

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION**

ORDER NO. 99-024

NPDES PERMIT NO. CA0038636

REISSUING WASTE DISCHARGE REQUIREMENTS FOR:

EAST BAY REGIONAL PARK DISTRICT,  
EAST BAY DISCHARGERS AUTHORITY, AND  
UNION SANITARY DISTRICT  
HAYWARD SHORELINE MARSH  
HAYWARD, ALAMEDA COUNTY

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

1. East Bay Dischargers Authority (EBDA), Union Sanitary District (USD), East Bay Regional Park District (EBRPD) (hereinafter collectively called the dischargers) submitted a joint Report of Waste Discharge dated November 20, 1998, for re-issuance of waste discharge requirements and a permit to discharge wastewater to waters of the State and the United States under the National Pollutant Discharge Elimination System (NPDES).

**PURPOSE OF ORDER**

2. This NPDES permit regulates the discharge of treated wastewater to Lower San Francisco Bay, waters of the State and the United States. This discharge was previously governed by Waste Discharge Requirements in Order No. 93-155, adopted by the Board on December 15, 1993.

## FACILITY DESCRIPTION

3. The dischargers presently operate a 145-acre man-made marsh system including three freshwater marsh basins (85 acres) and two brackish water basins (60 acres) at Hayward Shoreline Regional Park, adjacent to the San Francisco Bay. The hydraulic capacity of the marsh system is about 20 million gallons per day (MGD). During the past three-year period from 1996 through 1998, the marsh was operated at 2 to 16.5 million gallons per day (MGD) with reclaimed wastewater diverted from the adjacent EBDA discharge line as the freshwater influent sources. At the point of diversion, reclaimed wastewater is supplied by the Union Sanitary District, a member agency of EBDA. Storm runoff and tidal saline water also enter into the brackish water basins of the marsh system.
4. After mixing with Bay water in the brackish water basins, the reclaimed wastewater from the marsh system is discharged directly into the Central San Francisco Bay (Latitude 37 Deg. 37 Min. 32 Sec.; Longitude 122 Deg. 07 Min. 50 Sec.) through an earthen channel. Attachment A is a location map and is hereby made a part of this Order.
5. The marsh system is operated to enhance the beneficial uses of reclaimed wastewater, to derive net environmental benefits and to meet water quality objectives, and as a research site to better understand development and management of a marsh utilizing reclaimed wastewater.
6. Regular monitoring indicates that avian species diversity has increased steadily in the study area since bird censuses commenced in 1990 at least 206 species of birds have utilized the marsh. There has also been a trend toward relatively greater numbers of water bird species over land birds, which may be attributable to improved wetland habitat management and/or higher rainfall during this period.
7. The marsh is a refuge for nesting shorebirds and waterfowl with active nests initiated as early as March and continuing into September each year. This represents a substantial regional nesting population for dabbling ducks and mid-sized shorebirds and also represents one of the largest colonies of nesting snowy egrets and black-crowned night herons in the Central Bay. In addition, several rare species, the federally threatened western snowy plover, Caspian and Forster's terns and black skimmers nest within this marsh.
8. The marsh supports a great density of wintering waterfowl, numbering as high as 40,000 ducks each season, and is an important migratory stopover for shorebirds each Spring and Fall. These high numbers of birds create a tremendous draw for recreation and research with bird watchers and organized environmental groups visiting the marsh regularly.
9. Toxicity tests with samples collected at the receiving water after the Marsh discharge produced the No-Observable-Effect-Concentration (NOEC) value of 100% , which indicates that the discharge has no toxicity effect on the fishes.

10. The Marsh Shoreline discharge creates a salinity transition zone (fresh water to brackish water) that re-creates habitat attractive for rearing of juvenile bay fishes. The California State University studies demonstrated a 400 % increase in 12 species of juvenile bay fishes in the transition habitat compared to more saline areas of the Bay nearby.
11. Educational benefits associated with the marsh system include numerous special tours by the universities, consultants, agencies and foreign visitors interested in the use of reclaimed water to create wetland habitat. In addition, about 20,000 students and public visitors annually attend programs offered by the adjacent Hayward Interpretive Center that specializes in educational programs on wetlands, shoreline habitats and the ecology of the San Francisco Bay.
12. The U.S. Environmental Protection Agency (USEPA) and the Board have classified this discharge as a minor discharge.

### **APPLICABLE PLANS, POLICIES AND REGULATIONS**

13. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board (SWRCB) and the Office of Administrative Law on July 20, 1995 and November 13, 1995, respectively. A summary of the regulatory provisions is contained in Title 23 of the California Code of Regulations, Section 3912. The Basin Plan identifies beneficial uses and water quality objectives for waters of the state in the Region, including surface waters and groundwaters. The Basin Plan also identifies effluent limitations and discharge prohibitions intended to protect beneficial uses. This Order implements the plans, policies and provisions of the Board's Basin Plan.

### **BENEFICIAL USES**

14. The beneficial uses identified in the Basin Plan for Central San Francisco Bay and contiguous water bodies include:
  - Industrial Service Supply
  - Industrial Process Supply
  - Navigation
  - Water Contact Recreation
  - Non-contact Water Recreation
  - Ocean Commercial and Sport Fishing
  - Wildlife Habitat
  - Preservation of Rare and Endangered Species
  - Fish Migration
  - Fish Spawning
  - Shellfish Harvesting

- Estuarine Habitat

## **REGULATORY BASIS FOR EFFLUENT LIMITS AND DISCHARGE REQUIREMENTS**

15. Effluent limitations in this permit are based on the plans, policies and water quality objectives and criteria of the 1995 Basin Plan, *Quality Criteria for Water* (EPA 440/5-86-001, 1986 and subsequent amendments "Gold Book"), applicable Federal Regulations (40 CFR Parts 122 and 131), National Toxics Rule (57 FR 60848, 22 December 1992; 40 CFR Part 131.36(b), "NTR"), National Toxics Rule Amendment (Federal Register Vol. 60, No. 86, 4 May 1995 pg. 22229-22237), and best professional judgment (BPJ) as defined in the Basin Plan. Where numeric effluent limitations have not been established in the Basin Plan, 40CFR122.44(d) specifies that water quality based effluent limits may be set based on USEPA criteria and supplemented where necessary by other relevant information to attain and maintain narrative water quality criteria to fully protect designated beneficial uses.
16. U.S. EPA guidance documents upon which BPJ was developed may include in part:
  - Technical Support Document for Water Quality Based Toxics Control March 1991,
  - Region 9 Guidance For NPDES Permit Issuance February 1994,
  - Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria October 1, 1993,
  - Whole Effluent Toxicity (WET) Control Policy July 1994,
  - Draft National Guidance for the Permitting, Monitoring, and Enforcement of Water Quality-based Effluent Limitations set Below Analytical Detection/Quantitation Levels March 18, 1994,
  - National Policy Regarding Whole Effluent Toxicity Enforcement, August 14, 1995,
  - Clarifications Regarding Flexibility in 40 CFR Part 136 Whole Effluent Toxicity (WET) Test Methods, April 10, 1996,
  - Interim Guidance for Performance - Based Reductions of NPDES Permit Monitoring Frequencies April 19, 1996,
  - Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Programs Final May 31, 1996,
  - Draft Whole Effluent Toxicity (WET) Implementation Strategy February 19, 1997.
  - National Toxics Rule, 57 FR 60848, December 22, 1992 (NTR).

## **DISCHARGE PROHIBITION EXCEPTION**

17. The Basin Plan prohibits the discharge of wastewater which has characteristics of concern to beneficial uses at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1, or into any non-tidal water, dead-end slough, similar confined waters, or any immediate tributaries thereof. Discharge of wastewater to Hayward Marsh and to Central San Francisco Bay is contrary to this prohibition.

18. The Basin Plan states that exception to the above prohibition will be considered for dischargers where discharge is approved as a part of a reclamation project, or where it can be demonstrated that net environmental benefits will be derived as a result of the discharge.
19. The Board also finds that an exception to the discharge prohibition is warranted for the wetlands enhancement project (where water may be released on a year round basis as necessary for maintenance of the wetlands), as it was developed as part of the reclamation project and will provide for enhancement of wetlands habitat.
  - 19.1 The Board adopted Resolution 94-086 specifically establishing its Policy regarding the use of wastewater to create, restore, maintain, and enhance marsh lands. The policy also specifies the criteria under which it would consider exceptions to the Basin Plan for marshes. In conformance with the Policy, the dischargers submitted a technical report, the "Hayward Marsh Expansion Management Plan". The dischargers will periodically measure metals in the waters and sediments of the marsh. As vegetation and animals in the marsh ecosystem increase, additional studies to monitor the health of the marsh will be conducted.
  - 19.2 The marsh will be operated to enhance beneficial uses of reclaimed water, and as such qualifies for Board consideration of an exception to the discharge prohibitions stated in Finding 17 above. The diversion of treated effluent to an alternative discharge point does not allow an increase in the capacity of the plant.
  - 19.3 From July 1994 through June 1995, the dischargers studied the effect of reduced chlorine residual on fecal coliform numbers in the effluent and receiving waters. The information contained in their report, "Justification for Fecal Coliform Effluent Limitation," indicated that there are no negative impacts on the receiving waters due to the reduction of chlorine residual and subsequent increase in the fecal coliform numbers in the effluent. The report concluded that the receiving waters in the vicinity of the EBDA outfall are not used for water contact recreation and that five day log mean fecal coliform density up to 500 MPN/100 ml, and 90<sup>th</sup> percentile fecal coliform value of up to 1100 MPN/100 ml in the effluent will be protective of the beneficial uses of the receiving waters. Receiving water monitoring data showed that the fecal coliform density in the receiving water was generally less than 2.0 MPN/100 ml when the effluent was discharge with a fecal coliform density of 500 MPN/100 ml.

In 1990, the California Department of Health Services (DHS) provided clarification of beneficial use definitions of waters of the State as related to bacteriological standards. DHS recommended log mean fecal coliform densities of 500 MPN/100 ml, and 90<sup>th</sup> percentile fecal coliform value of 1100 MPN/100 ml as a criterion for Limited Water-contact Recreation. However, the receiving water monitoring data suggest that these fecal coliform densities in the effluent will be protective of the beneficial uses of the receiving waters.

