

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

**ORDER NO. R2-2002-0073  
NPDES PERMIT NO. CA0037664**

**WASTE DISCHARGE REQUIREMENTS FOR:**

**CITY AND COUNTY OF SAN FRANCISCO  
SOUTHEAST WATER POLLUTION CONTROL PLANT,  
NORTH POINT WET WEATHER FACILITY, AND  
BAYSIDE WET WEATHER FACILITIES  
SAN FRANCISCO, SAN FRANCISCO COUNTY**

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

**ORDER NO. R2-2002-0073  
NPDES PERMIT NO. CA0037664**

**REISSUING WASTE DISCHARGE REQUIREMENTS FOR:  
SOUTHEAST WATER POLLUTION CONTROL PLANT,  
NORTH POINT WET WEATHER FACILITY, AND  
BAYSIDE WET WEATHER FACILITIES  
SAN FRANCISCO, SAN FRANCISCO COUNTY**

**FINDINGS**

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

1. *Discharger and Permit Applications.* The City and County of San Francisco, hereinafter called the Discharger, has applied to the Board for reissuance of waste discharge requirements and permits to discharge treated wastewater to waters of the State and the United States under the National Pollutant Discharge Elimination System (NPDES) for the Southeast Water Pollution Control Plant (NPDES Permit No. CA 0037664) and for the Bayside Wet Weather Facilities including the North Point Wet Weather Facility (NPDES Permit No. CA 0038610).
2. Since the permits CA0037664 and CA 0038610 regulate two different components of the same Bayside Wastewater treatment system, this permit combines the two NPDES permits.
3. *Combined Sewer.* The Discharger collects wastewater in a combined sewer system. This means the domestic sewage, industrial wastewater, and stormwater runoff are collected in the same pipes (combined sewer). Most other communities in California have a separated sewer system: one set of pipes for domestic sewage and industrial waste and another set for stormwater. The City has complied with federally mandated upgrades to secondary level treatment of its dry weather wastewater treatment plants to comply with the Clean Water Act as required of Publicly Owned Treatment Works (POTW). The combined sewer system facilities are not POTWs subject to the secondary treatment regulations of 40 Code of Federal Regulation (CFR) Section 133. The U.S. EPA's Office of General Counsel has classified facilities that treat combined sewer overflows as point sources subject to Section 301(b)(1)(A) of the Clean Water Act. Under wet weather conditions, the City's combined sewer system is regulated under the Federal Combined Sewer Overflow Control Policy, (59FR 18688). Combined sewer system wet weather facilities must provide storage capacity for wet weather flows, maximize flow to treatment facilities, and minimize combined sewer overflows.

**Facilities Description**

4. *Facility Location and Description*
  - a. The Southeast Water Pollution Control Plant is located at 750 Phelps Street in San Francisco. It is a secondary wastewater treatment plant with a peak secondary treatment capacity of 150 million gallons per day (mgd). During wet weather, the Southeast wet weather facilities are engaged to provide primary treatment to an additional 100 mgd of mixed stormwater and sewage.

- b. The North Point Wet Weather Facility is located at 111 Bay Street in San Francisco. It operates only during wet weather and provides primary level treatment to combined stormwater and wastewater with a peak primary treatment capacity of 150 mgd. It is not a publicly owned treatment works (POTW) as defined in 40 Code of Federal Regulations (CFR) 122.2.
- c. Bayside Wet Weather Storage/Transport and Diversion Structures consist of a series of interconnected large underground rectangular tanks or tunnels that ring San Francisco like a moat, and 29 overflow structures. These storage/transport structures provide storage and treatment equivalent to primary treatment for additional stormwater and wastewater during wet weather conditions. When capacities at the wastewater treatment plants, wet weather facilities and storage/transport structures are exceeded, the excess flow is discharged into the Bay via the 29 shoreline overflow structures.
- d. The locations of the above facilities are shown in Attachments A and B.

## 5. *Discharge System Descriptions*

- a. Wet Weather Day:
  - i. Definition: Wet weather day is defined as any day in which one of the following conditions exists as a result of rainfall:
    - 1. Instantaneous influent flow to the Southeast Water Pollution Control Plant exceeds 110 mgd; or
    - 2. The average influent flow concentration of TSS or BOD is less than 100 mg/L, or
    - 3. North Shore storage/transport wastewater elevation exceeds 100 inches.
  - b. Dry Weather Day:
    - i. Definition: any day in the year, that is not defined as a wet weather day.
    - ii. During dry weather, all the wastewater collected is treated at the Southeast Water Pollution Control Plant.
  - c. The Discharger treats domestic and industrial wastewater from the Southeast and North Shore areas of San Francisco, the Bayshore Sanitary District, City of Brisbane, and a small part of the North San Mateo County Sanitation District.
- 6. The Discharger presently discharges an average dry weather flow of 68 mgd from the Southeast Water Pollution Control Plant. Wet weather flow is maximized at the Southeast Water Pollution Control Plant at 250 mgd and at 150 mgd from the North Point Wet Weather Facility.
- 7. The Discharger was previously regulated by Waste Discharge Requirements in Order Nos. 94-149, 95-039, and 96-116, adopted by the Board on October 19, 1994, February 15, 1995, and August 21, 1996, respectively. In addition, the SWRCB adopted Order No. WQ 95-04 in September 1995, which remanded portions of Order No. 94-149 based on an appeal of Order No. 94-149 by the Discharger. In particular, WQ 95-04 effectively removed final effluent limitations for aldrin, chlordane, dieldrin, endrin, heptachlor, hexachlorobenzene, mercury, PAHs, PCBs (total), TCDD equivalents, toxaphene, and tributyltin which were not supported by the Fact Sheet and findings.
- 8. The U.S. Environmental Protection Agency (U.S. EPA) and the Board have classified the Southeast Water Pollution Control Plant, the North Point Wet Weather Facility, and the Bayside Wet Weather Facilities as major discharges.

## Treatment Process Description

### 9. *Treatment Process.*

- a. **Southeast Water Pollution Control Plant:** The treatment process consists of a headworks with coarse and fine bar screens, primary sedimentation tanks, pure oxygen aeration basins, secondary clarifiers and chlorine contact basins (chlorination and dechlorination). The treatment process schematic diagrams for the Southeast Water Pollution Control Plant are included as Attachment C of this Order.
- b. **North Point Wet Weather Facility:** The treatment process consists of primary sedimentation, clarification, disinfection and dechlorination. It treats exclusively wet weather flow consisting of a combination of domestic and industrial wastewater mixed with stormwater runoff. The treatment level at this wet weather facility is equivalent to the minimum treatment specified by the *Combined Sewer Overflow Control Policy* (59 FR 18688) for the “Presumption” approach as defined in Finding 32.
- c. **Bayside Wet Weather Storage/Transport and Diversion Structures:** The treatment process consists of a series of baffles and weirs that are designed to remove settleable solids and floatables. The treatment is equivalent to the minimum treatment specified by the *Combined Sewer Overflow Control Policy* for the “Presumption” approach as defined in Finding 32.

### 10. *Discharge Process*

- a. **Southeast Water Pollution Control Plant:**

The Southeast Water Pollution Control Plant has the capacity to treat up to 250 mgd of combined stormwater and wastewater during wet weather conditions. Up to 150 mgd receive secondary treatment; the remaining 100 mgd receive primary treatment. The entire volume of treated stormwater and wastewater is disinfected prior to discharge. During dry weather conditions, all flow is discharged through the Southeast Water Pollution Control Plant deep water outfall at Pier 80 (E-001). At full wet weather capacity, the discharge via the deep water outfall at Pier 80 (E-001) is maximized to 110 mgd of a blended primary and secondary treated effluent. The remaining 140 mgd receive full secondary treatment and are discharged via the Quint St. shallow water outfall into Islais Creek (E-002).
- b. **North Point Wet Weather Facility:** The North Point Wet Weather Facility is operational only during wet weather and provides primary treatment to combined stormwater and wastewater flow up to 150 mgd. Treated combined stormwater and wastewater (Waste E-003) is simultaneously discharged from the North Point Wet Weather Facility into San Francisco Bay through four deep water outfalls, two of which terminate at the end of Pier 33 (E-003 & E-004), and two of which terminate at the end of Pier 35 (E-005 & E-006). The entire volume of treated stormwater and wastewater is disinfected and dechlorinated prior to discharge.
- c. **Bayside Wet Weather Storage/Transport and Diversion Structures:**
  - i. The storage/transport structures operate to transport combined sewage and street runoff to the Southeast Water Pollution Control Plant during dry weather periods. During wet weather, these structures provide storage for additional stormwater and wastewater flow, while pumping facilities continue to transfer flow to the treatment facilities. In the event that the capacities of the treatment plant, wet weather facilities and storage structures are exceeded, the combined stormwater and wastewater receive equivalent of primary treatment in the transport structures and are discharged into San Francisco Bay via one of the twenty-nine shoreline Combined Sewer Overflow structures (CSO 009 to CSO 043).
  - ii. Discharges from these structures occur only when the storm flow exceeds the combined storage capacity of the storage/transport and the capacity of the pumping facilities to transfer flows to the treatment plant and wet weather facilities. The outfalls associated with these structures range in size from 18’ diameter pipes to quadruple 8’3” X 9’6” box culverts.

11. **Discharge Locations.** The discharge locations are as follows and as shown in Attachments A & B:

<b>Outfall</b>	<b>Distance from shore/ Depth (Feet)</b>	<b>Receiving Water</b>	<b>Latitude</b>	<b>Longitude</b>
<b>Waste 001 Discharge E-001</b> Southeast Water Pollution Control Plant (Pier 80 Outfall)	810 feet from shore/ 42 feet below mean lower low water	Lower San Francisco Bay	37° 44' 58"	122° 22' 22"
<b>Waste 002 Discharge E-002</b> Southeast Water Pollution Control Plant (Quint Street Outfall)	Shoreline Outfall	Islais Creek	37° 44' 50"	122° 23' 13"
<b>Waste 003 Discharges E-003-006</b> North Point Wet Weather Facility (Discharges 003 and 004, at Pier 33 and Discharges 005 and 006, at Pier 35)	Dual outfalls both 800 feet from shore / 18 feet below mean lower low water	Central San Francisco Bay	37° 48' 25" & 37° 48' 36"	122° 24' 11" & 22° 24' 20"
<b>Waste 007 Discharge E-007</b> Oceanside Water Pollution Control Plant (Southwest Ocean Outfall)	This discharge is not regulated by this permit and is only incorporated for reference. It is regulated in permit number CA0037681 City and County of San Francisco Oceanside Water Pollution Control Plant and Westside Wet Weather Combined Sewer System.			
<b>Combined Sewer Overflow Sites</b>				
<b>Waste CSO 001 Discharge CSW-001</b>	These discharges are not regulated by this permit and are only incorporated for reference. They are regulated in permit number CA0037681 City and County of San Francisco Oceanside Water Pollution Control Plant and the Westside Wet Weather Combined Sewer System.			
<b>Waste CSO 002 Discharge CSW-002</b>				
<b>Waste CSO 003 Discharge CSW-003</b>				
<b>Waste CSO 004 Discharge CSW-004</b>				
<b>Waste CSO 005 Discharge CSW-005</b>				
<b>Waste CSO 006 Discharge CSW-006</b>				
<b>Waste CSO 007 Discharge CSW-007</b>				
<b>Waste CSO 008</b>	Discharge Eliminated			
<b>Waste CSO 009 Discharge CSN-009</b> Baker Street	Shoreline Outfall	Marina Beach North Shore Drainage Basin	37° 48' 29"	122° 26' 48"
<b>Waste CSO 010 Discharge CSN-010</b> Pierce Street	Shoreline Outfall	Marina Beach North Shore Drainage Basin	37° 48' 25"	122° 26' 24"

<b>Outfall</b>	<b>Distance from shore/ Depth (Feet)</b>	<b>Receiving Water</b>	<b>Latitude</b>	<b>Longitude</b>
<b>Waste CSO 011</b> <b>Discharge CSN-011</b> Laguna Street	Shoreline Outfall	Yacht Harbor #2 North Shore Drainage Basin	37° 48' 22"	122° 25' 53"
<b>Waste CSO 012</b>	Discharge Eliminated			
<b>Waste CSO 013</b> <b>Discharge CSN-013</b> Beach Street	Shoreline Outfall	Pier 39 North Shore Drainage Basin	37° 48' 30"	122° 24' 24"
<b>Waste CSO 014</b>	Discharge Eliminated			
<b>Waste CSO 015</b> <b>Discharge CSN-015</b> Sansome Street	Shoreline Outfall	Pier 31 North Shore Drainage Basin	37° 48' 24"	122° 24' 11"
<b>Waste CSO 016:</b>	Discharge Eliminated			
<b>Waste CSO 017</b> <b>Discharge CSN-017</b> Jackson Street	Shoreline Outfall	Pier 9 North Shore Drainage Basin	37° 47' 54"	122° 23' 41"
<b>Waste CSO 018:</b> <b>Discharge CSC-018</b> Howard Street	Shoreline Outfall	Pier 14 Central Drainage Basin	37° 47' 35"	122° 23' 24"
<b>Waste CSO 019</b> <b>Discharge CSC-019</b> Brannan Street	Shoreline Outfall	Pier 32 Central Drainage Basin	37° 47' 7"	122° 23' 24"
<b>Wastes CSO 020 &amp; CSO 021</b>	Discharges Eliminated			
<b>Waste CSO 022</b> <b>Discharge CSC-022</b> Third Street	Shoreline Outfall	Mission Creek Central Drainage Basin	37° 46' 38"	122° 23' 22"
<b>Waste CSO 023</b> <b>Discharge CSC-023</b> Fourth Street North	Shoreline Outfall	Mission Creek Central Drainage Basin	37° 46' 32"	122° 23' 29"
<b>Waste CSO 024</b> <b>Discharge CSC-024</b> Fifth Street North	Shoreline Outfall	Mission Creek Central Drainage Basin	37° 46' 26"	122° 23' 38"
<b>Waste CSO 025</b> <b>Discharge CSC-025</b> Sixth Street North	Shoreline Outfall	Mission Creek Central Drainage Basin	37° 46' 19"	122° 23' 46"
<b>Waste CSO 026</b> <b>Discharge CSC-026</b> Division Street	Shoreline Outfall	Mission Creek Central Drainage Basin	37° 46' 13"	122° 23' 51"
<b>Waste CSO 027</b> <b>Discharge CSC-027</b> Sixth Street South	Shoreline Outfall	Mission Creek Central Drainage Basin	37° 46' 17"	122° 23' 42"
<b>Waste CSO 028</b> <b>Discharge CSC-028</b> Fourth Street South	Shoreline Outfall	Mission Creek Central Drainage Basin	37° 46' 30"	122° 23' 28"
<b>Waste CSO 029</b> <b>Discharge CSC-029</b> Mariposa Street	Shoreline Outfall	Central Basin Central Drainage Basin	37° 45' 53"	122° 23' 7"

<b>Outfall</b>	<b>Distance from shore/ Depth (Feet)</b>	<b>Receiving Water</b>	<b>Latitude</b>	<b>Longitude</b>
<b>Waste CSO 030</b> <b>Discharge CSC-030</b> 20 <sup>th</sup> Street	Shoreline Outfall	Central Basin Central Drainage Basin	37° 45' 40"	122° 22' 48"
<b>Waste CSO 030A</b> <b>Discharge CSC-030A</b> 22 <sup>nd</sup> Street	Shoreline Outfall	Central Basin Central Drainage Basin	37° 45' 28"	122° 22' 49"
<b>Waste CSO 031</b> <b>Discharge CSC-031</b> Third Street North	Shoreline Outfall	Islais Creek Central Drainage Basin	37° 44' 52"	122° 23' 10"
<b>Waste CSO 031A</b> <b>Discharge CSC-031A</b> Islais Creek North	Shoreline Outfall	Islais Creek Central Drainage Basin	37° 44' 52"	122° 23' 15"
<b>Waste CSO 032</b> <b>Discharge CSC-032</b> Marin Street	Shoreline Outfall	Islais Creek Central Drainage Basin	37° 44' 55"	122° 23' 27"
<b>Waste CSO 033</b> <b>Discharge CSC-033</b> Selby Street	Shoreline Outfall	Islais Creek Central Drainage Basin	37° 44' 52"	122° 23' 27"
<b>Waste CSO 034</b>	Discharge Eliminated			
<b>Waste CSO 035</b> <b>Discharge CSC-035</b> Third Street South	Shoreline Outfall	Islais Creek Central Drainage Basin	37° 44' 50"	122° 23' 10"
<b>Waste 036</b>	Discharge Eliminated			
<b>Waste CSO 037</b> <b>Discharge CSS-037</b> Evans Avenue	Shoreline Outfall	India Basin Southeast Drainage Basin	37° 44' 9"	122° 22' 26"
<b>Waste CSO 038</b> <b>Discharge CSS-038</b> Hudson Avenue	Shoreline Outfall	India Basin Southeast Drainage Basin	37° 44' 0"	122° 22' 26"
<b>Waste CSO 039</b>	Discharge Eliminated			
<b>Waste CSO 040</b> <b>Discharge CSS-040</b> Griffith Street South	Shoreline Outfall	Yosemite Canal Southeast Drainage Basin	37° 43' 23"	122° 22' 56"
<b>Waste CSO 041</b> <b>Discharge CSS-041</b> Yosemite Avenue	Shoreline Outfall	Yosemite Canal Southeast Drainage Basin	37° 43' 26"	122° 23' 8"
<b>Waste CSO 042</b> <b>Discharge CSS-042</b> Fitch Street	Shoreline Outfall	South Basin Southeast Drainage Basin	37° 43' 20"	122° 22' 55"
<b>Waste CSO 043</b> <b>Discharge CSS-043</b> Sunnydale Avenue	Shoreline Outfall	Candlestick Cove Southeast Drainage Basin	37° 44' 50"	122° 23' 13"

CSN = North Drainage Basin

CSC = Central Drainage Basin

CSS = Southeast Drainage Basin



CSW = Westside Drainage Basin

12. **Solids Treatment, Handling and Disposal**

- a. **Southeast Water Pollution Control Plant:** Primary and secondary sludge is processed via anaerobic digestion. Prior to digestion, the secondary sludge is thickened. The digested and dewatered sludge is beneficially re-used as alternative daily cover at a permitted landfill sites or is used as land application at a permitted site.
- b. **North Point Wet Weather Facility:** Primary sludge is directed to the Southeast Water Pollution Control Plant for treatment.
- c. **Bayside Wet Weather Storage/Transport and Diversion Structures:** All solids which settle out in the storage/transport structures are flushed to the Southeast Water Pollution Control Plant after the rainstorm subsides.

**Combined Sewer Overflow**

13. U.S. EPA's Office of General Counsel has classified facilities that treat combined sewer overflows as point sources subject to Section 301(b)(1)(A) of the Clean Water Act. Thus, they are not Publicly Owned Treatment Works (POTWs) subject to the secondary treatment regulations of 40 Code of Federal Regulations (CFR) Section 133. This opinion is supported by subsequent case law (646 F.2d 568(1980); Montgomery Environmental Coalition V. Costle).
14. Wet weather flows are intermittent in nature and subject to a high degree of variability throughout the wet weather season. Based on past rainfall records, the North Point Wet Weather Facility will be operated approximately 30-40 times per wet season, with the duration of each operation expected to average approximately 12 hours at a maximum flow rate of approximately 150 mgd. The sanitary fraction in controlled overflows averages 6% of the total flow.
15. In 1971 and 1974, the Discharger developed the "Master Plan for Wastewater Management" and "Master Plan Environmental Impact Statement and Report", respectively. These documents set the groundwork for the Discharger's wastewater control program by identifying the need for upgraded treatment levels and the principle of storing accumulated combined sewage flow during wet weather for later treatment at the wastewater treatment plants.
16. In 1979, the Board issued Order No. 79-67 for the wet-weather facilities. This order found that a long term average of 4 overflows per year for diversion structures CSN-009 through CSN-017 (North Shore Drainage Basin), a long term average of 10 overflows per year for diversion structures CSC-018 through CSC-035 (Central Basin Drainage), and a long term average of 1 overflow per year for diversion structures CSS-037 through CSS-043 (Southeast Drainage Basin) would provide adequate overall protection of beneficial uses. This conclusion is based on evidence presented at the public meeting concerning the costs of different types of facilities necessary to achieve specific overflow frequencies, the water quality benefits derived from construction of these facilities, and the effects of the combined sewer overflows to existing beneficial uses. Wet weather flows are governed under compliance with the nine minimum controls contained in the *Combined Sewer Overflow Control Policy* (59FR 18688). The Discharger is responsible for operating wet weather facilities, storage, transport and pumping facilities at maximum efficiency in order to maximize treatment of wet weather flow. The Discharger has successfully designed and completed construction of its wet weather facilities based upon criteria contained in Order No. 79-67. Operation and implementation of these facilities satisfies CSO Control Policy requirements. The system was designed and built based upon historical rainfall data to not exceed the overflow frequencies specified in Order No. 79-67. As specified in Order No. 79-67 and subsequent permits for these facilities, these long term design criteria will not be used to determine compliance or non-compliance. The Board recognizes that

some years are wetter than others and may contribute more flow than anticipated in the system design criteria. The Discharger is required to maximize treatment and shall be considered in compliance as defined by adherence to the Wet Weather Effluent Performance Criteria defined in this permit and the Operations Plan and other permit conditions.

17. The storage and transport structures, which surround the City like a moat, were designed with the capacity to capture and hold wet weather flows for later treatment and prevent shoreline overflows. The system capacity was measured, designed, and constructed based upon a previous 70 year rainfall history pattern of California and the San Francisco Bay Area to capture flows as necessary to achieve the criteria specified in Order No. 79-67. In 1997, the Discharger completed the major components of the Wastewater Master Plan, and is in compliance with the Federal Combined Sewer Overflow Control Policy. Citywide, this construction program cost more than \$1.4 billion dollars over a twenty-year period and represents an expenditure of nearly \$1,900 for every resident in the City of San Francisco. Approximately \$1 billion of the cost represents facilities needed to control wet weather flows. The remaining costs were for treatment upgrades to all facilities and construction of the Oceanside Water Pollution Control Plant. The Oceanside Water Pollution Control Plant collects and treats the wastewater and stormwater for the western half of the City and County of San Francisco, excluding the Presidio. This permit does not regulate the discharges from the Oceanside Water Pollution Control Plant. Discharges associated with the Oceanside Water Pollution Control Plant are regulated under NPDES Permit No. CA0037681.

### **Regional Monitoring Program**

18. On April 15, 1992, the Board adopted Resolution No. 92-043 directing the Executive Officer to implement the Regional Monitoring Program (RMP) for the San Francisco Bay. Subsequent to a public hearing and various meetings, Board staff requested major permit holders in this region, under authority of section 13267 of California Water Code, to report on the water quality of the estuary. These permit holders, including the Discharger, responded to this request by participating in a collaborative effort, through the San Francisco Estuary Institute (formerly the Aquatic Habitat Institute). This effort has come to be known as the San Francisco Bay Regional Monitoring Program for Trace Substances. This Order specifies that the Discharger shall continue to participate in the RMP, which involves collection of data on pollutants and toxicity in water, sediment and biota of the estuary. Annual reports from the RMP are referenced elsewhere in this Order.

### **Applicable Plans, Policies and Regulations**

#### **Basin Plan**

19. 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 State Water Resources Control Board (SWRCB) and the Office of Administrative Law approved the revised Basin Plan 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 ground waters. The Basin Plan also identifies discharge prohibitions intended to protect beneficial uses. Section 4 of the Basin Plan states that "The Regional Board intends to implement the federal CSO Control Policy for the combined sewer overflows from the City and County of San Francisco". This Order implements the plans, policies and provisions of the Board's Basin Plan.

#### **Beneficial Uses**

20. *Central San Francisco Bay*: Beneficial uses of central San Francisco Bay and contiguous water, as identified in the Basin Plan and based on known uses of the receiving waters in the vicinity of the discharges, are:

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

21. *Lower San Francisco Bay*: Beneficial uses of Lower San Francisco Bay and contiguous water, as identified in the Basin Plan and based on known uses of the receiving waters in the vicinity of the discharges, are:

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

**Combined Sewer Overflow Control Policy (CSO Policy)**

22. On April 11, 1994, U.S. EPA adopted the *Combined Sewer Overflow (CSO) Control Policy* (59 Federal Register 18688-18698). This policy became part of the Clean Water Act in December 2000 and establishes a consistent national approach for controlling discharges from CSOs to the nation’s water. Using the NPDES permit program, the policy initiates a two-phased process with higher priority given to more environmentally sensitive areas. During the first phase, the permittee is required to implement the nine minimum controls listed in later findings. These controls constitute the technology-based requirements of the Clean Water Act as applied to combined sewer facilities (best conventional treatment, BCT, and best available treatment, BAT). These nine minimum controls can reduce the frequency of CSOs and reduce their effects on receiving water quality. During the second phase, the permittee is required to continue the implementation of the nine minimum controls, properly operate and maintain the completed CSO controls in accordance with the operational plan, and implement the post-construction monitoring program.

