluent data				Y	Y	0.5		N	No detected value of B, Step		No	Ud, no effluent data & B is ND
34	Methyl Bromide	4,000	N				No effluent data				Y	Y	0.5		N	No detected value of B, Step		No	Ud, no effluent data & B is ND
35	Methyl Chloride	No Criteria	N				No Criteria	No Criteria	No Criteria		Y	Y	0.5		N	No Criteria	No Criteria	Uo	No Criteria
36	Methylene Chloride	1,600	Y	Y	1		All ND, MDL<C, MEC=MDL	1	MEC<C, go to Step 5		Y	N		0.5		B<C, Step 7		No	MEC<C & B<C
37	1,1,2,2-Tetrachloroethane	11	N				No effluent data				Y	Y	0.05		N	No detected value of B, Step		No	Ud, no effluent data & B is ND
38	Tetrachloroethylene	8.85	N				No effluent data				Y	Y	0.05		N	No detected value of B, Step		No	Ud, no effluent data & B is ND
39	Toluene	200,000	Y	Y	1		All ND, MDL<C, MEC=MDL	1	MEC<C, go to Step 5		Y	Y	0.3		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
40	1,2-Trans-Dichloroethylene	140,000	N				No effluent data				Y	Y	0.5		N	No detected value of B, Step		No	Ud, no effluent data & B is ND
41	1,1,1-Trichloroethane	No Criteria	N				No Criteria	No Criteria	No Criteria		Y	Y	0.5		N	No Criteria	No Criteria	Uo	No Criteria
42	1,1,2-Trichloroethane	42	N				No effluent data				Y	Y	0.05		N	No detected value of B, Step		No	Ud, no effluent data & B is ND
43	Trichloroethylene	81	N				No effluent data				Y	Y	0.5		N	No detected value of B, Step		No	Ud, no effluent data & B is ND
44	Vinyl Chloride	525	N				No effluent data				Y	Y	0.5		N	No detected value of B, Step		No	Ud, no effluent data & B is ND
45	2-Chlorophenol	400	Y	Y	10		All ND, MDL<C, MEC=MDL	10	MEC<C, go to Step 5		Y	Y	1.2		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
46	2,4-Dichlorophenol	790	Y	Y	10		All ND, MDL<C, MEC=MDL	10	MEC<C, go to Step 5		Y	Y	1.3		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
47	2,4-Dimethylphenol	2,300	Y	Y	10		All ND, MDL<C, MEC=MDL	10	MEC<C, go to Step 5		Y	Y	1.3		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
48	2-Methyl- 4,6-Dinitrophenol	765	N				No effluent data				Y	Y	1.2		N	No detected value of B, Step		No	Ud, no effluent data & B is ND
49	2,4-Dinitrophenol	14,000	Y	Y	100		All ND, MDL<C, MEC=MDL	100	MEC<C, go to Step 5		Y	Y	0.7		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
50	2-Nitrophenol	No Criteria	Y	Y	10		No Criteria	No Criteria	No Criteria		Y	Y	1.3		N	No Criteria	No Criteria	Uo	No Criteria
51	4-Nitrophenol	No Criteria	Y	Y	20		No Criteria	No Criteria	No Criteria		Y	Y	1.6		N	No Criteria	No Criteria	Uo	No Criteria
52	3-Methyl 4-Chlorophenol	No Criteria	N				No Criteria	No Criteria	No Criteria		Y	Y	1.1		N	No Criteria	No Criteria	Uo	No Criteria
53	Pentachlorophenol	7.90	Y	Y	0.5		All ND, MDL<C, MEC=MDL	0.5	MEC<C, go to Step 5		Y	Y	1		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
54	Phenol	4,600,000	N				No effluent data				Y	Y	1.3		N	No detected value of B, Step		No	Ud, no effluent data & B is ND
55	2,4,6-Trichlorophenol	6.50	N				No effluent data				Y	Y	1.3		N	No detected value of B, Step		No	Ud, no effluent data & B is ND
56	Acenaphthene	2,700	Y	Y	0.03		All ND, MDL<C, MEC=MDL	0.03	MEC<C, go to Step 5		Y	N		0.0015		B<C, Step 7		No	MEC<C & B<C
57	Acenaphthylene	No Criteria	Y	Y	0.07		No Criteria	No Criteria	No Criteria		Y	N		0.00053		No Criteria	No Criteria	Uo	No Criteria
58	Anthracene	110,000	Y	N		0.005		0.005	MEC<C, go to Step 5		Y	N		0.0005		B<C, Step 7		No	MEC<C & B<C
59	Benzidine	0.00054	Y	Y	100		All ND, MinDL>C, Go to Step 5				Y	Y	0.0015		Y	No detected value of B, Step		No	UD; effluent data and B are ND
60	Benzo(a)Anthracene	0.049	Y	Y	0.007		All ND, MDL<C, MEC=MDL	0.007	MEC<C, go to Step 5		Y	N		0.0053		B<C, Step 7		No	MEC<C & B<C
61	Benzo(a)Pyrene	0.049	Y	Y	0.01		All ND, MDL<C, MEC=MDL	0.01	MEC<C, go to Step 5		Y	N		0.00029		B<C, Step 7		No	MEC<C & B<C
62	Benzo(b)Fluoranthene	0.049	Y	Y	0.003		All ND, MDL<C, MEC=MDL	0.003	MEC<C, go to Step 5		Y	N		0.0046		B<C, Step 7		No	MEC<C & B<C
63	Benzo(ghi)Perylene	No Criteria	Y	Y	0.01		No Criteria	No Criteria	No Criteria		Y	N		0.0027		No Criteria	No Criteria	Uo	No Criteria
64	Benzo(k)Fluoranthene	0.049	Y	Y	0.001		All ND, MDL<C, MEC=MDL	0.001	MEC<C, go to Step 5		Y	N		0.0015		B<C, Step 7		No	MEC<C & B<C
65	Bis(2-Chloroethoxy)Methane	No Criteria	Y	Y	20		No Criteria	No Criteria	No Criteria		Y	Y	0.3		N	No Criteria	No Criteria	Uo	No Criteria
66	Bis(2-Chloroethyl)Ether	1.40	Y	Y	20		All ND, MinDL>C, Go to Step 5				Y	Y	0.3		N	No detected value of B, Step		No	UD; effluent data and B are ND
67	Bis(2-Chloroisopropyl)Ether	170,000	Y	Y	20		All ND, MDL<C, MEC=MDL	20	MEC<C, go to Step 5		N					No detected value of B, Step		No	Ud;MEC<C & B is ND
68	Bis(2-Ethylhexyl)Phthalate	5.90	N				No effluent data				Y	Y	0.5		N	No detected value of B, Step		No	Ud, no effluent data & B is ND
69	4-Bromophenyl Phenyl Ether	No Criteria	Y	Y	10		No Criteria	No Criteria	No Criteria		Y	Y	0.23		N	No Criteria	No Criteria	Uo	No Criteria
70	Butylbenzyl Phthalate	5,200	Y	Y	10		All ND, MDL<C, MEC=MDL	10	MEC<C, go to Step 5		Y	Y	0.52		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
71	2-Chloronaphthalene	4,300	Y	Y	10		All ND, MDL<C, MEC=MDL	10	MEC<C, go to Step 5		Y	Y	0.3		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
72	4-Chlorophenyl Phenyl Ether	No Criteria	Y	Y	10		No Criteria	No Criteria	No Criteria		Y	Y	0.3		N	No Criteria	No Criteria	Uo	No Criteria
73	Chrysene	0.049	Y	Y	0.002		All ND, MDL<C, MEC=MDL	0.002	MEC<C, go to Step 5		Y	N		0.0024		B<C, Step 7		No	MEC<C & B<C
74	Dibenzo(a,h)Anthracene	0.049	Y	Y	0.007		All ND, MDL<C, MEC=MDL	0.007	MEC<C, go to Step 5		Y	N		0.00064		B<C, Step 7		No	MEC<C & B<C
75	1,2-Dichlorobenzene	17,000	Y	Y	1		All ND, MDL<C, MEC=MDL	1	MEC<C, go to Step 5		Y	Y	0.8		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
76	1,3-Dichlorobenzene	2,600	Y	Y	1		All ND, MDL<C, MEC=MDL	1	MEC<C, go to Step 5		Y	Y	0.8		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
77	1,4-Dichlorobenzene	2,600	Y	Y	1		All ND, MDL<C, MEC=MDL	1	MEC<C, go to Step 5		Y	Y	0.8		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
78	3,3 Dichlorobenzidine	0.077	Y	Y	100		All ND, MinDL>C, Go to Step 5				Y	Y	0.001		N	No detected value of B, Step		No	UD; effluent data and B are ND
79	Diethyl Phthalate	120,000	Y	Y	10		All ND, MDL<C, MEC=MDL	10	MEC<C, go to Step 5		Y	Y	0.24		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
80	Dimethyl Phthalate	2,900,000	Y	Y	10		All ND, MDL<C, MEC=MDL	10	MEC<C, go to Step 5		Y	Y	0.24		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
81	Di-n-Butyl Phthalate	12,000	Y	Y	20		All ND, MDL<C, MEC=MDL	20	MEC<C, go to Step 5		Y	Y	0.5		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
82	2,4-Dinitrotoluene	9.10	Y	Y	10		All ND, MinDL>C, Go to Step 5				Y	Y	0.27		N	No detected value of B, Step		No	UD; effluent data and B are ND
83	2,6-Dinitrotoluene	No Criteria	Y	Y	10		No Criteria	No Criteria	No Criteria		Y	Y	0.29		N	No Criteria	No Criteria	Uo	No Criteria
84	Di-n-Octyl Phthalate	No Criteria	Y	Y	20		No Criteria	No Criteria	No Criteria		Y	Y	0.38		N	No Criteria	No Criteria	Uo	No Criteria
85	1,2-Diphenylhydrazine	0.54	Y	Y	20		All ND, MinDL>C, Go to Step 5				Y	N		0.0037		B<C, Step 7		No	UD; effluent data ND, MDL>C & B<C
86	Fluoranthene	370	Y	Y	0.04		All ND, MDL<C, MEC=MDL	0.04	MEC<C, go to Step 5		Y	N		0.011		B<C, Step 7		No	MEC<C & B<C
87	Fluorene	14,000	Y	Y	0.008		All ND, MDL<C, MEC=MDL	0.008	MEC<C, go to Step 5		Y	N		0.00208		B<C, Step 7		No	MEC<C & B<C
88	Hexachlorobenzene	0.00077	Y	Y	10		All ND, MinDL>C, Go to Step 5				Y	N		0.0000202		B<C, Step 7		No	UD; effluent data ND, MDL>C & B<C
89	Hexachlorobutadiene	50	Y	Y	20		All ND, MDL<C, MEC=MDL	20	MEC<C, go to Step 5		Y	Y	0.3		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
90	Hexachlorocyclopentadiene	17,000	Y	Y	20		All ND, MDL<C, MEC=MDL	20	MEC<C, go to Step 5		Y	Y	0.31		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
91	Hexachloroethane	8.90	Y	Y	10		All ND, MinDL>C, Go to Step 5				Y	Y	0.2		N	No detected value of B, Step		No	UD; effluent data and B are ND
92	Indeno(1,2,3-cd)Pyrene	0.049	Y	Y	0.01		All ND, MDL<C, MEC=MDL	0.01	MEC<C, go to Step 5		Y	N		0.004		B<C, Step 7		No	MEC<C & B<C
93	Isophorone	600	Y	Y	10		All ND, MDL<C, MEC=MDL	10	MEC<C, go to Step 5		Y	Y	0.3		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
94	Naphthalene	No Criteria	Y	Y	0.06		No Criteria	No Criteria	No Criteria		Y	N		0.0023		No Criteria	No Criteria	Uo	No Criteria
95	Nitrobenzene	1,900	Y	Y	10		All ND, MDL<C, MEC=MDL	10	MEC<C, go to Step 5		Y	Y	0.25		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
96	N-Nitrosodimethylamine	8.10	Y	Y	10		All ND, MinDL>C, Go to Step 5				Y	Y	0.3		N	No detected value of B, Step		No	UD; effluent data and B are ND

Reasonable Potential Analysis
U.S. Navy-Naval Support Activity
Treasure Island

Beginning			Step 2	Step 3					Step 4	Step 2	Step 3		Step 5		Step 6	Steps 7 & 8	Final Result	
	Constituent name	C (ug/L) Lowest (most stringent) Criteria (Enter "No Criteria" for no criteria)	Effluent Data Available (Y/N)?	Are all data points non-detects (Y/N)?	If all data points ND Enter the min detection limit (MDL) (ug/L)	Enter the pollutant effluent detected max conc (ug/L)	If all data points are ND and MinDL>C, interim monitoring is required	Concentration from the effluent (MEC) (MEC= deteted max value; if all ND & MDL<C then MEC = MDL)	MEC vs. C 1. If MEC> or =C, effluent limitation is required; 2. If MEC<C, go to Step 5	B Available (Y/N)?	Are all B data points non-detects (Y/N)?	If all data points ND Enter the min detection limit (MDL) (ug/L)	Enter the pollutant B detected max conc (ug/L)	If all B is ND, is MDL>C?	B vs. C If B>C, effluent limitation is required	7) Review other information in the SIP page 4. If information is unavailable or insufficient, 8) the RWQCB shall establish interim monitoring requirements.	RPA Result	Reason
97	N-Nitrosodi-n-Propylamine	1.40	Y	Y	10		All ND, MinDL>C, Go to Step 5			Y	Y	0.001		N	No detected value of B, Step		No	UD; effluent data and B are ND
98	N-Nitrosodiphenylamine	16	Y	Y	10		All ND, MDL<C, MEC=MDL	10	MEC<C, go to Step 5	Y	Y	0.001		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
99	Phenanthrene	No Criteria	Y	N		0.149	No Criteria	No Criteria	No Criteria	Y	N		0.0061		No Criteria	No Criteria	Uo	No Criteria
100	Pyrene	11,000	Y	Y	0.009		All ND, MDL<C, MEC=MDL	0.009	MEC<C, go to Step 5	Y	N		0.0051		B<C, Step 7		No	MEC<C & B<C
101	1,2,4-Trichlorobenzene	No Criteria	Y	Y	10		No Criteria	No Criteria	No Criteria	Y	Y	0.3		N	No Criteria	No Criteria	Uo	No Criteria
102	Aldrin	0.00014	Y	Y	0.00202		All ND, MinDL>C, Go to Step 5			N					No detected value of B. Step		No	MDL>C & No B
103	alpha-BHC	0.013	Y	Y	0.00108		All ND, MDL<C, MEC=MDL	0.00108	MEC<C, go to Step 5	Y	N		0.000496		B<C, Step 7		No	MEC<C & B<C
104	beta-BHC	0.046	Y	Y	0.00157		All ND, MDL<C, MEC=MDL	0.00157	MEC<C, go to Step 5	Y	N		0.000413		B<C, Step 7		No	MEC<C & B<C
105	gamma-BHC	0.063	Y	Y	0.00112		All ND, MDL<C, MEC=MDL	0.00112	MEC<C, go to Step 5	Y	N		0.0007034		B<C, Step 7		No	MEC<C & B<C
106	delta-BHC	No Criteria	Y	Y	0.001		No Criteria	No Criteria	No Criteria	Y	N		0.000042		No Criteria	No Criteria	Uo	No Criteria
107	Chlordane (303d listed)	0.00059	Y	Y	0.0034		All ND, MinDL>C, Go to Step 5			Y	N		0.00018		B<C, Step 7		No	UD; effluent data ND, MDL>C & B<C
108	4,4'-DDT (303d listed)	0.00059	Y	Y	0.00329		All ND, MinDL>C, Go to Step 5			Y	N		0.000066		B<C, Step 7		No	UD; effluent data ND, MDL>C & B<C
109	4,4'-DDE (linked to DDT)	0.00059	Y	Y	0.00183		All ND, MinDL>C, Go to Step 5			Y	N		0.000593		B>C, Effluent Limit Requirec		Yes	B>C
110	4,4'-DDD	0.00084	Y	Y	0.00183		All ND, MinDL>C, Go to Step 5			Y	N		0.000313		B<C, Step 7		No	UD; effluent data ND, MDL>C & B<C
111	Dieldrin (303d listed)	0.00014	Y	Y	0.00193		All ND, MinDL>C, Go to Step 5			Y	N		0.000264		B>C, Effluent Limit Requirec		Yes	B>C
112	alpha-Endosulfan	0.0087	Y	Y	0.00263		All ND, MDL<C, MEC=MDL	0.00263	MEC<C, go to Step 5	Y	N		0.000031		B<C, Step 7		No	MEC<C & B<C
113	beta-Endolsulfan	0.0087	Y	Y	0.00183		All ND, MDL<C, MEC=MDL	0.00183	MEC<C, go to Step 5	Y	N		0.000069		B<C, Step 7		No	MEC<C & B<C
114	Endosulfan Sulfate	240	Y	Y	0.00217		All ND, MDL<C, MEC=MDL	0.00217	MEC<C, go to Step 5	Y	N		0.0000819		B<C, Step 7		No	MEC<C & B<C
115	Endrin	0.0023	Y	Y	0.00208		All ND, MDL<C, MEC=MDL	0.00208	MEC<C, go to Step 5	Y	N		0.000036		B<C, Step 7		No	MEC<C & B<C
116	Endrin Aldehyde	0.81	Y	Y	0.00241		All ND, MDL<C, MEC=MDL	0.00241	MEC<C, go to Step 5	N					No detected value of B, Step		No	Ud;MEC<C & B is ND
117	Heptachlor	0.00021	Y	Y	0.001		All ND, MinDL>C, Go to Step 5			Y	N		0.000019		B<C, Step 7		No	UD; effluent data ND, MDL>C & B<C
118	Heptachlor Epoxide	0.00011	Y	Y	0.00123		All ND, MinDL>C, Go to Step 5			Y	N		0.000094		B<C, Step 7		No	UD; effluent data ND, MDL>C & B<C
119-125	PCBs sum (2)	0.00017	Y	Y	0.1		All ND, MinDL>C, Go to Step 5			N					No detected value of B, Step		No	MDL>C & No B
126	Toxaphene	0.00020	Y	Y	0.035		All ND, MinDL>C, Go to Step 5			N					No detected value of B, Step		No	MDL>C & No B
	Tributylin	0.01000	Y	N		0.0046		0.0046	MEC<C, go to Step 5	Y	Y	0.001		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
	Total PAHs	15.00000	Y	N		0.155		0.155	MEC<C, go to Step 5	Y	N		0.052		B<C, Step 7		No	MEC<C & B<C