## **BASIS FOR EXISTING LIMITS**

20. *Technology Based Limits.* Permit effluent limits for conventional pollutants are technology based and are the same as in the prior permit. These constituents include: Biological Oxygen Demand (BOD), total suspended solids, settleable matter, and chlorine residual. Technology-based effluent limitations are based on secondary treatment.
21. *Marine and Fresh Water Quality Objectives and Limits.* Hayward Marsh is tidally influenced in the vicinity of the outfall. The Basin Plan states that saltwater effluent limitations shall apply to discharges to receiving waters with salinities greater than 5 parts per thousand (ppt) at least 75 percent of the time in a normal water year. The Hayward Marsh is tidally-influenced, but is not listed in the Basin Plan as supporting estuarine beneficial uses. Because Hayward Marsh is tidally influenced, with discharge to brackish water, the effluent limitations specified in this Order for discharge are the saltwater limitations.
22. *Shallow Water Discharge.* Discharge to the Hayward Marsh is into shallow water. Due to the tidal nature of the Marsh, the discharge is classified by the Board as a shallow water discharge. Therefore, effluent limitations are calculated assuming no dilution ( $D=0$ ).
23. The 1995 Basin Plan (p.4-12) states that shallow water dischargers may apply to the Regional Board for exceptions to the assigned dilution ratio of  $D=0$  (and thus the shallow water effluent limitations) based on demonstration of compliance with water quality objectives in the receiving waters and implementation of an aggressive pretreatment and source control program. The cited Basin Plan Shallow Water Discharges section specifies the issues that must be addressed to support requests for the Board to consider granting limited dilution credit where needed to meet effluent limits in the form of revised effluent or mass loading limits.

## **BASIS FOR REVISED EFFLUENT LIMITS**

24. *Water Quality Based Effluent Limitations(WQBELs).* Toxic substances are regulated by water quality based effluent limitations derived from USEPA national water quality criteria listed in the Basin Plan Tables 3-3 and 3-4, the National Toxics Rule, or USEPA Gold Book, and/or best professional judgment. Further details about the effluent limitations are given in the associated Fact Sheet.
25. *Alternative Limits.* The Basin Plan (at p. 4-8) provides that alternate effluent limitations can be considered by the Board where a site-specific water quality objective is being proposed and the dischargers are participating in source control programs. The dischargers are implementing well-developed source control programs for copper, mercury, nickel and cyanide. It is consistent with this provision of the Basin Plan to use an interim effluent limitation for copper, mercury, nickel and cyanide pending the results of the studies leading up to the Board's consideration of any site-specific recommendations to evolve from those analyses. Therefore, in addition to water quality

based effluent limits (WQBELs), interim limits for copper, mercury, nickel, and cyanide are included in this Order. Due to impairment of the San Francisco Bay and mercury's bioaccumulative effects, a mass limit and a mass "trigger" to initiate increased pollution prevention activity, in addition to interim concentration and WQBELs, are included in this Order for mercury. These controls on mass loading address the anti-degradation concerns established in State Board Order No. 90-5.

26. a. *Applicable Water Quality Objectives.* The Basin Plan (page 3-4) established a narrative objective for toxicity in order to protect beneficial uses: "All waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental responses in aquatic organisms". The Basin Plan also directs that ambient conditions shall be maintained until site specific objectives are developed. Effluent limitations and provisions contained in this Order are designed to implement this objective, based on available information.
- b. *Central San Francisco Bay Water Quality.* The draft Section 303(d) List of Impaired Water Bodies and Priorities for Development of Total Maximum Daily Loads (TMDLs) for the San Francisco Bay Region, dated March 9, 1998, was approved by the State Board on May 27, 1998. Pollutants contributing to the impairment of Central San Francisco Bay include mercury, copper, exotic species, diazinon, PCBs, selenium, and nickel.

27. Reasonable Potential Analysis

As specified in 40 CFR 122.44(d) (1) (i), permits are required to include limits 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." Considering the method described in the "Proposed Policy for Implementation of Toxics Standards for Inland Surface Water, Enclosed Bays, and Estuaries in California" (Draft, September 1997), and USEPA guidance documents, Regional Board staff have analyzed the effluent data to determine if the discharges had reasonable potential (RP) to cause or contribute to an exceedance of a State water quality standard ("RP Analysis"). In the absence of state-adopted numeric water quality objectives, the RP analysis compares the effluent data with the USEPA's Quality Criteria for Water, 1986 (Gold Book), a limited Regional Board site-specific study for copper, and the Basin Plan objective for tributyltin. The RP analysis assumed that the effluent would receive no dilution. The results of the RP Analysis are described in this finding and in Section B: Effluent Limitations.

For all parameters that have "reasonable potential" to contribute to an exceedance of a water quality objective, numeric water quality-based effluent limitations (WQBELs) are established. For copper, mercury, nickel, and cyanide WQBELs are established with compliance schedules if revised WQBELs for copper, mercury, nickel and cyanide are not established at the end of 7 years from the date of this permit's reissuance, then the WQBELs, based on USEPA's water quality criteria and the Basin Plan objectives, 4.9 µg/L, 0.025 µg/L, 8.3 µg/L, and 5 µg/L respectively, will go into effect. While site-

specific objectives and Total Maximum Daily Loads (TMDLs) are being developed, the dischargers will be held accountable for maintaining ambient conditions in the receiving water and Central San Francisco Bay by complying with interim performance based limits for copper, mercury, nickel and cyanide which are based on current treatment plant performance at the 99.7th percentile level.

Review of the 1996-98 data showed that the toxic constituents present in the discharger's effluent at concentrations greater than the detection limit were arsenic, chromium, copper, lead, mercury, nickel, selenium, silver, zinc, cyanide, PAHs and phenol. Of these constituents, only arsenic, copper, lead, mercury, nickel, selenium, silver, zinc, cyanide, and PAHs have reasonable potential to cause or contribute to exceedance of water quality objectives based on the RP analyses. All of the other toxic constituents considered were found at levels well below the corresponding effluent limitations; e.g., based on continued consistent plant performance, cadmium, chromium and phenols did not show reasonable potential to cause or contribute to exceedance of applicable water quality objectives. For some toxic constituents (endosulfan) reasonable potential could not be determined conclusively due to data validation and detection level problems. For cyanide, reasonable potential could not be determined due to possible analytical interference. Therefore, an interim performance-based limit is established until more information is available to perform a justifiable reasonable potential analysis.

The limit for PAHs, as defined by the Basin Plan, is the sum of about sixteen constituents measured in USEPA Method 610. The NTR, which is based on more updated data, lists standards for just eleven of the PAHs measured in Method 610. The USEPA criteria for three of the eleven are higher than the other eight; these are anthracene (NTR objective at 110,000 ppb), fluorene (14,000 ppb), and pyrene (11,000 ppb). Therefore, the PAH limits in the current permit are for the other eight PAHs that may be present in the discharge at concentrations which pose a reasonable potential to contribute to water quality impacts. The USEPA criteria for each of these eight PAHs are 0.049 ppb based on updated cancer potency factors from USEPA's Integrated Risk Information System (IRIS). Therefore, the limit for these eight PAHs is set at the practical quantitation level (PQL), or five times the method detection level. The limit for these eight PAHs is set at the practical quantitation level (PQL), or five times the method detection level. The eight PAHs are listed in Provision 2 of this Order and in Footnote 7, Table 1A, of the SMP.

The water quality objectives (WQO) that had reasonable potential to be exceeded, and the projected effluent quality (PEQ) computed from the analyses are listed in the following table for each constituent analyzed. The PEQ was computed based on concentration data measured during discharge periods from 1996 through 1998. No dilution was used in the determination. If the projected maximum concentration is greater than the WQO (or is significantly close), then there is reasonable potential for that constituent to cause or contribute to exceedance of the objective.

Constituent	PEQ (99%) (µg/L)	WQO (µg/L)	Reasonable Potential
Arsenic	105	36	yes
Copper	18.7	4.9	yes
Mercury	0.408	0.025	yes
Lead	22.12	5.6	yes
Nickel	76	8.3	yes
Selenium	169.6	5	yes
Silver	3.2	2.3	yes
Zinc	135.7	86	yes
Cyanide	62.9	5.0	yes
PAHs	22.72	0.03	yes
Phenol	28	30	no
Cadmium	1	1.1	no
Chromium	7.8	11	no

The Board cannot determine whether several organic constituents (PCBs, semi-volatile and volatile organics) have the reasonable potential to cause or contribute to exceedance of applicable water quality objectives because the historical effluent limitations were lower than current analytical techniques can measure. The dischargers will continue to monitor for these constituents and to investigate methodologies to improve detection limits. If detection limits improve to the point where it is feasible to evaluate compliance with the water quality objectives, a new reasonable potential analysis would be conducted to determine whether there is need to add numeric effluent limits to the permit or to continue monitoring.

A reopener provision is included in this Order that allows numeric limits to be added to the permit for any constituent that in the future exhibits reasonable potential to cause or contribute to exceedance of applicable water quality objectives. This determination, based on monitoring results, will be made by the Board.

28. Total Maximum Daily Load (TMDL)

For pollutants, such as copper, mercury and nickel that have interim performance-based limits based upon the reasons stated above, the Board intends to revise the WQBELs established in this Order after intensive literature review and data collection to determine appropriate local water quality objectives and cost-effective measures to achieve these objectives. Based upon the final Water Quality-Limited Waterbodies (303[d]) list, the Board may adopt TMDLs which may result in revising the WQBELs established in this Order. The Board's plan for conducting these reviews, data collection and TMDL development will be prioritized in the final 303(d) list and incorporated into the Watershed Management Initiative for implementation.

The following summarizes the Board's strategy to collect water quality data and general approaches to policy and TMDL development with associated time frames, and funding mechanism for this work:

- *Data collection* - The Board will require the individual point and non-point dischargers or dischargers collectively to develop analytical techniques capable of detecting these pollutants at levels of concern and to characterize loadings from their facilities into the water quality-limited waterbodies. The results will be used to (1) revise the 303(d) list and (2) support the watershed-specific pollutant policy development.
- *Policy and TMDL development* - A draft region-wide Mercury Strategy has been prepared by the Board staff which was distributed for public review and comment in June 1998. Adoption of the Mercury Strategy will be considered by the Board as part of the Basin Plan triennial review. This process will refine the timing and mechanism for development of other pollutant-specific TMDLs.
- *Funding mechanism* - The Board anticipates receiving resources from federal agencies for development of any alternate water quality based limits. The Board intends to supplement these resources to ensure timely alternate limits by allocating development costs among all dischargers through Regional Monitoring Program (RMP) or other appropriate group funded mechanisms. The dischargers have shown a willingness to participate in such a Board-initiated group effort as long as criteria are established to allocate the costs among all dischargers in the watershed equitably.