**State Implementation Policy (SIP)**

23. The SWRCB adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (also known as the State Implementation Policy or SIP) on March 2, 2000 and the Office of Administrative Law (OAL) approved the SIP on April 28, 2000. The SIP applies to discharges of toxic pollutants in the inland surface waters, enclosed bays and estuaries of California subject to regulation under the State’s Porter-Cologne Water Quality Control

Act (Division 7 of the Water Code) and the federal Clean Water Act. The SIP establishes implementation provisions for priority pollutant criteria promulgated by the U.S. EPA through the National Toxics Rule (NTR) and California Toxics Rule (CTR), and for priority pollutant objectives established by the Regional Water Quality Control Boards (RWQCBs) in their water quality control plans (basin plans). The SIP also establishes monitoring requirements for 2,3,7,8-TCDD equivalents, chronic toxicity control provisions, and Pollutant Minimization Program.

24. The SIP does not apply to discharges of toxic pollutants from combined sewer overflows. Therefore, the requirements of the SIP only apply when the Discharger is operating in the “dry weather” mode, and only to discharges through outfall E-001.

#### **California Toxics Rule (CTR)**

25. On May 18, 2000, the U.S. EPA published the *Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* (Federal Register, Volume 65, Number 97, 18 May 2000, or the CTR). The CTR specified water quality standards for numerous pollutants, of which some are applicable to the Discharger’s receiving waters.

#### **Other Regulatory Bases**

26. Water quality objectives and effluent limitations in this permit for E-001 during dry weather are based on the SIP; the plans, policies and water quality objectives and criteria of the Basin Plan; CTR; *Quality Criteria for Water* (U.S EPA 440/5-86-001, 1986 and subsequent amendments, “Gold Book”); applicable Federal Regulations (40 CFR Parts 122 and 131); NTR; December 10, 1998 “National Recommended Water Quality Criteria” compilation (Federal Register Vol. 63, No. 237, pp. 68354-68364); and Best Professional Judgment (BPJ) as defined in the Basin Plan. Where numeric effluent limitations have not been established or updated in the Basin Plan, 40 CFR 122.44(d) specifies that water quality based effluent limits may be set based on criteria and supplemented where necessary by other relevant information to attain and maintain narrative water quality criteria to fully protect designated beneficial uses. Discussion of the specific bases and rationale for effluent limits are given in the associated Fact Sheet for this Permit, which is incorporated as part of this Order.

27. Other U.S. EPA guidance documents upon which BPJ was developed for all the discharges in this permit may include in part:

- Region 9 Guidance For NPDES Permit Issuance, February 1994;
- Technical Support Document for Water Quality Based Toxics Control (March 1991) (TSD);
- Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria, October 1, 1993;
- Whole Effluent Toxicity (WET) Control Policy, July 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;
- Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Programs Final, May 31, 1996;
- Draft Whole Effluent Toxicity (WET) Implementation Strategy, February 19, 1997.
- *Combined Sewer Overflows, Guidance For Nine Minimum Controls*, EPA 832-B-95-003, May 1995
- *Manual, Combined Sewer Overflow Control*, EPA/625/R-93/007, September 1993
- *Combined Sewer Overflows, Guidance For Permit Writers*, EPA 832-B-95-008, September 1995
- *Combined Sewer Overflows, Guidance For Long-Term Control Plan*, EPA 832-B-95-002, September 1995

## Basis for Effluent Limitations

### General Basis

28. **Federal Water Pollution Control Act.** Effluent limitations and toxic effluent standards are established pursuant to sections 301 through 305, and 307 of the Federal Water Pollution Control Act and amendments thereto are applicable to the discharges herein.
29. The secondary technology based limits for conventional pollutants for dry weather discharges at E-001 are established in accordance with the Basin Plan and 40 CFR 125. During wet weather, the CSO Control Policy requirements together with technology based limits based on past performance for discharges at E-001, E-002, and E-003 replaces the secondary technology limits.

### CSO Policy Requirements

30. The nine minimum controls listed in the CSO Policy are as follows:
  - a. Conduct proper operation and regular maintenance programs for the combined sewer system (CSS) and the CSO outfalls;
  - b. Maximize use of the collection system for storage;
  - c. Review and modify pretreatment programs to ensure that CSO impacts are minimized;
  - d. Maximize flow to the POTW for treatment;
  - e. Prohibit CSOs during dry weather;
  - f. Control solids and floatable materials in CSOs;
  - g. Develop and implement pollution prevention programs that focus on contaminant reduction activities;
  - h. Notify the public; and
  - i. Monitor to effectively characterize CSO impacts and the efficacy of CSO controls.
31. The Discharger implemented the nine minimum controls as required by the CSO Policy.
32. In conformance with the CSO Policy, the Discharger developed a long-term control plan to select CSO controls to comply with water quality standards, based on consideration of the Discharger's financial capability. The purpose of this long-term control plan is to comply with the water quality requirements of the Clean Water Act. The CSO Policy provides two alternative approaches – the “demonstration” and the “presumption” approaches – that provide communities with targets for CSO controls that achieve compliance with the Act, particularly protection of water quality and designated beneficial uses. The Discharger's program, which is already complete, complies with the presumption approach. This approach is defined in the CSO Policy as follows:

#### *“Presumption” Approach*

*A program that meets any of the criteria listed below would be presumed to provide an adequate level of control to meet the water quality-based requirements of the CWA, provided the permitting authority determines that such presumption is reasonable in light of the data and analysis conducted in the characterization, monitoring, and modeling of the system and the consideration of sensitive areas described above. These criteria are provided because data and modeling of wet weather events often do not give a clear picture of the level of CSO controls necessary to protect WQS [Water Quality Standards].*

- i. No more than an average of four overflow events per year, provided that the permitting authority may allow up to two additional overflow events per year. For the purpose of this criterion, an overflow event is one or more overflows from a CSS [Combined Sewer System] as the result of a precipitation event that does not receive the minimum treatment specified below; or*

- ii. *The elimination or the capture for treatment of no less than 85% by volume of the combined sewage collected in the CSS during precipitation events on a system-wide annual average basis; or*
- iii. *The elimination or removal of no less than the mass of the pollutants, identified as causing water quality impairment through the sewer system characterization, monitoring, and modeling effort, for the volumes that would be eliminated or captured for treatment under paragraph ii above.*

*Combined sewer overflows remaining after implementation of the nine minimum controls and within the criteria specified at II.C.4.a.i or ii, should receive a minimum of:*

- *Primary clarification (Removal of floatables and settleable solids may be achieved by any combination of treatment technologies or methods that are shown to be equivalent to primary clarification.);*
- *Solids and floatables disposal; and*
- *Disinfection of effluent, if necessary, to meet WQS, protect designated uses and protect human health, including removal of harmful disinfection chemical residuals, where necessary.”*

33. The recently completed San Francisco Wastewater Control Program exceeds the specifications of the Presumption Approach. San Francisco captures and provides treatment to 100% of the combined sewer flows rather than the 85% identified in option ii. As defined in the CSO Policy, San Francisco has no remaining untreated overflow events; the overflows that occur in San Francisco have received treatment (within the storage/transport) consisting of removal of floatables and settleable solids.
34. The wet weather conditions in this Order require continued implementation of the long-term plan such that pollutant removal is maximized.

#### ***Applicable Water Quality Objectives***

35. The water quality objectives (WQO) applicable to the receiving water of this Discharger are from the Basin Plan, the CTR, and the NTR.
- a. The Basin Plan specifies numeric WQOs for 10 priority toxic pollutants, as well as narrative WQOs for toxicity and bioaccumulation in order to protect beneficial uses. The pollutants for which the Basin Plan specifies numeric objectives are arsenic, cadmium, chromium (VI), copper in freshwater, lead, mercury, nickel, silver, zinc, and cyanide (see also c. below). The narrative toxicity objective states in part “[a]ll waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms.” The bioaccumulation objective states in part “[c]ontrollable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life.” Effluent limitations and provisions contained in this Order are designed to implement these objectives, based on available information.
  - b. The CTR specifies numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries such as here, except that where the Basin Plan’s Tables 3-3 and 3-4 specify numeric objectives for certain of these priority toxic pollutants, the Basin Plan’s numeric objectives apply over the CTR (except in the South Bay south of the Dumbarton Bridge).
  - c. The NTR established numeric aquatic life criteria for selenium, and numeric aquatic life and human health criteria for cyanide for waters of San Francisco Bay upstream to and including

Suisun Bay and the Sacramento-San Joaquin Delta. This includes the receiving water for this Discharger.

***Basin Plan Receiving Water Salinity Policy***

36. The Basin Plan states that the salinity characteristics of the receiving water shall be considered in determining the applicable water quality objectives. Freshwater objectives apply to discharges to waters both outside the zone of tidal influence and with salinities lower than 5 parts per thousand (ppt) at least 75 percent of the time. Saltwater objectives shall apply to discharges to waters with salinities greater than 5 ppt at least 75 percent of the time. For discharges to waters with salinities in between the two categories or tidally influenced freshwaters that support estuarine beneficial uses, the objectives shall be the lower of the salt or freshwater objectives, based on ambient hardness, for each substance.

***CTR Receiving Water Salinity Policy***

37. The CTR states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable water quality criteria. Freshwater criteria shall apply to discharges to waters with salinities equal to or less than one ppt at least 95 percent of the time. Saltwater criteria shall apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to water with salinities in between these two categories, or tidally influenced freshwaters that support estuarine beneficial uses, the criteria shall be the lower of the salt or freshwater criteria, (the latter calculated based on ambient hardness), for each substance.

***Receiving Water Salinity***

38. The receiving waters for the subject discharge are the waters of central and lower San Francisco Bay. Salinity data indicate that the receiving waters for the subject discharge are saline according to both the Basin Plan and the CTR definitions.

***Daily Maximum Effluent Limits***

39. Maximum Daily Effluent Limits (MDEL) are used in this permit to protect against acute water quality effects. It is impracticable to use weekly average limitations to guard against acute effects. Weekly averages are effective for monitoring the performance of biological wastewater treatment plants, whereas the MDELs are necessary for preventing fish kills or mortality to aquatic organisms.

NPDES regulations, the SIP, and U.S. EPA's Technical Support Document (TSD) provide the basis to establish MDELs:

NPDES regulations at 40 Code of Federal Regulations section 122.45(d) state:

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

- (1) Maximum daily and average monthly discharge limitations for all discharges other than publicly owned treatment works; and
- (2) Average weekly and average monthly discharge limitations for POTWs.” (Emphasis added.)

The SIP (page 8, Section 1.4) requires water quality based effluent limits be expressed as maximum daily effluent limitations (MDELs) and average monthly effluent limitations (AMELs).

The TSD (page 96) states daily maximum is appropriate for two reasons:

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

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

#### ***Technology Based Effluent Limits***

40. Permit effluent limits for conventional pollutants for the dry weather E-001 discharge are technology based. Limits in this permit are the same as those in the prior permit for the following constituents: Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), settleable matter, oil and grease, and chlorine residual. Technology-based effluent limitations are put in place to ensure that full secondary treatment is achieved by the wastewater treatment facility.

#### ***Water Quality Based Effluent Limitations***

41. During dry weather as defined by Finding 5, toxic substances in Discharge E-001 are regulated by water quality based effluent limitations (WQBELs) derived from national water quality criteria listed in the Basin Plan Tables 3-3 and 3-4, the National Toxics Rule, or U.S. EPA Gold Book, the CTR, the SIP, and/or best professional judgment. WQBELs in this Order are revised and updated from the limits in the previous permit order and their presence in this Order is based on the evaluation of the Discharger's data as described below under the Reasonable Potential Analysis. Numeric WQBELs are required for all constituents that have reasonable potential to cause or contribute to an excursion above any State water quality standard. Reasonable potential is determined and final WQBELs are developed using the methodology outlined in the SIP. If the Discharger demonstrates that the final limits will be infeasible to meet and provides justification for a compliance schedule, then interim limits are established, with a compliance schedule to achieve the final limits. Further details about the effluent limitations are given in the associated Fact Sheet, which is incorporated as part of these Findings.

#### ***Receiving Water Ambient Background Data Used in Calculating WQBELs***

42. Ambient background values are utilized in the reasonable potential analysis (RPA) and in the calculation of effluent limitations for E-001 during dry weather. For RPA, ambient background concentrations shall be the observed maximum water column concentration. For calculating WQBELs, as stated in the SIP, ambient background concentration shall be the observed maximum ambient water column concentration or the arithmetic mean of observed ambient water concentrations (for the criterion/objective that is intended to protect human health from carcinogenic effects). The RMP stations at Yerba Buena Island and Richardson Bay located in the Central Bay have been sampled for most of the inorganic and some of the organic toxic pollutants. WQBELs were calculated using RMP data from 1992 through 2000 for inorganics and 1993 through 2000 for organics. However, not all the constituents listed in the CTR were analyzed by the RMP during this time. This data gap is filled by a provision in this Order that requires the Discharger to determine ambient background for those constituents. This requirement may occur either through participation in new RMP special studies or through equivalent studies conducted jointly with other Dischargers. Upon completion of the required ambient background monitoring, the Board shall use the gathered data to conduct the RPA and determine if a water-quality based effluent limitation is required.

#### ***Constituents Identified in the 303(d) List***

43. On May 12, 1999, the U.S. EPA approved a revised list of impaired waterbodies prepared by the State. The list [hereinafter referred to as the 303(d) list] was prepared in accordance with Section 303(d) of the federal Clean Water Act to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. Central and lower San Francisco Bays are listed as impaired water bodies. The pollutants impairing central San Francisco Bay include chlordane, copper, DDT, diazinon, dieldrin, dioxin and



furan compounds, exotic species, mercury, total PCBs, PCBs (dioxin-like) and selenium. The pollutants impairing lower San Francisco Bay include these same pollutants, and nickel.

#### ***Dilution and Assimilative Capacity***

44. In response to the State Board's Order No.2001-06, staff has evaluated the assimilative capacity of the receiving water for 303(d) listed pollutants for which the Discharger has reasonable potential in its discharge. The evaluation included a review of RMP data (local and Yerba Buena Island and Richardson Bay stations), effluent data, and WQOs. From this evaluation, staff has found that the assimilative capacity is highly variable due to the complex hydrology of the receiving water. Therefore, there is uncertainty associated with the representative nature of the appropriate ambient background data to conclusively quantify the assimilative capacity of the receiving water. Pursuant to Section 1.4.2.1 of the SIP, "dilution credit may be limited or denied on a pollutant-by-pollutant basis..."
- a. For bioaccumulative and impairing pollutants, based on BPJ, dilution credit is not included in calculating the final WQBELs. This determination will be based on available data on concentrations of these pollutants in aquatic organisms, sediment, and the water column. At the present time, dilution credit is not included for the following pollutants: mercury, dieldrin, 4,4'-DDE, dioxins and furans, PCBs, Chlordane, and selenium. Primarily, this determination is based on a San Francisco Bay fish tissue data that show these pollutants, except selenium, exceed screening levels. The fish tissue data are contained in "*Contaminant Concentrations in Fish from San Francisco Bay 1997*" May 1997. For selenium, this determination is based on Bay waterfowl tissue data presented in the California Department of Fish and Game's "*Selenium Verification Study*" (1986-1990). These data show elevated levels of selenium in the livers of waterfowl that feed on bottom dwelling organisms such as clams. Additionally, in 1987 the Office of Environmental Health Hazard Assessment issued an advisory for the consumption of two species of diving ducks in the north bay found to have high tissue levels of selenium. This suggests that there is no more assimilative capacity in the Bay for these pollutants. Denial of dilution credits in the calculation of WQBELs for bioaccumulative pollutants that are 303(d) listed is further justified by fish advisories to the San Francisco Bay. The office of Environmental Health and Hazard Assessment (OEHHA) performed a preliminary review of the data from the 1994 San Francisco Bay pilot study, "Contaminated Levels in Fish Tissue from San Francisco Bay." The results of the study showed elevated levels of chemical contaminants in the fish tissues. Based on these results, OEHHA issued an interim consumption advisory covering certain fish species from the bay in December, 1994. This interim consumption advice was issued and is still in effect due to health concerns based on exposure to sport fish from the bay contaminated with mercury, polychlorinated biphenyls (PCBs), dioxins, and pesticides (e.g., DDT). Based on these data, the Board placed selenium, mercury, and PCBs on the CWA Section 303(d) list. The USEPA added dioxins and furans compounds, dieldrin, Chlordane, and 4,4'-DDT on the CWA Section 303(d) list.
  - b. Furthermore, Section 2.1.1 of the SIP states that for bioaccumulative compounds on the 303(d) list, the Board should consider whether mass-loading limits should be limited to current levels. The Board finds that mass loading limits are warranted for certain bioaccumulative compounds on the 303(d) list for the receiving waters of this discharge. This is to ensure that this discharge does not contribute further to impairment of the narrative objective for bioaccumulation.
  - c. For non-bioaccumulative constituents, it is assumed that there is assimilative capacity based on BPJ, and a conservative allowance of 10:1 dilution is granted. This is based on the SIP, which allows the Board to further limit dilution credits.

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

45. Based on the 303(d) list of pollutants impairing central and lower San Francisco Bay, the Board plans to adopt Total Maximum Daily Loads (TMDLs) for these pollutants no later than 2010, with the exception of dioxin and furan compounds. The Board defers development of the TMDL for dioxin and furan compounds to the U.S. EPA. Future review of the 303(d) list for central and lower San Francisco Bay may result in revision of the schedules and/or provide schedules for other pollutants.
46. The TMDLs will establish waste load allocations (WLAs) and load allocations for point sources and non-point sources, respectively, and will result in achieving the water quality standards for the water body. The final effluent limitations for this discharge will be based on WLAs that are derived from the TMDLs.
47. ***Compliance Schedules***: Pursuant to Section 2.1.1 of the SIP, “the compliance schedule provisions for the development and adoption of a TMDL only apply when: (a) the Discharger requests and demonstrates that it is infeasible for the Discharger to achieve immediate compliance with a CTR criterion; and (b) the Discharger has made appropriate commitments to support and expedite the development of the TMDL. In determining appropriate commitments, the RWQCB should consider the discharge’s contribution to current loadings and the Discharger’s ability to participate in TMDL development.” As further described in a later finding under the heading ***Interim Limits and Compliance Schedules***, the Discharger has requested and demonstrated that it is infeasible to achieve immediate compliance for certain pollutants. Also, the Discharger has agreed to assist the Board in TMDL development through active participation and contribution to the Bay Area Clean Water Agencies (BACWA). The Board adopted Resolution No. 01-103, on September 19, 2001, which authorizes the Executive Officer of the Board to enter into a Memorandum of Understanding with BACWA, and other parties to accelerate the development of Water Quality Attainment Strategies including TMDLs for the San Francisco Bay-Delta and its tributaries.
48. The following summarizes the Board’s strategy to collect water quality data and to develop TMDLs:
  - a. Data collection – The Board has given the dischargers the option to collectively assist in developing and implementing analytical techniques capable of detecting 303(d)-listed pollutants to at least their respective levels of concern or water quality objectives. The Board will require dischargers to characterize the pollutant loads from their facilities into the water-quality limited water bodies. The results will be used in the development of TMDLs, but may also be used to update/revise the 303(d) list and/or change the water quality objectives for the impaired water bodies including central and lower San Francisco Bay.
  - b. Funding mechanism – The Board has received, and anticipates continued receipt of, resources from federal and state agencies for the development of TMDLs. To ensure timely development of TMDLs, the Board intends to supplement these resources by allocating development costs among Dischargers through the RMP or other appropriate funding mechanisms.

***Interim Limits and Compliance Schedules***

49. Until final WQBELs or WLAs are adopted, state and federal anti-backsliding and antidegradation policies, and the SIP, require that the Board include interim effluent limitations. The interim effluent limitations will be the lower of the following:
  - current performance; or
  - maximum observed effluent concentration

This permit establishes interim performance-based mass limits in addition to interim concentration limits for dry weather E-001 to limit discharge of 303(d)-listed bioaccumulative pollutants’ mass loads to their current levels. These interim performance-based mass limits are based on recent

discharge data. Where pollutants have existing high detection limits, interim mass limits are not established because meaningful performance-based mass limits cannot be calculated for pollutants with non-detectable concentrations. However, the Discharger has the option to investigate alternative analytical procedures that result in lower detection limits, either through participation in new RMP special studies or through equivalent studies conducted jointly with other Dischargers.

50. Compliance schedules are established based on Section 2.2 of the SIP for limits derived from CTR criteria or are based on the Basin Plan for limits derived from the Basin Plan WQOs. If an existing Discharger cannot immediately comply with a new and more stringent effluent limitation, the SIP and the Basin Plan authorize a compliance schedule in the permit. To qualify for a compliance schedule, both the SIP and the Basin Plan require that the Discharger demonstrate that it is infeasible to achieve immediate compliance with the new limit. The SIP and Basin Plan require that the following information be submitted to the Board to support a finding of infeasibility:
  - i. documentation that diligent efforts have been made to quantify pollutant levels in the discharge and sources of the pollutant in the waste stream, including the results of those efforts;
  - ii. documentation of source control and/or pollution minimization efforts currently under way or completed;
  - iii. a proposed schedule for additional or future source control measures, pollutant minimization or waste treatment; and
  - iv. a demonstration that the proposed schedule is as short as practicable.
51. On April 25, 2002, the Discharger submitted a feasibility study, which demonstrated according to the Basin Plan (page 4-14, Compliance Schedule) or SIP (Section 2.1, Compliance Schedule), it is infeasible to immediately comply with the WQBELs calculated according to Section 1.4 of the SIP. Therefore, this permit establishes a five-year compliance schedule for final limits based on CTR or NTR criteria (e.g., copper and selenium), a compliance schedule of March 31, 2010, for final limits based on the Basin Plan numeric objectives (e.g., mercury) except for dioxin TEQ. These compliance schedules both exceed the length of the permit, therefore, these calculated final limits are intended for point of reference for the feasibility demonstration and are only included in the findings by reference to the fact sheet. Additionally, the final WQBELs for copper, and mercury will very likely be based on either the Site Specific Objective (SSO) or TMDL/WLA as described in other findings specific to each of the pollutants.
52. During the compliance schedules, interim limits are included based on current treatment facility performance or on existing permit limits, whichever is more stringent to maintain existing water quality. The Board may take appropriate enforcement actions if interim limits and requirements are not met.

#### ***Antibacksliding and Antidegradation***

53. The interim limits in this permit are in compliance with antidegradation and antibacksliding because
  - (1) the interim limits hold the Discharger to current facility performance or current limitations; and
  - (2) because the final limit is in compliance with anti-backsliding requirements.

#### **Specific Basis**

##### ***Reasonable Potential Analysis***

54. As specified in 40 CFR 122.44(d) (1) (i), permits are required to include WQBELs for all pollutants “which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard.” Using the method prescribed in Section 1.3 of the SIP, Board staff has analyzed the dry weather Discharge E-001 effluent data to determine if this discharge has a reasonable potential to cause or contribute to an excursion above a State water quality standard (“Reasonable Potential Analysis” or

“RPA”). For all parameters that have reasonable potential, numeric water quality-based effluent limitations (WQBELs) are required. The RPA compares the effluent data with numeric and narrative WQOs in the Basin Plan and numeric WQCs from the U.S. EPA Gold Book, the NTR, and the CTR.

55. ***Wet Weather Discharges and Exception to 10:1***

- a. In Order No. 79-67, the Board concluded that facilities necessary to achieve the specified long term average wet weather CSO overflow frequencies (see Finding 16, above), provided adequate overall protection of beneficial uses. This order also requires further study of discharges to confined areas. Order No. 89-102 concluded that the CSO discharges met the requirements for an exception to the Basin Plan prohibition against discharges receiving less than 10:1 minimum initial dilution or discharging to a dead-end slough.

For the secondary effluent from the Southeast treatment plant, Board Order No. 96-116 included a finding that the Discharger had met the requirements in the Basin Plan for an exception to the prohibition requiring a minimum initial dilution of at least 10:1 and discharge to a dead-end slough. This Order allowed the wet weather discharge of effluent treated to secondary levels into Islais Creek through the Quint Street (E-002) discharge point. This discharge occurs when the deep-water outfall (E-001) is at capacity.