Effluent Monitoring Data (Metals)
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Date	ND	As	for Calc	ND	Cd	for Calc	ND	Cr6	for Calc	ND	Cu	for Calc	ND	Pb	for Calc	ND	Hg	for Calc	ND	Ni	for Calc	ND	Se	for Calc	ND	Ag	for Calc	ND	Zn	for Calc	Date2	ND	CN	for Calc
1/21/2001	<	1.9	0.95	<	0.2	0.1		0.7	0.7		15.9	15.9	<	1.1	0.55		0.0180	0.018		2.4	2.4	<	0.5	0.25		1	1		40.6	40.6				
2/15/2001		3.5	3.5	<	0.2	0.1		0.9	0.9		13	13		1.5	1.5		0.0110	0.011		2.3	2.3		0.8	0.8		3	3		27.1	27.1	2/15/2001	<	10	5
3/20/2001		2.9	2.9	<	0.2	0.1		0.8	0.8		9.4	9.4	<	1.1	0.55		0.0140	0.014		1.5	1.5		0.37	0.37	<	0.5	0.25		17.2	17.2				
4/18/2001		2.4	2.4		0.27	0.27		0.7	0.7		11.6	11.6	<	1.1	0.55		0.0230	0.023		1.5	1.5		0.39	0.39	<	0.5	0.25		21.5	21.5				
5/17/2001		2.3	2.3		0.24	0.24	<	0.6	0.3		13.3	13.3		1.9	1.9		0.0210	0.021		1.9	1.9	<	0.5	0.25	<	0.2	0.1		22.1	22.1	5/16/2001	<	10	5
6/21/2001		4.3	4.3	<	0.11	0.055	<	0.6	0.3		14.6	14.6		4.5	4.5		0.0180	0.018		2.9	2.9		0.86	0.86	<	0.2	0.1		37.4	37.4				
7/1/2001		3.9	3.9		0.11	0.11	<	0.6	0.3		8.3	8.3		1.1	1.1		0.0140	0.014		0.8	0.8	<	0.5	0.25	<	0.2	0.1		28.9	28.9				
8/20/2001	<	1.2	0.6		0.2	0.2		0.7	0.7		10.8	10.8		2.3	2.3		0.0120	0.012		3.1	3.1	<	0.5	0.25	<	0.2	0.1		27.6	27.6	8/16/2001	<	10	5
9/16/2001		3.9	3.9		0.13	0.13	<	0.6	0.3		9.6	9.6		2	2		0.0150	0.015		1.6	1.6		0.68	0.68	<	0.2	0.1		24.7	24.7				
10/21/2001		1.2	1.2		0.15	0.15		0.8	0.8		9.7	9.7		1.7	1.7		0.0170	0.017		1.6	1.6		0.68	0.68	<	0.2	0.1		26	26				
11/20/2001		3.2	3.2		0.26	0.26	<	0.6	0.3		11.6	11.6		2.5	2.5		0.0220	0.022		1.3	1.3	<	0.5	0.25	<	0.2	0.1		29	29				
12/20/2001		2.7409	2.7409		0.1639	0.1639		0.609	0.609		8.8493	8.8493		1.7843	1.7843		0.0260	0.026		2.5901	2.5901	<	0.5	0.25	<	0.201	0.1005		21.0545	21.0545	12/18/2001	<	5	2.5
1/13/2002		3.1	3.1		0.18	0.18	<	0.6	0.3		9.8	9.8		1.4	1.4		0.0130	0.013		1.9	1.9	<	0.5	0.25	<	0.2	0.1		21	21				
2/23/2002		2.2699	2.2699		1.0344	1.0344		0.609	0.609		10.8122	10.8122		1.4911	1.4911		0.017	0.017		2.7384	2.7384	<	0.5	0.25	<	0.201	0.1005		27.7771	27.7771				
3/24/2002		1.7422	1.7422		0.5375	0.5375	<	0.609	0.3045		8.9379	8.9379	<	0.989	0.4945		0.0182	0.0182		1.6911	1.6911	<	0.5	0.25	<	0.201	0.1005		24.9536	24.9536	3/17/2002	<	5	2.5
4/22/2002		2.771	2.771		0.2254	0.2254		0.6438	0.6438		12.1124	12.1124		1.6353	1.6353		0.0248	0.0248		2.4649	2.4649	<	0.5	0.25	<	0.201	0.1005		32.524	32.524				
5/23/2002	<	1.15	0.575		0.31	0.31		1.68	1.68		16.2	16.2		5.42	5.42		0.0231	0.0231		4.17	4.17	<	0.5	0.25		0.27	0.27		67.2	67.2				
6/9/2002	<	3	1.5		0.2598	0.2598	<	1	0.5		9.7439	9.7439		3.0722	3.0722				<	1	0.5		0.9766	0.9766	<	0.201	0.1005		21.3016	21.3016	6/9/2002	<	5	2.5
6/19/2002		4.1588	4.1588		0.2938	0.2938		1.8423	1.8423		18.9129	18.9129		10.4962	10.4962		**0.0591**	0.0591		1.8473	1.8473		1.0742	1.0742		0.215	0.215		43.2957	43.2957				
7/23/2002		1.6062	1.6062		0.171	0.171		0.7855	0.7855		16.7668	16.7668		3.6987	3.6987		0.0420	0.042		3.1641	3.1641	<	0.5	0.25		0.201	0.201		45.6775	45.6775				
8/23/2002	<	1.152	0.576		0.4402	0.4402		1.1708	1.1708		21.7698	21.7698		7.362	7.362		0.0341	0.0341		2.9522	2.9522	<	0.5	0.25	<	0.201	0.1005		46.9146	46.9146				
9/21/2002	<	1.152	0.576	<	0.111	0.0555	<	0.609	0.3045		17.7077	17.7077		13.8823	13.8823		0.0320	0.032		3.4259	3.4259	<	0.5	0.25	<	0.201	0.1005		38.374	38.374	9/22/2002	<	5	2.5
9/22/2002		1.3521	1.3521	<	0.111	0.0555		0.757	0.757		11.4663	11.4663		6.4759	6.4759					1.8881	1.8881	<	0.5	0.25		0.3055	0.3055		27.8442	27.8442				
10/20/2002	<	1.152	0.576		0.1995	0.1995		1.1058	1.1058		14.1575	14.1575		8.5779	8.5779		0.0346	0.0346		5.2294	5.2294	<	0.5	0.25	<	0.201	0.1005		23.712	23.712				
11/5/2002		2.8939	2.8939	<	0.111	0.0555	<	0.609	0.3045		9.0261	9.0261		3.1335	3.1335					2.0517	2.0517	<	0.5	0.25	<	0.201	0.1005		23.3796	23.3796				
1/12/2003		1.6025	1.6025		0.1766	0.1766	<	0.609	0.3045		11.2282	11.2282		5.2038	5.2038					1.0749	1.0749	<	0.5	0.25	<	0.201	0.1005		31.1221	31.1221				
1/26/2003		3.0539	3.0539	<	0.111	0.0555	<	0.609	0.3045		8.2336	8.2336		3.223	3.223		0.0143	0.0143		1.2475	1.2475	<	0.5	0.25	<	0.201	0.1005		24.6146	24.6146				
2/9/2003		3.3198	3.3198	<	0.111	0.0555	<	0.609	0.3045		14.4587	14.4587		4.1806	4.1806		0.016	0.016		2.3086	2.3086	<	0.5	0.25	<	0.201	0.1005		32.9048	32.9048				
2/20/2003		3.9336	3.9336		0.1638	0.1638		0.609	0.609		10.4796	10.4796		1.9845	1.9845		0.0158	0.0158		2.2109	2.2109	<	0.5	0.25		0.201	0.201		32.0807	32.0807				
3/19/2003		3.5	3.5	<	0.111	0.0555		2.4	2.4		9.2	9.2		1.4	1.4		0.0215	0.0215	<	0.498	0.249	<	0.5	0.25	<	0.201	0.1005		38	38	3/9/2003	<	5	2.5
4/19/2003	<	1.2	0.6	<	0.11	0.055		1.6	1.6		8.8	8.8		1.5	1.5		0.015	0.015	<	0.5	0.25				<	0.2	0.1		25	25				
5/23/2003	<	2	1	<	0.5	0.25		1.9	1.9		9.9	9.9		1.9	1.9		0.0156	0.0156	<	5	2.5	<	0.5	0.25	<	0.5	0.25		32	32				
6/23/2003	<	1.15	0.575	<	0.11	0.055		0.61	0.61		10.46	10.46		1.86	1.86		0.0210	0.021		2.17	2.17	<	0.5	0.25		0.57	0.57		26.1	26.1	6/8/2003	<	5	2.5
7/22/2003	<	1.15	0.575		0.11	0.11		2.17	2.17		10.41	10.41		2.74	2.74		0.0110	0.011		1.72	1.72	<	0.5	0.25	<	0.2	0.1		29.8	29.8				
8/20/2003		4.62	4.62		0.25	0.25	<	0.61	0.305		8.79	8.79		1.01	1.01		0.0065	0.0065		1.73	1.73	<	0.5	0.25		0.29	0.29		23.25	23.25	8/12/2003		2.6	2.6
9/18/2003	<	1.15	0.575	<	0.11	0.055		1.53	1.53		12.97	12.97		2.55	2.55		0.0220	0.022		2.13	2.13	<	0.5	0.25	<	0.2	0.1		29.96	29.96				
10/17/2003		2.403	2.403	<	0.111	0.0555	<	0.609	0.3045		8.241	8.241	<	1	0.5		0.0116	0.01158		2.487	2.487	<	0.5	0.25	<	0.201	0.1005		23.35	23.35				
11/23/2003	<	5	2.5		0.206			2.53	2.53		17.66	17.66	<	0.99	0.495		0.0101	0.0101		3.88	3.88	<	0.5	0.25	<	0.201	0.1005		40.61	40.61	11/21/2003	<	0.4	0.2
12/20/2003	<	1.2	0.6	<	0.14		<	0.61	0.305		8.1	8.1					0.0150	0.015	<	1.9	0.95	<	0.5	0.25	<	0.2	0.1		31.3	31.3				
MDL	<	1.15		<	0.11		<	0.6			--		<	0.989			--			0.498			0.5			0.2			--				0.4	
All ND?	N			N			N			N			N			N			N			N					N				Y		
Max conc		**4.62**			**1.0344**			**2.53**			**21.7698**			**13.8823**			**0.0591**			**5.2294**			**1.0742**			**3**			**67.2**				**2.6**	
Min conc		1.2			0.11			0.609			8.1			1.01			0.0065			0.8			0.37			0.201			17.2				2.6	
No. of data	39			39			39			39			38			35			39			38			39			39			11		
No. of ND	14			16			16			0			6			0			5			30			30			0			10		
% ND	36			41			41			0			16			0			13			79			77			0			91		
Average	2.165			0.190			0.825			11.872			3.069			0.020			2.113			0.351			0.244			30.441			2.982		
STD DEV	1.299			0.182			0.647			3.407			2.939			0.010			1.032			0.227			0.482			9.456			1.466		
CV	calc	0.5997		calc	0.95739		calc	0.783361		calc	0.2869713		calc	0.9577242		calc	0.5075224		calc	0.4883565		calc	0.6458662		calc	1.9782197		a	0.6			default	0.6	

Effluent Monitoring Data (Organics from Table 2 of SMP)
U.S. Navy, Naval Support Activity
Treasure Island

CTR No.	Constituent		Jul-96		Sep-96		Nov-96		Jan-00		Feb-00		May-00	7-Sep-99	13-Sep-00	15-Feb-01	5-Mar-01	16-Aug-01	1-Nov-01	18-Dec-01	17-Mar-02	22-Sep-02	1-Dec-02	19-Feb-03		MEC or Lowest MDL	Additional Data
		ND	ug/L	ND	ug/L	ND	ug/L	ND	ug/L	ND	ug/L	ND	ug/L														
16	TCDD Equivalents [dioxin]		NA		NA		NA	<	0.0000062		NA	<	0.000039													<	0.0000062	
19	Benzene	<	2	<	2	<	2	<	1	<	1	<	1													<	1	
26	Chloroform	<	2	<	2	<	2	<	1	<	1		**5.8**														**5.8**	
36	Dichloromethane	<	5	<	5	<	5	<	1	<	1	<	5													<	1	
39	Toluene	<	2	<	2	<	2	<	1	<	5	<	1													<	1	
53	Pentachlorophenol		NA	<	10	<	0.5		NA	<	10		NA													<	0.5	
55	2,4,6 Trichlorophenol		NA		NA		NA		NA		NA		NA														NA	
75	1,2 Dichlorobenzene		NA	<	5		NA	<	1	<	5	<	1													<	1	
76	1,3 Dichlorobenzene		NA	<	5		NA	<	1	<	5	<	1													<	1	
77	1,4 Dichlorobenzene		NA	<	5		NA	<	1	<	5	<	1													<	1	
86	Fluoranthene		NA		NA		NA		NA		NA		NA														NA	
88	Hexachlorobenzene		NA	<	5		NA		NA	<	*	<	*													<	5	
102	Aldrin		**0.12**	<	0.025	<	0.025	<	0.00222	<	0.00222	<	0.00222	< 0.00222	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202		**0.12**	< 0.002
103	a-BHC	<	0.025	<	0.025	<	0.025	<	0.00157	<	0.00157	<	0.00157													<	0.00157	
104	b-BHC	<	0.025	<	0.025	<	0.025	<	0.00157	<	0.00157	<	0.00157													<	0.00157	
105	γ- BHC (Lindane)		**0.026**	<	0.025	<	0.025	<	0.00138	<	0.00139	<	0.00139														**0.026**	
107	Chlordane	<	0.5	<	0.5	<	0.5	<	0.0034	<	0.0034	<	0.0034													<	0.0034	
108	DDT	<	0.15	<	0.15	<	0.15	<	0.00329	<	0.00329	<	0.00329													<	0.00329	
111	Dieldrin	<	0.05	<	0.05	<	0.05	<	0.00241	<	0.00241	<	0.00241													<	0.00241	
115	Endrin	<	0.05	<	0.05	<	0.05	<	0.0021	<	0.0021	<	0.0021													<	0.0021	
117	Heptachlor		**0.041**	<	0.025	<	0.025	<	0.00123	<	0.00123	<	0.00123	< 0.00123	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001	< 0.001		**0.041**	< 0.001
118	Heptachlor Epoxide	<	0.025	<	0.025	<	0.025	<	0.00189	<	0.00189	<	0.00189													<	0.00189	
126	Toxaphene	<	2	<	2	<	2	<	0.035	<	0.035	<	0.035													<	0.035	
112-114	Endosulfan	<	0.1	<	0.1	<	0.1	<	0.00446	<	0.00446	<	0.00446													<	0.00446	
119-125	PCBs (Total)	<	5	<	5	<	5	<	0.1	<	0.1	<	0.1													<	0.1	
	Halomethanes		NA		NA		NA		**77.1**		**96.8**		**134**														**134**	
	Tributyltin		NA		NA		NA		**0.004**		NA		**0.005**														**0.005**	

Additional Organic Effluent Data (EPA 625 Method)
U.S. Navy - Treasure Island WWTP

	EPA 625 Method	10/12/2003	
CTR	Pollutant	GTLT	Value (ug/l)
45	2-Chlorophenol	<	10
46	2,4-Dichlorophenol	<	10
47	2,4-Dimethylphenol	<	10
49	2,4-Dinitrophenol	<	100
50	2-Nitrophenol	<	10
51	4-Nitrophenol	<	20
59	Benzidine	<	100
65	Bis(2-Chloroethoxy)Methane	<	20
66	Bis(2-Chloroethyl)Ether	<	20
67	Bis(2-Chloroisopropyl)Ether	<	20
69	4-Bromophenyl Phenyl Ether	<	10
70	Butylbenzyl Phthalate	<	10
71	2-Chloronaphthalene	<	10
72	4-Chlorophenyl Phenyl Ether	<	10
78	3,3 Dichlorobenzidine	<	100
79	Diethyl Phthalate	<	10
80	Dimethyl Phthalate	<	10
81	Di-n-Butyl Phthalate	<	20
82	2,4-Dinitrotoluene	<	10
83	2,6-Dinitrotoluene	<	10
84	Di-n-Octyl Phthalate	<	20
85	1,2-Diphenylhydrazine	<	20
88	Hexachlorobenzene	<	10
89	Hexachlorobutadiene	<	20
90	Hexachlorocyclopentadiene	<	20
91	Hexachloroethane	<	10
93	Isophorone	<	10
95	Nitrobenzene	<	10
96	N-Nitrosodimethylamine	<	10
97	N-Nitrosodi-n-Propylamine	<	10
98	N-Nitrosodiphenylamine	<	10
101	1,2,4-Trichlorobenzene	<	10