## 29. Copper

- a. *Copper Water Quality Objectives*. In 1984 the USEPA promulgated a national saltwater and freshwater copper criterion of 2.9 µg/L, measured as total recoverable copper. The Board developed a proposed Bay-wide site specific water quality objective for copper for San Francisco Bay of 4.9 µg/L in 1991. The site specific objective for copper employed the "water effect ratio" (WER) approach developed by the USEPA. This approach provides a measure of the binding capacity of natural waters (dependent on particulate matter) relative to the binding capacity of reference waters (filtered oceanic water). In the best professional judgment of the Board, from a technical standpoint, the Bay-wide site-specific objective was protective of the most sensitive designated beneficial use of San Francisco Bay water with respect to copper: habitat for aquatic organisms. The study and associated staff analysis are described in a September 25, 1992 Board staff report entitled "Revised Report on Proposed Amendment to Establish a Site Specific Objective for Copper for San Francisco Bay".
- b. The Board amended the Basin Plan on October 21, 1992 to include the site specific water quality objective of 4.9 µg/L for copper for San Francisco Bay based on a Bay-wide WER of 1.7 and the criterion of 2.9 µg/L. On June 16, 1993, the Board amended the 1986 Basin Plan to incorporate a wasteload allocation for copper. On April 21, 1994 the State Water Resources Control Board remanded both of these Basin Plan amendments as a consequence of the court decision which invalidated the California Enclosed Bays and Estuaries Plan and Inland Surface Waters Plan. Therefore, neither the site specific water quality objective nor the wasteload allocation have been legally promulgated.

- c. On October 1, 1993, in recognition that the dissolved fraction may be a better representation of the biologically active portion of the metal than is the total or total recoverable fraction, the USEPA Office of Water recommended that State water quality standards for the protection of aquatic life (with the exception of chronic mercury criterion) be based on dissolved metals. USEPA amended the NTR in 1995 to include factors to convert total metals to dissolved metals for both fresh and salt water objectives. USEPA published guidance in June 1996 on using metal translators, derived from site specific receiving water data, to calculate total recoverable effluent limits necessary to achieve dissolved receiving water criteria.
- d. In 1996, the USEPA promulgated a revised national saltwater dissolved copper criteria of 3.1  $\mu\text{g/L}$ . This revised criteria incorporates new scientific data generated during site specific studies of both New York Harbor and the San Francisco Bay. In order for the Board to consider application of the dissolved criteria to the discharge, an appropriate translator based on effluent and receiving water data must be developed. This Order requires the dischargers to conduct a study to generate data that may be considered by the Board for translation of the dissolved criteria to a total recoverable effluent limit.
- e. *Copper Effluent Concentrations.* Total recoverable copper concentrations measured in the discharger's effluent during the past three year period from January 1996 through December 1998 ranged from 4.0 to 14.0  $\mu\text{g/L}$  and averaged 8.64  $\mu\text{g/L}$ .
- f. *Copper Effluent Limits.* This Order establishes an interim performance-based effluent limitation for copper as well as a water quality based effluent limit (WQBEL) with a compliance schedule. The interim effluent limitation for copper is based on data from the past three years, 1996 to 1998, at the 99.7th percentile level; i.e., based on past performance, the dischargers should be able to meet this limit 99.7% of the time. This interim performance-based concentration, 17 $\mu\text{g/L}$ , will be effective for seven years unless a revised WQBEL is established prior to that time as specified in the B. Effluent Limitations. A different WQBEL than 4.9  $\mu\text{g/L}$  may be established when additional site specific information is available that would allow derivation of an appropriate limit that considers the binding capacity of the receiving waters specific to the Hayward Marsh and other relevant information regarding protection of beneficial uses of the receiving waters. This information may be developed by the dischargers, this Board, and/or other parties. The dischargers are required to implement a testing program that could lead to development of a site specific objective for copper for Hayward Marsh. Based on the results of these studies, which may be conducted in conjunction with other dischargers, the Board may revise this permit to include a revised interim limit for copper. A Regional Board hearing will be held within seven years from the adoption date of this permit to consider the results of site specific studies. The dischargers shall also report mass emissions of copper quarterly on a year-round basis from both Marsh influent and effluent. This data shall be used to develop a mass-emission study as part of a region-wide TMDL effort for copper.

- g. *If this permit is not revised with a different WQEBL for copper, then the WQBEL established in this Order, 4.9 µg/L, shall go into effect according to the time schedule specified in Provision 4. The interim limit will be solely for the purposes of this permit. The limit in the previous permit, 4.9 µg/L, had not been attained by the dischargers, therefore an interim performance-based limit is not subject to anti-backsliding. A compliance schedule in the permit is allowed since the 4.9 µg/L is a new interpretation of the existing narrative water quality objective and general toxicity standard, whereas the limit in the previous permit was based on the numeric objective from State Plans which have since been invalidated.*
- h. *Source Control.* The dischargers shall start a source control program as specified in the Provisions.

30. Mercury

- a. *Mercury Water Quality Objectives.* For mercury, the national chronic criterion is based on protection of human health. The criterion is intended to limit the bioaccumulation of methyl-mercury in fish and shellfish to levels which are safe for human consumption. As described in the Gold Book, saltwater criterion of 0.025 µg/L was derived using the bioconcentration factor of 40,000 obtained for methylmercury with the Eastern oyster. These criterion is below levels that have produced acute and chronic toxicity in both fresh and salt water aquatic species.
- b. *Mercury Effluent Concentrations.* Effluent mercury concentrations measured in the marsh basins 2A and 2B effluent (2AE and 2BE) during the past three year period from January 1996 through December 1998 ranged from 0.010 to 0.12 µg/L and averaged 0.046 µg/L.
- c. *Special Studies and Schedules.* Board staff are in the process of developing a plan to address mercury compliance for the shallow water dischargers. Review of recent data indicates that in the absence of dilution credit (as allowed for deep water dischargers) the discharge concentrations for these facilities are all generally higher than the objectives. Although the municipal dischargers are generally not considered to be significant contributors to the bulk mercury loading to the San Francisco Bay, there does remain the possibility of localized impacts related to their discharges. As such, USD is required to maximize their control over influent mercury sources, with consideration of relative costs and benefits. USD is encouraged to work with other shallow water dischargers to optimize both source control efforts and assessment of alternatives for protecting beneficial uses of receiving waters. The limit in the previous permit, 0.025 µg/L, had not been attained by the dischargers, therefore an interim performance-based limit is not subject to anti-backsliding. A compliance schedule in the permit is allowed since the 0.025 µg/L is a new interpretation of the existing narrative water quality objective and general toxicity standard, whereas the limit in the previous permit was based on the numeric objective from State Plans which have since been invalidated.

- d. *Mercury Effluent Limits.* This Order establishes an interim performance-based effluent limit for mercury as well as a water quality based effluent limit (WQBEL) with a compliance schedule. The interim effluent limitation for mercury is based on data from the past three years, 1996 to 1998, at the 99.7 percentile level; i.e., based on past performance, the dischargers should be able to meet this limit 99.7% of the time. This interim performance-based concentration, 0.14 µg/L, will be effective for seven years unless a revised WQBEL is established prior to that time as specified in the Section B (Effluent Limitations). In addition to the performance-based limit and WQBEL with a time schedule, a mass-based annual limit and a mass loading monthly maximum for mercury are established in this Order. These controls on mass loading are intended to further address anti-degradation concerns. The mass loading monthly maximum (or "trigger") initiates the increased actions specified in the Provisions and was calculated based on 12-month moving averages of discharge flows from 1996 through 1998 and a projected maximum effluent concentration derived from ultra-clean sampling and analysis taken in 1997 and 1998 (the projected maximum was calculated using the same procedure as in the Reasonable Potential Analysis). The mass based annual limit was calculated from 12-month moving average flows and concentrations during the entire year from the last three years. The mean of the moving average loads, in kilograms per day, was used to calculate the monthly mass limit.
- e. *Source Control.* This Order requires the dischargers to develop and implement a source control program as necessary to comply with, or evaluate their ability to comply with a 0.025 µg/L limit, and to reduce any significant, controllable sources that may be contributing to mercury toxicity in the receiving waters. The Regional Board intends to work toward the derivation of mercury effluent limitations for the dischargers, that will lead towards overall reduction of mercury mass loadings in the watershed. This permit will be revised after additional information on such factors as attainability, impacts on beneficial uses, mass loadings, and site specific limits are developed. This permit contains a time schedule for the mercury source control program as specified in the Provisions. The dischargers will also participate in watershed based activities and studies, as directed by the Regional Board staff, that are aimed at mercury source identification and reduction. Based on these studies, the Board may amend this permit to specify a different limit for mercury.

31. Cyanide

- a. *Effluent Cyanide Concentrations.* The saltwater objective for cyanide is 1 µg/L as a 1-hour average. However, the detection limit for weak acid dissociable cyanide is generally 5 µg/L. Effluent cyanide concentrations measured in the marsh basins 2A and 2B (2AE and 2BE) during 1996-1998 averaged 9.8 µg/L, with a range from <3 µg/L to 17 µg/L. Effluent chlorination may be creating cyanide or compounds that are also detectable by cyanide analyses (positive interferences).
- b. *Effluent Cyanide Limits.* This order establishes an interim performance-based effluent limit for cyanide as well as a WQBEL with a compliance schedule. Uncertainty

exists as to the persistence of cyanide in the environment. The Basin Plan (page 4-70, Footnote f) states that "the Regional Board will consider information on the persistence of cyanide in evaluating alternate limit proposals". Therefore, this Permit contains an interim performance-based effluent limitations for cyanide of 17.1 µg/L (daily average), based upon 99.7 percentile of 1996-1998 plant performance. This interim limit will be solely for the purposes of this permit. A final water quality based effluent limitations will be included in a subsequent permit revision after additional data is obtained.