The exceptions to Basin Plan requirements cited in these previous Orders are still consistent with the Basin Plan. In particular, they are consistent with and implement the approach for wet weather overflows as described in Chapter 4 of the Basin Plan.

- b. As specified by the CSO Policy, wet weather effluent from Discharges E-001 through E-006 and CSO wastes CSO 009 through CSO 043 do not have reasonable potential to cause, or contribute to an excursion above any state water quality standard as long as the Discharger implements and maintains the Nine Minimum Control measures and fully implements the Wet Weather Operations Plan. Therefore, the following methods of determining reasonable potential do not apply to wet weather effluent wastes E-001 through E-003 and wastes CSO 009 through CSO 043.

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

- a. The first trigger is activated when the maximum effluent concentration (MEC) is greater than the lowest applicable water quality objective (WQO), which has been adjusted for pH, hardness, and translator data, if appropriate. An MEC that is greater than the (adjusted) WQO means that there is reasonable potential for that constituent to cause or contribute to an excursion above the WQO and a water quality based effluent limitation (WQBEL) is required. (Is the  $MEC > WQO$ ?)
- b. The second trigger is activated if observed maximum ambient background concentration (B) is greater than the adjusted WQO and the MEC is less than the adjusted WQO or the pollutant was not detected in any of the effluent samples and all of the detection levels are greater than or equal to the adjusted WQO. If B is greater than the adjusted WQO, then a WQBEL is required. (Is  $B > WQO$ ?)
- c. The third trigger is activated after a review of other information determines that a WQBEL is required even though both MEC and B are less than the WQO. A limit is only required under certain circumstances to protect beneficial uses.

57. **Summary of RPA Data and Results.** The RPA was based on dry weather effluent monitoring data for Discharge E-001 from January 1999 through December 2001 for metals, selenium, cyanide, and organic pollutants. For dioxin TEQ, data from August 1995 to November 2001 were used for RPA. Based on the RPA methodology described above and in the SIP, the following constituents have been found to have reasonable potential to cause or contribute to an excursion above water quality objectives: copper, lead, mercury, nickel, silver, zinc, bis(2-ethylhexyl)phthalate, DDE, dieldrin, tributyltin and dioxin TEQ. Based on the RPA, numeric water quality based effluent limits are required to be included in the permit for these constituents. DDE and dieldrin were not detected in any of the Discharger's effluent samples, but all detection levels were above the lowest applicable WQO. However, background concentrations were above the adjusted WQO (trigger #2), therefore RP is affirmed and final limits are included with compliance based on the Minimum Levels in Appendix 4 of the SIP. These Minimum Levels were derived from data provided by State certified analytical laboratories in 1997 and 1998. For dioxin TEQ, only OCDD was measured in the Discharger's E-001 dry weather discharge, but the levels were below the WQO. However, the detection limits for most of the congeners were not low enough to determine compliance with the objective. Dioxin TEQ was detected in the Discharger's Southeast WPCP influent (up to 1.76 pg/L TEQ) and CSO discharges. Also, surveys of other POTWs in the region indicate that dioxin TEQ are present in POTW effluent above the WQO (trigger #3, other information, see Finding 62 for more detailed discussion). Therefore, based on the available information, RP is affirmed for dioxin TEQ.

58. **RPA Determinations.** The MEC from Discharge E-001 dry weather monitoring, WQOs, basis for the WQOs, background concentrations used and reasonable potential conclusions from the RPA are listed in the following table for all constituents analyzed. The RPA results for most of the constituents in the CTR (Nos. 17-126 except 38, 68,109 and 111) were not able to be determined because of the lack of background data, an objective, or effluent data. (Further details on the RPA can be found in the Fact Sheet.)

Constituent <sup>1</sup>	WQO (µg/L)	Basis <sup>2</sup>	MEC (µg/L)	Maximum Ambient Background Conc. (µg/L)	Reasonable Potential
Arsenic	36	BP, sw	5.1	2.22	No
Cadmium	9.3	BP, sw	5.21	0.13	No
Chromium	50	BP, sw,	9.2	4.4	No
Copper*	3.7	CTR, sw, T=0.83	33.3	2.45	Yes
Lead	5.6	BP, sw	14.9	0.8	Yes
Mercury*	0.025	BP, sw	0.169	0.006	Yes
Nickel*	7.1	BP, sw	8.2	3.5	Yes
Selenium*	5.0	NTR, sw	1.9	0.19	No
Silver	2.3	BP, sw	3.6	0.07	Yes
Zinc	58	BP, sw	364.8	4.6	Yes
Cyanide	1	NTR	All non-detect Detection limit = 10	Not available	No
TBT	0.01	BP, narrative	0.02	Not available	Yes
TCDD TEQ*	1.4x10 <sup>-8</sup>	CTR, BP	OCDD detected in effluent. In addition, dioxin TEQ is also detected in Southeast WPCP influent and wet	Not available	Yes

Constituent <sup>1</sup>	WQO (µg/L)	Basis <sup>2</sup>	MEC (µg/L)	Maximum Ambient Background Conc. (µg/L)	Reasonable Potential
			weather discharges		
Bis(2-ethylhexyl)Phthalate	5.9	CTR, hh	7.92	Not available	Yes
Dieldrin*	0.00014	CTR, hh	All non-detect Detection limit = 0.0019	0.000264	Yes <sup>3</sup>
4,4-DDE*	0.00059	CTR, hh	All non-detect Detection limit=0.0018	0.00069	Yes <sup>3</sup>
CTR #s 17-126 except 38, 68, 109 and 111 <sup>4</sup>	Various or NA	CTR	Non-detect, less than WQO, or no WQO	Less than WQO or Not Available	No or Undetermined

- \*Constituents on 303(d) list, TCDD TEQ applies to Toxicity Equivalent Quantity (TEQ) of 2,3,7,8 TCDD congeners based on the 1998 WHO toxicity equivalents factors.
- BP = Basin Plan; CTR = California Toxics Rule; sw = saltwater criteria; hh=human health criteria, H = hardness of 400 in mg/L as CaCO<sub>3</sub>; T = translator to convert dissolved to total copper.
- Dieldrin and DDE: RPA is based on B > WQO.
- Undetermined due to lack of background data, lack of objective, or lack of effluent data (See Fact Sheet Table 3 for full RPA results).

59. **RPA Results for Impairing Pollutants.** While TMDLs and WLAs are being developed, interim concentration limits are established in this permit for 303(d) listed pollutants in dry weather discharge from Discharge E-001 that have reasonable potential to cause or contribute to an excursion above the water quality standard. In addition, mass limits are required for bioaccumulative 303(d) listed pollutants that can be reliably detected. Constituents on the 303(d) list for which the dry weather Discharge E-001 RPA determined a need for effluent limitations are copper, mercury, nickel, dioxin TEQ, and dieldrin. This list also includes 4,4-DDE because although 4,4-DDE is not directly listed under the 303(d) list, it is a breakdown product of DDT, which is one of the pollutants impairing the central San Francisco Bay. Final determination of dry weather discharge from Discharge E-001 RPA for other constituents identified on the 303(d) list could not be performed due to lack of available effluent data, lack of background data or lack of an established water quality objective or criterion.

60. **Interim Limits with Compliance Schedules.**

- On April 25, 2002, the Discharger submitted a feasibility study, to demonstrate that it is infeasible to immediately comply with the WQBELs calculated according to Section 1.4 of the SIP for Waste E-001. The Board concurs that it is infeasible for the Discharger to immediately comply with the effluent limitations for copper, mercury, and dioxin TEQ. Therefore, this Order establishes compliance schedules for these pollutants. For limits based on CTR (e.g., copper), this Order establishes a five-year compliance schedule as allowed by the CTR and SIP. For limits based on the Basin Plan numeric objectives (e.g., mercury), this Order establishes a compliance schedule until March 31, 2010. The Basin Plan provides for a 10-year compliance schedule for implementation of measures to comply with new standards as of the effective date of those standards. This provision has been construed to authorize compliance schedules for new interpretations of existing standards, such as the numeric water quality objectives specified in the Basin Plan, resulting in more stringent limits than in the previous permit. Due to the adoption of the SIP, the Board has newly interpreted these objectives. As a result of applying the SIP

methodologies, the effluent limitations for some pollutants are more stringent than the prior permit. Accordingly, a compliance schedule is appropriate here for the new limits for these pollutants.

- b. Since the compliance schedules for CTR criteria and Basin Plan numeric water quality objectives both exceed the length of the permit which is 4 years and 11 months, therefore, these calculated final limits are intended as points of reference for the feasibility demonstration and are only included in the findings by reference to the fact sheet. Additionally, the actual final WQBELs for these pollutants will very likely be based on either the Site Specific Objective (SSO) or TMDL/WLA as described in other findings specific to each of the pollutants.

**Specific Pollutants**

61. Polynuclear Aromatic Hydrocarbons (PAHs). The RPA was conducted on individual PAHs, not total PAHs, as required by the SIP and CTR. The effluent monitoring data set is based on sampling results from 1998 to 2001. All of the concentrations were reported as non-detected with detection limits higher than the WQOs. Background concentrations were all below the WQOs. Based on the SIP, there is insufficient data to determine reasonable potential. Provision F.3 requires the Discharger to characterize the effluent for individual PAH constituents listed in Table 2 of the SMP with improved detection limits. Upon completion of the required effluent monitoring, the Board will use the gathered data to complete the RPA for all individual PAH constituents (as listed in the CTR) and determine if a water quality-based effluent limitation is required.

CTR Number	Constituent	WQO <sup>1</sup> (µg/L)	MEC <sup>2</sup> (µg/L)	B	RP <sup>3</sup>
60	Benzo(a)Anthracene	0.049	ND (Min. DL 0.84)	0.0053	U
61	Benzo(a)Pyrene	0.049	ND (Min. DL 1.21)	0.0025	U
62	Benzo(b)Fluoranthene	0.049	ND (Min. DL 1.65)	0.0046	U
64	Benzo(k)Fluoranthene	0.049	ND (Min. DL 1.14)	0.0015	U
73	Chrysene	0.049	ND (Min. DL 1.01)	0.0041	U
74	Dibenzo(a,h)Anthracene	0.049	ND (Min. DL 1.41)	0.0006	U
92	Indeno(1,2,3-cd) Pyrene	0.049	ND (Min. DL 1.35)	0.004	U

1. WQO based on the numeric WQO for protection of human health through consumption of organisms only.
2. All Discharger data was non-detect with minimum detection limit ranged from 0.84 to 1.65 µg/L.
3. U = Undetermined. All RPA results are undetermined due to detection levels higher than WQOs.
4. ND=Non-detect
5. DL=reported detection limit

62. 4,4 DDE and Dieldrin. Board staff could not determine an MEC for 4,4 DDE and dieldrin because it was not detected in the effluent, and all of the detection limits are higher than lowest WQO (Section 1.3 of the SIP). Board staff conducted the RPA by comparing the WQO with RMP ambient background concentration data gathered using research-based sample collection, concentration, and analytical methods. The RPA indicates that 4,4 DDE and dieldrin have reasonable potential, and numeric WQBELs are required.

63. The current 303(d) list includes central and lower San Francisco Bay as impaired for dieldrin and DDT. 4,4 DDE is chemically linked to the presence of DDT. The Board intends to develop TMDLs

that will lead towards overall reduction of dieldrin and 4,4-DDE. The water quality-based effluent limits specified in this Order may be changed to reflect the WLAs from this TMDL. To assist the Board in developing TMDLs, the Discharger has the option to participate in a special study, through the RMP, or other mechanism, to investigate the feasibility and reliability of different methods of increasing sample volumes to lower the detection limit for these compounds. Furthermore, the Discharger should submit the preferred method to U.S. EPA for approval. If analytical methodologies improve and the detection levels decrease to a point that show discharge concentrations above the limit in this Order, the Board will re-evaluate the Discharger's feasibility to comply with the limits and determine the need for a compliance schedule and interim performance limits at that time. Since dieldrin and 4,4-DDE are both bioaccumulative and on the 303(d) list due to fish tissue concentrations, there is no assimilative capacity, and no dilution credit was allowed in the final limit calculations.

64. Dioxin TEQ.

- a. The CTR establishes a numeric human health WQO of 0.014 picograms per liter (pg/L) for 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD) based on consumption of aquatic organisms.
- b. The preamble of the CTR states that California NPDES permits should use toxicity equivalents (TEQs) where dioxin-like compounds have reasonable potential with respect to narrative criteria. The preamble further states that U.S. EPA intends to use the 1998 World Health Organization Toxicity Equivalence Factor (TEF)<sup>1</sup> scheme in the future and encourages California to use this scheme in State programs. Additionally, the CTR preamble states U.S. EPA's intent to adopt revised water quality criteria guidance subsequent to their health reassessment for dioxin-like compounds.
- c. The SIP addresses toxic priority pollutants, including dioxins and furans. The SIP requires a limit for 2,3,7,8-TCDD if a limit is necessary, and requires twice per year monitoring for a minimum of 3 years by all major NPDES Dischargers for the other sixteen dioxin and furan compounds.
- d. The Basin Plan contains a narrative WQO for bio-accumulative substances:  
"Many pollutants can accumulate on particulates, in sediments, or bio-accumulate in fish and other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered."  
This narrative WQO applies to dioxin and furan compounds, based in part on scientific consensus that these compounds associate with particulates, accumulate in sediments, and bio-accumulate in the fatty tissue of fish and other organisms.
- e. The U.S. EPA's 303(d) listing determined that the narrative objective for bio-accumulative pollutants was not met because of the levels of dioxins and furans in the fish tissue. In addition, OCDD was detected in the Discharger's E-001 dry weather samples, and discharge data from the Discharger's CSO monitoring and surveys of other POTWs in the region indicate that there are a number of dioxins and furans present in the POTW effluent. Also, on March 10, 2000, the Discharger submitted a draft report titled Dioxin in San Francisco Wastewater. The report indicated that during the study period dioxin TEQ was detected in the Southeast Water Pollution Control Plant influent at concentrations greater than the water quality criterion (0.95 pg/L vs.

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



0.014 pg/L). Since dioxins and furans do not readily breakdown, there is a reasonable potential for the Discharger to contribute to the impairment of the narrative objective.

65. Tributyltin.

- a. The criterion for tributyltin is the USEPA chronic water quality criteria of 0.01 ug/l (CCC) and 0.37 ug/l (CMC) for the protection of marine water aquatic life. Based on best professional judgment, the application of these criteria is necessary to ensure protection of the Basin Plan's narrative objective for toxicity.
- b. Tributyltin was detected twice in the Discharger's effluent. Out of the four sample taken by the Discharger, two was non detect with detection limit greater than the chronic criteria. The maximum effluent concentration from the two remaining data points was 0.02 µg/L, which is greater than the chronic criterion. Therefore, there is a reasonable potential for the Discharger to contribute to the exceedance of the narrative objective.

66. Other organics. The Discharger has performed organics sampling once a year as required by the previous permit (Order No. 94-149). This sampling effort has covered most of the organic constituents listed in the CTR. This data set was used to perform the RPA for other organics. The full RPA is presented as an attachment in the Fact Sheet. In most cases (about 100 out of the 126 priority pollutants), reasonable potential cannot be determined because detection limits are higher than the lowest WQOs and/or ambient background concentrations are not available. The Discharger will continue to monitor for these constituents in the effluent and the receiving water using analytical methods that provide the best feasible detection limits. When sufficient data are available, a reasonable potential analysis will be conducted to determine whether to add numeric effluent limitations to the Order or to continue monitoring.

67. The Board recognizes that the SIP requirements relating to RPA and calculation of effluent limitation referenced in this permit do not specifically apply to dioxin TEQ and tributyltin because these pollutants are not in the CTR. However, Board staff finds the approach outlined in the SIP for other toxic pollutants is an appropriate and reasonable approach. As indicated above, based on available information, there was reasonable potential for dioxin TEQ and tributyltin to exceed the narrative WQO for bio-accumulative substances, so WQBELs are necessary.

68. Effluent RP Monitoring. This Order does not include effluent limitations for constituents that do not show a reasonable potential, but continued monitoring for many of them is required in the Provision of this Order. If concentrations of these constituents increase significantly, the Discharger will be required to investigate the source of the increases and establish remedial measures if the increases result in a reasonable potential to cause or contribute to an excursion above the applicable water quality standard.

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

### **Development of Effluent Limitations**

#### ***Interim Limits with Compliance Schedules.***

70. The Discharger has demonstrated infeasibility to meet the WQBELs calculated according to Section 1.4 of the SIP for copper, mercury and dioxin TEQ, thereby complying with the infeasibility requirements in Section 2.1 of the SIP. This Order establishes compliance schedules for these pollutants that extend beyond one year. Pursuant to the SIP, and 40 CFR 122.47, the Board shall establish interim numeric limitations and interim requirements to control the pollutant. Except as

authorized in the SIP and discussed elsewhere in this Order, this Order establishes interim limits for these pollutants based on the previous permit limits or plant performance, whichever is more stringent. Specific basis for these interim limits are described in the following findings for each pollutant. This Order also establishes interim requirements in a provision for development and/or improvement of a Pollution Prevention Program to reduce pollutant loadings to the treatment plant, and for submittal of annual reports on this Program. The Discharger has committed to support development of TMDLs for pollutants which its discharge may be contributing to the impairment. BACWA, which the Discharger is a member of, has entered into a Memorandum of Understanding with the Board to accelerate development of these TMDLs to reduce overall loading of these pollutants to the Bay.

### ***Copper***

71. *CTR Copper Water Quality Objectives.* Copper is listed on the 303(d) list as a pollutant that is impairing central and lower San Francisco Bay. The saltwater objective for copper in the adopted CTR is 3.1 µg/L dissolved copper. Included in the CTR are translator values to convert the dissolved objectives to total objectives. The Discharger may perform a translator study to determine a more site-specific translator. The SIP, Section 1.4.1, and the June 1996 U.S. EPA guidance document, entitled *The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion*, describe this process and provides guidance on how to establish a site-specific translator.
72. *Water-Effects Ratios.* The CTR provides for adjusting the criteria by deriving site-specific objectives through application of the water-effect ratio (WER) procedure. The U.S. EPA includes WERs to assure that the metal criteria are appropriate for the chemical conditions under which they are applied. A WER accounts for differences between a metal's toxicity in laboratory dilution water and its toxicity in water at the site. The U.S. EPA's February 22, 1994 Interim Guidance on Determination and Use of Water Effects Ratios for Metals superseded all prior U.S. EPA guidance on this subject. If the Discharger decides to pursue SSOs, they shall be developed in accordance with procedures contained in Section 5.2 of the SIP.
73. *Interim Effluent Limitation for Copper.* For Discharge E-001 during dry weather, this Order contains a limit for copper WQBEL because the 1998 303(d) list includes central and lower San Francisco Bay as impaired by copper, and because, based on the RPA, staff determined that there is reasonable potential for exceedances in the WQO for copper in Discharge E001 dry weather discharges. The Discharge E-001 dry weather final WQBEL for copper will be based on the SSO or WLA contained in a TMDL if one is completed. The SIP requires the interim numeric effluent limit for the pollutant be based on either current treatment facility performance, or on the previous Order's limitation, whichever is more stringent. This Order establishes an interim daily maximum copper limit of 37 µg/L for Discharge E-001 during dry weather.
74. *Treatment Plant Performance and Compliance Attainability for Copper.* Effluent concentrations during the recent three years (January 1998 - December 2001) range from 4.9 to 33.3 µg/L (136 samples). The effluent discharged to lower San Francisco Bay has been in consistent compliance with the previous permit limit of 37 µg/L.

### ***Mercury***

75. *Mercury Water Quality Objectives.* Both the Basin Plan and CTR include objectives that govern mercury in the receiving water. The Basin Plan specifies objectives for the protection of aquatic life of 0.025 µg/L as a 4-day average and 2.1 µg/L as a 1-hour average. The CTR specifies a long-term average criterion for protection of human health of 0.051 µg/L.

76. *Mercury TMDL.* The current 303(d) list includes the receiving water as impaired by mercury, due to high mercury concentrations in the tissue of fish from the Bay. Methyl-mercury is a persistent bioaccumulative pollutant. The Board intends to establish a TMDL that will lead towards overall reduction of mercury mass loadings into the San Francisco Bay watershed. The final mercury limitation will be based on the Discharger's WLA in the TMDL, and the permit will be revised to include the final water quality-based effluent limit as an enforceable limitation.
77. *Mercury Control Strategy.* Board staff is developing a TMDL to control mercury levels in San Francisco Bay. The Board, together with other stakeholders, will cooperatively develop source control strategies as part of TMDL development. Municipal discharge point sources are not the most significant mercury loadings to the Estuary according to the Board's staff report titled "Watershed Management of Mercury in the San Francisco Bay Estuary: Total Maximum Daily Load Report to the U.S. EPA", dated June 30, 2000. Therefore, the currently preferred strategy is applying interim mass loading limits to point source discharges while focusing mass reduction efforts on other more significant and controllable sources. While the TMDL is being developed, the Discharger will cooperate in maintaining ambient receiving water conditions by complying with performance-based mercury mass emission limits. Therefore, this Order includes interim concentration and mass loading effluent limitations for mercury for Waste E-001 during dry weather. The Discharger is required to implement source control measures and cooperatively participate in special studies as described below.
78. *Interim Concentration-Based Mercury Effluent Limitation.* This Order establishes a Discharge E-001 dry weather interim monthly average limit for mercury based on staff's analysis of the performance of over 20 secondary treatment plants in the Bay Area. This analysis is described in a Board staff report titled "Staff Report, Statistical Analysis of Pooled Data from Region-wide Ultra-clean Mercury Sampling", dated June 11, 2001. The objective of the analysis is to provide an interim concentration limit that characterizes regional facility performance using only ultra-clean data and compliance of which will ensure no further degradation of the receiving water quality resulting from the discharge. The conclusions of the report demonstrate that the statistical performance based mercury limit for a secondary plant is 87 ng/L, and for an advanced secondary plant is 23 ng/L.
79. The Discharger designed and operates the Southeast Water Pollution Control Plant as a secondary-level treatment plant; therefore the value of 87 ng/L is an appropriate interim limit. Based on Board staff's report titled "Watershed Management of Mercury in the San Francisco Bay Estuary: Total Maximum Daily Load Report to U.S. EPA," dated June 30, 2000, municipal sources are a very small contributor of the mercury load to the Bay. Because of this, it is unlikely that the TMDL will require reduction efforts beyond the source controls required by this permit.
80. *Interim Mass-Based Mercury Effluent Limitation.* This Order establishes an interim mercury mass-based effluent limitation for Discharge E-001 during dry weather. Based on treatment plant performance at the 99.87 percentile value (or average + 3\* standard deviation) from effluent data gathered from April 1998 through April 2001, the total mass loadings were calculated using a 12-month moving average. This mass based effluent limitation maintains current loadings until a TMDL is established and is consistent with state and federal antidegradation and antibacksliding requirements. The final mass based effluent limitation will be based on the WLA derived from the mercury TMDL.
81. *Treatment Plant Performance and Compliance Attainability.* The Discharger started using ultra-clean method for mercury analysis in 1998. Dry weather effluent Discharge E-001 mercury concentrations from January 1999 through December 2001 ranged from 3 to 169 ng/L (136 samples). The dry

weather Waste E-001 discharged to lower San Francisco Bay has exceeded the interim limit of 87 ng/L only 4 times out of the 136 sampling events. Therefore, it is the Board staff's best professional judgment that the interim limit of 87 ng/L is attainable for the Discharger.

82. *Mercury Source Control and Special Studies.* This Order requires the Discharger to develop and implement a source control program. The source control program should maximize the Discharger's control over mercury sources in its influent, and should optimize costs and benefits. The Discharger has voluntarily implemented an aggressive mercury source control program for several years. This program has resulted in San Francisco being one of the first cities in the United States to place a regulatory ban on the sale of and discourage the use of mercury fever thermometers. Considerable work has been performed to quantify mercury loads from dentists, the primary controllable source of mercury in the Discharger's influent, and to educate the dentist community to further reduce waste and emissions. The Discharger shall maintain their existing program with continued outreach to the dentist community. The Discharger should continue cooperating with other municipal Dischargers in broader efforts to maximize mercury source control and pollution prevention efforts, assess alternatives for reducing mercury loading to receiving waters, and protect their beneficial uses. In addition, the Discharger's treatment of combined sewage during wet weather provides for additional treatment of stormwater, thereby providing additional treatment of mercury. This Order contains a time schedule for the mercury source control program.