PAH Effluent Data
U.S. Navy, Naval Support - Treasure Island

Sample_Date	Analyte_Name	Qualifier	Value	Units	MDL	Input for RPA		
8/16/2001	acenaphthene	<	0.03	ug/L	0.03			
12/18/2001	acenaphthene	<	0.03	ug/L	0.03			
3/17/2002	acenaphthene	<	0.03	ug/L	0.03			
6/9/2002	acenaphthene	<	0.03	ug/L	0.03			
9/22/2002	acenaphthene	<	0.03	ug/L	0.03			
12/1/2002	acenaphthene	<	0.11	ug/L	0.11			
2/19/2003	acenaphthene	<	0.11	ug/L	0.11	<	0.03	ug/L
1/11/1998	acenaphthylene	<	0.100	ug/L	0.100			
4/14/1998	acenaphthylene	<	0.100	ug/L	0.100			
5/14/1998	acenaphthylene	<	0.100	ug/L	0.100			
10/13/1998	acenaphthylene	<	0.100	ug/L	0.100			
1/11/1999	acenaphthylene	<	0.14	ug/L	0.14			
4/14/1999	acenaphthylene	<	0.14	ug/L	0.14			
7/14/1999	acenaphthylene	<	0.14	ug/L	0.14			
12/16/1999	acenaphthylene	<	0.100	ug/L	0.100			
2/10/2000	acenaphthylene	<	0.100	ug/L	0.100			
6/8/2000	acenaphthylene	<	0.100	ug/L	0.100			
12/15/2000	acenaphthylene	<	0.14	ug/L	0.14			
3/9/2001	acenaphthylene	<	0.14	ug/L	0.14			
5/16/2001	acenaphthylene	<	0.14	ug/L	0.14			
8/16/2001	acenaphthylene	<	0.14	ug/L	0.14			
12/18/2001	acenaphthylene	<	0.14	ug/L	0.14			
3/17/2002	acenaphthylene	<	0.14	ug/L	0.14			
6/9/2002	acenaphthylene	<	0.14	ug/L	0.14			
9/22/2002	acenaphthylene	<	0.14	ug/L	0.14			
12/1/2002	acenaphthylene	<	0.07	ug/L	0.07			
2/19/2003	acenaphthylene	<	0.07	ug/L	0.07	<	0.07	ug/L
1/11/1998	anthracene		**0.005**	ug/L	0.001			
4/14/1998	anthracene	<	0.001	ug/L	0.001			
5/14/1998	anthracene	<	0.001	ug/L	0.001			
10/13/1998	anthracene	<	0.001	ug/L	0.001			
1/11/1999	anthracene	<	0.01	ug/L	0.01			
4/14/1999	anthracene	<	0.01	ug/L	0.01			
7/14/1999	anthracene	<	0.01	ug/L	0.01			
12/16/1999	anthracene	<	0.001	ug/L	0.001			
2/10/2000	anthracene	<	0.001	ug/L	0.001			
6/8/2000	anthracene	<	0.001	ug/L	0.001			
12/15/2000	anthracene	<	0.01	ug/L	0.01			
3/9/2001	anthracene	<	0.01	ug/L	0.01			
5/16/2001	anthracene	<	0.01	ug/L	0.01			
8/16/2001	anthracene	<	0.01	ug/L	0.01			
12/18/2001	anthracene	<	0.01	ug/L	0.01			
3/17/2002	anthracene	<	0.01	ug/L	0.01			
6/9/2002	anthracene	<	0.01	ug/L	0.01			
9/22/2002	anthracene	<	0.01	ug/L	0.01			
12/1/2002	anthracene	<	0.01	ug/L	0.01			
2/19/2003	anthracene	<	0.01	ug/L	0.01		**0.005**	ug/L
1/11/1998	benzo[a]anthracene	<	0.007	ug/L	0.007			
4/14/1998	benzo[a]anthracene	<	0.007	ug/L	0.007			
5/14/1998	benzo[a]anthracene	<	0.007	ug/L	0.007			
10/13/1998	benzo[a]anthracene	<	0.007	ug/L	0.007			
1/11/1999	benzo[a]anthracene	<	0.01	ug/L	0.01			
4/14/1999	benzo[a]anthracene	<	0.01	ug/L	0.01			
7/14/1999	benzo[a]anthracene	<	0.01	ug/L	0.01			
12/16/1999	benzo[a]anthracene	<	0.007	ug/L	0.007			
2/10/2000	benzo[a]anthracene	<	0.007	ug/L	0.007			
6/8/2000	benzo[a]anthracene	<	0.007	ug/L	0.007			
12/15/2000	benzo[a]anthracene	<	0.01	ug/L	0.01			
3/9/2001	benzo[a]anthracene	<	0.01	ug/L	0.01			
5/16/2001	benzo[a]anthracene	<	0.01	ug/L	0.01			
8/16/2001	benzo[a]anthracene	<	0.01	ug/L	0.01			
12/18/2001	benzo[a]anthracene	<	0.01	ug/L	0.01			
3/17/2002	benzo[a]anthracene	<	0.01	ug/L	0.01			
6/9/2002	benzo[a]anthracene	<	0.01	ug/L	0.01			
9/22/2002	benzo[a]anthracene	<	0.01	ug/L	0.01			
12/1/2002	benzo[a]anthracene	<	0.02	ug/L	0.02			
2/19/2003	benzo[a]anthracene	<	0.02	ug/L	0.02	<	0.007	ug/L
1/11/1998	Benzo[a]pyrene	<	0.012	ug/L	0.012			
4/14/1998	Benzo[a]pyrene	<	0.012	ug/L	0.012			
5/14/1998	Benzo[a]pyrene	<	0.012	ug/L	0.012			
10/13/1998	Benzo[a]pyrene	<	0.012	ug/L	0.012			
1/11/1999	Benzo[a]pyrene	<	0.01	ug/L	0.01			
4/14/1999	Benzo[a]pyrene	<	0.01	ug/L	0.01			
7/14/1999	Benzo[a]pyrene	<	0.01	ug/L	0.01			
12/16/1999	Benzo[a]pyrene	<	0.012	ug/L	0.012			
2/10/2000	Benzo[a]pyrene	<	0.012	ug/L	0.012			
6/8/2000	Benzo[a]pyrene	<	0.012	ug/L	0.012			
12/15/2000	Benzo[a]pyrene	<	0.01	ug/L	0.01			
3/9/2001	Benzo[a]pyrene	<	0.01	ug/L	0.01			

PAH Effluent Data
U.S. Navy, Naval Support - Treasure Island

Sample_Date	Analyte_Name	Qualifier	Value	Units	MDL	Input for RPA		
5/16/2001	Benzo[a]pyrene	<	0.01	ug/L	0.01			
8/16/2001	Benzo[a]pyrene	<	0.01	ug/L	0.01			
12/18/2001	Benzo[a]pyrene	<	0.01	ug/L	0.01			
3/17/2002	Benzo[a]pyrene	<	0.01	ug/L	0.01			
6/9/2002	Benzo[a]pyrene	<	0.01	ug/L	0.01			
9/22/2002	Benzo[a]pyrene	<	0.01	ug/L	0.01			
12/1/2002	Benzo[a]pyrene	<	0.02	ug/L	0.02			
2/19/2003	Benzo[a]pyrene	<	0.02	ug/L	0.02	<	0.01	ug/L
1/11/1998	benzo[b]fluoranthene	<	0.003	ug/L	0.003			
4/14/1998	benzo[b]fluoranthene	<	0.003	ug/L	0.003			
5/14/1998	benzo[b]fluoranthene	<	0.003	ug/L	0.003			
10/13/1998	benzo[b]fluoranthene	<	0.003	ug/L	0.003			
1/11/1999	benzo[b]fluoranthene	<	0.01	ug/L	0.01			
4/14/1999	benzo[b]fluoranthene	<	0.01	ug/L	0.01			
7/14/1999	benzo[b]fluoranthene	<	0.01	ug/L	0.01			
12/16/1999	benzo[b]fluoranthene	<	0.003	ug/L	0.003			
2/10/2000	benzo[b]fluoranthene	<	0.003	ug/L	0.003			
6/8/2000	benzo[b]fluoranthene	<	0.003	ug/L	0.003			
12/15/2000	benzo[b]fluoranthene	<	0.01	ug/L	0.01			
3/9/2001	benzo[b]fluoranthene	<	0.01	ug/L	0.01			
5/16/2001	benzo[b]fluoranthene	<	0.01	ug/L	0.01			
8/16/2001	benzo[b]fluoranthene	<	0.01	ug/L	0.01			
12/18/2001	benzo[b]fluoranthene	<	0.01	ug/L	0.01			
3/17/2002	benzo[b]fluoranthene	<	0.01	ug/L	0.01			
6/9/2002	benzo[b]fluoranthene	<	0.01	ug/L	0.01			
9/22/2002	benzo[b]fluoranthene	<	0.01	ug/L	0.01			
12/1/2002	benzo[b]fluoranthene	<	0.02	ug/L	0.02			
2/19/2003	benzo[b]fluoranthene	<	0.02	ug/L	0.02	<	0.003	ug/L
1/11/1998	benzo[ghi]perylene	<	0.014	ug/L	0.014			
4/14/1998	benzo[ghi]perylene	<	0.014	ug/L	0.014			
5/14/1998	benzo[ghi]perylene	<	0.014	ug/L	0.014			
10/13/1998	benzo[ghi]perylene	<	0.014	ug/L	0.014			
1/11/1999	benzo[ghi]perylene	<	0.01	ug/L	0.01			
4/14/1999	benzo[ghi]perylene	<	0.01	ug/L	0.01			
7/14/1999	benzo[ghi]perylene	<	0.01	ug/L	0.01			
12/16/1999	benzo[ghi]perylene	<	0.014	ug/L	0.014			
2/10/2000	benzo[ghi]perylene	<	0.014	ug/L	0.014			
6/8/2000	benzo[ghi]perylene	<	0.014	ug/L	0.014			
12/15/2000	benzo[ghi]perylene	<	0.01	ug/L	0.01			
3/9/2001	benzo[ghi]perylene	<	0.01	ug/L	0.01			
5/16/2001	benzo[ghi]perylene	<	0.01	ug/L	0.01			
8/16/2001	benzo[ghi]perylene	<	0.01	ug/L	0.01			
12/18/2001	benzo[ghi]perylene	<	0.01	ug/L	0.01			
3/17/2002	benzo[ghi]perylene	<	0.01	ug/L	0.01			
6/9/2002	benzo[ghi]perylene	<	0.01	ug/L	0.01			
9/22/2002	benzo[ghi]perylene	<	0.01	ug/L	0.01			
12/1/2002	benzo[ghi]perylene	<	0.02	ug/L	0.02			
2/19/2003	benzo[ghi]perylene	<	0.02	ug/L	0.02	<	0.01	ug/L
1/11/1998	benzo[k]fluoranthene	<	0.001	ug/L	0.001			
4/14/1998	benzo[k]fluoranthene	<	0.001	ug/L	0.001			
5/14/1998	benzo[k]fluoranthene	<	0.001	ug/L	0.001			
10/13/1998	benzo[k]fluoranthene	<	0.001	ug/L	0.001			
1/11/1999	benzo[k]fluoranthene	<	0.01	ug/L	0.01			
4/14/1999	benzo[k]fluoranthene	<	0.01	ug/L	0.01			
7/14/1999	benzo[k]fluoranthene	<	0.01	ug/L	0.01			
12/16/1999	benzo[k]fluoranthene	<	0.001	ug/L	0.001			
2/10/2000	benzo[k]fluoranthene	<	0.001	ug/L	0.001			
6/8/2000	benzo[k]fluoranthene	<	0.001	ug/L	0.001			
12/15/2000	benzo[k]fluoranthene	<	0.01	ug/L	0.01			
3/9/2001	benzo[k]fluoranthene	<	0.01	ug/L	0.01			
5/16/2001	benzo[k]fluoranthene	<	0.01	ug/L	0.01			
8/16/2001	benzo[k]fluoranthene	<	0.01	ug/L	0.01			
12/18/2001	benzo[k]fluoranthene	<	0.01	ug/L	0.01			
3/17/2002	benzo[k]fluoranthene	<	0.01	ug/L	0.01			
6/9/2002	benzo[k]fluoranthene	<	0.01	ug/L	0.01			
9/22/2002	benzo[k]fluoranthene	<	0.01	ug/L	0.01			
12/1/2002	benzo[k]fluoranthene	<	0.03	ug/L	0.03			
2/19/2003	benzo[k]fluoranthene	<	0.03	ug/L	0.03	<	0.001	ug/L
1/11/1998	chrysene	<	0.002	ug/L	0.002			
4/14/1998	chrysene	<	0.002	ug/L	0.002			
5/14/1998	chrysene	<	0.002	ug/L	0.002			
10/13/1998	chrysene	<	0.002	ug/L	0.002			
1/11/1999	chrysene	<	0.02	ug/L	0.02			
4/14/1999	chrysene	<	0.02	ug/L	0.02			
7/14/1999	chrysene	<	0.02	ug/L	0.02			
12/16/1999	chrysene	<	0.002	ug/L	0.020			
2/10/2000	chrysene	<	0.002	ug/L	0.020			
6/8/2000	chrysene	<	0.002	ug/L	0.020			
12/15/2000	chrysene	<	0.02	ug/L	0.02			

PAH Effluent Data
U.S. Navy, Naval Support - Treasure Island

Sample_Date	Analyte_Name	Qualifier	Value	Units	MDL	Input for RPA		
3/9/2001	chrysene	<	0.02	ug/L	0.02			
5/16/2001	chrysene	<	0.02	ug/L	0.02			
8/16/2001	chrysene	<	0.02	ug/L	0.02			
12/18/2001	chrysene	<	0.02	ug/L	0.02			
3/17/2002	chrysene	<	0.02	ug/L	0.02			
6/9/2002	chrysene	<	0.02	ug/L	0.02			
9/22/2002	chrysene	<	0.02	ug/L	0.02			
12/1/2002	chrysene	<	0.03	ug/L	0.03			
2/19/2003	chrysene	<	0.03	ug/L	0.03	<	0.002	ug/L
1/11/1998	dibenz[a,h]anthracene	<	0.007	ug/L	0.007			
4/14/1998	dibenz[a,h]anthracene	<	0.007	ug/L	0.007			
5/14/1998	dibenz[a,h]anthracene	<	0.007	ug/L	0.007			
10/13/1998	dibenz[a,h]anthracene	<	0.007	ug/L	0.007			
1/11/1999	dibenz[a,h]anthracene	<	0.01	ug/L	0.01			
4/14/1999	dibenz[a,h]anthracene	<	0.01	ug/L	0.01			
7/14/1999	dibenz[a,h]anthracene	<	0.01	ug/L	0.01			
12/16/1999	dibenz[a,h]anthracene	<	0.007	ug/L	0.007			
2/10/2000	dibenz[a,h]anthracene	<	0.007	ug/L	0.007			
6/8/2000	dibenz[a,h]anthracene	<	0.007	ug/L	0.007			
12/15/2000	dibenz[a,h]anthracene	<	0.01	ug/L	0.01			
3/9/2001	dibenz[a,h]anthracene	<	0.01	ug/L	0.01			
5/16/2001	dibenz[a,h]anthracene	<	0.01	ug/L	0.01			
8/16/2001	dibenz[a,h]anthracene	<	0.01	ug/L	0.01			
12/18/2001	dibenz[a,h]anthracene	<	0.01	ug/L	0.01			
3/17/2002	dibenz[a,h]anthracene	<	0.01	ug/L	0.01			
6/9/2002	dibenz[a,h]anthracene	<	0.01	ug/L	0.01			
9/22/2002	dibenz[a,h]anthracene	<	0.01	ug/L	0.01			
12/1/2002	dibenz[a,h]anthracene	<	0.02	ug/L	0.02			
2/19/2003	dibenz[a,h]anthracene	<	0.02	ug/L	0.02	<	0.007	ug/L
8/16/2001	fluoranthene	<	0.04	ug/L	0.04			
12/18/2001	fluoranthene	<	0.04	ug/L	0.04			
3/17/2002	fluoranthene	<	0.04	ug/L	0.04			
6/9/2002	fluoranthene	<	0.04	ug/L	0.04			
9/22/2002	fluoranthene	<	0.04	ug/L	0.04			
12/1/2002	fluoranthene	<	0.06	ug/L	0.06			
2/19/2003	fluoranthene	<	0.06	ug/L	0.06	<	0.04	ug/L
1/11/1998	fluorene	<	0.008	ug/L	0.008			
4/14/1998	fluorene	<	0.008	ug/L	0.008			
5/14/1998	fluorene	<	0.008	ug/L	0.008			
10/13/1998	fluorene	<	0.008	ug/L	0.008			
1/11/1999	fluorene	<	0.03	ug/L	0.03			
4/14/1999	fluorene	<	0.03	ug/L	0.03			
7/14/1999	fluorene	<	0.03	ug/L	0.03			
12/16/1999	fluorene	<	0.080	ug/L	0.080			
2/10/2000	fluorene	<	0.080	ug/L	0.080			
6/8/2000	fluorene	<	0.080	ug/L	0.080			
12/15/2000	fluorene	<	0.03	ug/L	0.03			
3/9/2001	fluorene	<	0.03	ug/L	0.03			
5/16/2001	fluorene	<	0.03	ug/L	0.03			
8/16/2001	fluorene	<	0.02	ug/L	0.02			
12/18/2001	fluorene	<	0.02	ug/L	0.02			
3/17/2002	fluorene	<	0.02	ug/L	0.02			
6/9/2002	fluorene	<	0.02	ug/L	0.02			
9/22/2002	fluorene	<	0.02	ug/L	0.02			
12/1/2002	fluorene	<	0.03	ug/L	0.03			
2/19/2003	fluorene	<	0.03	ug/L	0.03	<	0.008	ug/L
1/11/1998	indeno[1,2,3-cd]pyrene	<	0.010	ug/L	0.010			
4/14/1998	indeno[1,2,3-cd]pyrene	<	0.010	ug/L	0.010			
5/14/1998	indeno[1,2,3-cd]pyrene	<	0.010	ug/L	0.010			
10/13/1998	indeno[1,2,3-cd]pyrene	<	0.010	ug/L	0.010			
1/11/1999	indeno[1,2,3-cd]pyrene	<	0.03	ug/L	0.03			
4/14/1999	indeno[1,2,3-cd]pyrene	<	0.03	ug/L	0.03			
7/14/1999	indeno[1,2,3-cd]pyrene	<	0.03	ug/L	0.03			
12/16/1999	indeno[1,2,3-cd]pyrene	<	0.010	ug/L	0.010			
2/10/2000	indeno[1,2,3-cd]pyrene	<	0.010	ug/L	0.010			
6/8/2000	indeno[1,2,3-cd]pyrene	<	0.010	ug/L	0.010			
12/15/2000	indeno[1,2,3-cd]pyrene	<	0.03	ug/L	0.03			
3/9/2001	indeno[1,2,3-cd]pyrene	<	0.03	ug/L	0.03			
5/16/2001	indeno[1,2,3-cd]pyrene	<	0.03	ug/L	0.03			
8/16/2001	indeno[1,2,3-cd]pyrene	<	0.02	ug/L	0.02			
12/18/2001	indeno[1,2,3-cd]pyrene	<	0.02	ug/L	0.02			
3/17/2002	indeno[1,2,3-cd]pyrene	<	0.02	ug/L	0.02			
6/9/2002	indeno[1,2,3-cd]pyrene	<	0.02	ug/L	0.02			
9/22/2002	indeno[1,2,3-cd]pyrene	<	0.02	ug/L	0.02			
12/1/2002	indeno[1,2,3-cd]pyrene	<	0.03	ug/L	0.03			
2/19/2003	indeno[1,2,3-cd]pyrene	<	0.03	ug/L	0.03	<	0.010	ug/L
8/16/2001	Naphthalene	<	0.06	ug/L	0.06			
12/18/2001	Naphthalene	<	0.06	ug/L	0.06			
3/17/2002	Naphthalene	<	0.06	ug/L	0.06			