- c. *Cyanide Studies.* The dischargers have conducted a study on sources of cyanide, potential analytical interference, sample preservation techniques, in-plant cyanide formation and reduction measures since September 1996. The study has found that while influent cyanide concentrations were below detection limits, effluent chlorination appeared to be creating compounds that were also detected as cyanide in the analysis. The dischargers and other Bay Area Discharger Association (BADA) members are the sponsors for the current Water Environment Research Foundation (WERF) research project "Cyanide Formation & Fate in Complex Effluents" started in July, 1997. The results from this research should provide additional information for the Board to establish a different limit for cyanide.

## 32. Nickel

- a. On October 1, 1993, in recognition that the dissolved fraction may be a better representation of the biologically active portion of the metal than is the total or total recoverable fraction, the USEPA Office of Water recommended that State water quality standards for the protection of aquatic life (with the exception of chronic mercury criterion) be based on dissolved metals. USEPA amended the NTR in 1995 to include factors to convert total metals to dissolved metals for both fresh and salt water objectives. USEPA published guidance in June 1996 on using metal translators, derived from site specific receiving water data, to calculate total recoverable effluent limits necessary to achieve dissolved receiving water criteria.
- b. In order for the Board to consider application of the dissolved criteria to the discharge, an appropriate translator based on effluent and receiving water data must be developed. This Order requires the dischargers to conduct a study to generate data that may be considered by the Board for translation of the dissolved criteria to a total recoverable effluent limit.
- c. *Nickel Effluent Concentrations.* Total recoverable nickel concentrations measured in the marsh basin 2A and 2B effluent (2AE and 2BE) during the past three year period from January 1996 through December 1998 ranged from 14.0 to 38.0 µg/L and averaged 22.0 µg/L.
- d. *Effluent Limits.* This Order establishes an interim performance-based effluent limit for nickel as well as a water quality based effluent limit (WQBEL) with a compliance schedule. The interim effluent limitation for nickel is based on data from the past

three years, 1996 to 1998, at the 99.7<sup>th</sup> percentile level; i.e., based on past performance, the discharge should be able to meet this limit 99.7% of the time. This interim performance-based concentration, 43µg/L, will be effective for seven years unless a revised WQBEL is established prior to that time as specified in the B. Effluent Limitations. A different WQBEL than 8.3 µg/L may be established when additional site specific information and other relevant information regarding protection of beneficial uses of the receiving waters. This information may be developed by the dischargers, the Board, and/or other parties. The dischargers are required to implement a testing program that could lead to development of a site specific objective for nickel for Hayward Marsh. Based on the results of these studies, which may be conducted in conjunction with other dischargers, the Board may revise this permit to include a revised interim limit for nickel. A Board hearing will be held within seven years from the adoption date of this permit to consider the results of site specific studies. The dischargers shall also report mass emissions of nickel quarterly on a year-round basis from both Marsh influent and effluent. This data shall be used to develop a mass-emission study as part of a region-wide TMDL effort for nickel.

- e. If the permit is not revised with a different water quality based effluent limit for nickel, then the WQBEL established in this Order, 8.3 µg/L, shall go into effect according to the time schedule specified in the Provisions. The interim limit will be solely for the purposes of this permit. The limit in the previous permit, 8.3 µg/L, had not been attained by the dischargers, therefore an interim performance-based limit is not subject to anti-backsliding. A compliance schedule in the permit is allowed since the 8.3 µg/L is a new interpretation of the existing narrative water quality objective and general toxicity standard, whereas the limit in the previous permit was based on the numeric objective from State Plans which have since been invalidated.

### 33. Acute and Chronic Toxicity

- a. *Program History.* The Basin Plan contains a narrative toxicity objective stating that "All waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental responses to aquatic organisms" and that "there shall be no chronic toxicity in ambient waters." The Board initiated the Effluent Toxicity Characterization Program (ETCP) in 1986 with the goal of developing and implementing toxicity limits for each discharger based upon actual characteristics of both receiving waters and waste streams. Two rounds of effluent characterization were conducted by selected dischargers beginning in 1988 and 1991. A second round was completed in 1995, and the Board is evaluating the need for a third round. Board guidelines for conducting toxicity tests and analyzing results were published in 1988 and last updated in 1991.

Attempts have been made to include numeric chronic toxicity limits in NPDES permits. The Board adopted Order No. 92-104 in August 1992 amending the permits of eight dischargers to include numeric chronic toxicity limits, based upon an eleven sample median value of 1 TUC and 90th percentile value of 2 TUC. However, due to

the court decision which invalidated the California Enclosed Bays and Estuaries Plan and Inland Surface Waters Plan, on which Order No. 92-104 was based, the SWRCB stated, by letter dated November 8, 1993, that the Regional Board will have to reconsider the Order. This letter also committed to providing the regional boards with guidance on issuing permits in the absence of the State Plans (*Guidance for NPDES Permit Issuance*, February 1994).

- b. *SWRCB Toxicity Task Force Recommendations.* The Toxicity Task Force provided several consensus-based recommendations in their October 1995 report to the SWRCB for consideration in redrafting the State Plans. A key recommendation was that permits should include narrative rather than numeric limits. The numeric test values should then be used as toxicity “triggers” to first accelerate monitoring and then initiate Toxicity Reduction Evaluations (TRES).
- c. *Regional Board Program Update.* The Board intends to reconsider Order No. 92-104 as directed by the SWRCB, and to update, as appropriate, the Board’s Whole Effluent Toxicity (chronic and acute) program guidance and requirements. This will be done based upon analysis of discharger routine monitoring and ETCP results, and in accordance with current USEPA and SWRCB guidance. In the interim, decisions regarding the need for and scope of chronic toxicity requirements for individual dischargers will continue to be made based upon best professional judgment as indicated in the Basin Plan.
- d. *Permit requirements.* The Hayward Marsh Improvement Program including the vegetation planting and dechlorination station has been implemented by the dischargers to promote nitrification for removal of ammonia as the source of toxicity. The full benefit of ammonia removal by the improvement program will likely require many years to develop, since ammonia removal is greatly dependent on the plant growth in the Marsh. Until ammonia toxicity is fully under control, the chronic toxicity test would not provide useful information. Therefore, the dischargers are not required to participate in the chronic toxicity program.

However, the dischargers are required to conduct acute toxicity studies on the receiving water to identify if Marsh discharge would cause adverse impacts on the beneficial uses of the receiving water. The dischargers are required to submit a remedial plan with an implementation schedule for the Board’s approval if the adverse impacts are identified.

## **CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) AND PUBLIC NOTICE OF ACTION**

34. 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.

35. The dischargers 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.
36. 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 and regulations adopted thereunder, and to the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, that the dischargers 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 the Finding No. 3 and 4 is prohibited.
2. Neither the treatment, nor the discharge of reclaimed wastewater nor the management of the Marsh shall create a nuisance as defined in Section 13050 (m) of the California Water Code.

**B. EFFLUENT LIMITATIONS**

1. The discharge of reclaimed wastewater to the Hayward Marsh shall not exceed the following limits:

a. Conventional Pollutants

<i>Constituent</i>	<i>Units</i>	<i>Monthly Average</i>	<i>Weekly Average</i>	<i>Daily Maximum</i>	<i>Instantaneous Maximum</i>
a. Biochemical Oxygen Demand (BOD <sub>5</sub> , 20°C)	mg/L	30	45		--
b. Total Suspended Solids	mg/L	30	45		--
c. Settleable Matter	ml/L-hr	0.1	--	--	0.2
d. Chlorine Residual	mg/L	--	--	--	0.0

Notes:

- For all the items listed, with exception of Effluent Limit B.1.d., the dischargers may demonstrate compliance with these requirements at USD's discharge to the EBDA outfall interceptor, or at a point agreeable to the Executive Officer. For Effluent Limit B.1.d., compliance shall be determined at the inlet of Basin 1.
- For chlorine residual, requirement defined as below the limit of detection in standard test methods defined in the 18<sup>th</sup> edition of *Standard Methods for the Examination of Water and Wastewater*.

- b. The pH of the discharge shall not exceed 8.5 nor be less than 6.5.
- c. Coliform Bacteria: The effluent shall not exceed a five day log mean fecal coliform density of 500 MPN/100ml and a 90th percentile value of 1100 MPN/100ml.

2. Marsh Effluent at Basins 2AE & 2BE

- a. Toxic Substances Effluent Limitations: The discharge of effluent containing constituents in excess of the following limitations is prohibited [a]:

Constituent	Units	Daily Average [b]
Arsenic	µg	36
Copper[c]	µg/L	4.9 [e]
Lead [d]	µg/L	5.6
Mercury	µg/L	0.025[g]
Nickel [d]	µg/L	8.3
Selenium [d]	µg/L	5
Silver	µg/L	2.3
Zinc [d]	µg/L	86
Cyanide	µg/l	5
PAHs	µg/L	15 [h]

- b. Interim Effluent Limitations: The following interim limits shall apply in lieu of the above limits until the date specified in the time schedule below and according to the Provisions[a]:

Constituent	Units	Daily Average [b]	Effective Dates for interim limits	
			Starting Date	Ending Date
Copper	µg/L	17[e]	May 25, 1999	May 25, 2006
Mercury	µg/L	0.14[g]	May 25, 1999	May 25, 2006
Nickel [d]	µg/L	43[e]	May 25, 1999	May 25, 2006
Cyanide [c]	µg/L	17.1 [f]	May 35, 1999	May 25, 2006

Footnotes (apply to both 2.a. and 2.b.):

- a. All analyses shall be performed using current USEPA Methods, as specified in USEPA Water/Wastewater Methods (EPA-600 Series), except that mercury analyses may be performed using USEPA Method 1631. Metal limits are expressed as total recoverable metals.
- b. Limits apply to the average concentration of all samples collected during the averaging period (Daily - 24-hour period; Monthly - Calendar month).
- c. The dischargers may demonstrate compliance with this limitation by measurement of weak acid dissociable cyanide or total cyanide.
- d. Effluent limitation may be met as a 4-day average. If compliance is to be determined

- based on a 4-day average, then concentrations of four 24-hour composite samples shall be reported, as well as the average of four.
- e. The interim limit 2b shall apply for copper and nickel until the 7-year compliance schedule is over, at which time the limit specified in 2a shall apply. The interim limit is based on the 99.7<sup>th</sup> percentile of the 1996 through 1998 data.
  - f. The cyanide limit is based on the 99.7<sup>th</sup> percentile of the 1996 through 1998 data.
  - g. The interim limit in 2.b. shall apply for mercury until the 7-year compliance schedule is over, at which time the limit specified in 2.a. shall apply. The interim limit is based on the 99.7<sup>th</sup> percentile of the 1996 through 1998 data.
  - h. The water quality based effluent limit for PAHs refers to the limit for each of the eight PAHs listed in the Provisions. Compliance will be based on the practical quantitation level (PQL) for each PAH, 4 µg/L.
- c. The dischargers shall demonstrate that the combined mercury mass loading of the USD's effluent to the Marsh and the EBDA outfall does not increase by complying with the following:

**Mass limit:** The 12-month moving average annual load for mercury shall not exceed 2.54 kg/year. This limit was calculated from the mean of the moving average loads taken from moving average flows times the corresponding moving average mercury concentrations from the past three years, 1996 through 1998.