### ***Dioxin TEQ***

83. *Numerical Water Quality Objective.* The CTR establishes a numeric human health WQO of 0.014 picograms per liter (pg/L) for 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD) based on consumption of aquatic organisms. A Finding above discusses the use of TEQ's for other dioxin-like compounds, the RPA procedures, and SIP requirements. Staff used TEQs to translate the narrative WQOs to numeric WQOs for the other 16 congeners.
84. This Order establishes that a final limit for dioxin TEQ will be based on the waste load allocated to the Discharger from the TMDL. The detection limit used by the Discharger is insufficient to determine the concentration of the dioxin congeners. Therefore, an interim limit for dioxin TEQ cannot be calculated. A compliance schedule is warranted because it is infeasible for the Discharger to comply with a new, more stringent WQBEL calculated pursuant to the SIP. The following findings describe the factors considered for these requirements.
- a. The Board recognizes that the primary source of dioxins and furans in the Bay Area is from air emissions from combustion sources. The root cause of the dioxin detections in the Discharger's effluent are not within the Discharger's control, and the next step of treatment will be overly burdensome and not cost effective relative to the benefits. The detections are caused by dioxins and furans compounds in domestic waste and storm water. Even with this technology, dioxin and furans concentrations cannot be further removed without significant upgrades to the facility. Based on preliminary data, the Discharger's mass contribution is minor compared to other inputs to the Bay. This cost for further reduction seems overly burdensome and not cost effective at this time.
  - b. The U.S. EPA's 303(d) listing highlights the need for a region-wide cross media assessment of the problem. This integrated assessment should result in a more balanced, and more effective water quality based limitation for the Discharger.
  - c. To assist in developing the TMDL, the Discharger has already completed an extensive special study of dioxin and will investigate the feasibility and reliability of different methods of

increasing sample volumes to lower the detection limits for these dioxin and furan compounds. Furthermore, the Discharger should submit the preferred method to the U.S. EPA for approval.

#### 85. Basis for Compliance Timeframe for Dioxin and Furans

- a. This Order specifies a 10-year compliance time schedule until June 30, 2012. Both the SIP and the Basin Plan authorize compliance schedules if it is infeasible for the Discharger to meet more stringent WQBELs. The SIP states that the “Discharger shall be deemed out of compliance with an effluent limitation if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported ML [minimum level].” This implies that compliance will be determined at the ML when the effluent limitation is below the ML. However, there is no ML for dioxins and furans in the SIP. As a result, the Discharger’s compliance with the new calculated WQBEL for dioxins and furans cannot be determined at this time. In such cases, the SIP and Basin Plan allow for a compliance schedule if the Discharger provides satisfactory justification. On April 25, 2002, the Discharger submitted feasibility studies to evaluate immediate compliance with the new calculated WQBELs. Based on Board staff’s evaluation, the Discharger satisfies the conditions under which to grant a compliance schedule.
- b. There is no interim limitation for dioxin TEQ specified in this Order because there is insufficient data with low enough detection limits. Instead, this Order requires the Discharger to investigate lowering the detection limit of dioxin and furan congeners, and to conduct additional dioxin TEQ monitoring for interim limit calculation purposes because:
  - i. An interim dry weather limitation for Discharge E-001 is necessary because both the CTR and the State Implementation Policy require a numeric interim limit when the compliance schedule exceeds 1 year. The SIP allows for the interim limit to be based on facility performance or existing permit limitations, which ever is more stringent.
  - ii. Current facility performance is represented by 12 sampling events taken at Discharge E-001 during dry weather from August 1995 through November 2000. OCDD was detected three times during this period.
  - iii. Wet weather facility performance is represented by 16 sampling events taken at Discharge E-002 from December 1995 through March 2001. Dioxin TEQ was detected at 1.07 pg/L.
  - iv. On March 10, 2000, the Discharger submitted a draft report titled *Dioxin in San Francisco Wastewater*. The report indicated that, during the study period dioxin TEQ was detected in the Southeast Water Pollution Control Plant influent at concentrations greater than the water quality criterion (0.95 pg/L vs. 0.014 pg/L).
  - v. Because the wet weather concentrations are about a hundred times above the water quality criterion and because dioxin TEQ is detected in the facility’s dry weather influent, it is reasonable to use these data to conclude that the discharge has a reasonable potential to cause or contribute to exceedance of the standard. However, because they are estimated values, SIP excludes the use of wet weather data for CSO facilities, and because the dry weather sampling events are all non detect, these data are not sufficient to derive a performance based interim limit.

### ***Bis(2-ethylhexyl)phthalate***

86. Bis(2-ethylhexyl)phthalate. Bis(2-ethylhexyl)phthalate was detected twice in the Discharger's dry weather Discharge E-001 effluent, 7.9 µg/L and 1.3 µg/L. Where the 7.9 µg/L is greater than the WQO of 5.9 µg/L. Therefore, reasonable potential is confirmed under the first trigger, above. Therefore, an interim limit is required. Since there are only two detected effluent data points available it is not possible to perform a statistical analysis to determine an Interim Performance Based Effluent Limit (IPBEL). Without an IPBEL, or previous permit limit, no interim limitation can be established. This order requires the Discharger to conduct accelerated monitoring to gather data for interim limit calculation.

### ***Tributyltin***

87. Tributyltin. Tributyltin was detected twice in Discharge E-001 dry weather effluent. The observed MEC is at a concentration of 0.02 µg/L, which is greater than the USEPA criterion of 0.01 µg/L. Therefore, reasonable potential is confirmed under the first trigger, above. There are no ambient background data on tributyltin in the receiving water, and it is not possible to calculate final WQBELs for this pollutant. Therefore, an interim limit is required. Since there are only two detected effluent data points available it is not possible to perform a statistical analysis to determine an IPBEL. In addition, the previous permit does not contain an effluent limit for tributyltin. Without an IPBEL, or previous permit limit, no interim limitation can be established. This order requires the Discharger to conduct accelerated monitoring to gather data for interim limit calculation.

### ***Final Effluent Limit.***

#### ***Lead***

88. Water Quality Objective. The Basin Plan contains numeric WQOs for total lead of 5.6 µg/L and 140 µg/L for chronic and acute toxicity, respectively. No translator value is needed.
89. Effluent Limitations. The final WQBELs for lead were calculated pursuant to procedures in the SIP, and are calculated as 89 µg/L and 36 µg/L daily maximum and monthly average, respectively (see the attached Fact Sheet for details).
90. Treatment Plant Performance and Compliance Attainability. The Discharge E-001 dry weather MEC reported for lead since 1999 has been 14.9 µg/L. The monthly average effluent limit (AMEL), calculated as required by Section 1.4 of the SIP, is 36 µg/L, as noted above. Based on the comparison of the MEC to the AMEL, the Discharger can comply with the final WQBELs.

#### ***Nickel***

91. Water Quality Objective. The Basin Plan contains numeric WQOs for total nickel of 7.1 µg/L and 140 µg/L for chronic and acute toxicity, respectively. No translator value is needed.
92. Effluent Limitations. The final WQBELs for nickel were calculated pursuant to procedures in the SIP, and are calculated as 59 µg/L and 34 µg/L daily maximum and monthly average, respectively (see the attached Fact Sheet for details). These WQBELs may be revised in the future based on the TMDL/WLA or the results of the SSO and translator studies. The current 303(d) list includes Lower San Francisco Bay as impaired by nickel. The Discharger is participating in impairment assessment studies aimed at gathering additional data on nickel concentrations in Lower San Francisco Bay. The Board has considered these studies in its 303(d) listing decision in 2001, and when considering any SSO proposed for nickel The nickel WQBEL would be developed consistent with SIP procedures in Section 5.2 if the impairment studies support adoption of a SSO. On November 28, 2001, the Board considered a staff report on Proposed Revisions to Section 303(d) List and Priorities for Development of Total Maximum Daily Loads (TMDLs) for the San Francisco Bay Region and authorized the Executive Officer to transmit proposed revisions to the State Board. Nickel is proposed to be de-

listed from all segments of the San Francisco Estuary north of the Dumbarton Bridge including Lower San Francisco Bay but excluding the tidal portion of the mouth of Petaluma River.

93. Treatment Plant Performance and Compliance Attainability. The dry weather Discharge E-001 MEC reported for nickel since January 1999 has been 8.2 µg/L. The monthly average effluent limit (AMEL), calculated as required by Section 1.4 of the SIP, is 34 µg/L, as noted above. Based on the comparison of the MEC to the AMEL, the Discharger can comply with the final dry weather Discharge E-001 WQBELs.

#### ***Silver***

94. Water Quality Objective. The Basin Plan contains a numeric WQO for total silver of 2.3 µg/L. No translator value is needed.
95. Effluent Limitations. The calculated final dry weather Discharge E-001 WQBELs for silver are an average monthly value of 12 µg/L and daily maximum value of 22 µg/L (See the attached Fact Sheet for details).
96. Treatment Plant Performance and Compliance Attainability. The dry weather Discharge E-001 MEC since January 1999 has been 3.6 µg/L. Based on the comparison of the 3.6 µg/L MEC and the 11.8 µg/L AMEL calculated based on Section 1.4 of the SIP, the Discharger can comply with the final WQBELs.

#### ***Zinc***

97. Water Quality Objective. The Basin Plan contains a numeric WQO for total zinc of 58.0 µg/L as 24-hour averaged. No translator value is needed.
98. Effluent Limitations: The calculated final dry weather Discharge E-001 WQBELs for zinc are 720 µg/L and 490 µg/L for daily maximum and monthly average, respectively (See the attached Fact Sheet for details).
99. Treatment Plant Performance and Compliance Attainability. The dry weather Discharge E-001 MEC since January 1999 has been 364.8 µg/L. Based on the comparison of the 364.8 µg/L MEC and the 490 µg/L AMEL calculated based on Section 1.4 of the SIP, the Discharger can comply with the final WQBELs.

#### ***Bis(2-ethylhexyl)phthalate***

100. No dilution credit is allowed in the calculation of effluent limitations for bis(2-ethylhexyl)phthalate, a bioaccumulative pollutant that is not on the 303(d) list until there is data and information to demonstrate the assimilative capacity in the receiving water for this pollutant and to justify a dilution credit. This cautious approach is appropriate because of the greater potential for adverse impacts to biota from bioaccumulative pollutants as compared to non-bioaccumulative pollutants. Waiting for a 303(d) listing before denying dilution credits would allow impairment to occur which is contrary to the goal of water quality based permits. The Discharger is required, by the August 6<sup>th</sup> letter, to collect ambient background data to characterize the concentration levels of bis(2-ethylhexyl)phthalate in the Bay. The Regional Monitoring Program also periodically collects sediment and fish tissue data from the main channel of the Bay. The Discharger may supplement these data with data closer to its outfall. Once the data are collected, Board staff can reassess the potential assimilative capacity, and establish dilution credits if appropriate.

Section 1.4.2 of the SIP states that the Regional Board has the discretion to allow mixing zone and dilution credit in accordance with the provisions of the section. Section 1.4.2.2.B states that:

*“The RWQCB shall deny or significantly limit a mixing zone and dilution credit as necessary to protect beneficial uses, meet the conditions of this Policy, or to comply with other regulatory requirements. Such situations may exist based upon the quality of the discharge, hydraulics of the water body, or the overall discharge environment (including water column chemistry, organism health, and potential for bioaccumulation). For example, in determining the extent of or whether to allow a mixing zone and dilution credit, the RWQCB shall consider the presence of pollutants in the discharge that are carcinogenic, mutagenic, teratogenic, persistent, bioaccumulative, or attractive to organisms. In another example, the RWQCB shall consider, if necessary to protect beneficial uses, the level of flushing in water bodies in such lakes, reservoirs, enclosed bays, estuaries or other water bodies types where pollutants may not be readily flushed through the system. In the case of multiple mixing zones, proximity to other outfalls shall be carefully considered to protect beneficial uses.”*

**Evidence of Bioaccumulation for Bis(2-ethylhexyl)phthalate**

Bis(2-ethylhexyl)phthalate is a bioaccumulative pollutant, similar to other pollutants currently on the 303(d) list as impairing the Bay. Generally, bioaccumulation is most likely to occur with persistent and very hydrophobic chemicals; that is, those with log K<sub>ow</sub> values from 5 to 8 (U.S. EPA Bioaccumulation and Bioconcentration Screening, page 7.4). See the table below for a comparison of these chemical characteristics.

Chemical	Log K <sub>ow</sub>	303(d) Listed (yes or no)
bis(2-ethylhexyl)phthalate	5.1	No
4-4 DDE	5.7	Yes
Dieldrin	4.6	Yes
Aroclor-1260	7.1	Yes

Based on the SIP and the similar bioaccumulative characteristics to other pollutants already listed as impairing the Bay, Board finds that it is appropriate and necessary to deny mixing zone and dilution credits for bis(2-ethylhexyl)phthalate.

**Whole Effluent Acute Toxicity**

- 101. This Order includes effluent limits for whole-effluent acute toxicity. Compliance evaluation is based on 96-hour flow-through bioassays. U.S. EPA promulgated updated test methods for acute and chronic toxicity bioassays on October 16, 1995, in 40 CFR Part 136. Dischargers have identified several practical and technical issues that need to be resolved before implementing the new procedures, referred to as the 4<sup>th</sup> Edition. The primary unresolved issue is the use of younger, possibly more sensitive fish, which may necessitate a reevaluation of permit limits. SWRCB staff recommended to the Board that new or renewed permit holders be allowed a time period in which new laboratories can become proficient in conducting the new tests. A provision is included in this Order granting the Discharger 12 months to implement the new test method. In the interim, the Discharger is required to continue using the current test protocols.



### **Whole Effluent Chronic Toxicity**

102. 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." In 1986, the Board initiated the Effluent Toxicity Characterization Program (ETCP), with the goal of developing and implementing toxicity limits for each Discharger based on actual characteristics of both receiving waters and waste streams. Dischargers were required to monitor their effluent using critical life stage toxicity tests to generate information on toxicity test species sensitivity and effluent variability to allow development of appropriate chronic toxicity effluent limitations. In 1988 and 1991, selected Dischargers conducted two rounds of effluent characterization. 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. The Board adopted Order No. 92-104 in August 1992 amending the permits of eight Dischargers to include numeric chronic toxicity limits. 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 Board will have to reconsider the order. In the meantime, permits now 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).
- b. *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 on analysis of Discharger routine monitoring and ETCP results, and in accordance with current 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 on BPJ as indicated in the Basin Plan.
- c. *Discharge Monitoring.* The Discharger initiated another round of ETCP screening in May through July 2001. Results from the May and June 2001 test events indicated that the three most sensitive species to the Southeast effluent were the invertebrates *Mytilus sp.* (mussel), *Haliotis rufescens* (abalone), and *Strongylocentrotus purpuratu* (echinoderm/urchin). Literature research indicates that all three species are sensitive to ammonia, with both abalone and echinoderms being more sensitive to ammonia than mussels. In July 2001, January, and February 2002, the Discharger conducted another three rounds of screening. This time Toxicity identification evaluation (TIE) manipulations were used to determine whether or not ammonia contributed to the toxic responses of abalone and urchin to the Southeast effluent. Parallel screening tests were run using ammonia stripped effluent and ammonia stripped effluent with ammonia spike. The results concluded that ammonia contributed to the toxic response of all three species. In addition, it also showed that Echinoderm development appears to be most sensitive to Southeast effluent following zeolite treatment to remove ammonia toxicity and should replace the current use of bivalves for NPDES compliance chronic toxicity testing.
- d. *Permit Requirements.* In accordance with U.S. EPA and SWRCB Task Force guidance, and based on BPJ, this Permit includes requirements for chronic toxicity monitoring based on the Basin Plan narrative toxicity objective. This Permit includes the Basin Plan narrative toxicity objective as the applicable effluent limit, implemented via monitoring with numeric values as "triggers" to initiate accelerated monitoring and to initiate a chronic toxicity reduction evaluation (TRE).

- e. *Permit Reopener*. The Board will consider amending this Permit to include numeric toxicity limits if the Discharger fails to aggressively implement all reasonable control measures included in its approved TRE work plan, following detection of consistent significant non-artifactual toxicity.

### **Pollution Prevention and Pollutant Minimization**

103. The Discharger has an approved Pretreatment Program and has established a Pollution Prevention Program under the requirements specified by the Board in the Basin Plan.
- a. Section 2.4.5 of the SIP specifies under what situations and for which priority pollutant(s) (i.e., reportable priority pollutants) the Discharger shall be required to conduct a Pollutant Minimization Program in accordance with Section 2.4.5.1.
  - b. There may be some redundancy required between the Pollution Prevention Program and the Pollutant Minimization Program.
  - c. Where the two programs' requirements overlap, the Discharger is allowed to continue/modify/expand its existing Pollution Prevention Program to satisfy the Pollutant Minimization Program requirements.
  - d. For copper and mercury, the Discharger will conduct any additional source control measures in accordance with California Water Code 13263.3 and Section 2.1 of the SIP. Section 13263.3 establishes a separate process outside of the NPDES permit process for preparation, review, approval, and implementation of such source control and pollutant minimization measures.
104. The Board staff intends to require an objective third party to establish model programs, and to review program proposals and reports for adequacy. This is to encourage use of Pollution Prevention and does not abrogate the Board's responsibility for regulation and review of the Discharger's Pollution Prevention Program. Board staff will work with the Discharger and other POTWs to identify the appropriate third party for this effort.

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

105. *Insufficient effluent and ambient background data*. Staff's review of the effluent and ambient background monitoring data found that there were insufficient data to determine reasonable potential and calculate numeric WQBELs for most pollutants listed in the SIP.
106. On August 6, 2001, the Board sent a letter to all permitted dischargers, including the Discharger, pursuant to Section 13267 of the California Water Code requiring the submittal of effluent and receiving water data on priority pollutants. This formal request for technical information addresses the insufficient effluent and ambient background data; and the dioxin study. BACWA submitted the sampling plan on October 1, 2001. An interim report presenting the data is due May 18, 2003, with the final report due 180 days prior to expiration of the permit.
107. The letter (described above) is referenced throughout the permit as the "August 6, 2001 Letter". The requirements of this letter are incorporated as a provision in this Order.

### **Optional Studies**

108. *Optional Mass Offset*. This Order contains requirements to prevent further degradation of the impaired water body. Such requirements include the adoption of interim mass limits that are based on treatment plant performance, provisions for aggressive source control, feasibility studies for wastewater reclamation, and treatment plant optimization. After implementing these efforts, the Discharger may find that further net reductions of the total mass loadings of the 303(d)-listed

pollutants to the receiving water can only be achieved through a mass offset program. This Order includes an optional provision for a mass offset program.

109. *Copper Translator Study.* The Basin Plan does not establish a water quality objective for copper. Therefore, the CTR water quality criterion for copper, 3.1 µg/L dissolved, is the applicable standard. Since NPDES permit limits must be expressed as a total recoverable metal value, a translator is required to convert the dissolved objective into a total recoverable objective. Pursuant to Appendix 3 of the SIP, the default translator used in this permit is 0.83, which converts the 3.1 µg/L dissolved to 3.7 µg/L total. An optional copper translator study is included in this permit to encourage the Discharger to develop a local translator value for copper in place of the default translator value established in the SIP, 0.83.
110. *Odor:* The Discharger has received odor complaints from various locations in its service area. Standard Provisions Section A.1. of this Order specifies that “neither the treatment nor the discharge of pollutants shall create a pollution, contamination, or nuisance as defined in Section 13050 of the California Water Code.” Odors fall under the definition for nuisance. To address this problem, this Order contains a provision requiring the Discharger to revise and update its Odor Control Master Plan to include source identification, mitigation, and monitoring.

#### **Other Discharge Characteristics and Permit Conditions**

111. *Pretreatment Program:* The Discharger has implemented and is maintaining a U.S. EPA approved pretreatment program in accordance with Federal pretreatment regulations (40 CFR 403) and the requirements specified in Attachment E “Pretreatment Requirements” and its revisions thereafter.
112. *O & M Manual.* An Operations and Maintenance Manual is maintained by the Discharger for purposes of providing plant and regulatory personnel with a source of information describing all equipment, recommended operation strategies, process control monitoring, and maintenance activities. In order to remain a useful and relevant document, the manual shall be kept updated to reflect significant changes in treatment facility equipment and operation practices.
113. *NPDES Permit.* This Order serves as a 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. In addition, adoption of this Order is exempt from CEQA pursuant to California Code of Regulations, Title 11, section 15301, involving negligible or no expansion of use of an existing facility.
114. *Notification.* The Discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharge and have been provided an opportunity to submit their written views and recommendations.
115. *Public Hearing.* 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 Discharger shall comply with the following:

#### **A. DISCHARGE PROHIBITIONS**

1. Discharge of treated wastewater at a location or in a manner different from that described in this Order is prohibited.
2. Dry weather discharge from Discharge E-001 where the wastewater does not receive an initial dilution of at least 10:1 is prohibited.
3. Discharge of Wastes 002 and 003 and CSO-009 through CSO-043 outside of the wet weather period as defined in Finding 5.a is prohibited.
4. The bypass or overflow of untreated or partially treated wastewater to waters of the State, either at the treatment plant or from the collection system or pump stations tributary to the treatment plant, is prohibited except during a wet weather day.
5. Degradation of harvestable shellfish in the area as a result of Discharge E-001 dry weather discharge is prohibited.
6. The discharge of average dry weather flows greater than 85.4 mgd is prohibited. The Discharger shall determine the average dry weather flow over three consecutive dry weather months each year.

## B. EFFLUENT LIMITATIONS

### Conventional Pollutants

1. Dry weather discharge from Discharge E-001 (Discharge from Southeast Water Pollution Control Plant's deep water outfall) shall not exceed the following limits:

a.	Constituent	Units	Monthly Average	Weekly Average	Daily Maximum
i	5-day Biochemical Oxygen Demand (BOD <sub>5</sub> ) mg/L		30	45	
ii	Total Suspended Solids (TSS)	mg/L	30	45	
iii	Oil & Grease	mg/L	10		20
iv	Settleable Matter	ml/L-hr	0.1		0.2

- b. pH: The pH of the effluent shall not exceed 9.0 nor be less than 6.0.

When the Discharger conducts continuous pH monitoring, the Discharger shall be in compliance with the pH limitation specified herein, provided that all of the following conditions are satisfied: (i) pH is monitored continuously; (ii) The total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and (iii) No individual excursion from the range of pH values shall exceed 60 minutes.

- c. 85 Percent Removal, BOD<sub>5</sub> and TSS: The arithmetic mean of the 5-day biochemical oxygen demand (BOD<sub>5</sub> 20°C) and total suspended solids (TSS) concentrations, for effluent samples collected in each calendar month shall not exceed 15 percent of the arithmetic mean of the respective values, for influent samples collected at approximately the same times during the same period.
- d. Fecal Coliform Bacteria: The treated wastewater, at some point in the treatment process prior to discharge, shall meet the following limits of bacteriological quality:

- i. The 30-day moving median value for fecal coliform density in final effluent samples shall not exceed 500 Colony Forming Units (CFU)/100 ml, nor shall more than 10% of the samples in any 30-day period equal or exceed 1100 CFU/100 ml.
- e. Total Chlorine Residual: 0.0 mg/L as an instantaneous maximum.

This requirement means that total chlorine residual shall not be greater than the limit of detection in standard test methods as defined in the latest U.S. EPA approved edition of *Standard Methods for the Examination of Water and Wastewater*. The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine and sodium bisulfite dosage (including a safety factor) and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Board staff will conclude that these false positive chlorine residual exceedances are not violations of this permit limit.

2. Discharge E-001(wet weather), and Discharges E-002 through E-006 shall not exceed the following limits:

- a. Fecal Coliform Bacteria: The 30-day moving median value for fecal coliform density in final effluent samples shall not exceed 500 CFU/100 ml, nor shall more than 10% of the sample equal or exceed 1100 CFU/100ml.
- b. Total Chlorine Residual: 0.0 mg/L as an instantaneous maximum.

This requirement means that total chlorine residual shall not be greater than the limit of detection in standard test methods as defined in the latest U.S. EPA approved edition of *Standard Methods for the Examination of Water and Wastewater*. The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine and sodium bisulfite dosage (including a safety factor) and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Board staff will conclude that these false positive chlorine residual exceedances are not violations of this permit limit.