PAH Effluent Data
U.S. Navy, Naval Support - Treasure Island

Sample_Date	Analyte_Name	Qualifier	Value	Units	MDL	Input for RPA		
6/9/2002	Naphthalene	<	0.06	ug/L	0.06			
9/22/2002	Naphthalene	<	0.06	ug/L	0.06			
12/1/2002	Naphthalene	<	0.08	ug/L	0.08			
2/19/2003	Naphthalene	<	0.08	ug/L	0.08	<	0.06	ug/L
1/11/1998	phenanthrene		**0.149**	ug/L	0.005			
4/14/1998	phenanthrene	<	0.005	ug/L	0.005			
5/14/1998	phenanthrene	<	0.005	ug/L	0.005			
10/13/1998	phenanthrene	<	0.005	ug/L	0.005			
1/11/1999	phenanthrene	<	0.06	ug/L	0.06			
4/14/1999	phenanthrene	<	0.06	ug/L	0.06			
7/14/1999	phenanthrene	<	0.06	ug/L	0.06			
12/16/1999	phenanthrene	<	0.005	ug/L	0.005			
2/10/2000	phenanthrene	<	0.005	ug/L	0.005			
6/8/2000	phenanthrene	<	0.005	ug/L	0.005			
12/15/2000	phenanthrene	<	0.06	ug/L	0.06			
3/9/2001	phenanthrene	<	0.06	ug/L	0.06			
5/16/2001	phenanthrene	<	0.06	ug/L	0.06			
8/16/2001	phenanthrene	<	0.06	ug/L	0.06			
12/18/2001	phenanthrene	<	0.06	ug/L	0.06			
3/17/2002	phenanthrene	<	0.06	ug/L	0.06			
6/9/2002	phenanthrene	<	0.06	ug/L	0.06			
9/22/2002	phenanthrene		**0.095**	ug/L	0.06			
12/1/2002	phenanthrene	<	0.03	ug/L	0.03			
2/19/2003	phenanthrene	<	0.03	ug/L	0.03		**0.149**	ug/L
1/11/1998	pyrene	<	0.009	ug/L	0.009			
4/14/1998	pyrene	<	0.009	ug/L	0.009			
5/14/1998	pyrene	<	0.009	ug/L	0.009			
10/13/1998	pyrene	<	0.009	ug/L	0.009			
1/11/1999	pyrene	<	0.03	ug/L	0.03			
4/14/1999	pyrene	<	0.03	ug/L	0.03			
7/14/1999	pyrene	<	0.03	ug/L	0.03			
12/16/1999	pyrene	<	0.009	ug/L	0.009			
2/10/2000	pyrene	<	0.009	ug/L	0.009			
6/8/2000	pyrene	<	0.009	ug/L	0.009			
12/15/2000	pyrene	<	0.03	ug/L	0.03			
3/9/2001	pyrene	<	0.03	ug/L	0.03			
5/16/2001	pyrene	<	0.03	ug/L	0.03			
8/16/2001	pyrene	<	0.03	ug/L	0.03			
12/18/2001	pyrene	<	0.03	ug/L	0.03			
3/17/2002	pyrene	<	0.03	ug/L	0.03			
6/9/2002	pyrene	<	0.03	ug/L	0.03			
9/22/2002	pyrene	<	0.03	ug/L	0.03			
12/1/2002	pyrene	<	0.06	ug/L	0.06			
2/19/2003	pyrene	<	0.06	ug/L	0.06	<	0.009	ug/L
1/11/1998	Total PAHs		**0.155**	ug/L	0.180			
4/14/1998	Total PAHs	<	0.180	ug/L	0.180			
5/14/1998	Total PAHs	<	0.180	ug/L	0.180			
10/13/1998	Total PAHs	<	0.257	ug/L	0.257			
1/11/1999	Total PAHs	<	0.38	ug/L	0.38			
4/14/1999	Total PAHs	<	0.38	ug/L	0.38			
7/14/1999	Total PAHs	<	0.38	ug/L	0.38			
12/16/1999	Total PAHs	<	0.179	ug/L	0.179			
2/10/2000	Total PAHs	<	0.179	ug/L	0.179			
6/8/2000	Total PAHs	<	0.179	ug/L	0.179			
12/15/2000	Total PAHs	<	0.38	ug/L	0.38			
3/9/2001	Total PAHs	<	0.38	ug/L	0.38			
5/16/2001	Total PAHs	<	0.38	ug/L	0.38			
8/16/2001	Total PAHs	<	0.51	ug/L	0.510			
12/18/2001	Total PAHs	<	0.51	ug/L	0.510			
3/17/2002	Total PAHs	<	0.51	ug/L	0.51			
6/9/2002	Total PAHs	<	0.51	ug/L	0.51			
9/22/2002	Total PAHs		**0.095**	ug/L	0.51			
12/1/2002	Total PAHs	<	0.11	ug/L	0.11			
2/19/2003	Total PAHs	<	0.11	ug/L	0.11		**0.155**	ug/L

US NAVY - TREASURE ISLAND - DIOXINS AND FURANS REPORT												
Method: EPA 1613												
Sample_Numbe	Source_Name	Analyte_Name	Sample_Date	Qualifier	Value	DL	MDL	RDL	Units	CAS No.	Method	Dilution Factor
2302210091	TIP_FINAL_EFFLUENT	2,3,7,8-TCDD	2/19/2003	<	0.95	0.95			pg/L	57117-31-4	1613	1
2302210091	TIP_FINAL_EFFLUENT	1,2,3,7,8-PeCDD	2/19/2003	<	1.6	1.6			pg/L	19408-74-3	1613	1
2302210091	TIP_FINAL_EFFLUENT	1,2,3,4,7,8-HxCDD	2/19/2003	<	1.3	1.3			pg/L	39227-28-6	1613	1
2302210091	TIP_FINAL_EFFLUENT	1,2,3,6,7,8-HxCDD	2/19/2003	<	1.4	1.4			pg/L	57653-85-7	1613	1
2302210091	TIP_FINAL_EFFLUENT	1,2,3,7,8,9-HxCDD	2/19/2003	<	1.3	1.3			pg/L	19408-74-3	1613	1
2302210091	TIP_FINAL_EFFLUENT	1,2,3,4,6,7,8-HpCDD	2/19/2003	<	2.8	2.8			pg/L	35822-46-9	1613	1
2302210091	TIP_FINAL_EFFLUENT	OCDD	2/19/2003	<	23	23			pg/L	90-04-0	1613	1
2302210091	TIP_FINAL_EFFLUENT	2,3,7,8-TCDF	2/19/2003	<	1.9	1.9			pg/L	57117-31-4	1613	1
2302210091	TIP_FINAL_EFFLUENT	1,2,3,7,8-PeCDF	2/19/2003	<	1	1			pg/L	19408-74-3	1613	1
2302210091	TIP_FINAL_EFFLUENT	2,3,4,7,8-PeCDF	2/19/2003	<	1	1			pg/L	58-90-2	1613	1
2302210091	TIP_FINAL_EFFLUENT	1,2,3,4,7,8-HxCDF	2/19/2003	<	1	1			pg/L	39227-28-6	1613	1
2302210091	TIP_FINAL_EFFLUENT	1,2,3,6,7,8-HxCDF	2/19/2003	<	1.1	1.1			pg/L	57653-85-7	1613	1
2302210091	TIP_FINAL_EFFLUENT	2,3,4,6,7,8-HxCDF	2/19/2003	<	0.76	0.76			pg/L	60851-34-5	1613	1
2302210091	TIP_FINAL_EFFLUENT	1,2,3,7,8,9-HxCDF	2/19/2003	<	0.77	0.77			pg/L	19408-74-3	1613	1
2302210091	TIP_FINAL_EFFLUENT	1,2,3,4,6,7,8-HpCDF	2/19/2003	<	2.9	2.9			pg/L	35822-46-9	1613	1
2302210091	TIP_FINAL_EFFLUENT	1,2,3,4,7,8,9-HpCDF	2/19/2003	<	1.2	1.2			pg/L	55673-89-7	1613	1
2302210091	TIP_FINAL_EFFLUENT	OCDF	2/19/2003	<	5.3	5.3			pg/L	90-04-0	1613	1
		TEQ			0				pg/L	2037-26-5	1613	

RMP Yerba Buena Total Metals Data

Station Co	Station	Date	Ag*	As	Cd*	Co	Cr	Cu*	Fe	Hg	MeHg	Mn*	Ni*	Pb*	Se	Zn*
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ng/L	µg/L	µg/L	µg/L	µg/L	µg/L
BC10	Yerba Buena Island	3/3/1993	0.0037	1.82	0.0333	NA	0.86	2.45	NA	0.004	NA	NA	2.74	0.24	0.132	1.86
BC10	Yerba Buena Island	5/24/1993	0.0516	1.78	0.0685	NA	1.42	1.61	NA	0.0035	NA	NA	1.79	0.24	0.234	1.87
BC10	Yerba Buena Island	9/13/1993	0.0093	2.3	0.0641	NA	0.9	1.66	NA	0.0039	NA	NA	1.46	0.27	0.275	1.76
BC10	Yerba Buena Island	2/3/1994	0.013	2.18	0.0628	NA	1.07	1.68	NA	0.0042	NA	NA	2.13	0.28	0.39	3.26
BC10	Yerba Buena Island	4/20/1994	0.0165	2.02	0.0951	NA	1.78	2.34	NA	0.0064	NA	NA	3.21	0.8	0.27	3.22
BC10	Yerba Buena Island	8/17/1994	0.009	2.46	0.1268	NA	1.17	2.02	NA	0.0029	NA	NA	2.06	0.19	0.27	1.77
BC10	Yerba Buena Island	2/8/1995	0.0026	1.55	0.032	NA	0.85	2.27	NA	0.0025	NA	NA	2.81	0.15	0.07	2.01
BC10	Yerba Buena Island	4/27/1995	0.0033	1.63	0.048	NA	1.64	1.8	NA	0.0034	NA	NA	2.63	0.35	0.18	2.23
BC10	Yerba Buena Island	8/16/1995	0.01	2.02	0.09	NA	0.6	1.33	NA	0.0022	NA	NA	1.43	0.18	e 0.04	1.48
BC10	Yerba Buena Island	2/7/1996	0.004	1.75	0.07	NA	1.2	2.1	NA	0.005	NA	NA	2.3	0.3	0.3	4.4
BC10	Yerba Buena Island	4/30/1996	0.004	1.61	0.05	NA	0.7	1.2	NA	0.002	NA	NA	1.2	0.1	0.11	1.2
BC10	Yerba Buena Island	7/26/1996	0.007	2.13	0.1	NA	4.4	1.8	NA	0.004	NA	NA	2.5	0.3	0.09	2.4
BC10	Yerba Buena Island	1/23/1997	NA	1.47	0.03	NA	3.28	1.8	NA	0.0001	NA	NA	2.4	0.34	0.11	2.4
BC10	Yerba Buena Island	4/14/1997	NA	2.11	0.07	NA	1.41	1.8	NA	0.0038	NA	NA	1.9	0.28	0.11	2.8
BC10	Yerba Buena Island	7/30/1997	NA	2.22	0.1	NA	1.39	1.5	NA	0.0026	NA	NA	2.3	0.25	0.14	1.7
BC10	Yerba Buena Island	1/29/1998	0.01	1.98	0.04	NA	3.05	2.2	NA	0.0055	NA	NA	3.5	0.67	0.15	4.2
BC10	Yerba Buena Island	4/20/1998	0.004	1.52	0.02	NA	2.69	2.1	NA	0.003	NA	NA	2.4	0.35	0.19	2.6
BC10	Yerba Buena Island	7/22/1998	0.004	1.92	0.07	NA	0.71	1.3	NA	0.0023	NA	NA	1.6	0.16	0.12	2
BC10	Yerba Buena Island	2/4/1999	0.005	1.68	0.038	NA	0.65	1.8	NA	b 0.0035	NA	NA	2.3	0.29	0.11	2.3
BC10	Yerba Buena Island	4/14/1999	0.006	1.11	0.068	NA	2.09	1.6	NA	b 0.0068	q 0.06	NA	2.2	0.35	e 0.02	2.5
BC10	Yerba Buena Island	7/16/1999	0.012	2.14	0.126	NA	3.33	2.3	NA	b 0.007	q b 0.04	NA	3.7	0.63	0.11	3.9
BC10	Yerba Buena Island	2/4/2000	0.011	1.39	0.091	NA	NA	2.01	NA	b 0.0069	p 0.025	NA	3.014	0.74823	ND	2.996
BC10	Yerba Buena Island	7/14/2000	0.007	1.71	0.086	NA	NA	0.815	NA	Q	ND, p	NA	1.086	0.23813	e 0.039	1.266
BC10	Yerba Buena Island	2/8/2001	NA	2.16	NA	NA	NA	NA	NA	NR	B	NA	NA	NA	e 0.08	NA
BC10	Yerba Buena Island	8/3/2001	NA	b 2.08	NA	NA	NA	NA	NA	0.0086	0.197	NA	NA	NA	e 0.08	NA
	Maximum		**0.0516**	**2.46**	**0.1268**	**0**	**4.4**	**2.45**	**0**	**0.0086**	**0.197**	**0**	**3.7**	**0.8**	**0.39**	**4.4**
	Average		**0.00965**	**1.86083**	**0.06868**	**#DIV/0!**	**1.67571**	**1.8037**	**#DIV/0!**	**0.00368**	**0.197**	**#DIV/0!**	**2.28957**	**0.33506**	**0.17689**	**2.44009**