**Mass trigger:** If the 12-month moving average monthly mass loading for mercury exceeds 0.55 kg/month, the actions specified in the Provisions shall be initiated. This load was calculated using a yearly moving average discharge flow (in mgd) times the corresponding moving average mercury concentration from 1997 to 1998 data. The highest resulting moving average load, in kg per day, was used to calculate the 0.55 kg/month. For any mercury results with Reporting Limits (RLs) which exceed the minimum RLs normally achieved by the discharger's laboratory method, the minimum RL normally achieved by the method shall be used for compliance purposes.

The mass emission limit (or trigger) for mercury shall be calculated as follows:

Flow = Running average of last 12 months of effluent flow in mgd, measured EBDA Pump Station Discharge.

$$\text{Mass emission trigger, in kg/month} = \text{Flow} \times \text{Hg Conc.} \times 0.1151$$

Hg Conc. = Running average of last 12 monthly mercury concentration measurements in µg/L corresponding to the above flows, measured at the Plant effluent wet well.

$$\text{Mass emission limit, in kg/year} = \text{Flow} \times \text{Hg Conc.} \times 1.3815$$

### C. Marsh and Bay Receiving Water Limitations:

1. The dischargers shall provide sufficient circulation through the marsh to maintain the following conditions:

#### Marsh and Bay

- a. No visible, floating, suspended, or deposited oil or other products of petroleum origin;
- b. No floating, suspended, or deposited macroscopic particulate matter or foam of sewage origin;
- c. No bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;
- d. No toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, 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.
- e. Acute Toxicity :                      The dischargers are required to conduct acute toxicity studies as specified in the Provisions with samples collected from the receiving water immediately after marsh discharge E-2.

#### 2. San Francisco Bay

The discharge of waste shall not cause the following limits to be exceeded in waters of the State within one foot of the water surface:

- a. Un-ionized Ammonia                      0.025 mg/l as N, annual median.  
    0.4 mg/l as N, maximum
- b. Dissolved Oxygen                              5.0 mg/l minimum.

The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% 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 of dissolved oxygen concentrations.

- c. Dissolved Sulfide                              0.1 mg/l, maximum
- d. pH    Variation from natural ambient pH by more than 0.5 pH units

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 applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control 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 accordingly.

D. Provisions

1. Permit Compliance

The dischargers shall comply with the limitations, prohibitions, and other provisions of this Order immediately upon adoption by the board. The Board may reopen this permit to add numeric limits for any constituent that in the future exhibits reasonable potential to cause or contribute to exceedance of applicable water quality objectives. Requirements prescribed by this Order supersede the requirements prescribed by Order No. 93-155. Order No. 93-155 is hereby rescinded.

2. PAH and Other Organic Compounds Detection Limits

If the analytical methods for PAHs, or other organic compounds are improved or new methods developed which lower the analytical quantification limit below that specified in the Self-Monitoring Program, and the dischargers, using the new or improved methods, finds these constituents consistently present at levels above their respective water quality objectives, the dischargers shall notify the Executive Officer. The dischargers shall also accelerate monitoring for these constituents to characterize the discharge, and, within 90 days develop and initiate a source identification and reduction investigation acceptable to the Executive Officer. During this time, compliance shall be determined at the former analytical quantification limit specified in the Self-Monitoring Program. "Consistently" as stated above is defined as present at levels above the respective objective in more than two consecutive monitoring events.

The dischargers shall participate in a regional study to determine if alternative analytical methods with lower detection levels for PAHs and other organic compounds are currently available through commercial laboratories. To the extent that non-EPA approved (40CFR136) methods are used, the results will not be used for compliance purposes.

Furthermore, if one of the following eight PAHs is found at levels equal to or greater than the practicable quantitation limit (PQL), then the dischargers shall accelerate monitoring to one sample per month for each of the eight PAHs. The PQL shall be five times the method

detection limit. If any of the eight PAHs is detected consistently for three consecutive months at or above the PQL, then the dischargers shall notify the Executive Officer, accelerate monitoring, and initiate a source identification and reduction investigation. This program will include an investigation and evaluation of the collection system and pretreatment program.

<b>Constituent</b>	<b>Unit</b>	<b>Reporting Level</b>
1,2-Benzanthracene	µg/L	0.8
3,4-Benzofluoranthene	µg/L	0.8
Benzo[k]fluoranthene	µg/L	0.8
1,12-Benzoperylene	µg/L	0.8
Benzo[a]pyrene	µg/L	0.8
Chrysene	µg/L	0.8
Dibenzo[a,h]anthracene	µg/L	0.8
Indeno[1,2,3-cd]pyrene	µg/L	0.8

### 3. Copper Reduction Study and Schedule

The dischargers shall document current copper reduction and control activities, evaluate the feasibility of potential enhancements to those activities, including enhancement of copper control in the water supply system, and develop and implement a source identification and reduction plan for sources of copper. This program shall be aimed at taking all reasonable and economical steps to reduce influent copper concentrations and shall be developed and implemented in accordance with the following time schedule. The dischargers shall also report mass loading of copper from both the influent and effluent and reported in the quarterly and annual self-monitoring reports. All reports submitted shall be acceptable to the Executive Officer.

<b>Tasks</b>	<b>Compliance Date</b>
a. The dischargers shall submit a report, acceptable to the Executive Officer, documenting efforts to identify any other significant copper sources in the community. Assessment of options for source reduction shall be provided for any identified sources. Time schedules for anticipated actions associated with implementing a source reduction plan shall be included.	December 1, 2000

### 4. Copper Translator Study and Schedule

In order to develop information that may be used to establish a water quality based effluent limit based on dissolved copper criteria, the dischargers shall implement a sampling plan to collect data for development of a dissolved to total copper translator. This work shall be performed in accordance with the following time schedule:

Tasks	Compliance Date
a. The dischargers shall submit a study plan, acceptable to the Executive Officer, for collection of data that can be used for establishment of a dissolved to total copper translator, as discussed in the Findings. After Executive Officer approval, the dischargers shall begin implementation of the study plan by March 1, 2000, the beginning of the wet weather discharge season. The study plan shall provide for development of translators in accordance with USEPA guidelines and any relevant portions of the Basin Plan, as amended.	December 1, 1999
b. The dischargers shall conduct the field sampling for the translator study by the end of the 2000-2001 wet weather discharge period and shall submit a report, acceptable to the Executive Officer, documenting the results of the copper translator study, which may also include any other site specific information that the dischargers would like the Board to consider in development of a water quality based effluent limitation for copper.	December 1, 2002

The Board intends to hold a hearing prior to April 21, 2002 to consider the results of this study, and any other site specific studies the dischargers choose to conduct. At the hearing, the Board will also review the long-term feasibility of achieving the WQBEL of 4.9 µg/L established in this Order and to determine whether adequate information exists upon which to adopt a revised final water quality based limit for copper. As a result of the hearing, the Board may adopt a revised near-term performance limit for copper and/or a revised WQBEL. If a revised final water quality based effluent limit for copper is not established within seven years of the effective date of this permit, then an effluent limit of 4.9 µg/L shall be established. If the TMDL efforts are delayed by either the USEPA, the State Water Resources Control Board, or this Regional Board, then this seven-year time schedule for WQBEL of 4.9 µg/l will be revised and extended.

#### 5. Mercury Reduction Study and Schedule

The dischargers shall use methods which are capable of achieving detection limits as low or lower than 0.01µg/L for total mercury. The dischargers shall implement an source control program as well as assess the feasibility of attaining the US EPA national freshwater mercury criterion of 0.025 µg/L as described in the Findings. This evaluation shall consider reductions in mercury effluent concentrations achieved through source control and economically feasible optimization of treatment plant removal efficiency (for both the existing, and proposed new facility). If necessary, alternative control strategies shall be investigated, through participation with the Board and other shallow water dischargers in identifying cross media watershed-wide sources of mercury impacting the receiving water, and potential control measures. The mercury reduction program shall be developed and implemented in accordance with the following time schedule:

Tasks	Compliance Date
a. Submit a proposed program, acceptable to the Executive Officer, to investigate mercury sources, which shall include 1) sampling for mercury in residential and commercial wastewater at representative locations in the collection system over a reasonable period of time, 2) evaluating industrial contributions to mercury loadings, 3) evaluating possible means by which any significant sources can be reduced, and 4) evaluating alternative analytical methods to provide improved data reporting limits. Discharge from any industries and/or commercial establishments that are likely to contain mercury shall be characterized.	January 14, 2000
b. Following approval by the Executive Officer or within 60 days of submission of the Study Plan to the Executive Officer, commence work in accordance with the study plan and time schedule submitted pursuant to Task 5.a. All significant sources shall be identified. Any sources of significance shall be evaluated for possible reduction. This submittal shall include a proposed plan and time schedule for evaluation of source reduction measures.	March 17, 2000
c. Submit an interim report, acceptable to the Executive Officer, documenting the initial findings of source reduction options, and proposed efforts to encourage minimization of mercury discharges to the collection system.	December 1, 2000
d. Submit a final report, acceptable to the Executive Officer, documenting the findings of source reduction work and efforts made to minimize mercury in the collection system and treated effluent.	June 1, 2001
e. Develop a pollution prevention plan and time schedule, acceptable to the Executive Officer, based upon the results of the report submitted pursuant to Task 5.d.	December 3, 2001

The Board intends to hold a hearing prior to three years from the adoption date of this Order to consider the results of this study, and determine whether adequate information exists upon which to adopt a final concentration or mass based mercury limit. The Board may adopt a revised interim limit, a revised final limit, and/or schedules to require the dischargers to conduct and/or participate in additional studies necessary to support development of a revised limit. (Note: If mercury effluent concentrations are consistently maintained below 0.025  $\mu$ g/L, these source control tasks are not required.) If a revised water quality based effluent limit for mercury is not established within seven years of the effective date of this permit, then an effluent limit of 0.025  $\mu$ g/L shall be established. If the TMDL efforts are delayed by either the USEPA, the State Water Resources Control Board, or this Regional Board, then this seven-year time schedule for WQBEL of 0.025  $\mu$ g/l will be revised and extended.