### **Toxic Pollutants**

3. *Whole Effluent Acute Toxicity:*

- a. **Requirements for Southeast Water Pollution Control Plant:** Representative samples of the effluent (Dry Weather Discharge E-001) shall meet the following limits for acute toxicity. Compliance with these limits shall be achieved in accordance with Provision F.8 of this Order.

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

- 1) an 11-sample median value of not less than 90 percent survival <sup>[b(1)]</sup> ; and
- 2) an 11-sample 90th percentile value of not less than 70 percent survival <sup>[b(2)]</sup> .

These acute toxicity limits are further defined as follows:

- 1) 11-sample median limit:  
Any bioassay test showing survival of 90 percent or greater is not a violation of this limit. A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit, if five or more of the past ten or fewer bioassay tests also show less than 90 percent survival.

- 2) 90th percentile limit:  
Any bioassay test showing survival of 70 percent or greater is not a violation of this limit. A bioassay test showing survival of less than 70 percent represents a violation of this effluent limit, if one or more of the past ten or fewer bioassay tests also show less than 70 percent survival.
- 3) If the Discharger demonstrates to the satisfaction of the Executive Officer that toxicity exceeding the levels cited above is caused by ammonia and that the ammonia in the discharge is not adversely impacting receiving water quality or beneficial uses, then such toxicity does not constitute a violation of this effluent limit.

b. **Requirements for North Point Wet Weather Facility and Southeast Water Pollution Control Plant Quint Street Outfall:** Representative samples of the effluent (E-002 and E-003) shall achieve a single sample maximum of not less than 70% survival. Acute toxicity testing shall be conducted on the next subsequent wet weather event if survival falls below 70%.

4. *Chronic Toxicity:*

Representative samples of effluent (Effluent Station Dry Weather E-001) shall meet the following requirements for chronic toxicity. Compliance with the Basin Plan narrative chronic toxicity objective shall be achieved in accordance with Provision F.9 of this Order and shall be demonstrated according to the following tiered requirements based on results from representative samples of the treated final effluent meeting test acceptability criteria:

- i. Routine monitoring;
- ii. Accelerated monitoring after exceeding a three sample median value of 10 chronic toxicity<sup>2</sup> (TUc) or a single sample maximum of 20 TUc or greater. Accelerated monitoring shall consist of monitoring at frequency intervals of one half the interval given for routine monitoring in the SMP of this Order;
- iii. Return to routine monitoring if accelerated monitoring does not exceed either “trigger” in “ii”, above;
- iv. Initiate approved toxicity identification evaluation/toxicity reduction evaluation (TIE/TRE) work plan if accelerated monitoring confirms consistent toxicity above either “trigger” in “ii”, above;
- v. Return to routine monitoring after appropriate elements of TRE work plan are implemented and either the toxicity drops below “trigger” level in “ii”, above or, based on the results of the TRE, the Executive Officer authorizes a return to routine monitoring.

5. *Toxic Substances:* The combined effluent (Dry Weather Discharge E-001 as defined in the attached Self-Monitoring Program) shall not exceed the following limits (1):

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<sup>2</sup> A TUc equals 100 divided by the no observable effect level (NOEL). The NOEL is determined from IC, EC, or NOEC values. Monitoring and TRE requirements may be modified by the Executive Officer in response to the degree of toxicity detected in the effluent or in ambient waters related to the discharge. Failure to conduct the required toxicity tests or a TRE within a designated period shall result in the establishment of effluent limitations for chronic toxicity.

<u>Constituent</u>	<u>Daily Max</u>	<u>Monthly Average</u>	<u>Interim Daily Maximum</u>	<u>Interim Monthly Average</u>	<u>Units</u>	<u>Notes</u>
Copper			37		µg/L	(1), (2)
Mercury				0.087	µg/L	(1), (3), (4)
Lead	89	36			µg/L	(1)
Nickel	59	34			µg/L	(1)
Silver	22	12			µg/L	(1)
Zinc	720	490			µg/L	(1)
Diieldrin	0.00028	0.00014			µg/L	(1), (5)
4,4-DDE	0.0012	0.00059			µg/L	(1), (5)

Footnotes :

- (1) (a) Compliance with these limits is intended to be achieved through secondary treatment and, as necessary, pretreatment and source control.
  - (b) All analyses shall be performed using current U.S. EPA methods, or equivalent methods approved in writing by the Executive Officer. The Discharger is in violation of the limit if the discharge concentration exceeds the effluent limitation and the reported minimum level (ML) for the analysis (see note 9 for TCDD Equivalent).
  - (c) Limits apply to the average concentration of all samples collected during the averaging period (Daily = 24-hour period; Monthly = calendar month).
- (2) This interim limit shall remain in effect until June 30, 2007, or until the Board amends the limit based on site-specific objectives or the Waste Load Allocation in the TMDL. However, during the next permit reissuance, Board staff may re-evaluate the interim limits.
- (3) Mercury: Effluent mercury monitoring shall be performed by using ultra-clean sampling and analysis techniques, with a minimum level of 0.002 µg/L or lower.
- (4) This interim limit shall remain in effect until March 31, 2010, or until the Board amends the limit based on site-specific objectives or the Waste Load Allocation in the TMDL. However, during the next permit reissuance, Board staff may re-evaluate the interim limits.
- (5) As outlined in Section 2.4.5 of the SIP, compliance with these final limits is determined by comparing the effluent data with the corresponding Minimum Levels in Appendix 4 of the SIP: 0.01 µg/L for diieldrin; and 0.05 µg/L for 4,4-DDE; A daily maximum or monthly average valued for a given constituent shall be considered non-compliant with the effluent limits only if it exceeds the effluent limitation and the reported ML for that constituent.

**6. Interim Mass Emission Limits – Mercury**

Until TMDL and Waste Load Allocation (WLA) efforts for mercury provide enough information to establish a different WQBEL, the Discharger shall demonstrate that the total mercury mass loading from discharges to lower San Francisco Bay at the deepwater outfall (Effluent Station Dry Weather E-001) has not increased by complying with the following:

- a. Interim mass emission limit: **The mass emission limit for mercury is 0.30 kilograms per month (kg/month).** The total mercury mass load shall not exceed this limit.

- b. Compliance with this limit shall be evaluated using monthly moving averages of total mass load, computed as described below:

12-Month Monthly Moving Average of Total Mass Load = Average of the monthly total mass loads from the past 12 months

Monthly Total Mass Load (kg/month) = Average daily flow in a calendar month in mgd outfall (Dry Weather Waste E-001) x monthly effluent concentration measurements in µg/L corresponding to the above flows for samples taken from dry weather E-001 x 0.1151. (If more than one concentration measurement is obtained in a calendar month, the average of these measurements is used as the monthly concentration value for that month. If test results are less than the reported ML, the concentration value shall be assumed to be equal to the reported ML.)

- c. The Discharger shall submit a cumulative total of mass loadings for the previous twelve months with each monthly Self-Monitoring Report. Compliance with each monthly mass limit will be determined based on the 12-month moving averages over the previous twelve months of monitoring. The Discharger may use monitoring data collected under accelerated schedules (i.e., special studies) to determine compliance.
- d. The mercury TMDL and WLAs will supersede this mass emission limitation upon their completion. The Clean Water Act's antibacksliding rule, Section 402(o), indicates that this Order may be modified to include a less stringent requirement following completion of the TMDL and WLA, if the requirements for an exception to the rule are met.

### **C. WET WEATHER EFFLUENT PERFORMANCE CRITERIA**

The Federal Combined Sewer Overflow Control Policy (59 FR 18688) regulates the operation of combined sewer systems. The Board, in Order No. 79-67, determined that the combined sewer system, designed to capture 100% of the combined sewage and storm water runoff, to attain a long term average overflow frequency specified in that order, and to maximize treatment through appropriately sized facilities, would protect beneficial uses. The Discharger has successfully and adequately designed, built, and implemented control and treatment strategies that effectively address wet weather flow conditions. The treatment and discharge process descriptions of the Discharger are referenced in the Findings of this document.

The Discharger is required to comply with the Nine Minimum Controls required in the CSO Control Policy. The Nine Minimum Controls constitute the technology based minimum controls applicable to combined sewer flows. In accordance with the Policy's Nine Minimum Controls and its Long Term Control Plan, the Discharger must maximize pollutant removal. Adherence to the following criteria will constitute compliance with CSO Policy requirements for technology based and water quality based effluent limitations, and discharge permit requirements. The Discharger shall provide documentation that addresses the following criteria for wet weather flows as part of the Monthly Self Monitoring Report requirements.

1. The Operations Plan must be filed by June 30, 2003, and approved by the Executive Officer, and then as modified during the life of the permit. Operations parameters, equipment maintenance schedules, and replacement parts for the system shall be set forth in the Operations Plan.
2. Wet Weather Operation of Bayside Facilities



- a. NORTH DRAINAGE BASIN: North Point Wet Weather Facility (NPF) operation depends on rainfall, forecasts and storage conditions in the North Drainage Basin and the Central Drainage Basin. Activation of the NPF is the pumping of flow from the North Shore Pump Station into the NPF for storage or treatment.
  - i. The NPF will be activated when the level of sewage and stormwater in the North Shore Storage/Transport Box is at 200 inches.
  - ii. The NPF will be activated treating 135-145 mgd of combined in-flow within 60 minutes of a discharge through CSN 013 to CSN 017.
  - iii. The NPF will remain operational until the Central Drainage Basin (Channel) storage/transport levels are low enough that flow from the North Shore Pump Station to the Channel Pump Station will not increase the likelihood of storage transport discharges in the Central or Southeast Drainage Basins.
- b. CENTRAL DRAINAGE BASIN: Channel Pump Station (CHS) operation depends on rainfall, forecasts and storage conditions in the Central Drainage Basin and the Southeast Drainage Basin
  - i. CHS will be pumping 80 mgd to the Southeast Water Pollution Control Plant (SEP) or SEP influent will be at 250 mgd (from CHS and Flynn Pump Stations [FPS] and SEP Lift Station) before there are any storage/transport discharges to Mission Creek (CSC 022 to CSC 027).
  - ii. Flow from CHS to SEP may be reduced to prevent discharge from the Southeast Drainage Basin storage/transport structures if the flow levels between the Central Drainage Basin structures and the Southeast Drainage Basin structures (Griffith Pump Station and/or FPS become unbalanced, e.g., Griffith and/or Flynn storage levels continue to rise while SEP is at a maximum flow.
- c. Mariposa Pump Station
  - i. The Mariposa Pump Station (two wet weather pumps) will be operated at full capacity prior to discharge through CSC 029.
- d. 20<sup>th</sup> Street Pump Station
  - i. The 20<sup>th</sup> St. Pump Station (two wet weather pumps) will be operated at full capacity prior to discharge through CSC 030 or CSC 030A.
- e. SOUTH DRAINAGE BASIN: Southeast Water Pollution Control Plant operation depends on rainfall, forecasts and storage conditions in the Central Drainage Basin and the Southeast Drainage Basin.
  - i. The Southeast Water Pollution Control Plant will have an influent flow rate of 240-250 mgd prior to discharge into Islais Creek from CSS 031 to CSS 035.
- f. Griffith Pump Station
  - i. The Griffith Pump Station (four wet weather pumps) will be operated at full capacity prior to discharge through CSS 040 to CSS 042.
- g. Sunnydale Pump Station
  - i. The Sunnydale Pump Station (3 wet weather pumps) will be operated at full capacity prior to discharge through CSS 043.

### 3. Post Rain Activities

- a. Post Wet Weather Event – Treatment at the Southeast Water Pollution Control Plant and North Point Wet Weather Facility will continue until North, Central and Southeast Drainage Basin storage/transports are substantially empty of stormwater flows.
  - i. If the National Weather Service predicts rain during the next 24 Hours
    - a) Pumping will occur until the level of sewage/stormwater in the Channel Pump Station Box is between 100-150 inches,
    - b) Pumping will occur until the level of sewage/stormwater in the North Shore Box is at 100 inches, and
    - c) Pumping will occur until the Islais Creek storage level is essentially zero.
  - ii. If the National Weather Service does not predict rain
    - a) Pumping will occur until the level of sewage/stormwater in the Channel Pump Station Box is below 150 inches,
    - b) Pumping will occur until the level of sewage/stormwater in the North Shore Box is below 150 inches, and
    - c) Pumping will occur until the Islais Creek storage level is essentially zero.

#### **D. RECEIVING WATER LIMITATIONS**

1. The discharge of dry weather waste shall not cause the following conditions to exist in waters of the State at any place:
  - a. Floating, suspended, or deposited macroscopic particulate matter or foam;
  - b. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;
  - c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
  - d. Visible, floating, suspended, or deposited oil or other products of petroleum origin; and
  - e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or which render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.
  
2. The discharge of dry weather waste shall not cause the following limits to be exceeded in waters of the State at any one place within one foot of the water surface:
  - a. Dissolved Oxygen:                    5.0 mg/L, minimum  
  
 The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, then the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.
  
  - b. Dissolved Sulfide:                    0.1 mg/L, maximum

- c. pH: Variation from normal ambient pH by more than 0.5 pH units.
  - d. Un-ionized Ammonia: 0.025 mg/L as N, annual median (except Islais Creek); and  
0.16 mg/L as N, maximum.  
0.40 mg/l as N, maximum for Islais Creek
  - 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 of waste shall not cause a violation of any particular water quality standard for receiving waters adopted by the Board or the State Board as required by the Clean Water Act and regulations adopted hereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

## **E. SLUDGE MANAGEMENT PRACTICES**

1. The Discharger presently disposes of all stabilized, dewatered bio-solids (sewage sludge) from the Discharger's wastewater treatment plant by beneficially re-using as alternative daily cover at a permitted landfill or by land application at a permitted site. If the Discharger desires to dispose of sludge by a different method, the Discharger shall notify the Board and U.S. EPA in writing before start-up of the alternative disposal practice.
2. Sludge that is disposed of in a municipal solid waste landfill must meet the requirements of 40 CFR 258. The Discharger's annual self-monitoring report shall include the amount of sludge disposed of, and the landfill(s) to which it was sent.
3. All sludge generated by the Discharger must be disposed of in a municipal solid waste landfill, or in accordance with the requirements of 40 CFR 503. All the requirements of 40 CFR Part 503 are enforceable whether or not they are stated in an NPDES permit or other permit issued to the Discharger.
4. Sludge treatment, storage, and disposal or reuse shall not create a nuisance or result in groundwater contamination.
5. The treatment and temporary storage of sewage sludge at the Discharger's wastewater treatment facility shall not cause waste material to be in a position where it will be carried from the sludge treatment and storage site and deposited in the waters of the State.
6. This permit does not authorize permanent on-site storage or disposal of sewage sludge at the Discharger's wastewater treatment facility. A report of Waste Discharge shall be filed and the site brought into compliance with all applicable regulations prior to commencement of any such activity by the Discharger.
7. The Board may amend this permit prior to expiration if changes occur in applicable state and federal sludge regulations.

## **F. PROVISIONS**

### **1. Permit Compliance and Rescission of Previous Waste Discharge Requirements**

The Discharger shall comply with all sections of this Order beginning on July 1, 2002. Requirements prescribed by this Order supersede the requirements prescribed by Order Nos. 94-149, 95-039, and 96-116. Order Nos. 94-149, 95-039, and 96-116 are hereby rescinded upon the effective date of this Order.

## **Special Studies**

### **2. Effluent Characterization for Selected Constituents**

The Discharger shall monitor and evaluate effluent discharged to central San Francisco Bay for the constituents listed in Enclosure A of the Board's August 6, 2001 Letter (Attachment H). Compliance with this requirement shall be achieved in accordance with the specifications stated in the Board's August 6, 2001 Letter under Effluent Monitoring for major Dischargers. The Discharger submitted a sampling plan in response to this letter, and the Executive Officer conditionally approved the plan in November 2001. Interim and final reports shall be submitted to the Board in accordance with the schedule specified below (same schedule is also specified in August 6, 2001 Letter):

*Interim and Final Reports:* An interim report is due on May 18, 2003. The report should summarize the data collected to date, and describe future monitoring to take place. A final report that presents all the data shall be submitted to the Board 180 days prior to the permit expiration date. This final report shall be submitted with the application for permit reissuance.

### **3. Ambient Background Receiving Water Study**

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

The Bay Area Clean Water Agencies, on behalf of the Discharger, submitted a sampling plan dated September 28, 2001, for a collaborative group monitoring program. The Executive Officer conditionally approved this plan in November 2001.

*Interim and Final Reports:* The Discharger shall submit an interim report on May 18, 2003. The report shall summarize the data collected to date, and describe future monitoring to take place. The Discharger shall submit a final report that presents all the data to the Board 180 days prior to permit expiration. This final report shall be submitted with the application for permit reissuance.

### **4. Wet Weather Facilities System Study**

Within three years of the effective date of this permit, the Discharger shall fund the preparation of a Wet Weather Facilities system study by a mutually agreed upon third party. The objective of the study is to determine if the Discharger, has and is, maintaining and operating the wet weather facilities in compliance with the requirements set forth in this permit (e.g., minimize overflows and maximize treatment), and the Discharger's approved operations and maintenance plans. The study will be based on a mutually agreed upon scope of work, which will be provided for Board staff review and Executive Officer approval by the Discharger within one year of the effective date of this permit. This scope of work shall include a task to compile records on the maintenance and operation of the wet weather facilities.

5. **Dioxin Special Study:** The Discharger shall investigate lowering the detection limit for dioxin TEQ congeners. The special study shall also include monitoring which would allow the Board to calculate an interim limit for dioxin TEQ.

<u>Task</u>	<u>Due Date</u>
Submit study Work Plan acceptable to the Executive Officer	September 1, 2002
Implement Approve Work Plan	20 days after study plan approval
Submit Final Report	December 1, 2003

6. **Tributyltin Special Study:** The Discharger shall conduct additional tributyltin monitoring, which would allow the Board to calculate an interim limit for tributyltin.

<u>Task</u>	<u>Due Date</u>
Submit study Work Plan acceptable to the Executive Officer	September 1, 2002
Implement Approve Work Plan	20 days after study plan approval
Submit Final Report	May 31, 2003

7. **Bis(2-ethylhexyl)phthalate Special Study:** The Discharger shall investigate and improve sampling and analysis procedures for bis(2-ethylhexyl)phthalate to avoid laboratory contamination. The special study shall include monitoring requirement which would allow the Board to calculate an interim limit for bis(2-ethylhexyl)phthalate.

<u>Task</u>	<u>Due Date</u>
Submit study Work Plan acceptable to the Executive Officer	September 1, 2002
Implement Approve Work Plan	20 days after study plan approval
Submit Final Report	May 31, 2003

8. **Odor Control Master Plan:** To alleviate and minimize odor created by sewage treatment and disposal, the Discharger shall update and revise its Odor Control Master Plan to investigate methods to control odor.

<u>Task</u>	<u>Due Date</u>
Submit an Odor Control Work Plan The Plan shall include but not be limited to an odor source investigation, source mitigation study that fully addresses measures to abate odor complaints and that evaluates the feasibility of implementing those measures, odor monitoring, and implementation schedule.	September 1, 2002
Implement Work Plan	As specified in the Work Plan

9. **Pollution Prevention Program and Pollutant Minimization Program**  
 a. The Discharger shall continue to improve its existing Pollution Prevention Program in order to reduce pollutant loadings to the treatment plant and therefore to the receiving waters.

- b. The Discharger shall submit an annual report, acceptable to the Executive Officer, no later than August 30<sup>th</sup> of each calendar year. Annual reports shall cover July through June of the preceding year.

Annual report shall include at least the following information:

- (i) *A brief description of its treatment plant, treatment plant processes and service area.*
- (ii) *A discussion of the current pollutants of concern.* Periodically, the Discharger shall analyze its own situation to determine which pollutants are currently a problem and/or which pollutants may be potential future problems. This discussion shall include the reasons why the pollutants were chosen.
- (iii) *Identification of sources for the pollutants of concern.* This discussion shall include how the Discharger intends to estimate and identify sources of the pollutants. The Discharger should also identify sources or potential sources not directly within the ability or authority of the Discharger to control such as pollutants in the potable water supply and air deposition.
- (iv) *Identification of tasks to reduce the sources of the pollutants of concern.* This discussion shall identify and prioritize tasks to address the Discharger's pollutants of concern. Tasks can target its industrial, commercial, or residential sectors. The Discharger may develop tasks themselves or participate in group, regional, or national tasks that will address its pollutants of concern. The Discharger is strongly encouraged to participate in group, regional, or national tasks that will address its pollutants of concern whenever it is efficient and appropriate to do so. A time line shall be included for the implementation of each task.
- (v) *Continuation of outreach tasks for City employees.* The Discharger shall continue outreach tasks for City and/or District employees. The overall goal of this task is to inform employees about the pollutants of concerns, potential sources, and how they might be able to help reduce the discharge of pollutants of concerns into the treatment plant. The Discharger may provide a forum for employees to provide input to the Program.
- (vi) *Continuation of a public outreach program.* The Discharger shall continue to develop a public outreach program to communicate pollution prevention to its service area. Outreach may include participation in existing community events such as county fairs, initiating new community events such as displays and contests during Pollution Prevention Week, implementation of a school outreach program, conducting plant tours, and providing public information in newspaper articles or advertisements, radio, television stories or spots, newsletters, utility bill inserts, and web site. Information shall be specific to the target audiences. The Discharger should coordinate with other agencies as appropriate.
- (vii) *Discussion of criteria used to measure the Program's and tasks' effectiveness.* The Discharger shall establish criteria to evaluate the effectiveness of its Pollution Prevention Program. This shall also include a discussion of the specific criteria used to measure the effectiveness of each of the tasks in item b. (iv), b. (v), and b. (vi).
- (viii) *Documentation of efforts and progress.* This discussion shall detail all of the Discharger's activities in the Pollution Prevention Program during the reporting year.
- (ix) *Evaluation of Program's and tasks' effectiveness.* This Discharger shall utilize the criteria established in b. (vii) to evaluate the Program's and tasks' effectiveness.
- (x) *Identification of specific tasks and time schedules for future efforts.* Based on the evaluation, the Discharger shall detail how it intends to continue or change its tasks in order to more effectively reduce the amount of pollutants to the treatment plant, and subsequently in its effluent.

- c. According to Section 2.4.5 of the SIP, when there is evidence that a priority pollutant is present in the effluent above an effluent limitation and either:
  - (i) A sample result is reported as detected, but not quantified (less than the Minimum Level) and the effluent limitation is less than the reported Minimum Level; or
  - (ii) A sample result is reported as not detected (less than the Method Detection Limit) and the effluent limitation is less than the Method Detection Limit, then the Discharger shall expand its existing Pollution Prevention Program to include the reportable priority pollutant. A priority pollutant becomes a reportable priority pollutant when (1) there is evidence that it is present in the effluent above an effluent limitation and either (c)(i) or (c) (ii) is triggered or (2) if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported Minimum Level.
- d. If triggered by the reasons in Provision F.9.c above and notified by the Executive Officer, the Discharger's Pollution Prevention Program shall, within 6 months, also include:
  - (i) An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling, or alternative measures approved by the Executive Officer when it is demonstrated that source monitoring is unlikely to produce useful analytical data;
  - (ii) Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system, or alternative measures approved by the Executive Officer when it is demonstrated that influent monitoring is unlikely to produce useful analytical data;
  - (iii) Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;
  - (iv) Development of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and
  - (v) An annual status report that shall be sent to the RWQCB including:
    - 1. All Pollution Prevention monitoring results for the previous year;
    - 2. A list of potential sources of the reportable priority pollutant(s);
    - 3. A summary of all actions undertaken pursuant to the control strategy; and
    - 4. A description of actions to be taken in the following year.
- e. To the extent where the requirements of the Pollution Prevention Program and the Pollutant Minimization Program overlap, the Discharger is allowed to continue/modify/expand its existing Pollution Prevention Program to satisfy the Pollutant Minimization Program requirements.
- f. These Pollution Prevention/Pollutant Minimization Program requirements are not intended to fulfill the requirements in The Clean Water Enforcement and Pollution Prevention Act of 1999 (Senate Bill 709).