RMP Yerba Buena Total PAHs

Station Code	Station	Date	2-Methylphenanthrene	Methylanthracene	Total Alkanes	SUM PAHS (SFEI)	SUM LPAHS (SFEI)	Biphenyl	Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	2,6-Dimethylnaphthalene	2,3,5-Trimethylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene
			ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L
BC10	Yerba Buena Island	3/3/93	0.627			11	3.27	NA	NA	NA	NA	NA	NA	NA	NA	0.01
BC10	Yerba Buena Island	2/3/94		ND	2983	13	2.11	NA	NA	0.26	0.41	NA	NA	NA	NA	0.02
BC10	Yerba Buena Island	4/20/94		NA	793	29	2.74	NA	NA	0.27	NA	NA	NA	NA	NA	0.17
BC10	Yerba Buena Island	8/17/94		NA	136	10	1.2	NA	NA	NA	NA	NA	NA	NA	NA	0.08
BC10	Yerba Buena Island	2/8/95			208	9	1.56	NA	NA	NA	NA	NA	NA	NA	NA	ND
BC10	Yerba Buena Island	4/27/95			96	14	1.97	NA	NA	NA	NA	NA	NA	NA	NA	Q
BC10	Yerba Buena Island	8/16/95			105	14	2.97	NA	NA	NA	NA	NA	NA	NA	NA	Q
BC10	Yerba Buena Island	2/7/96				37	17.08	1.4	2.3	0.88	2.56	0.26	0.24	0.69	0.53	0.09
BC10	Yerba Buena Island	4/30/96				25	12.14	0.6	1.1	1.24	Q	0.39	0.19	1.3	0.22	ND
BC10	Yerba Buena Island	7/26/96				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BC10	Yerba Buena Island	1/23/97				26	11.93	0.3	0.4	0.56	0.87	ND	ND	0.97	ND	ND
BC10	Yerba Buena Island	4/14/97				24	4.67	0.2	0.2	0.19	0.32	ND	ND	0.77	ND	ND
BC10	Yerba Buena Island	7/30/97				24	7.27	0.2	0.4	0.18	0.21	0.13	0.12	1.5	0.17	0.44
BC10	Yerba Buena Island	1/29/98				52	10.3	ND	ND	ND	ND	ND	ND	1.4	0.3	0.5
BC10	Yerba Buena Island	4/20/98				S	S	b 0.43	ND	ND	ND	B	B	B	ND	B
BC10	Yerba Buena Island	7/22/98				S	S	ND	ND	ND	0.44	ND	ND	1.4	ND	ND
BC10	Yerba Buena Island	2/4/99				17	0.8	ND	ND	ND	0.23	ND	ND	0.13	ND	ND
BC10	Yerba Buena Island	4/14/99				20	4.7	0.2	0.29	ND	0.44	ND	ND	0.24	ND	ND
BC10	Yerba Buena Island	7/16/99				34	6.8	B	0.24	0.4	B	0.47	ND	0.88	0.11	0.35
BC10	Yerba Buena Island	7/14/00				13.28	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND
BC10	Yerba Buena Island	8/3/01				19	4.4	1.2	ND	ND	ND	ND	ND	ND	ND	ND
	Maximum		**0.627**	**0**	**2983**	**52**	**17.08**	**1.4**	**2.3**	**1.24**	**2.56**	**0.47**	**0.24**	**1.5**	**0.53**	**0.5**
	Average		**0.6270**	**0.0000**	**1043.4286**	**23.3305**	**6.0416**	**0.6875**	**0.9038**	**0.5800**	**0.8933**	**0.3440**	**0.1975**	**0.9800**	**0.3100**	**0.2400**

RMP Yerba Buena Total PAHs

Date	Dibenzothiophene	Fluorene	Phenanthrene	1-Methylphenanthrene	SUM HPAHS (SFEI)	Benz(a)anthracene	Chrysene	Pyrene	Benzo(a)pyrene	Benzo(e)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Dibenz(a,h)anthracene	Perylene	Benzo(ghi)perylene	Fluoranthene	Indeno(1,2,3-cd)pyrene
	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L
3/3/93	NA	NA	2.86	0.41	8	0.09	0.59	0.84	0.02	0.65	1.09	0.33	0.04	NA	ND	4.03	0.21
2/3/94	NA	NA	1.42	NA	11	0.33	0.98	1.6	0.04	0.89	1.41	0.59	0.03	NA	ND	4.91	0.52
4/20/94	NA	NA	2.3	NA	26	1.18	e 1.41	5.1	e 0.02	e 2.65	e 3.96	e 1.22	0.35	NA	NA	6.6	e 3.31
8/17/94	NA	NA	1.12	ND	9	NA	0.42	1.6	ND	0.64	1	0.31	0.25	NA	0.1	3.8	0.7
2/8/95	NA	NA	1.43	0.13	7	0.06	0.67	1.76	ND	0.66	0.97	0.47	0.1	NA	NA	2.52	0.22
4/27/95	NA	NA	1.97	Q	12	Q	1.14	1.1	Q	1.6	2.2	0.62	0.39	NA	NA	2.7	2
8/16/95	NA	NA	2.27	0.7	11	0.39	1.07	1.03	0.29	1.02	1.13	0.78	0.4	NA	NA	3.93	0.65
2/7/96	0.22	1.75	5.1	1.12	20	1.12	1.48	4.1	0.04	2.5	1.86	1.48	0.64	ND	ND	4.7	2.5
4/30/96	0.09	2.08	4.65	0.28	12	0.79	0.72	1.3	ND	0.97	1.44	0.52	0.14	ND	ND	6	0.6
7/26/96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1/23/97	ND	1.85	6	0.95	14	1.14	0.45	4	ND	0.81	0.96	0.35	ND	ND	ND	6.71	ND
4/14/97	0.15	0.65	2.25	ND	19	1.9	0.99	3.29	ND	1.8	2.4	0.81	0.25	ND	2.7	2.8	2.4
7/30/97	0.2	1.1	2.39	0.23	17	1.34	0.79	3.9	ND	0.96	1.4	0.44	0.12	ND	ND	7	0.68
1/29/98	0.3	1.8	6.1	B	41	5.3	2.4	b 8.3	ND	3.2	4.6	1.5	0.6	ND	0.38	11	4
4/20/98	ND	B	CE	b 6.6	26	CE	0.65	b 19	ND	1.2	2.1	0.57	ND	ND	0.93	B	1.6
7/22/98	ND	1.4	CE	ND	9	CE	0.41	B	ND	0.48	0.8	ND	ND	ND	ND	b 7.8	ND
2/4/99	ND	0.24	NA	0.2	16	2.6	1.1	3.4	ND	1.4	1.8	0.7	0.2	ND	0.2	3.9	0.9
4/14/99	ND	0.6	2.5	0.5	15	0.2	1.1	3.4	ND	1.8	2.7	0.9	0.2	ND	ND	3.4	1.6
7/16/99	0.37	1.1	b 2.8	B	27	1.7	1.8	b 5.3	ND	2.9	4.2	1.4	0.4	ND	ND	6.3	3.1
7/14/00	ND	0.38	1.42	ND	11.48	1.3	0.67	2.18	ND	1.2	1.9	0.57	ND	ND	ND	3	0.66
8/3/01	ND	0.62	2.6	ND	14	1.8	0.81	2.9	ND	1.3	2.1	0.62	ND	ND	ND	3.5	1.4
	0.37	**2.08**	**6.1**	**1.12**	**41**	**5.3**	**2.4**	**5.1**	**0.29**	**3.2**	**4.6**	**1.5**	**0.64**	**0**	**2.7**	**11**	**4**
	0.2429	**1.2038**	**3.0871**	**0.5640**	**17.4514**	**1.5612**	**1.0320**	**2.7412**	**0.1360**	**1.4590**	**2.0330**	**0.7611**	**0.2969**	**0.0000**	**1.1683**	**5.1474**	**1.5411**

RMP Yerba Buena Total Pesticides

Station Code	Station	Date	Methylchlorpyrifos	p,p^-DDMU	Toxaphene	Trifluralin	Chlorpyrifos	Dacthal	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Oxadiazon	SUM DDTs (SFEI)	o,p^-DDD	o,p^-DDE	o,p^-DDT	p,p^-DDD
			pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L
BC10	Yerba Buena Island	3/3/1993					1210	1161	NA	23.268	Q	Q	1317	196	18	ND	T	100
BC10	Yerba Buena Island	2/3/1994	ND	35.8	ND	ND	2185	1515	NA	ND	ND	ND	3244	222	21.1	e 2.4	ND	121.5
BC10	Yerba Buena Island	4/20/1994	NA	NA	NA	NA	142	178	2800	ND	ND	ND	3	354	32	4.8	ND	229
BC10	Yerba Buena Island	8/17/1994	NA	NA	NA	NA	206	80	540	ND	ND	ND	180	142	9.5	1.7	ND	88
BC10	Yerba Buena Island	2/8/1995					134	661	8100	ND	ND	ND	132	106	2	4	ND	12
BC10	Yerba Buena Island	4/27/1995					137	294	2400	ND	ND	ND	ND	376	38	5	4	170
BC10	Yerba Buena Island	8/16/1995					4	39	460	ND	ND	ND	9	151	16	4	2	68
BC10	Yerba Buena Island	2/7/1996					ND	165	13000	ND	ND	ND	2	341	27	6	Q	126
BC10	Yerba Buena Island	4/30/1996					151	172	1700	31	69	11	50	249	33	16	Q	95
BC10	Yerba Buena Island	7/26/1996					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BC10	Yerba Buena Island	1/23/1997					194	11	4522	ND	ND	81.9	13	546	20	17	M	313
BC10	Yerba Buena Island	4/14/1997					66	79	1300	ND	ND	26	ND	439	64	7	M	197
BC10	Yerba Buena Island	7/30/1997					231	ND	640	ND	ND	ND	ND	260	15	17	M	144
BC10	Yerba Buena Island	1/29/1998					B	b 280	3455	ND	ND	39.7	b 2017	S	52	T	T	B
BC10	Yerba Buena Island	4/20/1998					B	ND	M	ND	ND	11.5	ND	S	b 23	B	Q	B
BC10	Yerba Buena Island	7/22/1998					B	b 54	400	ND	ND	21	175	S	B	B	B	B
BC10	Yerba Buena Island	2/4/1999					B	152	5200	20	19	41	491	221	34	b 8.4	Q	84
BC10	Yerba Buena Island	4/14/1999					b 80	3	1500	ND	39	28	4002	182	b 25	5.1	Q	50
BC10	Yerba Buena Island	7/16/1999					4	7	3040	2	ND	39	ND	150	13	3.5	Q	58
BC10	Yerba Buena Island	7/14/2000					22	10	370	3.6	ND	12	49	164	21	13	3.3	83
BC10	Yerba Buena Island	8/3/2001					44	8.6	ND	ND	ND	7	196	161	Q	Q	Q	62
	Maximum			**35.8**			**2185**	**1515**	**13000**	**31**	**69**	**81.9**	**4002**	**546**	**64**	**17**	**4**	**313**
	Average			**35.8**			**337.857143**	**283.475**	**3089.188**	**15.9736**	**42.3333333**	**28.9181818**	**704.5**	**250.58824**	**25.975**	**8.007692**	**3.1**	**117.6765**

RMP Yerba Buena Total Pesticides

Date	p,p^-DDE	p,p^-DDT	SUM Chlordanes (SFEI)	alpha-Chlordane	gamma-Chlordane	cis-Nonachlor	trans-Nonachlor	Heptachlor	Heptachlor Epoxide	Oxychlordane	Sum HCHs (SFEI)	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH	Aldrin	Dieldrin	Endrin	Hexachlorobenzene	Mirex
	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L
3/3/1993	50	28	75	25	24	Q	25	NA	NA	NA	348	148	93	NA	107	NA	264	NA	16	NA
2/3/1994	51.8	e 24.9	84	36	20.2	10.5	17.4	NA	ND	ND	1284	424	157	NA	703.4	NA	171.1	NA	ND	NA
4/20/1994	88	ND	103	33	28	12.2	21.3	ND	9.3	ND	1197.7	389	413	ND	396	NA	93	CE	8.8	ND
8/17/1994	43	ND	101	28	32.3	8.3	12.9	19	ND	ND	847.4	295	349	ND	203.6	NA	16	ND	8.9	ND
2/8/1995	88	ND	165	18	24	5	22	ND	94	2	540	190	86	34	230	NA	ND	9	16	ND
4/27/1995	151	8	110	25	27	14	24	ND	16	4	771	373	155	7	237	NA	ND	ND	4	ND
8/16/1995	32	29	65	17	14	5	12	2	11	3	640	312	160	6	162	NA	53	2	2	ND
2/7/1996	127	55	180	46	27	10	29	2	63	4	835	346	171	7	310	NA	64	ND	12	ND
4/30/1996	74	32	119	29	25	CE	13	8	38	6	1095	496	322	7	270	NA	4	16	5	ND
7/26/1996	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1/23/1997	133	63	155	35	27	4	14	ND	16	60	408	190	71	7	140	NA	184	ND	13.2	ND
4/14/1997	105	66	144	27	14	8	21	ND	32	43	501	250	111	ND	140	NA	78	ND	20.2	ND
7/30/1997	84	ND	161	30	20	6	29	ND	34	41	484	223	130	ND	131	NA	75	ND	8.6	ND
1/29/1998	T	b 167	116.4	b 51	36	5.4	T	ND	24	ND	385	114	131	ND	140	NA	110	ND	T	T
4/20/1998	693	B	S	b 39	B	b 4.2	25	ND	B	ND	S	B	B	b 53	B	NA	ND	B	bi 2.2	ND
7/22/1998	b 73	7	S	B	B	B	B	B	B	2.1	553	b 250	150	B	153	NA	39	B	bi 8.5	ND
2/4/1999	82	13	49	13	15	B	13	ND	6.3	2.2	388	124	82	6.9	175	NA	55	14	B	ND
4/14/1999	76	26	46	13	13	Q	10	ND	10	ND	220	81	80	6.5	53	NA	28	ND	14	ND
7/16/1999	74	1.6	38	5	7	2.9	6.8	13	2.8	ND	323	160	99	3.5	60	NA	24	1.6	10	ND
7/14/2000	44	B	48	7.3	2.4	2.7	15	3.3	8.8	8.6	155	85	28	42	ND	NA	22	36	B	ND
8/3/2001	69	b 31	53	4.6	4.9	2.4	5.9	ND	25	b 10	215	145	16	ND	54	NA	19	ND	b 22	ND
	693	**66**	**180**	**46**	**36**	**14**	**29**	**19**	**94**	**60**	**1284**	**496**	**413**	**42**	**703.4**		**264**	**36**	**20.2**	
	114.7111	**29.87273**	**100.688889**	**23.052941**	**20.044444**	**6.8857143**	**17.572222**	**7.88333333**	**26.0133333**	**15.990909**	**588.95263**	**241.38889**	**147.57895**	**12.69**	**203.611**		**76.4176**	**13.1**	**10.6692308**	

Attachment 4

Calculation of Final WQBELs

Effluent Limitation Calculations (Per Section 1.4 of the SIP)
U.S. Navy-Naval Support Activity
Treasure Island

Note: Numbers in blue have formula in the cells - calculates values automatically

PRIORITY POLLUTANTS	Copper	Lead	Mercury	Silver	Zinc	Cyanide	Dioxins	4,4'-DDE	Dieldrin
Basis and Criteria type	CTR - SW	BP FW (4-d, 1-hr avg)	BP SW (4-d, 1-hr avg)	BP SW (inst. Max)	BP SW (24-hr, inst. Max)	NTR sw	CTR HH (pg/l)	CTR HH	CTR HH
Lowest WQO	3.73	5.60	0.025	2.3	58.0	1.0	0.014	0.00059	0.00014
Translators									
Dilution Factor (D) (if applicable)	9	9	0	9	9	9	0	0	0
no. of samples per month	4	4	4	4	4	4	4	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	Y	Y	Y	N	N	N
HH criteria analysis required? (Y/N)	N	N	Y	N	N	Y	Y	Y	Y
Applicable Acute WQO	5.78	140.0	2.1	2.3	170.0	1.0			
Applicable Chronic WQO	3.73	5.6	0.025		58.0	1.0			
HH criteria			0.051			220,000	0.014	0.00059	0.00014
Background (max conc for Aquatic Life calc)	2.45	0.8	0.0086	0.0516	4.4	0.4	0.071		
Background (avg conc for HH calc)			0.0037			0.4	0.03165	0.000115	0.000076
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	N	N	Y	N	N	N	Y	Y	Y
ECA acute	35.75	1392.8	2.1	22.5356	1660.4	6.4			
ECA chronic	15.25	48.8	0.025	No Chronic WQO	540.4	6.4			
ECA HH			0.051			2199996.4	0.014	0.00059	0.00014
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	N	N	N	Y	Y	Y	Y
avg of data points	11.872	3.0690	0.0201	0.24	30.441				
SD	3.41	2.9392	0.0102	0.48	9.456				
CV calculated	0.287	0.958	0.508	1.978	0.311	N/A	N/A	N/A	N/A
CV (Selected) - Final	0.287	0.958	0.508	1.978	0.311	0.600	0.600	0.60	0.60
ECA acute mult99	0.54	0.21	0.37	0.12	0.52	0.32			
ECA chronic mult99	0.72	0.39	0.58	0.21	0.71	0.53			
LTA acute	19.33	295.29	0.77	2.65	858.26	2.05			
LTA chronic	11.05	18.80	0.014		381.88	3.38			
minimum of LTAs	11.05	18.80	0.014	2.65	381.88	2.05			
AMEL mult95	1.25	1.90	1.46	2.77	1.27	1.55	1.55	1.55	1.55
MDEL mult99	1.85	4.72	2.72	8.49	1.93	3.11	3.11	3.11	3.11
AMEL (aq life)	13.84	35.81	0.02	7.34	486.47	3.19			
MDEL(aq life)	20.44	88.70	0.04	22.54	738.79	6.40			
MDEL/AMEL Multiplier	1.48	2.48	1.86	3.07	1.52	2.01	2.01	2.01	2.01
AMEL (human hlth)			0.051			2199996	0.014	0.00059	0.00014
MDEL (human hlth)			0.095			4413609	0.028	0.00118	0.00028
minimum of AMEL for Aq. life vs HH	13.84	35.81	0.021	7.34	486.47	3.19	0.014	0.00059	0.00014
minimum of MDEL for Aq. Life vs HH	20.44	88.70	0.039	22.54	738.79	6.40	0.028	0.00118	0.00028
Current limit in permit (30-d avg)	N/A	N/A	0.21	N/A	N/A	N/A	N/A	N/A	N/A
Current limits in permit (daily)	37	53	1	23	580	10	N/A	N/A	N/A
Final limit - Calculated AMEL	13.8	36	0.021	7.3	486	3.2	0.014	0.00059	0.00014
Final limit - Calculated MDEL	20.4	89	0.039	22.5	739	6.4	0.028	0.00118	0.00028
Max Effl Conc (MEC)	21.8	13.88	0.059	3.0	67.2	2.6	<0.95	<0.00183	<0.00193
Feasible for immediate compliance?	No	Yes	No	Yes	Yes	No	No	No	No
Interim Limits for those where TMDL is final limit	25	N/A	0.087	N/A	N/A	10	N/A	0.05	0.01

Note: units are in ug/L except for Dioxin, which is in pg/L.