## 6. Mercury Mass Loading Reduction

If mass loading for mercury exceeds the trigger level specified in B.2c of this Order, then the following actions shall be initiated and subsequent reports shall include but not be limited to the following:

I. Notification: Any exceedance of the trigger specified in Effluent Limitation B.2c. shall be reported to the Regional Board in accordance with Section E.6.b. in the Standard Provisions and Reporting Requirements (August, 1993).
II. Identification of the problem. Resample to verify the increase in loading. If resampling confirms that the mass loading trigger has been exceeded, determine whether the exceedance is flow or concentration-related. If the exceedance is flow related, identify whether it is related to changes in reclamation, increase in the number of sewer connections, increases in infiltration and inflow (I/I), wet weather conditions or unknown sources. If the exceedance is concentration-related, identify whether it is related to industrial, commercial, residential or unknown sources.
III. Investigation of corrective action: Investigate the feasibility of the following actions: <ul style="list-style-type: none"><li>• Improving public education and outreach</li><li>• Reducing inflow and infiltration (I/I)</li><li>• Increasing reclamation</li></ul> Develop a plan and time schedule, acceptable to the Executive Officer to implement all reasonable actions to maintain mercury mass loadings at or below the mass loading trigger contained in Effluent Limitation B.2c.
IV. Investigation of additional prevention measures: In the event the exceedance is related to growth and the plan required under III is not expected to keep mercury loads below the mass load trigger, work with the local planning department to investigate the feasibility and potential benefits of requiring water conservation, reclamation, and dual plumbing for new development.

## 7. Nickel Mass Loading Report

The dischargers shall report mass loading of nickel quarterly on a year-round basis from both influent and report in the quarterly and annual self-monitoring reports.

## 8. Nickel Translator Study and Schedule

In order to develop information that may be used to establish a water quality based effluent limit based on dissolved nickel criteria, the dischargers shall implement a sampling plan to collect data for development of a dissolved to total nickel translator. This work shall be performed in accordance with the following time schedule:

Tasks	Compliance Date
a. The dischargers shall submit a study plan, acceptable to the Executive Officer, for collection of data that can be used for establishment of a dissolved to total nickel translator, as discussed in the Findings. After Executive Officer approval, the dischargers shall begin implementation of the study plan by February 1, 2000, the beginning of the wet weather discharge season. The study plan shall provide for development of translators in accordance with EPA guidelines and any relevant portions of the Basin Plan, as amended.	December 1, 1999
b. The dischargers shall conduct the field sampling for the translator study by the end of the 2000-2001 wet weather discharge period and shall submit a report, acceptable to the Executive Officer, documenting the results of the nickel translator study, which may also include any other site specific information that the dischargers would like the Board to consider in development of a water quality based effluent limitation for nickel.	February 1, 2002

The Board intends to hold a hearing prior to April 21, 2002 to consider the results of this study, and any other site specific studies the dischargers choose to conduct. As a result of the hearing, the Board may adopt a revised near-term performance limit for nickel and/or a revised WQBEL.

9. Unionized Ammonia study

The dischargers are required to measure and report total ammonia and unionized ammonia monthly on a year-round basis for both Marsh effluent at 3A and 3B and receiving water after Marsh discharge E-2. The board may revise the limit and compliance location after additional data is obtained.

10. Acute Toxicity Effluent Study

- a. The dischargers are required to perform acute toxicity studies of receiving water. The study is to identify if Marsh discharge would cause the adverse impacts on the beneficial uses of the receiving water. The dischargers are required to submit a remedial plan with an implementation schedule for the Board's approval if adverse impacts are identified.
- b. The study shall be conducted by measuring survival of test species exposed to undiluted receiving water samples for 96 hours in either static renewal or flow through bioassays. Each fish species represents a single bioassay. The species to be used is identified in the Self-Monitoring Program.
- c. All bioassays shall be performed according to protocols approved by the USEPA or State Board, or published by the American Society for Testing and Materials (ASTM) or American Public Health Association (APHA). The dischargers are allowed to continue using the current test protocols until further guidance is provided by SWRCB or Board

staff on conducting the new tests and interpreting the compliance results compared to current test results.

- d. The dischargers shall submit a proposed time schedule for the acute toxicity studies by December 1, 2002

#### 11. Compliance With Toxic Substances Limitations

- a. The dischargers shall comply with effluent limitations specified in B. Effluent Limitations immediately upon adoption of this Order.
- b. The dischargers shall initiate a monitoring program using appropriate USEPA methods and detection limits, to evaluate the compliance status for all constituents listed in B. Effluent Limitations.

#### 12. Pollution Prevention Program

- a. USD shall continue to participate in the Pollution Prevention Program (previously known as the Waste Minimization Program) as described in the Basin Plan, Chapter IV, Waste Minimization Section.
- b. USD shall continue to implement and expand its existing Pollution Prevention Program in order to reduce the pollutant loadings to the treatment plant and, subsequently, to the receiving waters. USD shall focus on copper, mercury, nickel, cyanide, and all other constituents found to be in non compliance with Basin Plan Table IV-1A limits. USD shall continue to submit semi-annual reports that include (1) documentation of its efforts and progress, (2) evaluation of the program's accomplishments, and (3) identify specific tasks and establish time schedules for future efforts. Reports, acceptable to the Executive Officer, shall be submitted by January 1st and July 1st, of each year. One of these reports shall be a comprehensive document; the other shall be a short progress report. Duplicate copies shall be provided.

#### 13. Self-Monitoring Program

The dischargers shall comply with the attached Self-Monitoring Program. The Executive Officer may make minor amendments to it pursuant to federal regulations (40 CFR 122.63).

#### 14. Standard Provisions

The dischargers shall comply with all applicable items of the attached "Standard Provisions and Reporting Requirements" dated August 1993.

15. Marsh Operation

The Board expects the dischargers to operate and maintain the Marsh without chemical treatment (i.e., herbicides and algaecides) and to implement all feasible measures prior to using chemical treatment. If chemical treatment is proposed by the dischargers, then such treatment shall be in accordance with the provisions of the Basin Plan.

16. Marsh Management Plan

The dischargers shall review, and update as necessary, its Marsh Management Plan, annually, or within 90 days of completion of any significant facility or process changes. The dischargers shall submit to the Board, by April 15 of each year, a letter describing the results of the review process including an estimated time schedule for completion of any revisions determined necessary, and a description or copy of any completed revisions.

17. Marsh Contingency Plan

The dischargers shall implement the following approved programs/plans: (a) a Marsh Contingency Operations Plan for the protection of marsh and Bay during contingency operations (e.g., assurances that only secondary treated wastewater enters the marsh at proper coliform levels, for operations during periods when secondary treated wastewater can not be discharged to the marsh, etc.), (b) a program to minimize public contact with the reclaimed wastewater, and (c) a special receiving water monitoring plan and program to assess impacts on nearshore biota (ref. State Department of Fish and Game letter of January 24, 1983). A copy shall also be sent to State Department of Health Services.

Annually, the dischargers shall review and update as necessary, its Marsh Contingency Operation Plan. The discharge of pollutants in violation of this Order where the dischargers have 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. Plan revisions, or a letter stating that no changes are needed, shall be submitted to the Board by April 15 of each year.

18. Primary Responsibility for the operation

For purposes of enforcement of these requirements the Board will consider the EBRPD to have the primary responsibility for the operation of the marsh to meet water quality objectives and prevention of nuisance and USD to be responsible for supplying treated reclaimed wastewater as specified in Effluent Limitations B. The dechlorination basin (Basin 1), Basin 2A, and Basin 2B is not to be considered waters of the state but as part of the treatment process under the responsibility of the dischargers.

Basins 1, 2A, and 2B, which are designated solely as part of the treatment process can not become "attractive nuisances" for wildlife. The dischargers are required to employ best management practices in order to avoid harming the wildlife which frequent these basins.

19. Order Expiration and Renewal

This Order expires on May 25, 2004. The dischargers must file a report of waste discharge accordance with Title 23, Division 3, Chapter 9 of the California Code of Regulations not later than 180 days before this expiration date as application for re-issuance of waste discharge requirements

20. Reopener.

The Board may modify, or revoke and reissue, this Order and Permit if present or future investigations demonstrate that the discharge(s) governed by this Order will cause, have the potential to cause, or will contribute to adverse impacts on water quality and/or beneficial uses of the receiving waters.

The Board may revise this Order to include revised interim limits based on the results of the site specific studies.

The Board may revise ammonia interim limit and its compliance location based upon the results of the site specific studies of the unionized ammonia and toxicity in the marsh effluent and receiving water.

The final effluent limitations and provisions for the toxic pollutants in this Order are designed to implement the Basin Plan narrative toxicity objective, based upon available information. If the U. S. EPA adopts the California Toxics Rule and/or the State Water Resources Control Board adopts a statewide implementation plan for the regulation of these constituents during the term of the limit, these limitations may be reopened.

In the event that the Board's interpretation of the narrative toxicity objective is modified or invalidated by a State Water Resources Control Board order, a court decision, or State or Federal statute or regulation, the effluent limitations for toxic pollutants contained in this Order will be revised to be consistent with the order, decision, statute or regulation.