### **CSO Requirements**

#### **10. Nine Minimum Controls: The discharger shall implement and comply with the following technology-based requirements for the Bayside Wet Weather Facilities and Divers ion Structures:**

- a. **Conduct Proper Operations and Regular Maintenance Programs.** The Discharger shall implement the Operations and Maintenance Plan for the combined sewer system that will

include the elements listed below. The Discharger shall also update the plan to incorporate any changes to the system and shall operate and maintain the system according to the plan. The Discharger shall keep records to document the implementation of the plan

- i. **Designation of a Manager for Combined Sewer Overflows.** The Discharger shall designate a person to be responsible for the wastewater collection system and serve as the contact person regarding combined sewer overflows. The Discharger shall notify the Executive Officer of the Board within 90 days of designation of a new contact person.
  - ii. **Inspection and maintenance of CSS.** The Discharger shall:
    - Inspect and maintain all overflow structures, regulators, pumping stations, and tide gates to ensure that they are in good working condition and adjusted to minimize overflows and prevent tidal inflow.
    - Inspect each overflow outfall at least once per year. The inspection shall include, but is not limited to, entering the regulator structure if accessible, determining the extent of debris and grit build-up, and removing any debris that may constrict flow, cause blockage, and result in a dry weather overflow. For overflow outfalls that are inaccessible, the Discharger may perform a visual check of the overflow pipe to determine whether or not the overflow occurred or could potentially occur during dry weather flow conditions.
    - Record in a maintenance log the results of the inspections.
  - iii. **Provision for Trained Staff.** The Discharger shall provide an adequate number of full-time equivalents to carry out the operation, maintenance, repair and testing functions required to ensure compliance with the terms and conditions of this permit. Each member of the staff shall receive appropriate training.
  - iv. **Allocation of Funds for Operation and Maintenance.** The Discharger shall allocate adequate funds specifically for operation and maintenance activities. The Discharger shall submit a certification of assurance that the necessary funds, equipment, and personnel have been or will be committed to carry out the Operations and Management (O&M) Plan.
- b. **Maximize Use of the Collection System for Storage.** The Discharger shall continue to maximize the inline storage capacity. (Note: This provision refers to using the sewers for storage to the maximum extent possible. It does not refer to the storage/transports.)
- c. **Review and Modify Pretreatment Program.** The Discharger shall continue to implement selected controls to minimize the impact of non-domestic discharges. The Discharger shall re-evaluate every 3 years whether additional modifications to its pretreatment program are feasible or of practical value. The Discharger shall keep records to document this evaluation and to document implementation of the selected controls to minimize non-domestic discharges.
- d. **Maximize Flow to Southeast Water Pollution Control Plant and North Point Wet Weather Facility.** The Discharger shall operate the Southeast Water Pollution Control Plant at a maximum treatable flow during wet weather flow conditions. The Discharger shall report rainfall and flow data to the Board as part of the Self-Monitoring Report.

The Discharger has prepared a facilities operation plan. This operation plan was developed to achieve the following objectives:

- i. Maximize the volume of wastewater treated (at either the Southeast Water Pollution Control Plant or North Point Wet Weather Facility and discharged via deep water



outfalls, consistent with the hydraulic capacities of the Discharger's storage, transport, treatment, and disposal facilities, and

- ii. Assure that all discharges from the diversion structures are first baffled to reduce floatable volume.
- e. **Prohibit Combined Sewer Overflows During Dry Weather.** Dry weather overflows from outfalls E-002 through E-006 and CSO structures CSO 009 through-043 are prohibited. All dry weather overflows must be reported to the Board within 24 hours of when the Discharger becomes aware of a dry weather overflow. When the Discharger detects a dry weather overflow, the Discharger shall begin corrective actions immediately.

The Discharger shall inspect the dry weather overflow point each subsequent day of the overflow until the overflow has been eliminated. The Discharger shall record in the inspection log each dry weather overflow event, as well as the cause, corrective measures taken, and the dates of the beginning and cessation of the overflow.

- f. **Control Solid and Floatable Materials in CSOs.** The Discharger shall continue to implement measures to control solid and floatable materials in its overflows. These measures shall include:
- i. Ensure that all overflows from the diversion structures are baffled or that other means are used to reduce the volume of floatable materials.
  - ii. Remove solid or floatable materials captured in the storage/transport in an acceptable manner prior to discharge to the receiving water.
- g. **Develop and Implement Pollution Prevention Program.** The Discharger shall continue to implement a pollution prevention program focused on reducing the impact of treated and untreated overflows on receiving waters. This pollution prevention program is authorized by the Basin Plan and Federal Regulations on CSOs. The Discharger shall keep records to document pollution prevention implementation activities. This program shall be developed and implemented in accordance with Provision 8. Conducting street sweeping and catch basin modification or cleaning at a frequency that will prevent large accumulations of pollutants and debris.
- h. **Notify the Public of Overflows.** The Discharger shall continue to implement a public notification plan to inform citizens of when and where overflows occur. The process must include:
- i. A mechanism to alert persons using all receiving bodies of water affected by overflows.
  - ii. A system to determine the nature and duration of conditions that are potentially harmful to users of these receiving water bodies due to overflows.

Specifically, warning signs shall be posted at beach locations where water contact recreation is enjoyed by the public whenever there is a discharge from the diversion structures. Such warning signs shall be posted on the same days as the overflow unless the overflow occurs after 4:00 p.m., in which case the signs shall be posted by 8:00 a.m. the next day. The Discharger shall keep records documenting public notification.

The City's current notification process fulfills these requirements. The process includes permanent information signs at all beach locations around the perimeter of San Francisco. These signs inform the public in English, Spanish and Chinese that signs will be posted when it is unsafe to enter the water, and warns users that bacteria concentrations may be elevated during periods of heavy rainfall. NO SWIMMING signs are posted at beach

locations whenever an overflow occurs in the vicinity. These signs remain posted until water sampling indicates the bacteria concentration has dropped below the level of concern for water contact recreation. Both signs reference the City's toll free water quality hotline (1-877-SF BEACH) which is updated weekly or whenever beach conditions change. San Francisco also provides color coded descriptions of beach water quality conditions (green/open; yellow/caution; red/posted) on the web at <http://www.sfpuc.com> or <http://www.earth911.org>.

- iii. The Discharger shall undertake a Recreational Use Study of the bayside beaches and water use areas (Candlestick Point Recreation Area, Aquatic Park Beach, Crissy Field Beach, Islais Creek and Mission Bay) in order to determine the number of users impacted from CSO events. The study will assess the current levels of recreational use of the shoreline and nearshore waters identifying types and frequency of use.

<u>Task</u>	<u>Compliance Date</u>
(1) Recreational Use Study Plan The Discharger shall develop and submit a study plan acceptable to the Executive Officer. The study shall at minimum encompass two full wet weather seasons in order to get adequate information relating to CSO events and use data. This special study will replace any standard observation requirements associated with shoreline bacteria monitoring.	January 15, 2003
(2) Study Commencement	1 <sup>st</sup> wet weather period after study approval
(3) Final Report The Discharger shall submit a final report, acceptable to the Executive Officer, documenting the result of the Recreational Use Study.	1 year prior to permit expiration

- i. **Monitor to Effectively Characterize Overflow Impacts and the Efficacy of CSO Controls.** The Discharger shall regularly monitor overflow outfalls to effectively characterize overflow impacts and efficacy of CSO controls.

<u>Task</u>	<u>Compliance Date</u>
(1) Study Plan The Discharger shall develop and submit a study plan acceptable to the Executive Officer. The study shall at minimum encompass two full wet weather seasons in order to get adequate information relating CSO events and use data. This special study will replace any routine overflow monitoring requirements.	January 15, 2003
(2) Study Commencement	1 <sup>st</sup> wet weather period after study approval
(3) Final Report The Discharger shall submit a final report, acceptable to the Executive Officer, documenting the result of the Overflow Impacts and the CSO Control Efficacy Study.	1 year prior to permit expiration

## Toxicity Requirements

### 11. Acute Toxicity

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

- a. From permit adoption date to **June 30, 2003**:
  - (1) Compliance with the acute toxicity effluent limits of this Order shall be evaluated by measuring survival of test organisms exposed to 96-hour continuous flow-through bioassays.
  - (2) Test organisms shall be three-spined sticklebacks unless specified otherwise in writing by the Executive Officer.
  - (3) All bioassays shall be performed according to the "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms," 3<sup>rd</sup> Edition, with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).
- b. From **July 1, 2003** on:
  - (1) Compliance with the acute toxicity effluent limits of this Order shall be evaluated by measuring survival of test organisms exposed to 96-hour continuous flow-through bioassays, or static renewal bioassays. If the Discharger will use static renewal tests, or continue to use 3<sup>rd</sup> Edition Methods, they must submit a technical report by March 1, 2003, identifying the reasons why flow-through bioassay is not feasible using approved EPA protocol specified in 40CFR 136 (currently 4<sup>th</sup> edition).
  - (2) Test organisms shall be fathead minnows or rainbow trout unless specified otherwise in writing by the Executive Officer.
  - (3) All bioassays shall be performed according to the "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms" as specified in 40CFR 136. Exceptions may be granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

## 12. Whole Effluent Chronic Toxicity Requirements

The Discharger shall monitor and evaluate effluent discharged from dry weather E-001 to lower San Francisco Bay for chronic toxicity in order to demonstrate compliance with the Basin Plan narrative toxicity objective. Compliance with this requirement shall be achieved in accordance with the following.

- a. The Discharger shall conduct routine chronic toxicity monitoring in accordance with the SMP of this Order.
- b. If data from routine monitoring exceed either of the following evaluation parameters, then the Discharger shall conduct accelerated chronic toxicity monitoring. Accelerated monitoring shall consist of monitoring at frequency intervals of one half the interval given for routine monitoring in the SMP of this Order.
- c. Chronic toxicity evaluation parameters:
  - (1) a three sample median value of  $10 \text{ TU}_c^{(3)}$ ; and
  - (2) a single sample maximum value of  $20 \text{ TU}_c^{(3)}$ .
  - (3) These parameters are defined as follows:
    - (a) Three-sample median: A test sample showing chronic toxicity greater than  $10 \text{ TU}_c$  represents an exceedance of this parameter, if one of the past two or fewer tests also show chronic toxicity greater than  $10 \text{ TU}_c$ .
    - (b)  $\text{TU}_c$  (chronic toxicity unit): A  $\text{TU}_c$  equals  $100/\text{NOEL}$  (e.g., If  $\text{NOEL} = 100$ , then toxicity =  $1 \text{ TU}_c$ ).  $\text{NOEL}$  is the no observed effect level determined from IC, EC, or  $\text{NOEC}$  values <sup>(c)</sup>.
    - (c) The terms IC, EC,  $\text{NOEL}$  and  $\text{NOEC}$  and their use are defined in Attachment C of this Order.

- d. If data from accelerated monitoring tests are found to be in compliance with the evaluation parameters, then routine monitoring shall be resumed.
- e. If accelerated monitoring tests continue to exceed either evaluation parameter, then the Discharger shall initiate a chronic toxicity reduction evaluation (TRE).
- f. The TRE shall be conducted in accordance with the following:
  - (1) The Discharger shall prepare and submit to the Board for Executive Officer approval a TRE work plan. An initial generic workplan shall be submitted within 120 days of the date of adoption of this Order. The workplan shall be reviewed and updated as necessary in order to remain current and applicable to the discharge and discharge facilities.
  - (2) The TRE shall be initiated within 30 days of the date of completion of the accelerated monitoring test observed to exceed either evaluation parameter.
  - (3) The TRE shall be conducted in accordance with an approved work plan.
  - (4) The TRE needs to be specific to the discharge and Discharger facility, and be in accordance with current technical guidance and reference materials including U.S. EPA guidance materials. TRE shall be conducted as a tiered evaluation process, such as summarized below:
    - (a) Tier 1 consists of basic data collection (routine and accelerated monitoring).
    - (b) Tier 2 consists of evaluation of optimization of the treatment process including operation practices, and in-plant process chemicals.
    - (c) Tier 3 consists of a toxicity identification evaluation (TIE).
    - (d) Tier 4 consists of evaluation of options for additional effluent treatment processes.
    - (e) Tier 5 consists of evaluation of options for modifications of in-plant treatment processes.
    - (f) Tier 6 consists of implementation of selected toxicity control measures, and follow-up monitoring and confirmation of implementation success.
  - (5) The TRE may be ended at any stage if monitoring finds there is no longer consistent toxicity.
  - (6) The objective of the TIE shall be to identify the substance or combination of substances causing the observed toxicity. All reasonable efforts using currently available TIE methodologies shall be employed.
  - (7) As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the source(s) and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with chronic toxicity evaluation parameters.
  - (8) Many recommended TRE elements parallel required or recommended efforts of source control, pollution prevention and storm water control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements or recommended efforts of such programs may be acceptable to comply with TRE requirements.
  - (9) The Board recognizes that chronic toxicity may be episodic and identification of causes of and reduction of sources of chronic toxicity may not be successful in all cases. Consideration of enforcement action by the Board will be based in part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.
- g. Chronic Toxicity Monitoring Screening Phase Requirements, Critical Life Stage Toxicity Tests and definitions of terms used in the chronic toxicity monitoring are identified in Attachment A of the SMP. The Discharger shall comply with the chronic toxicity screening requirements specified in this attachment as applicable to the discharge.

## **Ongoing Programs**

### **13. Regional Monitoring Program**

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

#### 14. **Pretreatment Program**

Pretreatment Program: The Discharger shall implement and enforce its approved pretreatment program in accordance with Federal Pretreatment Regulations (40 CFR 403), pretreatment standards promulgated under Section 307(b), 307(c), and 307(d) of the Clean Water Act, and the requirements in **Attachment F**, "Pretreatment Requirements." The Discharger's responsibilities include, but are not limited to:

- a. Enforcement of National Pretreatment Standards in accordance with 40 CFR 403.5 and 403.6;
- b. Implementation of its pretreatment program in accordance with legal authorities, policies, procedures and financial provisions described in the General Pretreatment regulations (40 CFR 403) and the Discharger's approved pretreatment program;
- c. Submission of reports to, the State Board and the Board, as described in **Attachment F**, "Pretreatment Requirements;"

The Discharger shall implement its approved pretreatment program and the program shall be an enforceable condition of this permit. If the Discharger fails to perform the pretreatment functions, the Regional Water Quality Control Board (RWQCB), the State Waters Resources Control Board (SWRCB), or the United States Environmental Protection Agency (U.S. EPA) may take enforcement actions against the Discharger as authorized by the Clean Water Act.

### **Optional Studies**

#### 15. **Optional Mass Offset**

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

#### 16. **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 Discharger may utilize RMP data from stations nearest the Discharger's outfall. Copper translator will be calculated as part of the technical work being conducted for the central San Francisco copper/nickel TMDL/SSO project. Optionally, the Discharger may implement a sampling plan to collect data for development of a dissolved to total copper translator. If the Discharger chooses to proceed with the study, which may be conducted in cooperation with other Dischargers, the work shall be performed in accordance with the following tasks:

##### Task

##### a. ~~Copper Translator Study Plan~~

The Discharger 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.

- b. After Executive Officer approval, the Discharger shall begin implementation of the study plan. The study plan shall provide for development of translators in accordance with the State Board's SIP, EPA guidelines, California Department of Fish and Game approval, and any relevant portions of the Basin Plan, as amended.
- c. **Copper Translator Final Report**  
The Discharger shall conduct the translator study by using field sampling data approximate to the discharge point and in the vicinity of the discharge point, or as otherwise provided for in the approved work plan, and shall submit a report, acceptable to the Executive Officer, no later than November 30, 2003, documenting the results of the copper translator study. The study may be conducted in coordination with other Dischargers and may also include any other site specific information that the Discharger would like the Board to consider in development of a water quality based effluent limitation for copper.

### **Facilities Status Reports and Permit Administration**

#### **17. Wastewater Facilities, Review and Evaluation, and Status Reports**

- a. The Discharger shall operate and maintain its wastewater collection, treatment and disposal facilities in a manner to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary, in order to provide adequate and reliable transportation, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the Discharger's service responsibilities.
- b. The Discharger shall regularly review and evaluate its wastewater facilities and operation practices in accordance with section a. above. Reviews and evaluations shall be conducted as an ongoing component of the Discharger's administration of its wastewater facilities.
- c. Annually, the Discharger shall submit to the Board a report describing the current status of its wastewater facility review and evaluation, including any recommended or planned actions and an estimated time schedule for these actions. This report shall include a description or summary of review and evaluation procedures, and applicable wastewater facility programs or capital improvement projects. This report shall be submitted in accordance with the Annual Status Report Provision below.

#### **18. Operations and Maintenance Manual, Review and Status Reports**

- a. The Discharger shall maintain an Operations and Maintenance Manual (O & M Manual) as described in the findings of this Order for the Discharger's wastewater facilities. The O & M Manual shall be maintained in useable condition, and available for reference and use by all applicable personnel.
- b. The Discharger shall regularly review, and revise or update as necessary, the O & M Manual(s) in order for the document(s) to remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and revisions or updates shall be completed as necessary. For any significant changes in treatment facility equipment or operation practices, applicable revisions shall be completed within 90 days of completion of such changes.
- c. Annually, the Discharger shall submit to the Board a report describing the current status of its O & M Manual review and updating. This report shall include an estimated time schedule for completion of any revisions determined necessary, a description of any completed revisions, or a statement that no revisions are needed. This report shall be submitted in accordance with the Annual Status Report Provision below.

#### **19. Contingency Plan, Review and Status Reports**

- a. The Discharger shall maintain a Contingency Plan as required by Board Resolution 74-10 (Attachment G), and as prudent in accordance with current municipal facility emergency planning. The discharge of pollutants in violation of this Order where the Discharger has failed to

develop and/or adequately implement a contingency plan will be the basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.

- b. The Discharger shall regularly review, and update as necessary, the Contingency Plan in order for the plan to remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and updates shall be completed as necessary.
- c. Annually, the Discharger shall submit to the Board a report describing the current status of its Contingency Plan review and update. This report shall include a description or copy of any completed revisions, or a statement that no changes are needed. This report shall be submitted in accordance with the Annual Status Report Provision below.

**20. Annual Status Reports**

The reports identified above in Provisions **F.17.c, F.18.c, and F.19.c** shall be submitted to the Board annually, by July 15<sup>th</sup> of each year. Modification of report submittal dates may be authorized, in writing, by the Executive Officer.

**21. 303(d)-listed Pollutants Site-Specific Objective and TMDL Status Review**

The Discharger shall participate in the development of a TMDL or site-specific objective for copper, mercury, 4,4-DDE, and dieldrin. By January 31 of each year, the Discharger shall submit an update to the Board to document efforts made on participation in development of TMDL or site-specific objective. Board staff shall review the status of TMDL development. This Order may be reopened in the future to reflect any changes required by the TMDL development.

**22. New Water Quality Objectives**

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

**23. Self-Monitoring Program**

The Discharger shall comply with the Self-Monitoring Program (SMP) for this Order as adopted by the Board. The SMP may be amended by the Executive Officer pursuant to U.S. EPA regulations 40CFR 122.62, 122.63 and 124.5.

**24. Standard Provisions and Reporting Requirements**

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

**25. Change in Control or Ownership**

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

**26. Permit 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 or have the potential to cause or contribute to adverse impacts on water quality and/or beneficial uses of the receiving waters.

**27. NPDES 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 on July 1, 2002 provided the U.S. EPA Regional Administrator has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

**28. Order Expiration and Reapplication**

- a. This Order expires on May 31, 2007.
- b. In accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code, the Discharger must file a report of waste discharge no later than 180 days before the expiration date of this Order as application for reissue of this permit and waste discharge requirements.

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 June 19, 2002.

\_\_\_\_\_  
LORETTA K. BARSAMIAN  
Executive Officer

**Attachments :**

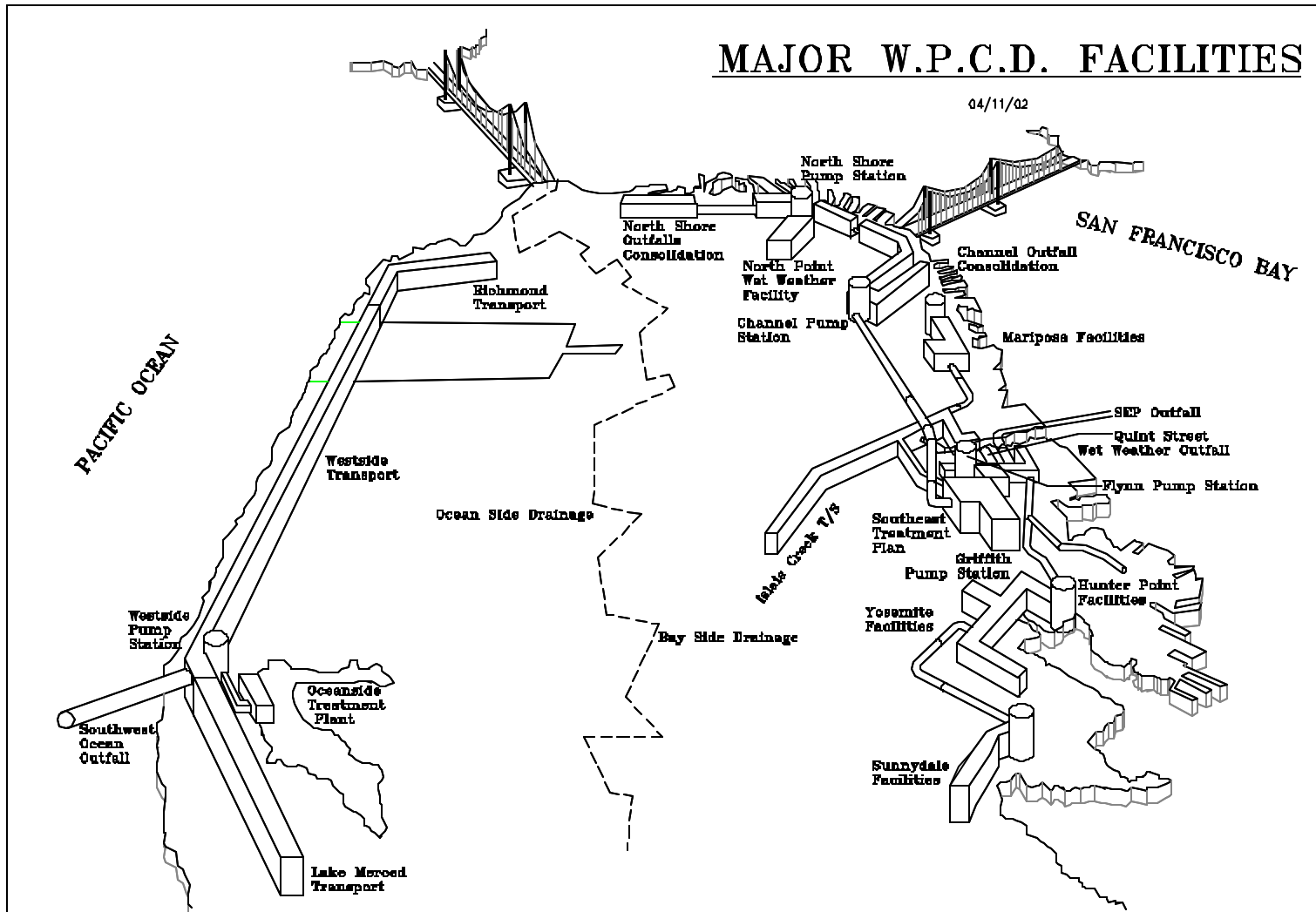
- A. Discharge Facility Location Map
- B. Combined Sewer Overflow Structures
- C. Discharge Facility Treatment Process Diagram
- D. Self-Monitoring Program, Part B
- E. Factsheet
- F. Pretreatment Program Requirements

The following attachments are part of this Order, but are not attached because of volume. These documents are available on the Board's website at [www.swrcb.ca.gov/rwqcb2](http://www.swrcb.ca.gov/rwqcb2), or by calling the Board at (510) 622-2300.