Attachment 5

General Basis for Final Compliance Dates

General Basis for Final Compliance Dates [1]
for Discharges North of the Dumbarton Bridge
Revised June 25, 2003

Constituent	Reference for applicable standard	Maximum compliance schedule allowed	Compliance date and Basis
Cyanide (salt CCC of 1 ppb), Selenium	NTR	10 years	**5-yr from effective date of permit** (but not to go beyond May 18, 2010). Basis is the SIP.
Copper (salt), Chromium (III)	CTR	5 years	**5-yr from effective date of permit** (but not to go beyond May 18, 2010). Bases are CTR and SIP.
Copper (fresh), mercury, nickel, zinc, arsenic, cadmium, chromium (VI), lead, silver (CMC) Cyanide (fresh)	Numeric Basin Plan using SIP methodology	10 years	**April 1, 2010,** which is 10 years (using full months) from effective date of SIP (April 28, 2000). Basis is the Basin Plan, see note [2].
Dioxins/Furans, Tributyltin, other toxic pollutants not in CTR	Narrative Basin Plan using SIP methodology	10 years	**10-yr from effective date of permit** (which is when new standard is adopted; no sunset date). Basis is the Basin Plan, see note [2].
Other priority pollutants on CTR and not listed above	CTR	5 years	**5-yr from effective date of permit** (but not to go beyond May 18, 2010). Basis is the CTR and SIP.

[1] These dates are maximum allowable compliance dates applicable. As required by the Basin Plan, CTR, SIP, and 40CFR122.47, compliance should be as short as possible. These are only applicable for discharges north of the Dumbarton Bridge because applicable criteria for the southbay are different than those cited above.

- For pollutants where there are planned TMDLs or SSOs, and final WQBELs may be affected by those TMDLs and SSOs, maximum timeframes may be appropriate due the uncertain length of time it takes to develop the TMDL/SSO.
- However, for pollutants without planned TMDLs or SSOs, the State Board in the EBMUD remand order (WQO 2002-0012), directs the Regional Board to establish schedules that are as short as feasible in accordance with requirements.

[2] The Basin Plan provides for a 10-year compliance schedule for implementation of measures to comply with new standards as of the effective date of those standards. This provision has been construed to authorize compliance schedules for new interpretations of existing standards, such as the numeric and narrative water quality objectives specified in the Basin Plan, if the new interpretations result in more stringent limits than in the previous permit.

a. For numeric objectives, due to the adoption of the SIP, the Regional Board has newly interpreted these objectives. The effective date of this new interpretation is the effective date of the SIP (April 28, 2000) for implementation of these numeric Basin Plan objectives. March is the last full month directly preceding the sunset date of April 28, 2010. Compliance should be set on the first day of the month to ease determination of monthly average limits. Therefore, compliance must begin on April 1, 2010.

b. For narrative objectives, the Board must newly interpreted these objectives using best professional judgement for each permit. Therefore, the effective date of this new interpretation will be the effective date of the permit.

Attachment E

Feasibility Study

March 4, 2004

Feasibility Study and Request for Compliance Schedules and Interim Limits

Naval Support Activity, Treasure Island
(NPDES Permit No. CA0110116)

March 4, 2004

D R A F T

Feasibility Study and Request for Compliance Schedules and Interim Limits

Naval Support Activity, Treasure Island
(NPDES Permit No. CA0110116)

Submitted by

U.S. Navy
Naval Facilities Engineering Command
Southwest Division

and

City and County of San Francisco
Public Utilities Commission
Planning Bureau

Submitted to

San Francisco Regional Water Quality Control Board
Oakland, California

March 4, 2004

Introduction

The U.S. Navy has applied to the California Regional Water Quality Control Board for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit for discharge of pollutants from the Naval Support Activity, Treasure Island, to waters of San Francisco Bay. This permit was previously issued as Order 95-126 (NPDES Permit No. CA0110116). The Regional Board has prepared a draft of the permit including proposed effluent limitations.

The U.S. Navy plans to transfer ownership of the facility to the City of San Francisco's Treasure Island Development Authority over the next several years. The City and County of San Francisco (hereinafter San Francisco) currently operates the wastewater treatment facility and will additionally implement the pollution prevention measures identified in this document.

The U.S. Navy and San Francisco are submitting the enclosed feasibility study and related request for compliance schedule and interim limits to the Regional Water Quality Control Board (RWQCB). This document is intended to demonstrate the wastewater treatment's facility inability to consistently comply with proposed final water quality-based effluent limits for the following main constituents of concern (COCs):

- Copper
- Mercury

These two constituents were identified in the Regional Board's preliminary draft as not complying with the proposed final effluent limitations.

In addition, this feasibility study also addresses several pollutants for which compliance is undetermined due to lack of data:

- Cyanide
- 4,4'-DDE
- Dieldrin

For these constituents lack of effluent monitoring data at low enough detection levels means that final effluent limits cannot be calculated.

Background

This study of the feasibility of achieving compliance with proposed final effluent limits for copper and mercury is being provided in response to the water quality-based effluent limits that are proposed in the draft Tentative Order for the renewal of NPDES Permit No. CA0110116 for the wastewater discharge to San Francisco Bay from the Treasure Island wastewater treatment facility. The requirement for feasibility studies as a way to document the need for interim effluent limits was first suggested on May 3, 2001, and further defined in a May 11, 2001, meeting between representatives of Bay area dischargers, the RWQCB, the U. S. Environmental Protection Agency (USEPA), and the State Water Resources Control Board (SWRCB). Subsequently, various Bay Area dischargers have submitted feasibility studies to the RWQCB and have had their permits

adopted with effluent limits based on those studies. It is the understanding of the Navy and San Francisco that those studies were sufficient to prove inability to comply with the proposed final water quality-based effluent limits. Hence, this analysis and documentation is generally based on those previous examples. In addition, this document also briefly addresses the constituents for which adequate monitoring data is not available.

It is the applicants understanding that it is necessary to demonstrate that it is infeasible to meet the final effluent limits for the two COCs listed above in order to be granted compliance schedules and interim effluent limits in the renewed NPDES permit. If the discharger believes it is infeasible to meet a California Toxic Rule (CTR)/State Implementation Policy (SIP) water quality-based effluent limit, then the SIP procedures should be followed. Similarly, water quality-based effluent limits based on the Basin Plan should follow procedures outlined in the 1995 Basin Plan. The RWQCB will determine if a compliance schedule and interim limits are appropriate, based on the discharger's submittal. If the RWQCB agrees that immediate compliance is infeasible, and that all the conditions are met, a compliance schedule and interim limit can be established on a constituent-by-constituent basis. Accordingly, if the RWQCB believes that a compliance schedule and interim limits are not justified by this submittal for one or more of the COCs, the Navy and San Francisco requests that the RWQCB hold the adoption of the Tentative Order (TO) in abeyance until additional data can be provided to allow full consideration of the discharges inability to immediately comply with the subject final water quality-based effluent limits.

There are two bases for the feasibility analysis:

1) The *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California* (known as the SIP - March 2000) which establishes statewide policy for NPDES permitting, and

2) The RWQCB's *Basin Plan*, 1995.

The SIP provides for the situation where an existing NPDES discharger cannot immediately comply with an effluent limitation derived from a California Toxics Rule (CTR) criterion. The SIP allows for the adoption of interim effluent limits and a schedule to achieve compliance with a water quality-based effluent limit in such cases. To qualify for interim limits and a compliance schedule, the discharger must request and/or demonstrate that it is appropriate to establish interim requirements for implementation of CTR criteria.

The SIP defines the term "infeasible" as "not capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors."

The SIP requires submittal of the following information to the RWQCB to support a finding of infeasibility:

- Documentation that diligent efforts have been made to quantify pollutant levels in the discharge and sources of the pollutant in the waste stream, including the results of those

efforts;

- Documentation of source control and/or pollution minimization efforts currently underway or completed;
- A proposed schedule for additional or future source control measures, pollutant minimization, or waste treatment; and
- A demonstration that the proposed schedule is as short as practicable.

The SIP requires that interim numeric effluent limits be based on (a) current treatment facility performance or (b) limits in the existing permit, whichever is more stringent.

The SIP also requires that compliance schedules be limited to specific time periods. For constituents not on the 303(d) list, the maximum length of the compliance schedule is five years from the date of permit issuance. For constituents on the 303(d) list (where a TMDL is required to be prepared), the maximum length of the compliance schedule is 20 years from the effective date of the SIP (March 2000). To secure the TMDL-based compliance schedule, the discharger must make commitments to support and expedite development of the associated TMDL.

In similar fashion, when a NPDES discharger cannot immediately comply with an effluent limitation from a Basin Plan criterion, the Basin Plan allows the RWQCB to consider the discharger's proposals for longer compliance schedules where the revised effluent limitation will not be immediately met. The Basin Plan justification for compliance schedules is essentially the same as the SIP procedure. Both procedures require implementation of pollution prevention measures to reduce COC loadings to the maximum extent practicable as soon as possible.

Constituents to be Evaluated

The constituents for which the Navy and San Francisco request interim effluent limits in the renewal of NPDES No. CA0110116 are shown in Table 1.

***Table 1* – Primary Constituents of Concern**

		BASIS OF LIMIT	
CONSTITUENT	ON 303(D) LIST?	CTR	BASIN PLAN
Mercury	Yes		√
Copper	Yes (?)	√	

Other Potential Constituents of Concern: Several constituents (cyanide, 4,4'-DDE, Dieldrin) have a questionable reasonable potential status which may be resolved by a Bay area discharger-sponsored data collection or by additional sampling at the facility (cyanide).

Proposed Water Quality-Based Effluent Limits and Current Treatment Facility Performance for Constituents of Concern

The RWQCB staff transmitted proposed final water quality-based effluent limits for the Treasure Island Naval Support Activity, for the constituents of concern in a February 12, 2004 preliminary draft Tentative Order. These limits may be modified before final adoption. The proposed final effluent limits and the treatment facility's effluent quality are summarized in Table 2 for the constituents of concern. Effluent quality for the two metals is based on data collected between October 2000 and October 2003.

Table 2 – **Proposed Final Limits Compared with Effluent Quality (Primary Constituents of Concern)**

CONSTITUENT OF CONCERN	**FINAL WATER QUALITY-BASED EFFLUENT LIMITS** (1)		**NAVAL SUPPORT FACILITY EFFLUENT QUALITY** (4)	
	AMEL (2)	**MDEL** (3)	**MEAN**	**MEC** (5)
Copper, ug/L	12.9 (aq lf)	24 (aq lf)	14	46.4
Mercury, ug/L	0.021 (aq lf)	0.041 (aq lf)	0.024	0.071

Notes: "aq lf" – AMEL/MDEL is based on aquatic life criterion; "hh" – AMEL/MDEL is based on human health criterion. In each case the lowest criterion is indicated.

1 Final limits as stated in February 12, 2004 preliminary draft Tentative Order package for Treasure Island Naval Support Activity

2 Average monthly effluent limit

3 Maximum daily effluent limit

4 Data set timeframe for mercury and copper is 10/12/00 through 10/17/03

5 MEC = Maximum Effluent Concentration observed in the data set [see Section 1.3 of the SIP]

It is the discharger's understanding that the water quality-based effluent limits shown in Table 2 are calculated using procedures described in Section 1.4 of the SIP. Background values (maximum or average, as appropriate for the COC in question) were derived from Regional Monitoring Program (RMP) data collected at two Central Bay stations (Yerba Buena Island and Richardson Bay). Dilution values used in the calculation of water-quality-based effluent limits were as follows:

- Dilution = 10:1 for non-bioaccumulative pollutants (copper). (Note that San Francisco has proposed in its comments on the preliminary draft that the effluent limit calculation use real dilution as determined by dye studies and numerical discharge models.)

- Dilution = zero for 303(d)-listed and bioaccumulative pollutants (mercury). (Note that San Francisco has questioned the appropriateness of this approach for de minimis discharges such as the POTW effluents.)

Other Potential Constituents of Concern

Table 3 - **Proposed Final Limits Compared with Effluent Quality (Other Constituents of Concern)**

CONSTITUENT OF CONCERN	**FINAL WATER QUALITY-BASED EFFLUENT LIMITS** (1)		**NAVAL SUPPORT FACILITY EFFLUENT QUALITY**	
	AMEL (2)	**MDEL** (3)	**MEAN**	**MEC** (4)
Cyanide, ug/L	3.2	6.4	NA	2.6 ug/l (5)
4,4'-DDE, ug/L	0.00059	0.00118	Not detected (6)	Not detected (6)
Dieldrin, ug/L	0.00014	0.00028	Not detected	Not detected

NA - not available (inadequate number of samples);

1 Final limits as stated in February 12, 2004 preliminary draft Tentative Order package for Treasure Island Naval Support Activity

2 Average monthly effluent limit

3 Maximum daily effluent limit

4 MEC = Maximum Effluent Concentration observed in the data set [see Section 1.3 of the SIP]

5 Cyanide – this MEC value was the only value detected above the detection limit.

6 The detection limit for 4,4'-DDE - 0.15 ug/L , for Dieldrin – 0.0024 ug/L

As shown, the compliance status for the constituents in Table 3 is unclear at this time. The two "legacy pollutants", 4,4'-DDE and Dieldrin, have detection limits which are not low enough to determine compliance. These two pollutants are considered to have a reasonable potential to exceed standards because background concentrations have been measured in the Bay at levels above the criteria. Cyanide is generally "non-detect" but one quantifiable sample was found at 2.6 ug/l which is below both the AMEL and MDEL but above the Bay objective.

Compliance with Final Water Quality-Based Effluent Limits for Constituents of Concern

As shown in Table 2, based upon current performance, the treatment facility will not be able to immediately comply with proposed final effluent limits for the two primary COCs. Consequently, interim effluent limits and a compliance schedule to attempt to meet final limits should be granted in the reissued NPDES permit.

The discharge from the Treasure Island Naval Support Activity indicate that immediate compliance with the final effluent limits for copper is very unlikely. The MEC concentration would result in permit violations at the proposed AMEL and MDEL. The long-term average also exceeds the AMEL. Therefore, interim effluent limits for copper and a compliance schedule to attempt to meet final copper limits should be granted in the new NPDES permit.

The effluent characteristics for mercury also indicate that immediate compliance with the final effluent limits is similarly unlikely. The MEC concentration would result in permit violations at the proposed AMEL and MDEL. The effluent long-term average (0.024) is also slightly higher than the AMEL (0.021). Although some months may be in compliance, the discharge would likely have exceedances in most months. Therefore, interim effluent limits for mercury and a compliance schedule to attempt to meet final mercury limits should also be granted in the new NPDES permit.

Table 4 lists the interim limits which could be considered for this permit.

***Table 4* – Possible Interim Limits for Primary Pollutants of Concern**

CONSTITUENT OF CONCERN	INTERIM EFFLUENT LIMITS	BASIS	ISSUES	ALTERNATIVE INTERIM LIMIT BASED ON MEC
Copper, ug/L	37 (daily avg.)	Previous permit (this is more stringent than the calculated performance based limit – 39.3 ug/L)	This concentration was exceeded on Nov. 18, 2002 (46.4 ug/L). The inability to consistently comply with the existing effluent limit may be the basis for an alternative compliance standard	46.4 ug/L
Mercury, ug/L	0.087 (monthly avg.)	Pooled data for secondary treatment plants in the Bay Area	Samples included a 0.07 ug/L and also several at 0.04 and 0.05 during the last three years. This proposed limit may also be exceeded.	TBD

Because the possible interim limits identified in the second column of Table 3 have a high likelihood of being exceeded during the next permit cycle, the permit applicant requests that compliance determinations be made on an alternative basis. For example, compliance could be based on the average mass loading or other basis. Another option is using the MEC value for copper. A copper limitation higher than the previous permit can be justified on basis that a properly operated and maintained facility has been nevertheless unable to comply with the

limitation. The interim limit for mercury of 0.087 ug/L is based on pooled data for major secondary treatment plants. This Treasure Island facility has an average dry weather flow of 0.2 to 0.4 mgd and thus would be classed a minor facility based on current flow. Neither this facility nor other minor facilities were included in the data pool used to calculate the Bay-wide interim limit. It is possible that smaller facilities are likely to have more erratic results than larger facilities because of the averaging effect of large wastewater systems.

Table 5 lists the interim limits which could be considered for this permit for the other pollutants which need to be addressed.