21. Alternative Compliance

This permit provides a seven-year compliance schedule to allow the dischargers to come into compliance with the final effluent limits. If, however, at the end of the seven-year period, the dischargers are unable to achieve the final effluent limitations despite implementation of reasonable control measures, the dischargers may choose to discontinue discharge of the reclaimed wastewater to the Hayward Marsh provided that other separately permitted discharge or reuse alternatives exist.

22. Effective Date of Permit

This Order shall serve as a National Pollutant Discharge Elimination System (NPDES) Permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective 10 days after the date of its adoption provided the Regional

Administrator, Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Loretta K. Barsamian, 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 25, 1999.

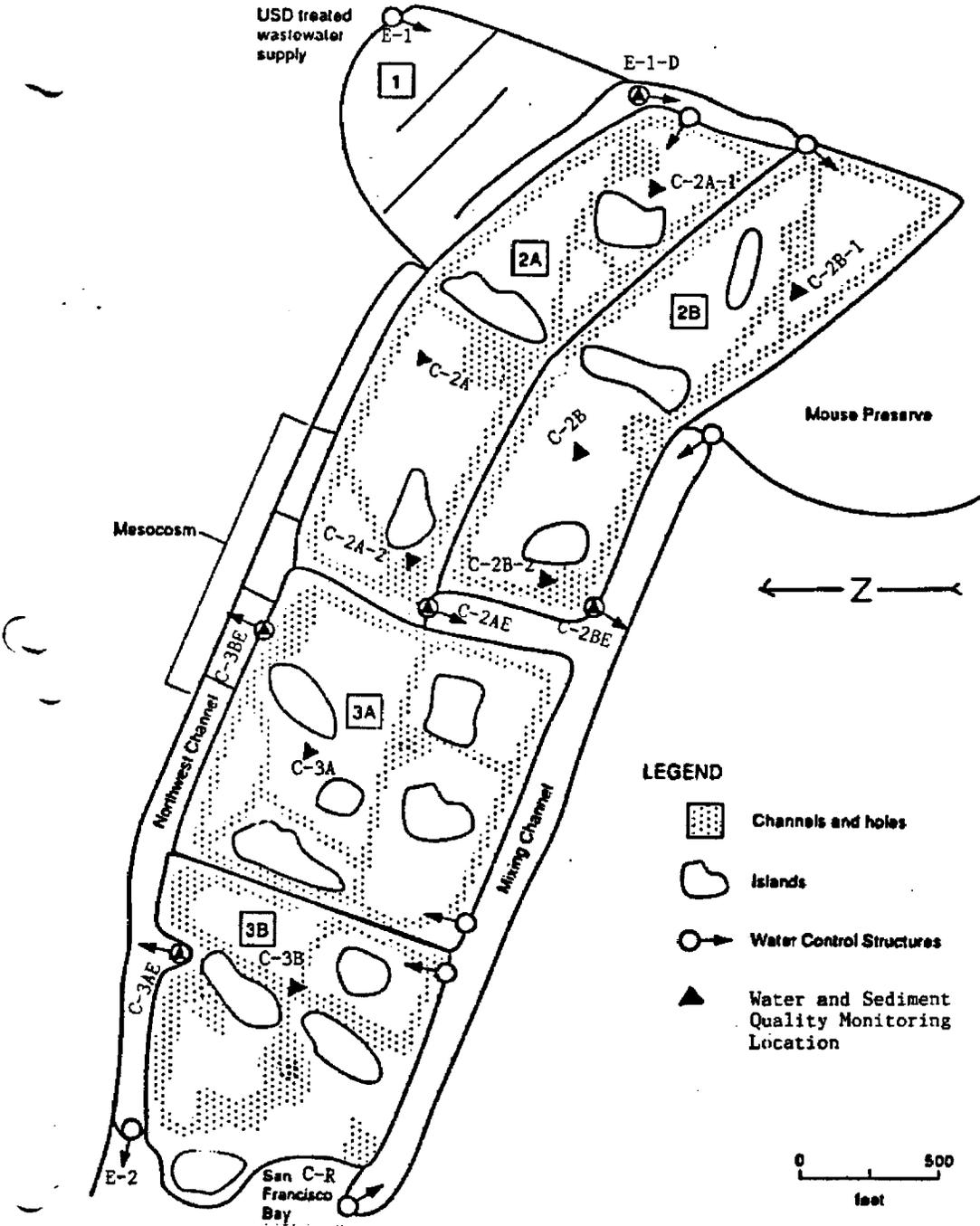


LORETTA K. BARSAMIAN  
Executive Officer

Attachments:

- A. Location Map
- B. Summary of Report Due Dates/Deadlines
- C. Self-Monitoring Program
- D. ~~Marsh Policy 77-1~~ Resolution 94-086
- E. Standard Provisions & Reporting Requirements, August 1993

# ATTACHMENT A



HAYWARD SHORELINE MARSH  
LOCATION MAP

## ATTACHMENT B

### SUMMARY OF REPORT DUE DATES AND ACTION DEADLINES

NAME OF REPORT/ACTION	DUE DATE TO BOARD	REFERENCE
A. ANNUAL REPORTS		
• Marsh Management Plan	April 15	D.16
• Marsh Contingency Plan	April 15	D.17
B. SEMI-ANNUAL REPORTS		
• Pollution Prevention Program	Jan 1 and July 1	D.12
C. SPECIFIC REPORT/ACTION DEADLINES		
• Acute Toxicity Time Schedule	December 1, 2002	D.10
• Copper Reduction Study	December 1, 2000	D. 3
• Copper Translator Study	Dates as indicated in D. 4	D. 4
• Mercury Reduction Study	Dates as indicated in D. 5	D. 5
• Nickel Translator Study	Dates as indicated in D 8	D. 8

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

EAST BAY REGIONAL PARK DISTRICT,  
EAST BAY DISCHARGERS AUTHORITY,  
UNION SANITARY DISTRICT  
HAYWARD SHORELINE MARSH

NPDES PERMIT NO. CA 0038636

ORDER NO. 99-024

CONSISTS OF

PART A

AND

PART B

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT AND EFFLUENT

<u>Station</u>	<u>Description</u>
E-1	At any point in the outfall from the USD's treatment facilities between the point of discharge and the point at which all waste tributary to that outfall is present (see attached Location Map).
E-2	Located at the marsh discharge point, and consisting entirely of discharge from the marsh.

B. MARSH WATERS

<u>Station</u>	<u>Description</u>
E-1-D, C-2A, C-2B, C-3A, C-3B, C-2AE, C-2BE	As specified in Location Map (attached)

C. MARSH SEDIMENTS

<u>Station</u>	<u>Description</u>
C-2A-1, C-2A-2, C-2B-1, C-2B-2, C-3A, C-3B	As specified in Location Map (attached)

D. RECEIVING WATERS

<u>Station</u>	<u>Description</u>
C-R	At a point in Lower San Francisco Bay satisfactory to the Executive Officer that is representative of Lower San Francisco Bay where the marsh discharges.
C-R-B	At a point in Lower San Francisco Bay, satisfactory to the Executive Officer, that is representative of the portion of the Lower San Francisco Bay which is not being affected by the Marsh discharge.

E. LAND OBSERVATIONS

<u>Station</u>	<u>Description</u>
L-1	Located along the perimeter levee at through equidistant intervals not to exceed 500 L-"n" feet. (A sketch showing locations of these stations shall accompany each report)

II. SCHEDULE OF SAMPLING, ANALYSIS AND OBSERVATIONS

The schedule of sampling, analysis and observation shall be that given in Table 1.

III. MODIFICATIONS TO PART A

Includes the following modifications of Part A:

1. The second sentence of Section F.1, Spill Reports, is revised to read as follows:  
"Spills shall be reported to this Regional Board (510-622-2300 on weekdays during office hours from 8 a.m. to 5 p.m.), and to the Office of Emergency Services (800-852-7550 during non office hours) immediately after the occurrence.  
  
Section F.1.b is revised to read: "Best estimate of volume involved".  
Section F.1.d is revised to read: "Cause of spill or overflow".  
Section F.1.i is revised to read: "Agencies or persons notified".
2. Paragraph G.5 is revised to read:  
  
"Average monthly values are calculated as the sum of all measured discharge values (measured during the specified period ie. calendar month), divided by the number of days during that specific period"
3. Paragraph D.5 shall apply to the Basins with the following addition:  
  
(c) Special attention shall be paid to observations for vector nuisance and signs of waterfowl botulism per Marsh Management Plan.
4. Paragraph F.4 should include the following addition:  
  
"The dischargers may file separate self-monitoring reports detailing compliance with the Order."

IV. MODIFICATIONS TO STANDARD PROVISIONS AND REPORTING REQUIREMENTS

1. Section G, Definitions, No. 14, Overflows is revised to read as follows: "Overflow is defined as the intentional or unintentional spilling or forcing out of untreated or partially treated wastes from a collection or transport system (e.g. collection points, sewer system manholes, pump stations) upstream from the treatment plant headworks caused by excess flows, capacity restrictions, stoppages (obstructions, blockages, and/or structural failure), and the actions of others."
2. Paragraph G.5 should include the following addition:  
"The Annual Report narrative (and data as appropriate) should stress the operations of the marsh to meet with water quality objectives, enhance beneficial uses of reclaimed wastewater, protection of off-site beneficial uses, and the net environmental benefits."

V. MISCELLANEOUS REPORTING

- A. The dischargers shall retain and submit (when required by the Executive Officer) the following information concerning the monitoring program for organic and metallic pollutants:
  - a. Description of sample stations, times, and procedures.
  - b. Description of sample containers, storage, and holding time prior to analysis.
  - c. 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 dischargers shall submit in the monthly self-monitoring report the metallic and organic test results together with the detection limits (including unidentified peaks). All unidentified (non-Priority Pollutant) peaks detected in the USEPA 624, 625 test methods shall be identified and semi-quantified. Hydrocarbons detected at  $<10 \mu\text{g/L}$  based on the nearest internal standard may be appropriately grouped and identified together as aliphatic, aromatic and unsaturated hydrocarbons. All other hydrocarbons detected at  $> 10 \mu\text{g/L}$  based on the nearest internal standard shall be identified and semi-quantified.

2. Self-Monitoring Reports for each calendar month shall be submitted monthly, by the fifteenth day of the following month. The required contents of these reports are described in Section F.4 of Part A.
3. An Annual Report for each calendar year shall be submitted to the Board by February 15th of the following year. The required contents of the annual report are described in Section F.5 of Part A.
4. Any overflow, bypass or significant non-compliance incident that may endanger health or the environment shall be reported according to the Sections F.1 and F.2 of Part A.