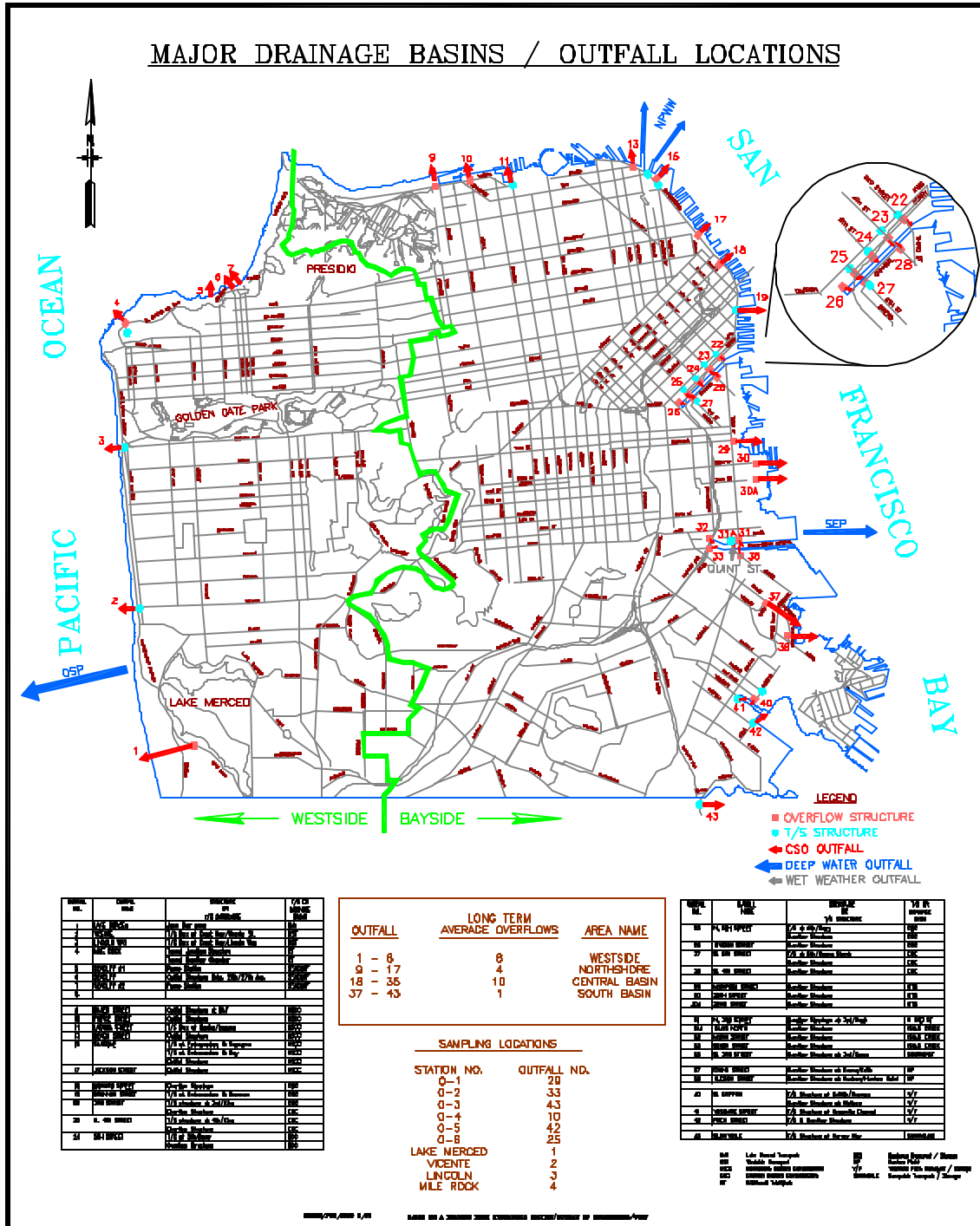
- G. Self-Monitoring Program Part A, August 1993
- H. Standard Provisions and Reporting Requirements, August 1993
- I. Board Resolution No. 74-10
- J. August 6, 2001 Regional Board staff letter, "Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy"



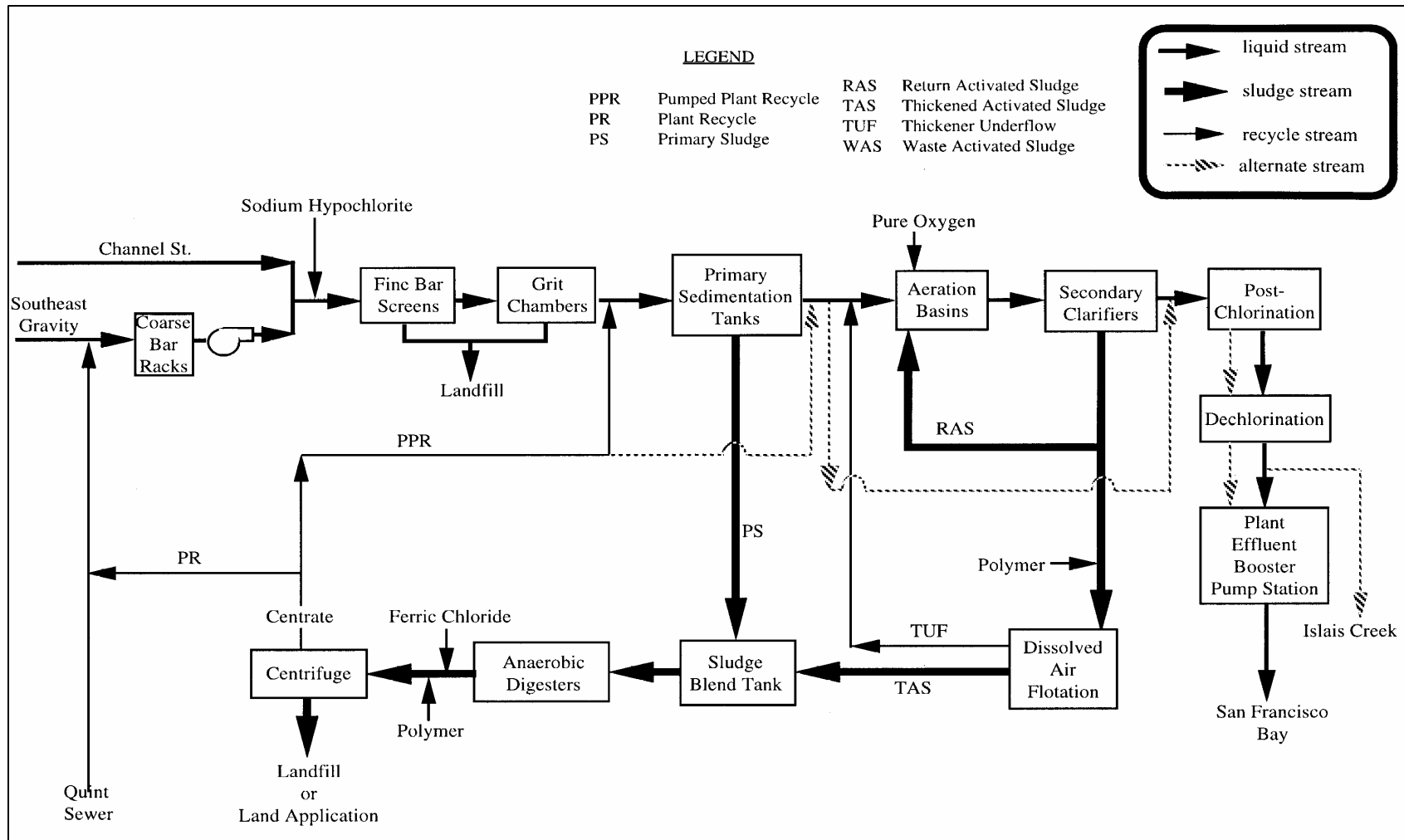
Attachment A - Discharge Facility Location Map



# Attachment B – Combined Sewer Overflow Structures



### Attachment C - Discharge Facility Treatment Process Diagram



## **Attachment D – Self-Monitoring Program, Part B**

## **Attachment E – Factsheet**

## **Attachment F – Pretreatment Program Requirements**

**Attachment G – Self-Monitoring Program Part A, August 1993**

## **Attachment H – Standard Provisions and Reporting Requirements, August 1993**



**Attachment I – Board Resolution No. 74-10**

**Attachment J – August 6, 2001, Regional Board staff letter, “Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy”**

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD**

**SAN FRANCISCO BAY REGION**

**SELF-MONITORING PROGRAM**

**FOR**

**CITY AND COUNTY OF SAN FRANCISCO**

**SOUTHEAST WATER POLLUTION CONTROL PLANT,**

**NORTH POINT WET WEATHER FACILITY, AND**

**BAYSIDE WET WEATHER FACILITIES**

**SAN FRANCISCO COUNTY**

**NPDES PERMIT NO. CA0037664**

**ORDER NO. R2-2002-0073**

**Consists of:**

**Part A, Adopted August 1993 (not attached)**

**And**

**Part B**

**Adopted: June 19, 2002**

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## Part B

### I. Station Descriptions

NOTE: The Discharger shall submit a sketch showing the locations of all sampling and observation stations with the Annual Report, and with the monthly report if stations change.

- A. Influent Station Description
- Southeast Water Pollution Control Plant Station:**
- A-001 At any point in facilities upstream of the primary sedimentation basins at which all waste tributary to the treatment system is present, and preceding any phase of treatment.
- North Point Wet Weather Facility:**
- A-002 At any point at which all waste tributary to the system is present and preceding any phase of treatment.
- B. Effluent Station Description
- Southeast Water Pollution Control Plant Stations**
- Waste **Under Dry Weather Discharge Conditions :**
- E-001 At any point in the sewerage system, between the point of discharge and the point at which all wastes have gone through complete secondary treatment, including disinfection.
- Under Wet Weather Discharge Conditions:**
- At any point in the sewerage system, between the point of discharge and the point at which adequate contact with the disinfectant is assured.
- E-001D At any point in the disinfection facilities at which point adequate contact with the disinfectant is assured (may be the same location as E-001).
- Waste  
E002 Wet weather discharge only, at any point in the sewerage system, between the point of discharge into Isla's Creek and the point at which all wastes have gone through complete secondary treatment, including disinfection.
- E-002D At any point in the disinfection facilities at which point adequate contact with the disinfectant is assured (may be the same location as E-002).
- North Point Wet Weather Facility:**
- Waste  
E-003 At any point in the facility system between the point of discharge to Pier 33 (E-003 & E-004) and Pier 35 (E-005 & E-006) outfalls and the point at which all waste tributary to those outfalls is present.
- E-003D At any point in the disinfection facilities for Waste E-003 at which point adequate contact with the disinfectant is assured (may be the same as E-003).

C. Shoreline Stations

<u>Station (As shown in Figure 1)</u>	<u>Description</u>
S-202.2	Crissy Field Central
S-202.4	Crissy Field (east of Lagoon)
S-210.1	Aquatic Park Beach (Hyde St. Pier)
S-211	Aquatic Park Beach East End
S-300.1	Candlestick Point SRA (Sunnydale Cove Beach)
S-301.1	Candlestick Point SRA (Windsurfing Circle)
S-301.2	Candlestick Point SRA (Jack Rabbit Beach)



LEGEND FOR TABLE 1

<u>Sampling Stations</u>		<u>Type of samples</u>	
A	= Treatment Facility Influent	G	= Grab Sample
E	= Treatment Facility Effluent	C-24	= Composite Sample, 24 hours (including continuous sampling such as flows)
S	= Shoreline Monitoring	C-X	= Composite sample, X hours
<u>Frequency of Sampling</u>			
E	= Each Occurrence	M	= Once Each Month
Q	= Quarterly	2H	= Once Every Two Hours
W	= Once Each Calendar Week	2/Y	= Twice Each Year (on separate days, once during the dry weather season and once during the wet weather season)
3/W	= Three Times Each Calendar Week (on separate days)	D	= Daily
5/W	= Five Times Each Calendar Week (on separate days)	Cont.	= Continuous

FOOTNOTES FOR TABLE 1

[1] Additional details regarding sampling, analyses and observations are given in Section III of this SMP, Specifications for Sampling, Analyses and Observations.

[2] Flow Monitoring.

Continuous flow monitoring depicted in Table 1 shall be conducted by continuous measurement and reporting of the following parameters:

Influent (A-001), and Effluent (E-001):

Daily:

Average Daily Flow (mgd)

Maximum Daily Flow (mgd)

Minimum Daily Flow (mgd).

Monthly: Average Monthly Flow (mgd), for the calendar month.

[3] Oil & Grease Monitoring.

During dry weather, each Oil & Grease sample event shall consist of a composite sample comprised of three grab samples taken at equal intervals during the sampling date, with each grab sample being collected in a glass container. During wet weather, each Oil & Grease sample event shall consist of a composite sample comprised of three grab samples taken at appropriate intervals during the sample date, with each grab sample being collected in a glass container. The grab samples shall be mixed in proportion to the instantaneous flow rates occurring at the time of each grab sample, within an accuracy of plus or minus 5 %. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent as soon as possible after use, and the solvent rinsate shall be added to the composite sample for extraction and analysis.

[4] Disinfection Process Monitoring.

Chlorine Residual Monitoring.

During all times when chlorination is used for disinfection of the effluent, effluent chlorine residual concentrations shall be monitored continuously, or by grab samples taken every two hours. Grab samples may be taken by hand or by automated means using in-line equipment such as three-way valves and chlorine residual analyzers. Chlorine residual concentrations shall be monitored and reported for sampling points both prior to and following dechlorination. Chlorine dosage (kg/day) and dechlorination chemical dosage and/or residual (if desired to demonstrate chlorine exceedances are false positives) shall be recorded on a daily basis.



[5] Acute Toxicity Monitoring (Flow-through bioassay tests).

The following parameters shall be monitored on the sample stream used for the acute toxicity bioassays, at the start of the bioassay test and daily for the duration of the bioassay test, and the results reported:

- 
- pH,
- temperature,
- dissolved oxygen,
- and ammonia nitrogen.

If the fish survival in the effluent is less than 70% or if the control fish survival rate is less than 90%, a bioassay test shall be restarted with a new batch of fish and continued as soon as practicable until compliance is demonstrated.

[6] Chronic Toxicity Monitoring: See also, Provision F.12. and Attachment A of this Order.

Chronic Toxicity Monitoring Requirements

Sampling. The discharger shall collect 24-hour composite samples of treatment plant effluent at Sampling Station E-001 (dry weather), for critical life stage toxicity testing as indicated below. For toxicity tests requiring renewals, 24-hour composite samples collected on consecutive days are required.

Test Species: Chronic toxicity shall be monitored using critical life stage test(s) and the most sensitive test specie(s) identified by screening phase testing.. Test specie(s) shall be approved by the Executive Officer. Two test species may be required if test data indicate that there is alternating sensitivity between the two species. Currently, the Discharger found that echinoderm as the most sensitive specie. The Discharger may remove ammonia from the effluent prior to toxicity testing.

Frequency:

i. *Routine Monitoring:* If the discharge demonstrates chronic toxicity during routine monitoring, accelerated monitoring will be required. However, if the discharge demonstrates no chronic toxicity in excess of the triggers specified in the "Conditions for Accelerated Monitoring" subsection below, the monitoring frequency will be twice per year during the next five years, once during wet weather, and once during dry weather.

ii. *Accelerated Monitoring:* Quarterly, or as otherwise specified by the Executive Officer.

Methodology: Sample collection, handling and preservation shall be in accordance with U.S. EPA protocols. The test methodology used shall be in accordance with the references cited in this Permit, or as approved by the Executive Officer. A concurrent reference toxicant test shall be performed for each test.

Dilution Series: The discharger shall conduct tests at 2%, 5%, 10%, 15%, and 30%. The "%" represents percent effluent as discharged.

Chronic Toxicity Reporting Requirements

Routine Reporting:

Toxicity test results for the current reporting period shall include, at a minimum, for each test:

- a. sample date(s)
- b. test initiation date
- c. test species
- d. end point values for each dilution (e.g. number of young, growth rate, percent survival)
- e. NOEC value(s) in percent effluent
- f. IC15, IC25, IC40, and IC50 values (or EC15, EC25 ... etc.) in percent effluent
- g. TUC values (100/NOEC, 100/IC25, and 100/EC25)
- h. Mean percent mortality ( $\pm$ s.d.) after 96 hours in 100% effluent (if applicable)
- i. NOEC and LOEC values for reference toxicant test(s)
- j. IC50 or EC50 value(s) for reference toxicant test(s)
- k. Available water quality measurements for each test (ex. pH, D.O., temperature, conductivity, hardness, salinity, ammonia)

Compliance Summary: The results of the chronic toxicity testing shall be provided in the most recent self-monitoring report and shall include a summary table of chronic toxicity data from at least eleven of the most recent samples. The information in the table shall include the items listed above under *Chronic Toxicity Reporting Requirements*, items a, c, e, f (IC<sub>25</sub> or EC<sub>25</sub>), g, and h.

- [7] Use ultra-clean sampling to the maximum extent practicable and analytical methods for mercury monitoring pursuant to the Regional Board's 13267 letters issued to discharger. ML for compliance purposes is as listed in Table 2 below until the State Board adopts an alternative minimum level. Alternative methods of analysis must be approved by the Executive Officer.
- [8] The discharger may, at their option, analyze for cyanide as Weak Acid Dissociable Cyanide using protocols specified in Standard Method Part 4500-CN-I, U.S. EPA Method OI 1677, or equivalent alternatives in latest edition. Alternative methods of analysis must be approved by the Executive Officer.
- [9] See Table 2 below. This pollutant shall be monitored twice per year, once in dry season and once in wet season on a "dry weather" day as defined by this permit. Analyses shall be conducted using the lowest commercially available and reasonably achievable detection levels. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to respective water quality objectives.
- [10] Pretreatment Program Requirements: see Table 3 below.
- [11] Report the running 30 day median fecal coliform bacteria density per 100 ml, and the percent fecal coliform greater than 1100/100 mL in the same 30 day period. Sample shall be collected during period of maximum flow and at a time when sampling for chlorine residual.
- [12] The fecal coliform effluent sample collected from wet weather discharges shall be collected within 4 hours after discharge start (between 4:00 AM and 2:00 PM); sample shall be collected first thing in the morning if the wet weather facility begins operation after 2:00 PM. When calculating 30 day moving median, effluent concentration shall assume to be zero on days of no discharge.
- [13] Sample the first and second events of the season and then sample monthly when wet weather facilities are operational.
- [14] May be satisfied by measuring *E. coli* as recommended in the EPA Beach Monitoring Program. Total coliform bacteria and *E. coli* may be measured using the *Colisure* method of analysis.
- [15] The Discharger will analyze COD five times per week. If the effluent COD concentration exceeds 75 mg/L on two consecutive days, the Discharger will initiate daily BOD sampling until it is show that the effluent BOD concentration is below a concentration of 30 mg/L.

Table 2 Minimum Levels (µg/l or ppb)

For compliance monitoring, analyses shall be conducted using the lowest commercially available and reasonably achievable detection levels. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to the Minimum Levels given below.

CTR #	Constituent [a]	Types of Analytical Methods [b]											
		GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
6.	Copper [c]					25	5	10	0.5	2			1000
7.	Lead					20	5	5	0.5	2			10,000
8.	Mercury[d]								0.5			0.2	
9.	Nickel					50	5	20	1	5			1000
11.	Silver					10	1	10	0.25	2			1000
13.	Zinc					20		20	1	10			
14.	Cyanide				5								
68.	Bis(2-ethylhexyl)Phthalate	10	5										
111	Dieldrin	0.01											
109.	4,4'-DDE	0.05											

CTR #	Constituent [a]	Types of Analytical Methods [b]											
		GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
	Tributyltin [e]												
	Dioxins and Furans [f]												

Footnotes to Table 2 of Self-Monitoring Program:

- a.) According to the SIP, method-specific factors (MSFs) can be applied. In such cases, this additional factor must be applied in the computation of the reporting limit. Application of such factors will alter the reported ML (as described in section 2.4.1). Dischargers are to instruct laboratories to establish calibration standards so that the ML value is the lowest calibration standard. At no time is the discharger to use analytical data derived from the extrapolation beyond the lowest point of the calibration curve.
- b.) Laboratory techniques are defined as follows: GC = Gas Chromatography; GCMS = Gas Chromatography/Mass Spectrometry; LC = High Pressure Liquid Chromatography; Color = Colorimetric; FAA = Flame Atomic Absorption; GFAA = Graphite Furnace Atomic Absorption; Hydride = Gaseous Hydride Atomic Absorption; CVAA = Cold Vapor Atomic Absorption; ICP = Inductively Coupled Plasma; ICPMS = Inductively Coupled Plasma/Mass Spectrometry; SPGF AA = Stabilized Platform Graphite Furnace Atomic Absorption (i.e. EPA 200.9); DCP = Direct Current Plasma.
- c.) For copper, the discharger may also use the following laboratory techniques with the relevant minimum level: GFAA with a minimum level of 5 µg/L and SPGF AA with a minimum level of 2 µg/L.
- d.) Use ultra-clean sampling (EPA 1669) to the maximum extent practicable, and ultra-clean analytical methods (EPA 1631) for mercury monitoring. The Discharger may use alternative methods of analysis (such as EPA 245), if that alternate method has a Minimum Level of 2 ng/l or less.
- e.) The Discharger should continue using the same analytical procedures to achieve the method detection limit of 0.002 ug/L. Board staff is working with the Discharger (through BACWA), to determine a minimum level compliance determination.
- f.) The Discharger shall use EPA method 1613. Compliance shall be determined using only values that are at or above the lowest calibration standard. Board staff is working with the Discharger through BACWA, and the State Board to determine minimum levels for these compounds.

Table 3 Southeast Pretreatment Monitoring Requirements

Constituents / EPA Method	Influent A-001	Effluent E-001	Sludge
VOC / 624	2/Y	2/Y	
BNA / 625	2/Y	2/Y	
Metals [1]	M	M	
O-Pest / 614	N/A	N/A	
C-Pest / 632	N/A	N/A	
Sludge [2]			2/Y

Definition of terms in Table 3:

- M = once each month
- 2/Y = twice each calendar year (at about 6 month intervals, once in the dry season, once in the wet season)
- VOC = volatile organic compounds
- BNA = base/neutrals and acids extractable organic compounds
- O-Pest = organophosphorus pesticides, no monitoring required for this constituent
- C-Pest = carbamate and urea pesticides, no monitoring required for this constituent

Key to notes used in Table 3:

[1] Same EPA method used to determine compliance with the respective NPDES permit. The parameters are copper, lead, mercury, nickel, silver, zinc, and cyanide.

[2] EPA approved methods.

### **III. Specifications For Sampling, Analyses And Observations**

Sampling, analyses and observations, and recording and reporting of results shall be conducted in accordance with the schedule given in Table 1 of this SMP, and in accordance with the following specifications, as well as all other applicable requirements given in this SMP. All analyses shall be conducted using analytical methods that are commercially and reasonably available, and that provide quantification of sampling parameters and constituents sufficient to evaluate compliance with applicable effluent limits.

#### **A. Influent Monitoring.**

Influent monitoring identified in Table 1 of this SMP is the minimum required monitoring. Additional sampling and analyses may be required in accordance with Pretreatment Program or Pollution Prevention/Source Control Program requirements.

#### **B. Effluent Monitoring.**

Composite samples of effluent shall be collected on varying days of the week (Monday through Friday, excluding holidays) coincident with influent composite sampling unless otherwise stipulated. The Executive Officer may approve an alternative sampling plan if it is demonstrated to the Executive Officer's satisfaction that expected operating conditions for the facility warrant a deviation from the standard sampling plan.

Grab samples of effluent shall be collected during periods of maximum peak flows and shall coincide with effluent composite sample days.

Fish bioassay samples shall be collected on days coincident with effluent composite sampling.

Bioassay tests should be performed on effluent samples after chlorination-dechlorination.

Total ammonia nitrogen shall be analyzed and un-ionized ammonia calculated whenever fish bioassay test results fail to meet the specified percent survival.

If any maximum daily limit is exceeded, the sampling frequency shall be increased to daily until two samples collected on consecutive days show compliance with the maximum daily limit.

If the final or intermediate results of any single bioassay test indicate a threatened violation (i.e. the percentage of surviving test organisms is less than the required survival percentage), a new test will begin and the discharger shall investigate the cause of the mortalities and report the finding in the next self-monitoring report.

Chlorine residual analyzers shall be calibrated against grab samples as frequently as necessary to maintain accurate control and reliable operation. If an effluent violation is detected, grab samples shall be collected at least every 30 minutes until compliance is achieved.

#### **IV. Reporting Requirements**

A. General Reporting Requirements are described in Section E of the Regional Board's "*Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits*", dated August 1993.

B. Modifications to Self-Monitoring Program, Part A:

1. If any discrepancies exist between Part A and Part B of the SMP, Part B prevails.
2. The following sections of Part A: C.3., C.4., C.5. are satisfied by participation in the Regional Monitoring Program.
3. The following sections of Part A: D.4., and E.3, are exclusions to the Self- Monitoring Program.
4. Section C.2.a of Part A, shall be modified as follows:

If additional influent or effluent sampling beyond that required in Table 1 of Part B is done voluntarily or to fulfill any requirements in this permit other than those specified in Table 1 or Part B, corresponding collection of effluent or influent samples is not required by this section. The Executive Officer may approve an alternative sampling plan if it is demonstrated to be representative of plant discharge flow and in compliance with all other requirements of this permit.