***Table 5* – Possible Interim Limits for Other Pollutants of Concern**

CONSTITUENT OF CONCERN	INTERIM EFFLUENT LIMITS	BASIS	ISSUES
Cyanide, ug/L	10 (daily avg.)	Previous permit	Currently there is inadequate data to determine the compliance status although there is not evidence of exceedance of the calculated final limits.
4,4'-DDE, ug/L	0.05	Common detection limit (?)	No evidence that this constituent is present in the discharge
Dieldrin, ug/L	0.01	Common detection limit (?)	No evidence that this constituent is present in the discharge

Current and Future Pollutant Reductions Efforts for the Constituents of Concern

The remainder of this study discusses the current source identification efforts, current pollution prevention efforts, and proposed future pollution prevention efforts directed at the primary COCs. The focus is on San Francisco activities rather than the Navy's since San Francisco currently operates the treatment facilities and ownership is expected to be transferred to San Francisco during the permit period. San Francisco intends to extend its pollution prevention program to Treasure Island when ownership is transferred.

At the end of this document there is a section which summarizes the efforts directed toward the other potential COCs: Cyanide, 4,4'-DDE, and Dieldrin.

General Source Identification Efforts for the primary COCs

Heavy Metals

Copper and mercury are both considered heavy metals. San Francisco's source identification efforts directed at heavy metals include the following studies and reports. This information is used to inform and direct the City's ongoing pollution prevention efforts. While some of the information collection efforts was directed at inflow to current ("mainland") San Francisco treatment facilities, the results are a useful guide for pollution prevention programs regardless of location.

It should also be noted that while Treasure Island has a separate sanitary sewer system, virtually all of San Francisco proper relies on a combined sewer system. Consequently, the City's pollution prevention program has been directed at limiting toxics carried by both domestic wastewater and by stormwater runoff. The pollution prevention program required as a basis for establishing interim limits for Treasure Island need only be directed at pollutants entering the separate sanitary sewer systems. However, pollution prevention efforts directed at stormwater runoff obviously have environmental benefits and thus are included in the following discussion. San Francisco will implement its dual program - directed at both sanitary sewer pollutants and stormwater pollutants - on Treasure Island.

- *Consumer Products Heavy Metals Inventory* (August 1991) - This report identified metal content in common consumer products in order to better target reduction and consumer education efforts.

- *Mass Loadings of Used Motor Oil and Latex Paints to the Sewerage System* (November 1993) - This study estimated the mass loading of copper, mercury, and other heavy metals to the sewerage system due to the discharge of used oil and latex paints to the sewer system as well as vehicular leakage and washing of paint equipment. This report

estimated that the discharge of older latex paints to inside/street drains contributed between 1.5 and 5.3% of the total mercury in the influent to the Southeast Treatment Plant. This information led to the City's Latex Paint Recycling Initiative (described later).

- *Cooling Tower Study* (December 1995) - This study looked at sources such as office buildings, hotels, medical facilities, museums/municipal buildings, etc. to determine if cooling towers were present and what chemicals were being used in the towers. Tower blowdown was sampled for mercury, copper, tributyltin and other constituents.

- *1995/96 Scoping Study Report* (June 1996) - This report calculated metal and other pollutant loadings to the Southeast Treatment Plant from Screen Printers.

- *Identifying Potential Storm Water Pollution Sources Using a Geographic Information System and Estimating Sediment Catch Basin Efficiencies* (May 1998) - San Francisco has a combined sewer system and therefore the source identification efforts are directed at both dry and wet weather sources. This project produced a Geographic Information System (GIS) database mapping potential business storm water sources covering the entire City. The database includes information on targeted businesses (address, telephone number, SIC code). In addition, this project analyzed five years worth of influent and effluent data for four catch basins to determine the removal efficiency for five toxic heavy metals (including copper; mercury results were consistently below detection limits).

Copper - *Additional Source Identification*

The City's pretreatment program monitors copper (as well as other constituents) at Significant Industrial Users (SIUs) such as food processors and medical facilities as well as non-significant industrial users (IUs) such as taxicab operators and bus washes.

Mercury - *Additional Source Identification*

The pretreatment program monitors mercury from potential sources. In particular, the City has initiated special monitoring at certain medical facilities to identify the significance of medical sources, including dental offices.

Summary of COC Source Identification Efforts

San Francisco's source identification efforts have been very comprehensive and in several areas (e.g., consumer products) are possibly the most thorough in the nation. These efforts have allowed the City to effectively target the major sources of these key pollutants.

San Francisco's Prior and Existing Pollution Prevention Efforts for the COCs

General Program Activities

Note: the focussed Copper and Mercury program activities are addressed in separate sections below

Water Pollution Prevention Program (WPPP) and Related General Activities

In order to reduce the levels of toxic constituents entering the wastewater system from industrial, commercial, and residential sources, the City has undertaken a proactive pollution prevention effort. The City defines pollution prevention as any "measures" whether technical, institutional, or educational, that contribute to reducing mass loadings of pollutants into the sewer system. This effort targets both wet weather runoff and domestic and industrial sewage. Several of the subsections below describe specific activities directed toward reductions in the COCs.

- *Pretreatment Program – Local Limits* – Since requirements were established by the Clean Water Act in the 1970s, San Francisco has implemented an approved pretreatment program designed to control wastes released to the sewer system by industries, other commercial facilities, hospitals, and other major non-residential sources. The local limits, including standards for mercury and copper, are periodically reviewed. The current standards were established in 1990 and reviewed again in 1998. City staff routinely inspect facilities and take sewer line samples to ensure that local sources are complying with the City's standards. Approximately 30,000 samples are collected each year and entered into a Laboratory Information Management System (LIMS) for tracking and enforcement purposes.

- *Waste Minimization Program* – San Francisco requires all Significant Industrial Users (SIUs) to prepare waste minimization plans and complete storm water pollution prevention checklists and spill prevention plans. Certain Permitted Industrial Users (IUs) are also required to prepare these documents.

- *Latex Paint Recycling Initiative (Operated by Hazardous Waste Management Program)* – This effort established seven locations around the City for the collection of unwanted latex paint. In 1990, U.S. EPA regulations reduced the mercury content in latex paints. However, some use was still allowed (up to 200 ppm in exterior paints) and a considerable amount of old (pre-reduction) paints were in the marketing chain or in the possession of painters and residents. Sampling of latex paints in 1993 at the City's household recycling center found average concentrations of mercury of 125 ppm. Thus, the latex control efforts were important for reducing mercury loadings to the treatment plant.

  The latex paint collection and recycling program continues and is a popular program.

San Francisco residents can drop off unwanted latex paint at the household hazardous waste facility, or call for an appointment for pickup at their home.

- *Targeted Facility Control Efforts* – San Francisco developed and implemented comprehensive programs for both runoff and sewer discharges for several industrial categories considered as significant sources:

  - *Automotive Repair Facility Pollution Prevention Program* - The City developed and implemented a bilingual multi-year inspection and audit program which was primarily educational in nature (see the *Green Wrench Guide* discussed below). A total of 372 shops were visited (and sometimes revisited) during this three phase program. In particular, this effort targeted radiator repair and coolant change as potential sources of copper.

  - *Facility Audit Program* – This contractor effort targeted 145 businesses in the Lower Army and Lower Shelby drainage area.

  - *Machine Shop Facilities Pollution Prevention Program* – Sixteen businesses were visited as part of this effort to identify and help control pollutants of concern.

  - *Automotive Dismantler Facilities Pollution Prevention Program* – Using a checklist with 22 BMPs, a City contractor visited nine facilities as part of this audit effort.

- *Public Outreach and Education* – San Francisco has limited heavy industry, so much of the pollution prevention effort is directed at residents and local businesses. These efforts are extensive and the following list is not inclusive:

  - *"Environmental House"* – San Francisco developed a whimsical, portable "house" to take to street fairs to educate the public, and especially kids, about pollution prevention practices. The House is now a permanent exhibit at the San Francisco Unified School District's Environmental Science Center at Fort Funston.

  - *Hazardous Materials Resource Center* - The Resource Center contains user-friendly journals and computers to answer citizens questions. The center is located at 1145 Market Street, Suite 404, and is open to the public Monday - Friday, 10:00 a.m. - 2:00 p.m. or by appointment.

  - *Rx for a Healthy Environment, Pollution Prevention Tips for Hospitals & Medical Office Buildings* – This guide addresses mercury thermometers and other mercury sources.

  - *Never Down the Drain, Pollution Prevention Tips for Dental Offices* – This document also targets mercury and contains the *Resource Guide – Useful Information for Properly Managing Your Dental Waste.* San Francisco estimates that 12% of the

mercury in the Southeast treatment plant influent is from dental offices (Seattle estimated 14%). Dental offices are a primary target of the pollution prevention program.

- *Managing the Less Toxic Building, Pollution Prevention Tips for Commercial Office Buildings* – This guide addresses copper-based root control products, copper concentrations in cooling towers, as well as control of corrosion from copper piping.
- *Only Rain Down the Drain, Storm Water Pollution Prevention Tips for Commercial and Industrial Businesses.*
- *Clean Image: Pollution Prevention Tips for Photoprocessing and Printing Operations.*
- *The Green Wrench Guide, Pollution Prevention Tips for Auto Repair and Body Shops* (also in Spanish) – This guide particularly targets control of auto fluids such as waste antifreeze which can be a major source of copper.
- Consumer Guides (available in English, Spanish, Chinese):
  - *Remodel It! Home Improvement Tips for the Do-It-Yourselfer.*
  - *Control It! Less Toxic Methods to Control and Prevent Pests In and Around Your Home.*
  - *Fix It! Quick Guide to Car Care for the Do-It-Yourselfer.*
  - *Grow It! The Less Toxic Garden.*
  - *Clean It! – Safer Housecleaning Methods that Really Work.*
- *Storm Drain Labeling* – The City labels storm drains with "Don't dump - drains to Bay" (or Ocean).
- *Gardening Calendars* – These calendars contain tips on alternatives to pesticide use for home gardeners.
- *Gardening Tips, Household Tips, and Car Repair* – On the internet at: http://sfwater.org/detail.cfm/MSC_ID/46/MTO_ID/18/MC_ID/10/C_ID/333/holdSession/1
- *Drive-Through Hazardous Waste Disposal for San Francisco Residents* - How to use the Household Hazardous Waste Facility.
- *For Residents* - Fact sheet on how to safely dispose of chemical products from the home.
- *Protect Your Family from Lead in Your Home* - Booklet with information on sources of lead exposure, how to detect them, and reduce exposure.

- *Lead In Your Home* - Lead laws and how to protect children.
- *Mercury Thermometers and Your Family's Health*
- *On The Safe Side* – The City publishes this newsletter twice a year. It is directed at small businesses in San Francisco to inform them of hazardous waste disposal options, the newest waste minimization & pollution prevention technologies, information on what other small businesses are doing, and descriptions of Hazardous Waste Management Program services.

- *Program Evaluation* – In addition, to its inspection and enforcement efforts the WPPP promotes a substantial public education effort as described above. An essential component of such efforts is regular review to ensure that the education message is effective in changing public attitudes and behavior. The City's independent program evaluation efforts include the following surveys. The 1998 survey is described in more depth.

  - *Best Management Practices – Public Awareness Survey* (August 1992) – Prepared by PAM and Public Research Institute, San Francisco State University.
  - *Educating the Public About the Use and Safe Disposal of Household Toxic Products: A Survey of San Francisco Households* (July 1994) - Prepared by PAM and Public Research Institute, San Francisco State University.
  - *Educating the Public About the Use and Safe Disposal of Household Toxic Products: A Survey of San Francisco Households* (June 1996) - Prepared by PAM and Public Research Institute, San Francisco State University.
  - "Clean It" Survey Results (June 1997) – This survey evaluated the impact of the guide: *Clean It! – Safer Housecleaning Methods that Really Work.*
  - *Survey of San Francisco Households* (July 1998) - Prepared by Public Research Institute, San Francisco State University. This was a telephone survey of 350 households conducted in order to inform the development of educational campaigns aimed at the reduction of environmentally negative garden practices, pest control practices and household paint usage. Citywide coverage and representation of the San Francisco population was ensured through a random-digit-dialed sample of 3850 San Francisco listed and unlisted residential telephone numbers. Aside from their garden, pest control and paint usage behavior, respondents were also asked about their awareness of water pollution and its sources, as well as the level of support for local government's efforts to improve water quality and educate the public. Information was also obtained on respondents' exposure to various media outlets. The survey findings are used in developing and retaining effective public information programs and targeting new pollution prevention strategies.

- *Tools to Measure Source Control Program Effectiveness* (2000) – Prepared by Larry Walker Associates for the Water Environment Research Federation (document D00302). San Francisco participated in this national pollution prevention case study in which a model framework of effectiveness measurement tools for pollution prevention programs was tested. The report includes cost information to implement a pollution prevention program that includes program evaluation tools for measuring effectiveness. San Francisco's demonstration project was for mercury source reduction from two different sources: dental offices and thermometers (both fever and weather) from the general public. For the dental mercury source reduction program, San Francisco mailed surveys to nearly 1,000 dentists to learn how dentists were implementing the mercury (Hg) BMPs. The mailing also included tips on dental Hg BMPs and local waste handling resources, and how to prevent Hg from entering the sewer system. Follow-up site visits were conducted to see how well the dentists were implementing the BMPs. The results of the survey and the site visits were published in the report. The thermometer ban, which is discussed in more detail below under *Mercury Thermometer Ban and Collection Program*, was also discussed in the report. San Francisco's participation in this national study helped in developing useful public participation source control strategies that are applicable to a range of commercial and residential source control programs.

- *Mercury Pollution Prevention Program Evaluation* (March 2002) - Prepared by Larry Walker Associates for Association of Metropolitan Sewerage Agencies. With a grant from EPA, AMSA implemented this study to determine whether pollution prevention or some form of source control could sufficiently reduce influent mercury levels to enable POTWs to comply with increasingly stringent limits for mercury. The project also sought to identify beneficial impacts of wastewater source control programs on other pathways by which mercury enters the environment. San Francisco was a major participant in the study. San Francisco conducted sampling of discreet waste lines from six dental office buildings ranging from 4 to 100+ dental offices to provide data for Hg load calculations. There was no obvious relationship between measured mercury loadings per dentist and which BMPs were implemented, number of patients, or number of fillings per week. The report found that mercury source control and pollution prevention programs have the potential to achieve measurable reductions in influent levels of mercury, but will not generally enable publicly owned treatment works to meet increasingly stringent mercury effluent limits. Posted at http://www.amsa-cleanwater.org/advocacy/mercgrant.

- *Additional Evaluations* – PUC staff are evaluating methods for conducting effectiveness evaluations of the Latex Paint Recycling Program, BMPs for Hospitals and Medical Office Buildings, Mercury Thermometer Ban and Collection Program, and the Fluorescent Lamp Collection Program.

Household Hazardous Waste Collection Center

This facility is a very essential component in the City's efforts to keep hazardous materials out of the sewer system. San Francisco maintains a permanent collection center to which residents may take waste paints, old pesticides, batteries, and similar materials that might otherwise be discharged down sewers or storm drains. The facility accepts 15 gallons or 125 pounds of hazardous wastes from residents per trip. The facility also accepts wastes from small businesses for a fee.

Household Hazardous Waste Pickup Service (Including Small Business Wastes)

San Francisco has implemented a Hazardous Waste Pick Up Service for Residents. This initiative provides door-to-door pickup service for used motor oil, oil filters, and latex paint. Pick-up is by appointment for all San Francisco residents and will be extended to Treasure Island.

In addition, the City provides free household hazardous waste pick-up (household chemicals, paints, pesticides, aerosols, cleaners, etc.) for elderly and disabled residents. (Other residents pay $35.00 for service.) (More information at:
http://www.sfrecycles.org/hazardous_waste/haz_waste_content/Residents/hw_res_hw_pkup_service.htm)

Of particular importance for keeping hazardous chemicals out of the sewers are the services provided for small businesses (very small quantity generators: VSQG). These services are available for San Francisco businesses that generate small amounts of hazardous waste (less than 27 gallons or 220 lbs. per month). The program provides them with drop off and pick up options that are legal, safe, and affordable. This program is co-sponsored by the City and Sanitary Fill Company.

Hazardous Waste Drop-Off Sites

In addition to the Hazardous Waste Collection Center, the City has established drop-off sites for a variety of wastes which may contribute COCs if improperly disposed. These wastes include: auto tires, car batteries, cell phones, computers, household batteries, used oil, and fluorescent tubes and latex paint (these last two are also described elsewhere). More information at:
http://www.sfrecycles.org/Directories/what.html .

Street Sweeping/Catch Basin Cleaning

A key BMP is the City's street sweeping program, which directly reduces pollutants originating from street surfaces including copper from brake linings, (and possibly mercury from discarded batteries); all City streets are swept on a regular basis, usually weekly, with vacuum sweepers. Some commercial areas are swept daily; low-use areas are swept monthly. Unlike some communities, San Francisco does not allow neighborhoods to "opt out" of the street sweeping

program. The City's catch basins are also cleaned, as necessary, which helps reduce pollutant loadings.

Green Business Program

Although several City departments, including the PUC, DPH and DOE, have had programs for many years which interface with businesses and provide them with assistance and information to make their operations more "green", the City has not yet developed a coordinated, established and official Green Business Program that certifies businesses as being "environmentally friendly" based on pre-established conditions.

Beginning in FY 02-03, the following initial program development steps were taken:

- Discussions began toward establishing a formal Green Business Program for San Francisco. The WPPP is partnering with DOE/SF Environment and the SF Department of Public Health (DPH) to create the program. The initial plan is that the WPPP and DPH will conduct inspections for water pollution prevention and hazardous material/waste pollution prevention, and SF Environment will provide inspections in energy conservation, solid waste reduction, and administrative services. The SFPUC Water Department will provide water conservation services. A business will be certified as "Clean and Green" if it passes any or all of the different inspection fields, based on the type of business. The San Francisco Green Business Program is being modeled after the Association of Bay Area Government's (ABAG) Green Business Program. DPH has taken the lead on this program and has been attending ABAG Green Businesses meetings regularly for several months.