I, Loretta K. Barsamian, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedures set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 99-024.
2. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the dischargers, and revisions will be authorized by the Executive Officer.
3. Is effective on May 25, 1999.

  
LORETTA K. BARSAMIAN  
Executive Officer

Attachment:

A. Table 1

TABLE 1  
SCHEDULE OF SAMPLING, MEASUREMENTS, AND ANALYSIS

Hayward Shoreline Marsh

Sampling Station	E-1		E-1-D	C-2AE, C-2BE		C-2A, C-2B, C-3A, C-3B		E-2	C-R	C-R-B	
Type of Sample	C-24	G	G	G	Cont.	C-24	G	C-24	G	G	G
Flow Rate (mgd)	D										
BOD, 5-day, 20°C	W										
Total Suspended Solids (mg/L & Kg/day)		W									
Chlorine Residual (mg/L & Kg/day)		D									
Fecal Coliform (MPN/100 ml)		W									
Acute Toxicity	As proposed in the time schedule for Acute Toxicity study										
Dissolved Oxygen (mg/L & % saturation)		W(1)	W(1)				W(1)		M(1)	M(1)	M(1)
Sulfides (mg/L if DO < 5 mg/L)		W	W				D		M	M	M
Hardness (mg/L as CaCO <sub>3</sub> )	M										
pH (Units)		2/M		2/M			2/M		2/M	2/M	M
Ammonia Nitrogen (mg/L & Kg/day)		2/M		2/M			2/M		2/M	2/M	
Nitrate Nitrogen (mg/L & Kg/day)		2/M		2/M			2/M		2/M	2/M	
Temperature (°C)		W					W		W	2/M	
Salinity (ppt)		2/M		2/M			2/M		2/M	2/M	
Arsenic (mg/L & Kg/day)	M					Q					
Copper (mg/L & Kg/day)	M					Q					
Lead (mg/L & Kg/day)	M					Q					
Mercury (mg/L & Kg/day)	M					Q					
Nickel (mg/L & Kg/day)	M					Q					
Selenium (mg/L & Kg/day)	M					Q					
Silver (mg/L & Kg/day)	M					Q					

TABLE 1  
 SCHEDULE OF SAMPLING, MEASUREMENTS, AND ANALYSIS  
 Hayward Shoreline Marsh

Sampling Station	E-1		E-1-D	C-2AE, C-2BE			C-2A, C-2B, C-3A, C-3B		E-2	C-R	C-R-B
Type of Sample	C-24	G	G	G	Cont.	C-24	G	C-24	G	G	G
Cyanide (mg/L & Kg/day)	M					Q					
Zinc (mg/L & Kg/day)	M					Q					
Table 1A Constituents	As indicated on Table 1A (Attached)										
All applicable Standard Observations		W	W				W			W	
Un-ionized Ammonia (mg/L)		2/M		2/M			2/M		2/M		2/M

**LEGEND FOR TABLE 1:**

Types of Samples

Co = Continuous  
C-24 = 24-hour composite  
G = Grab  
Ob = Observations

Types of Stations

A = Treatment Plant Influent  
E = Treatment Plant Effluent  
O = Overflow and Bypass Points  
P = Treatment Facility Perimeters  
C = Receiving Water  
L = Pond Levee Stations

Frequency of Sampling

D = Once each day  
W = Once each week  
M = Once each month  
A = Once each year  
Q = Once each calendar quarter (with  
with at least two month intervals)  
E = Each occurrence  
3/W = 3 days per week  
2H = Every 2 hours  
2M = Every 2 months

**TABLE 1A Monitoring Frequency for Priority Pollutants [10]**

<u>Constituent</u>	<u>Frequency</u>	<u>Notes/Comment</u>
1, 2 - Dichlorobenzene	Y	
1, 3 - Dichlorobenzene	Y	
1, 4 - Dichlorobenzene	Y	
2, 4 - Dichlorophenol	Y	
2, 4, 6 - Trichlorophenol	Y	
4 - Chloro - 3 - Methylphenol	Y	
Aldrin	Y	
A - BHC	Y	
Benzene	Y	
B - BHC	Y	
Chlordane	Y	
Chloroform	Y	
DDT	Y	
Dichloromethane	Y	
Dieldrin	Y	
Diazinon	Y	
Endosulfan	Y	
Endrin	Y	
Fluoranthene	Y	
G - BHC (Lindane)	Y	
Halomethanes	Y	
Heptachlor	Y	
Heptachlor Epoxide	Y	
Hexachlorobenzene	Y	
PAH's	Y [7]	
PCB's	Y [8]	
Pentachlorophenol	Y	
Phenol	Y	
TCDD Equivalents	Y [9]	
Toluene	Y	
Toxaphene	Y	
Tributlytin	Y	

FOOTNOTES FOR TABLE 1 AND TABLE 1A

- [1] Measures should be made at the same time each day and within an hour of dawn twice per year.
- [2] If any effluent is in violation of limits, except those for metals, cyanide, and organics, sampling shall be increased for that parameter to at least daily or greater until compliance is demonstrated in two successive samples. Receiving water violations shall be reported in the monthly report; increased receiving water monitoring may be required. Compliance measurements represent compliance status for the time period between measurements.
- [3] Chlorine residual analyzers shall be calibrated against grab samples as frequently as necessary to maintain accurate control and reliable. If an effluent violation is detected, grab samples shall be taken every 30 minutes until compliance is achieved.
- [4] Flow Monitoring: Influent and effluent flows shall be measured continuously, and recorded and reported daily. For influent and 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] Chlorine Residual: Monitor dechlorinated effluent (E-001-S) 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.
- [6] Bioassays: Effluent used for fish bioassays must be dechlorinated prior to testing. Monitoring of the bioassay water shall include, on a daily basis, the following parameters: pH, dissolved oxygen, ammonia nitrogen, and temperature. These results shall be reported.

The dischargers shall use three-spined stickleback and fathead minnow as the compliance species for acute toxicity testing. Rainbow trout may be required as a compliance species, depending upon the outcome of testing pursuant to Provision D.10 of this Order.

- [7] PAHs (Polynuclear Aromatic Hydrocarbons): The dischargers shall attempt to achieve the lowest detection limits commercially available. Polynuclear aromatic hydrocarbons, PAHs, shall be analyzed using the latest version of USEPA Method 610 (8100 or 8300). The dischargers shall attempt to achieve the lowest detection limits commercially available. If an analysis cannot achieve a quantification limit for a particular sample at or below the effluent limits for PAHs, the dischargers shall provide an explanation in its self-monitoring

report. Note that the samples must be collected in amber glass containers. These samples shall be collected for the analysis of the regulated parameters. An automatic sampler which incorporates glass sample containers, and keeps the samples refrigerated at 4°C, and protected from light during compositing may be used. The 24-hour composite samples may consist of eight grab samples collected at three hour intervals. The analytical laboratory shall remove flow proportioned volumes from each sample vial or container for the analysis.

PAHs shall mean the following constituents. Each constituent shall be limited individually at 0.049 µg/L as indicated below. If any of these PAHs are detected in the quarterly samples, monthly monitoring shall begin.

<u>Constituent [a]</u>	<u>Unit</u>	<u>Monthly Average Effluent Limit [b]</u>
1,2-Benzanthracene	µg/L	0.049
3,4-Benzofluoranthene	µg/L	0.049
Benzo[k]fluoranthene	µg/L	0.049
1,12-Benzoperylene	µg/L	0.049
Benzo[a]pyrene	µg/L	0.049
Chrysene	µg/L	0.049
Dibenzo[a,h]anthracene	µg/L	0.049
e		
Indeno[1,2,3-cd]pyrene	µg/L	0.049

- [a] The limit for PAHs, as defined by the Basin Plan, is the sum of about sixteen constituents measured in USEPA Method 610. The NTR, which is based on more updated data, list standards for just eleven of the PAHs measured in Method 610. The USEPA criteria for three of the eleven are higher than the other eight; these are anthracene (NTR objective at 110,000 ppb), fluorene (14,000 ppb), and pyrene (11,000 ppb). Therefore, the PAH limits in the current permit are for the other eight PAHs that may be present in the discharge at concentrations which pose a reasonable potential to contribute to water quality impacts.
- [b] USEPA human health criteria calculations from the TSD, with updated cancer potencies (q\*) and reference doses (RfD) from the California Office of Environmental Health Hazard Assessment, and in USEPA's Integrated Risk Information System (IRIS). Calculations based on average human body weight of 70 kg, USEPA estimated national average fish consumption of 6.5 g/d, and a 10<sup>-6</sup> cancer risk level for carcinogens.
- [8] PCBs: (polychlorinated biphenyls) shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260.
- [9] Monitoring for TCDD Equivalents shall be done once each year during the discharge period over the three year period 1998 through 2000. Thereafter, monitoring frequency shall be as specified by the Executive Officer. TCDD Equivalents shall mean the

Chlorinated dibenzodioxins (2,3,7,8 - CDDs) and chlorinated dibenzofurans (2,3,7,8 - CDFs) as listed below. Data submitted shall include detection limits and concentrations of each of the following:

2,3,7,8 - tetra CDD  
1,2,3,7,8 - penta CDD  
1,2,3,4,7,8 - hexa CDDs  
1,2,3,4,6,7,8 - hexa CDDs  
1,2,3,4,6,7,8 - hepta CDD  
Total hepta CDDs  
octa CDD  
2,3,7,8 -tetra CDF  
2,3,4,7,8 -penta CDF  
1,2,3,4,7,8 -hexa CDF  
1,2,3,6,7,8 -hexa CDF  
2,3,4,6,7,8 -hexa CDF  
1,2,3,7,8,9 -hexa CDF  
Total hexa CDFs  
1,2,3,4,6,7,8 -hepta CDF  
1,2,3,4,7,8,9 -hepta CDF  
Octa CDF"

[10] Selected Toxic Pollutant Monitoring: Monitoring for these constituents may be done in conjunction with that conducted for the Pretreatment Program; however, in addition to inclusion with Pretreatment submittals, the results shall be submitted with the monthly Self-Monitoring Report for the period of monitoring.