- In October 2002, the Department of Public Health held workshops as part of a Clean and Green Certification program targeting Automobile Repair Facility commercial businesses. Vehicle Service and Repair Pollution Prevention Workshops were held and 96 people, representing 42 businesses (or approximately 10% of the City's auto repair facilities) attended. Many businesses stated that they would like to be certified as a Clean & Green shop by DPH. Many municipal operations also attended these workshops (such as MUNI, Central Shops, San Francisco Airport, the clean water pump stations, the water pollution control plants, and the Housing Authority).

- (*More recent activities*: July 2003 - December 2003):

    - SF Green Business Partners meetings were held with representatives of DPH, PUC and the Department of the Environment to begin formalizing the structure of a San Francisco Green Business Program. Discussion centered around the content of the inspections and interaction between, and roles of, respective department. Copies of inspection checklists adopted by ABAG were circulated for review. Input has been requested input on what modifications might be needed in order to best suit San Francisco and its (perhaps higher) standards and goals. More meetings will be held in the upcoming months.

- DPH also continued follow through on providing education to and inspections of automobile facilities that expressed interested in the Clean and Green Certification program for auto facilities. DPH envisions that auto facilities that are inspected and certified as a Clean & Green shop will have completed the hazardous waste/toxics and water pollution prevention related review that is part of the SF Green Business certification process, which has yet to be formally adopted.

Homepage of the WPPP

Historically, information on the WPPP had previously been available on the SFPUC main website (www.sfwater.org) in a very limited way. Navigating the SFPUC website was also not easy. Therefore, it was difficult to refer residents and businesses to the web for program information and resources. Information on the WPPP free guides, for example, was online, but the information was located in the At Your Service/Consumer Advice section. Additionally, there was only a brief mention of the WPPP in the section on SFPUC departments, and no detail on the program's purpose, message, or resources and assistance available to City residents and businesses.

- (*More recent activities*: July 2003 – December 2003): Beginning in the 3rd quarter of 2003, the WPPP established a more visible, and easily accessed, location on the internet, as detailed below:

  - Summary of Online Presence of WPPP Initiated in 3rd Quarter 2003

  - A WPPP homepage was established at http://pollutionprevention.sfwater.org. This page can also be accessed through links from the SFPUC site (www.sfwater.org) wherever the Water Pollution Prevention Program is referenced.

  - The WPPP homepage contains a statement on the program goals, what the program does, and provides links to information on specific program components - such as the Dental Mercury Reduction Program; the Gardener Calendar; the Our Water, Our World stores; and more.

  - The WPPP homepage was cited on all outreach materials developed for the launch of the Dental Mercury Reduction Program. All program outreach materials and permit application forms are available online so that dental offices can access them easily and print them as needed.

- Future plans for the WPPP homepage include the following:

  - Information on all free guides/materials and how to order them online or by phone;

  - Information and support materials for programs such as the Fats, Oils and

Grease programs (commercial and residential); and

- Use of the site to track response to targeted campaigns.

Pesticide Reduction Program

Some pesticides contain mercury or copper compounds and efforts to reduce pesticide use may incidentally reduce the release of mercury and copper to the environment. The following briefly describes the San Francisco program to reduce pesticides. This program will be expanded to Treasure Island when responsibility is transferred from the Navy.

As discussed below (section on legislative initiatives) San Francisco adopted an Integrated Pest Management (IPM) ordinance in October 1996, (revised 1997) which commits the City to a pest management approach on its own property that minimizes the use of toxic chemicals and controls pests by methods that pose a lower risk to public and environmental health. For example, four-hundred goats and tons of corn meal mulch are used to help prevent weeds from taking over City parks and watersheds, giant heaters are used to kill termites inside of building walls, and donut-shaped devices floating in City ponds release mosquito-eating microorganisms. Since the ordinance has been in place, San Francisco has reduced overall pesticide and herbicide use by more than 50% and has eliminated the use of products containing the most dangerous ingredients.

All of the most dangerous pesticides were banned for City use at the beginning of 1997 and for tenants on city property at the beginning of 1998. By January 1, 2000, only those chemicals considered as "reduced risk" and consistent with an IPM program may be used on City property.

The City has also adopted a list of the pesticide products approved for use under San Francisco's Integrated Pest Management Ordinance. Products are designated as Allowed (A), Limited Use (L), and Limited Use of Special Concern (L*). Each limited use product is accompanied by the specific circumstances under which it is approved for use.

Some of the educational materials used in this program are discussed in the Outreach section earlier in this document.

City Legislative Action

Action by the Board of Supervisors has also supported the pollution prevention efforts. These actions have resulted in some of the programs described above.

- *Pesticide Ban Ordinance* - Ordinance No. 274-97 (revised in June 12, 1997) bans the use of all pesticides on City property by the year 2000 except for those chemicals considered as "reduced risk" and consistent with an IPM program. This is one of the toughest ordinances in the nation on pesticides.

- *Other ordinances, including the mercury thermometer ban, are described below*

Areawide Activities

San Francisco participates in various Bay area activities directed toward pollution prevention.

- BASMAA (Bay Area Stormwater Management Agencies Association)
- BAPPG (Bay Area Pollution Prevention Group)
- The Regional Monitoring Program
- Regional Monitoring Program
- Bay Area Clean Water Agencies
- Clean Estuary Partnership , which provides support for Bay TMDL and related strategy development.

Mercury Program Activities

General Mercury Reduction Measures History

- In 1999 the City adopted the Environmentally Preferable Purchasing Ordinance. This ordinance established a purchasing process that results, where possible, in reductions in purchasing of items with PCBs, including mercury.
- Implementation by the SFPUC of an ongoing program to identify and replace manometers in use (and being purchased by the department) with non-mercury instruments.
- In 2001, the Mayor of San Francisco signed a letter in support of SB 633, which would have banned or restricted certain mercury-containing products.
- Establishment of the VSQG (Very Small Quantity Generator) program which is administered by the Department of the Environment. Among other things, this program encourages qualifying businesses to recycling fluorescent light tubes through the program.

Mercury Thermometer Program History

- Completion of a public perception survey to identify issues regarding ownership of mercury thermometers and the public's willingness to properly dispose of them.
- *Mercury Thermometer Ban* - The Supervisors passed an ordinance on May 8, 2000 banning the sale, import and manufacture of mercury thermometers (both fever and weather) within San Francisco's city and county limits. The ordinance was developed because mercury in breaking thermometers was considered the largest single household source of mercury pollution in municipal solid waste.
- Successful execution of a *Mercury Free May* event in May 2000. The event marked the

passage of the mercury fever thermometer ban in San Francisco, one of the first cities in the nation to pass such legislation (see item above). Approximately 4,700 mercury thermometers were collected during this event.

- Production of a tri-fold brochure (in English, Spanish and Chinese) that promoted Mercury Free May and the nine associated temporary drop-off/exchange sites at neighborhood fire stations throughout the City.

- Establishment of a three permanent mercury thermometer exchange sites in FY 02-03 (University of California, San Francisco bookstore (UCSF); SF Department of the Environment; permanent Hazardous Waste Collection Facility). Residents receive a free digital thermometer for every mercury thermometer they turn in. Coverage by media outlets at the "grand opening" of the UCSF location.

- *(Most recent: 7/03 – 12/03)* Promotion continued of the permanent drop-off/exchange sites. Beginning in July, a print/newspaper ad began running in local papers to promote the permanent thermometer exchange program (advert: "Think we collected 6,000 mercury thermometers for our health?")

Fluorescent Tube Recycling History

Mercury is an essential ingredient for most energy-efficient lamps and is used in fluorescent lamps.

- Establishment of a City-operated program to collect fluorescent tubes from municipal operations. The City's Department of Public Health provides collection services, including boxes for packing the tubes.

- In FY 02-03, the City's Department of the Environment received a grant from the California Integrated Waste Management Board for promotion of a residential fluorescent tube recycling program.

- Residents can transport bulbs to the Household Hazardous Waste Collection facility.

- Fluorescent Tube Recycling (7/03 – 12/03)

- *(Most recent: 7/03 – 12/03)* Continued operation of the City's program which collects fluorescent tubes from municipal operations.

Dental Mercury Reduction History

- Since the early 1990s, San Francisco has been active in stakeholder processes for creating educational materials and conducting outreach to the dental community. San Francisco was a key participant in the group that created the dental mercury BMP guide *Never Down the Drain,* first published 1997 and revised in September 2002.

- Outreach to promote voluntary implementation of BMPs to San Francisco dental practices, in the form of surveys and information materials, was conduced in FY 00-01 and FY 01-02.

- Surveys were conducted to assess the level of implementation of passive (not-mandated) BMPs.

- Sampling was conducted in 1991 and 1992 to determine if voluntary BMPs were reducing concentration of mercury. The promotion of voluntary BMPs did not appear to have a significant impact of implementation practices.

- San Francisco participated in the creation of a power point presentation, entitled "Environmentally Responsible Dentistry", through the regional BAPPG group. This presentation has been used to educate dentists and other interested parties.

- Important and ongoing partnerships were cultivated with groups such as the San Francisco Dental Society and the California Dental Association. Their support, and that of their membership, would facilitate the successful development and implementation of a Class 2 permit for dentists.

- Regular meetings were held with stakeholder groups and in Sept. 2002 San Francisco sponsored a booth at the CDA Convention in San Francisco and distributed approximately 175 *Never Down the Drain* guides.

- The WPPP conducted research on how to create a Pretreatment Program Class 2 permit for dentists to help reduce mercury loading into the City's sewer system. Other agencies and industry experts with relevant experience were consulted in order that a sound, scientifically-based program would be developed.

- In 2002, San Francisco decided to pursue development of a program to regulate dental offices under a Class 2 wastewater discharge permit.

- (*Most Recent - 7/03 – 12/03*) In July 2003 approval was granted SFPUC Commission to proceed with the implementation of the Dental Mercury Reduction Program.

    - An initial database of dental offices was compiled (based on data from the CA Department of Consumer Affairs, the SF Tax Collector's Office, yellow pages, and BERM's data from past outreach to SF dentists).

    - The dental office database was refined through a mailing and Response Form designed to confirm whether each office was active and to identify the responsible party in each office.

    - A baseline collection system/truck line monitoring plan was developed, sites were identified and sampling conducted. Planning for sewer monitoring was initiated.

- Mapping of active dental offices was completed on a GIS mapping system.
- A list of BMPs that would be required of dental offices under the program was created.
- A list of approved amalgam separator models was established and a Vendor Fair was held in October 2003. This aspect of the program was run by the San Francisco Department of the Environment, in coordination with the WPPP.
- The permit application documents were completed (Permit Application Form; Sample Completed Application; Application Instructions; and other related program forms)
- A Program Overview guide was produced. This 8-age guide provided all of the basic information that dental practitioners and other interested parties would need to know about the program. Refer to attached copy of the Program Overview.
- An amalgam separator installation Rebate Program was designed and promoted to encourage offices to install separators quickly. This aspect of the program was run by the San Francisco Department of the Environment, in coordination with the WPPP.
- A written procedure was developed on the wastewater sampling and analysis methodology that would have to be followed by dental offices choosing the self-monitoring option (as opposed to installation of an amalgam separator). A special sampling device ("berglund device") was also configured and specifications developed.
- Development of a list of approved amalgam waste haulers and a summary of proper amalgam waste management practices.
- A website was established where all Dental Mercury Program related information is posted and can be downloaded.
- An informal tri-agency dental mercury group was formed (EBMUD, Palo Alto and San Francisco) to discuss lessons learned in the development of the dental mercury program.
- Press releases on San Francisco's launch of the dental mercury reduction program were issued jointly by the SFPUC and the California Dental Association in August 2003. The message was picked up by some local print and radio outlets.
- The WPPP neared completion of a dental mercury module into the

departments existing centralized Oracle database. This will allow the program to better track program actions, BMP compliance, and other metrics.

Copper Program Activities

General Copper Reduction Measures History

Corrosion in the potable water system plumbing has been identified consistently to be one of the largest sources of copper in wastewater.

Past Achievements of Copper Reduction Program

- San Francisco participated in a regional BAPPG group that produced outreach materials that could be used regionally by cities to promote BMPs which would result in less copper corrosion. The campaign aims to educate pipe system designers and installers about ways they can help reduce copper corrosion, thereby reducing the levels of copper in POTW wastewater. The campaign materials were developed so that each agency could use them to conduct outreach in their respective areas. These materials included the following:
    - 2 Fact Sheets - one for designers ("Preventing Corrosion Protects San Francisco Bay") and one for installers/plumbers/pipefitters ("Good Plumbing Practices Protect San Francisco Bay").
    - A give-away scratch pad for plumbers with the message "You're the Solution to Copper Pollution" engraved on it. The pad is accompanied by a note card that explains the campaign and BMPs.
    - A power point presentation was created to be used in making presentations to pipe designers and pipe fitters. This presentation provides background information on the issue, explains how corrosion occurs and details information on BMPs to reduce copper corrosion. Survey questions were built in at the start and at the end to gauge how much the audience learned.
- (Most Recent - 7/03 - 12/03) Copper Program Achievements
    - Target audiences were identified for the copper P2 outreach materials that had been produced. A list was compiled of specific contacts for plumbing and pipefitting unions and other associations (such as plumbing engineer and corrosion engineer associations, and plumbing, heating and cooling associations). Local building inspection and planning departments were also identified as target audiences.
    - The power point presentation underwent some final revisions to make it more flexible for use by different jurisdictions.
    - The WPPP held a campaign outreach orientation meeting on September 17,

2003 where representatives from various jurisdictions were trained on how to use the campaign outreach materials. This included a walk through of power point presentation. Over 20 individuals attended.

- The WPPP provided copies of the power point presentation, the 2 fact sheets and the give-aways to representatives of regional agencies that had signed up to make presentations to the identified targeted entities.

- In November and December of 2003 the WPPP made initial contact with the identified local target audience associations. Initial information on the campaign was communicated and interest was expressed in attending association meetings to make a detailed presentation.

- Actual outreach and presentations to municipal departments and targeted associations is planned for the 1st and 2nd quarters of 2004.

Proposed Pollution Prevention Actions for Primary COCs

San Francisco was developed one of the earliest pollution prevention programs in the Bay Area. It was the first program to target stormwater runoff in addition to reducing pollutants in the sanitary sewer system. The program continues to expand and investigate new opportunities to reduce pollutant loading to local waterways. This effort will continue as described in the preceding sections.

- *Ongoing and expanded pollution prevention and copper and mercury control programs* - San Francisco will continue the general activities described above including the proposed new activities. New initiatives are planned for both mercury and copper control. When appropriate these programs will be extended to Treasure Island.

- *Sewage and Storm Water Management Guidelines for New Developments* - San Francisco intends to develop goals and objectives for the development and management of new storm water and wastewater infrastructure . The guidelines will impact much of the new development on Treasure Island. These objectives are intended to be general guidelines rather than specific design parameters. The objectives developed would satisfy all applicable regulations as well as address citywide planning needs for sewage and storm water management. Further, the objectives will consider approaches taken with recent large developments at Mission Bay and Hunters Point Shipyard as well as the Port's Storm Water Management Plan for the Southern Waterfront. Lastly, the objectives should be consistent with the current and future SFPUC Long-Term Strategic Plans and the overall goals of the San Francisco Clean Water Program including control of key pollutants of concern.

- *Treasure Island Wastewater Pollution Prevention Program* – The City has prepared a draft pollution prevention program for Treasure Island (attached). This program is going through reviews and will be implemented as soon as practicable.

General Source Identification and Control Efforts for the Other COCs

The discussion above focussed the two metals which are the primary COCs. Other efforts by the City have addressed organics including 4,4'-DDE and Dieldrin as well as cyanide

Source Identification - In addition to heavy metals, San Francisco has undertaken measures to identify the sources of toxic organics in the wastewater system. This work has been consolidated into the following phased effort which includes dioxins among its targeted constituents:

- *Toxic Organic Pollutant (TOP) Management Study* (Phase I began in 1995, Phase II in 1996) – This program was structured as a multi-year study with a broad scope running from TOP source identification to control measure implementation including public education. Both Phase I and Phase II included dry and wet-weather sampling throughout the collection system and at selected industrial discharges in order to identify TOP sources. Related work included surveying residents regarding pesticide use and disposal.

Education efforts - Many of the education and control programs discussed in preceding sections will be effective at controlling residual containers of DDT or Dieldrin that homeowners or businesses may have. The educational efforts should help increase awareness of the potential harm of these substances.

Gardening Calendars – These calendars contain tips on alternatives to pesticide use for home gardeners.

Drive-Through Hazardous Waste Disposal for San Francisco Residents - How to use the Household Hazardous Waste Facility

Disposal programs – The Household Hazardous Waste Collection Center is a very essential component in the City's efforts to keep hazardous materials out of the sewer system. San Francisco maintains a permanent collection center to which residents may take waste paints, old pesticides, batteries, and similar materials that might otherwise be discharged down sewers or storm drains. The facility also accepts wastes from small businesses for a fee.

Cyanide is thought to be generated in the treatment process itself so pollution prevention would not be effective. San Francisco, however, has begun implementing improved analysis methods to lower the detection limit in order to determine whether cyanide is present at levels of concern.

Attachment: *Treasure Island Wastewater Pollution Prevention Program*