5. Section C.2.b of Part A shall be modified as follows:

Grab samples of effluent shall be collected during periods of maximum peak flows at a frequency specified in Table 1 of Part B, shall coincide with effluent composite sample days, and shall be analyzed for the constituents specified in Table 1.

6. Section C.2.c of Part A shall be modified as follows (C.2.c(1) and (2) are unchanged):

Effluent sampling will occur on at least one day of any multiple-day flow-through bioassay test required by Table 1 in Part B.

7. Section C.2.d. of Part A shall be modified as follows:

If two consecutive samples of a constituent monitored on a weekly or monthly basis in a 30 day period exceed the monthly average effluent limit for any parameter, (or if the required sampling frequency is once per month and the monthly sample exceeds the monthly average limit), the sampling frequency shall be repeated once within 24 hours after results are received that indicate an exceedance of the monthly average effluent limit for that parameter. Repeat sampling shall occur in this way until the additional sampling shows two consecutive samples are in compliance with the monthly average limit

8. Section C.2.h of Part A shall be amended as follows:

When any dry weather bypass occurs, composite samples shall be collected on a daily basis for all constituents at all affected discharge points which have effluent limits for the duration of the bypass.

9. Section D.1 of Part A, insert the following:

The requirements of this section only apply when receiving water standard observations are specified in table 1 of Part B. Receiving water standard observations are not specified in Table 1 of Part B of this permit. Therefore, the requirements of this section do not apply.

10. Section D.3 of Part A, insert the following:

The Discharger will conduct a study of recreational uses on the bayside of the City over the course of this permit issuance. This comprehensive study will assess the current levels of recreational use of the shoreline and nearshore waters identifying types and frequency of use, and will substitute for standard shoreline observations.

11. Section D.5 of Part A, insert the following:

The requirements of this section only apply when facility periphery standard observations are specified in Table 1 of Part B. Facility periphery standard observations are not specified in Table 1 of Part B of this permit. Therefore, the requirements of this section do not apply.

12. Section G. of Part A, Definition of Terms, amend as follows:

- a. *Grab Sample.* A grab sample is defined as an individual sample collected in a short period of time not exceeding fifteen minutes. A grab sample represents only the conditions that exist at the time the sample is collected. Grab samples shall be collected during normal peak loading conditions for the parameter of interest, which may not necessarily correspond with periods of peak hydraulic conditions. Grab samples are used primarily in determining compliance with daily and instantaneous maximum or minimum limits.
- b. *Composite Sample.* A composite sample is defined as a sample composed of individual grab samples collected manually or by an autosampling device on the basis of time and/or flow as specified in Table 1 of Part B. For flow-based compositing, the proportion of each grab sample included in the composite sample shall be within plus or minus five percent from the representative flow rate of the waste stream being sampled measured at the time of grab sample collection. Alternately, equal volume grab samples may be individually analyzed and the flow-weighted average calculated by averaging flow-weighted ratios of each grab sample analytical result. Grab samples forming time-based composite samples shall be collected at intervals not greater than those specified in Table 1 of Part B. The quantity of each grab sample forming a time-based composite sample shall be a set or flow proportional volume as specified in Table 1 of Part B. For Oil and Grease a minimum of three grab samples, one every eight hours over a 24-hour period shall be used. If a particular time or flow-based composite sampling protocol is not specified in Table 1 of Part B, the discharger shall determine and implement the most representative sampling protocol for the given parameter subject to approval by the Executive Officer.
- c. *Average.* Average values for daily and monthly calculations are obtained by taking the sum of all daily values divided by the number of all daily values measured during the specified period. In calculating the monthly average, when there is more than one value for a given

day, all the values for that day shall be averaged and the average value used as the daily value for that day.

13. Section F. of Part A *Reports to be Filed with the Regional Board* shall be modified as shown in sections C, D, E and F below.

C. Monthly Self-Monitoring Report (SMR).

For each calendar month, a self-monitoring report (SMR) shall be submitted to the Regional Board in accordance with the requirements listed below. The purpose of the report is to document treatment performance, effluent quality and compliance with waste discharge requirements prescribed by this Order, as demonstrated by the monitoring program data and the discharger's operation practices. The report shall be submitted to the Regional Board no later than **thirty (30) days after the end of the reporting month.**

1. Letter of Transmittal

Each report shall be submitted with a letter of transmittal. This letter shall include the following:

- a. Identification of all violations of effluent limits or other discharge requirements found during the monitoring period;
- b. Details of the violations: parameters, magnitude, test results, frequency, and dates;
  - i. The cause of the violations;
  - ii. Discussion of corrective actions taken or planned to resolve violations and prevent recurrence, and dates or time schedule of action implementation. If previous reports have been submitted that address corrective actions, reference to such reports is satisfactory.
- c. The letter of transmittal shall be signed by the discharger's principal executive officer or ranking elected official, or duly authorized representative, and shall include the following certification statement:

" I certify under penalty of law that this document and all attachments have been prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

2. Compliance Evaluation Summary

Each report shall include a compliance evaluation summary. This summary shall include, for each parameter for which effluent limits are specified in the Permit, the number of samples taken during the monitoring period, and the number of samples in violation of applicable effluent limits.

3. Effluent Data Summary - U.S. EPA NPDES Discharge Monitoring Reports.

Summary tabulations of monitoring data including maximum, minimum and average values for subject monitoring period shall be reported in accordance with the format given by the U.S. EPA

NPDES Discharge Monitoring Report(s) (DMRs; US EPA Form 3320-1 or successor). Copies of these DMRs shall be provided to U.S. EPA as required by U.S. EPA.

4. Results of Analyses and Observations.

- a. Tabulations of all required analyses and observations, including parameter, sample date and time, sample station, and test result.
- b. If any parameter specified in Table 1 of Part B is monitored more frequently than required by this permit and SMP, the results of this additional monitoring shall be included in the monitoring report, and the data shall be included in data calculations and compliance evaluations for the monitoring period.
- c. Calculations for all effluent limits that require averaging of measurements shall utilize an arithmetic mean, unless specified otherwise in this permit or SMP.

5. Data Reporting for Results Not Yet Available.

The discharger shall make all reasonable efforts to obtain analytical data for required parameter sampling in a timely manner. The Regional Board recognizes that certain analyses require additional time in order to complete analytical processes and result reporting. For cases where required monitoring parameters require additional time to complete analytical processes and reporting, and results are not available in time to be included in the SMR for the subject monitoring period, such cases shall be described in the SMR. Data for these parameters, and relevant discussions of any observed violations, shall be included in the next SMR submitted after results are available.

6. Reporting Data in Electronic Format.

The discharger has the option to submit all monitoring results in an electronic reporting format approved by the Executive Officer. The discharger is currently submitting SMRs electronically in a format approved by the Executive Officer in a letter dated December 17, 1999, Official Implementation of Electronic Reporting System (ERS). The ERS format includes, but is not limited to, a transmittal letter, summary of violation details and corrective actions, and transmittal receipt.

D. Self-Monitoring Program Annual Report (Annual Report).

An Annual Report shall be submitted for each calendar year. The report shall be submitted to the Regional Board **by February 15 of the following year**. This report shall include the following:

- Both tabular and graphical summaries of monitoring data collected during the calendar year that characterizes treatment plant performance and compliance with waste discharge requirements.
- A comprehensive discussion of treatment plant performance and compliance with waste discharge requirements. This discussion should include any corrective actions taken or planned such as changes to facility equipment or operation practices which may be needed to achieve compliance, and any other actions taken or planned that are intended to improve performance and reliability of the discharger's wastewater collection, treatment or disposal practices.



- A plan view drawing or map showing the dischargers' facility, flow routing and sampling and observation station locations.

E. Spill Reports.

A report shall be made of any spill of oil or other hazardous material.

The spill shall be reported by telephone as soon as possible and no later than 24 hours following occurrence or discharger's knowledge of occurrence. Spills shall be reported by telephone as follows:

During weekdays, during office hours of 8 am to 5 pm, to Ray Balcom at the Regional Board:

Current telephone number: (510) 622 – 2312, (510) 622-2460 (FAX).

During non-office hours, to the State Office of Emergency Services:

Current telephone number: (800) 852 - 7550.

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

Date and time of spill, and duration if known.

Location of spill (street address or description of location).

Nature of material spilled.

Quantity of material involved.

Receiving water body affected.

Cause of spill.

Observed impacts to receiving waters (e.g., discoloration, oil sheen, fishkill).

Corrective actions that were taken to contain, minimize or cleanup the spill.

Future corrective actions planned to be taken in order to prevent recurrence, and time schedule of implementation.

Persons or agencies contacted.

F. Reports of Collection System Overflows.

Dry weather overflows of sewage from the discharger's collection system, other than overflows specifically addressed elsewhere in this Order and SMP, shall be reported to the Regional Board in accordance with the following:

1. *Overflows in excess of 1,000 gallons.*

- a. Overflows in excess of 1,000 gallons shall be reported by telephone and written report, as follows:
  - b. Overflows shall be reported by telephone as soon as possible and no later than 24 hours following occurrence or discharger's knowledge of occurrence. Notification shall be made as follows:
  - c. Notify the current Board staff inspector, or case handler, by phone call or message, or by facsimile:
    - [current staff inspector, Ray Balcom, phone number (510) 622 –2312]
    - [current staff case handler, phone number (510) 622 – 2300]
    - [current Regional Board Fax number: (510) 622 – 2460];
  - d. Notify the State Office of Emergency Services at phone number: (800) 852 - 7550.
  - e. Submit a written report of the incident in follow-up to telephone notification. The written report shall be submitted along with the regular self-monitoring report for the reporting period of the incident, unless directed otherwise by Board staff, and shall include the following:
    - Estimated date and time of overflow start and end.
    - Location of overflow (street address or description of location).
    - Estimated volume of overflow.
    - Final disposition of overflowed wastewater (to land, storm drain, surface water body).
    - Include the name of any receiving water body affected.
    - Cause of overflow.
    - Observed impacts to receiving waters if any (e.g., discoloration, fish kill).
    - Corrective actions that were taken to contain, minimize or cleanup the overflow.
    - Future corrective actions planned to be taken to prevent recurrence and time schedule of implementation.
    - Persons or agencies contacted.
2. Overflows less than 1,000 gallons.

Overflows less than 1,000 gallons shall be reported by written report, as follows:

- a. The discharger shall prepare and retain records of such overflows, with records available for review by Board staff upon request.
- b. The records for these overflows shall include the information as listed in 1.e. above.

- c. A summary of these overflows shall be submitted to the Regional Board annually, as part of the Discharger's Self-Monitoring Program Annual Report.

G. Reports of Treatment Plant Process Bypass or Significant Non-Compliance.

The following requirements apply to all treatment plant bypasses and significant non-compliance occurrences, except for bypasses under the conditions contained in 40 CFR Part 122.41 (m)(4) as stated in Standard Provision A.13:

1. A report shall be made of any incident, other than wet weather discharges or bypasses addressed elsewhere in this permit and self-monitoring program, where the discharger:
  - a. experiences or intends to experience a bypass of any treatment process, or
  - b. experiences violation or threatened violation of any daily maximum effluent limit contained in this Permit or other incident of significant non-compliance, due to:
    - i. maintenance work, power failures or breakdown of waste treatment equipment, or
    - ii. accidents caused by human error or negligence, or
    - iii. other causes such as acts of nature.
2. Such incidents shall be reported to the Regional Board in accordance with the following:
  - a. Notify Regional Board staff by telephone:
    - i. within 24 hours of the time the discharger becomes aware of the incident, for incidents that have occurred, and
    - ii. as soon as possible in advance of incidents that have not yet occurred.
  - b. Submit a written report of the incident in follow-up to telephone notification.
  - c. The written report shall be submitted along with regular self-monitoring report for the reporting period of the incident, unless directed otherwise by Board staff.
  - d. The written report for a treatment process bypass shall include the following:
    - i. Identification of treatment process bypassed;
    - ii. Date and time of bypass start and end;
    - iii. Total duration time;
    - iv. Estimated total volume;
    - v. Description of, or reference to other report(s) describing, bypass event, cause, corrective actions taken, and any additional monitoring conducted.
  - e. The written report for violations of daily maximum effluent limits or similar significant non-compliance shall include information as described in section IV.C.1.b. of this SMP.

3. During any treatment process bypass, the discharger shall conduct additional monitoring as described in Section V of this SMP. The results of such monitoring shall be included in the regular SMR for the reporting period of the bypass.

## **V. Recording Requirements - Records To Be Maintained**

Written or electronic source data pertinent to demonstrating compliance with waste discharge requirements including self-monitoring program requirements, shall be maintained by the discharger in a manner and at a location (e.g., wastewater treatment plant or discharger offices) such that the records are accessible to Board staff. These records shall be retained by the discharger for a minimum of three years. The minimum period of retention shall be extended during the course of any unresolved litigation regarding the subject discharges, or when requested by the Regional Board or by the Regional Administrator of the US EPA, Region IX.

Records to be maintained shall include the following:

### **A. Parameter Sampling and Analyses, and Observations.**

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

1. Parameter
2. Identity of sampling or observation station, consistent with the station descriptions given in this SMP.
3. Date and time of sampling or observation.
4. Method of sampling (grab, composite, other method).
5. Date and time analysis started and completed, and name of personnel or contract laboratory performing the analysis.
6. Reference or description of procedure(s) used for sample preservation and handling, and analytical method(s) used.
7. Calculations of results.
8. Analytical method detection limits and related quantitation parameters.
9. Results of analyses or observations.

### **B. Flow Monitoring Data.**

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

1. Total flow or volume, for each day.
2. Maximum, minimum and average daily flows for each calendar month.

### **C. Wastewater Treatment Process Solids.**

1. For each treatment process unit which involves solid removal from the wastewater stream, records shall include the following:
  - a. Total volume and/or mass quantification of solids removed from each unit (e.g., grit, skimmings, undigested sludge), for each calendar month; and
  - b. Final disposition of such solids (e.g., landfill, other subsequent treatment unit).
2. For final dewatered sludge from the treatment plant, records shall include the following:
  - a. Total volume and/or mass quantification of dewatered sludge, for each calendar month;
  - b. Solids content of the dewatered sludge; and
  - c. Final disposition of dewatered sludge (point of disposal location and disposal method).

D. Disinfection Process.

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

1. For bacteriological analyses:
  - a. Date and time of each sample collected;
  - b. Wastewater flow rate at the time of sample collection;
  - c. Results of sample analyses (coliform count);
  - d. Required statistical parameters of cumulative coliform values (e.g., moving median or log mean for number of samples or sampling period identified in waste discharge requirements).
2. For chlorination process, at least daily average values for the following:
  - a. Chlorine residual in contact basin (mg/L);
  - b. Contact time (minutes);
  - c. Chlorine dosage (kg/day);
  - d. Dechlorination chemical dosage (kg/day)

E. Treatment Process Bypasses.

A chronological log of all treatment process bypasses, other than wet weather bypasses addressed elsewhere in this permit and self-monitoring program, including the following:

1. Identification of treatment process bypassed;

2. Date and time of bypass start and end;
3. Total duration time;
4. Estimated total volume;
5. Description of, or reference to other report(s) describing, bypass event, cause, corrective actions taken, and any additional monitoring conducted.

F. Collection System Overflows

A chronological log of all collection system overflows, including the following:

1. Location of overflow;
2. Date and time of overflow start and end;
3. Total duration time;
4. Estimated total volume;
5. Description of, or reference to other report(s) describing, overflow event, cause, corrective actions taken, and any additional monitoring conducted.

## **VI. Selected Constituents Monitoring**

- A. Effluent monitoring shall include evaluation for all constituents listed in Table 1 by sampling and analysis of final effluent.
- B. Analyses shall be conducted using the lowest commercially available and reasonably achievable detection levels. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to respective water quality objectives.

## **VII. Monitoring Methods And Minimum Detection Levels**

- A. The Discharger may use the methods listed in Table 2 or alternate test procedures that have been approved by the U.S. EPA Regional Administrator pursuant to 40 CFR 136.4 and 40 CFR 136.5 (revised as of May 14, 1999); or
- B. Where no methods are specified for a given pollutant in Table 2 below, methods approved by the SWRCB or RWQCB.

## **VIII. Self-Monitoring Program Certification**

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

1. Has been developed in accordance with the procedure set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Board Order No. R2-2002-0073.

2. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the Discharger, and revisions will be ordered by the Executive Officer.
3. Is effective as of **July 1, 2002**

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LORETTA K. BARSAMIAN  
Executive Officer

Attachment A: Chronic Toxicity – Definition of Terms and Screening Phase Requirements

Figure 1: Shoreline Sampling Stations

**ATTACHMENT A**  
**CHRONIC TOXICITY**

**DEFINITION OF TERMS & SCREENING PHASE REQUIREMENTS**

**I. Definition of Terms**

- A. No observed effect level (NOEL) for compliance determination is equal to IC<sub>25</sub> or EC<sub>25</sub>. If the IC<sub>25</sub> or EC<sub>25</sub> cannot be statistically determined, the NOEL shall be equal to the NOEC derived using hypothesis testing.
- B. Effective concentration (EC) is a point estimate of the toxicant concentration that would cause an adverse effect on a quantal, "all or nothing," response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Kärber. EC<sub>25</sub> is the concentration of toxicant (in percent effluent) that causes a response in 25% of the test organisms.
- C. Inhibition Concentration (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a non-lethal, non-quantal biological measurement, such as growth. For example, an IC<sub>25</sub> is the estimated concentration of toxicant that would cause a 25% reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as EPA's Bootstrap Procedure.
- D. No observed effect concentration (NOEC) is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. It is determined using hypothesis testing.

**II. Chronic Toxicity Screening Phase Requirements**

- A. The discharger shall perform screening phase monitoring:
  - 1. Subsequent to any significant change in the nature of the effluent discharged through changes in sources or treatment, except those changes resulting from reductions in pollutant concentrations attributable to pretreatment, source control, and waste minimization efforts, or
  - 2. Prior to Permit reissuance. Screening phase monitoring data shall be included in the NPDES Permit application for reissuance. The information shall be as recent as possible, but may be based on screening phase monitoring conducted within 5 years before the permit expiration date.
- B. Design of the screening phase shall, at a minimum, consist of the following elements:
  - 1. Use of test species specified in Tables 1 and 2 (attached), and use of the protocols referenced in those tables, or as approved by the Executive Officer;
  - 2. Two stages:
    - a. Stage 1 shall consist of a minimum of one battery of tests conducted concurrently. Selection of the type of test species and minimum number of tests shall be based on Table 3 (attached); and
    - b. Stage 2 shall consist of a minimum of two test batteries conducted at a monthly frequency using the three most sensitive species based on the Stage 1 test results and as approved by the Executive Officer.
  - 3. Appropriate controls; and
  - 4. Concurrent reference toxicant tests.
- C. The discharger shall submit a screening phase proposal to the Executive Officer for approval. The proposal shall address each of the elements listed above.

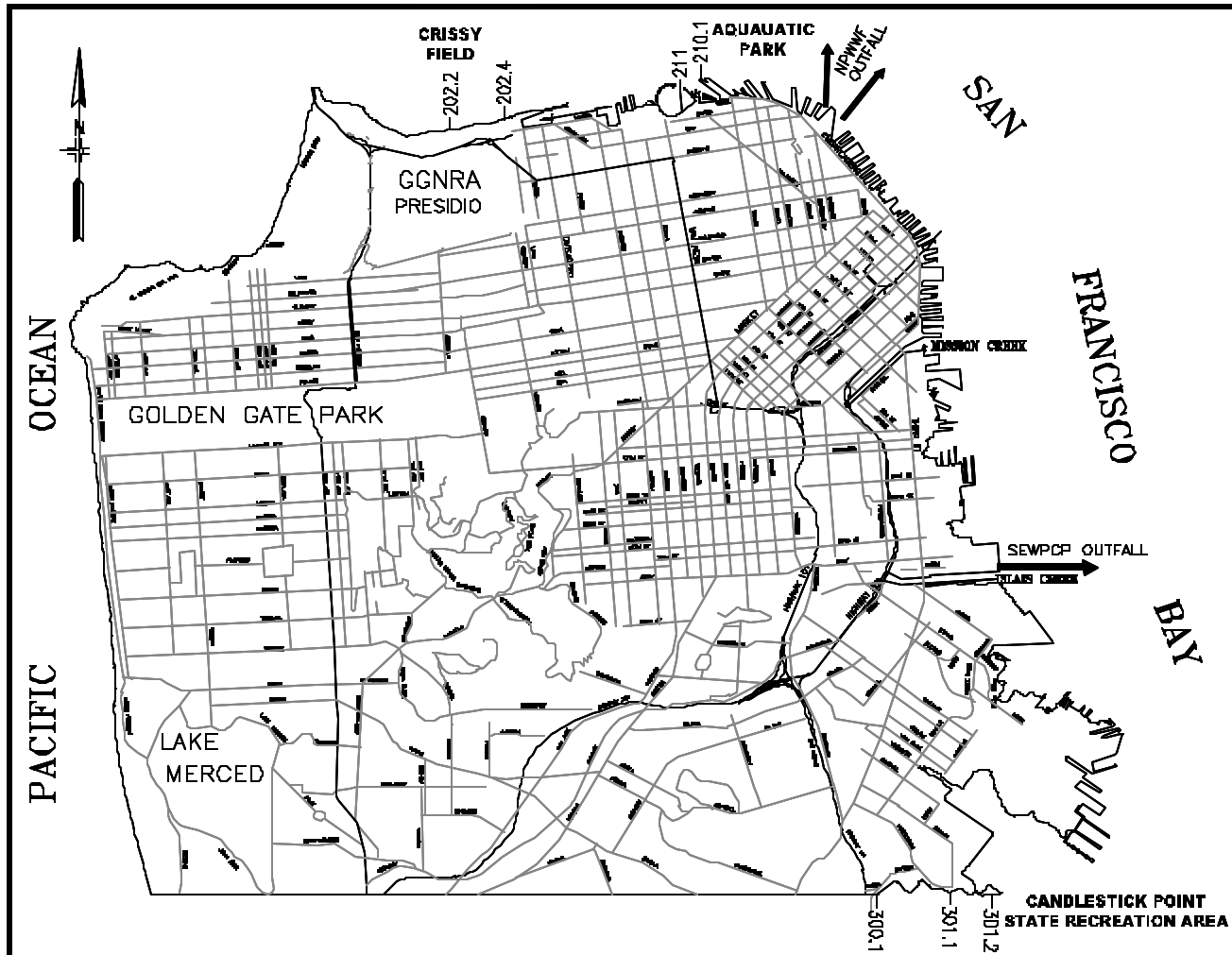


**TABLE C 1**  
**CRITICAL LIFE STAGE TOXICITY TESTS FOR ESTUARINE WATERS**

<b>SPECIES (Scientific Name)</b>	<b>EFFECT</b>	<b>TEST DURATION</b>	<b>REFERENCE</b>
<b>Alga</b> ( <i>Skeletonema costatum</i> ) ( <i>Thalassiosira pseudonana</i> )	growth rate	4 days	1
<b>Red alga</b> ( <i>Champia parvula</i> )	number of cystocarps	7-9 days	3
<b>Giant kelp</b> ( <i>Macrocystis pyrifera</i> )	percent germination; germ tube length	48 hours	2
<b>Abalone</b> ( <i>Haliotis rufescens</i> )	abnormal shell development	48 hours	2
<b>Oyster</b> ( <i>Crassostrea gigas</i> )	abnormal shell development; percent survival	48 hours	2
<b>Mussel</b> ( <i>Mytilus edulis</i> )	abnormal shell development; percent survival	48 hours	2
<b>Echinoderms</b>  (Urchins: <i>Strongylocentrotus purpuratus</i> )  (Sand dollar: <i>Dendraster excentricus</i> )	percent fertilization	1 hour	2
<b>Shrimp</b> ( <i>Mysidopsis bahia</i> )	percent survival; growth	7 days	3
<b>Shrimp</b> ( <i>Holmesimysis costata</i> )	percent survival; growth	7 days	2
<b>Top smelt</b> ( <i>Atherinops affinis</i> )	percent survival; growth	7 days	2
<b>Silversides</b> ( <i>Menidia beryllina</i> )	larval growth rate; percent survival	7 days	3

1. American Society for Testing Materials (ASTM). 1990. Standard Guide for conducting static 96-hour toxicity tests with microalgae. Procedure E 1218-90. ASTM Philadelphia, PA.
2. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms. EPA/600/R-95/136. August 1995
3. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms. EPA/600/4-90/003. July 1994

Figure 1: Shoreline Sampling Stations



**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD**

**SAN FRANCISCO BAY REGION**

**1515 CLAY STREET, SUITE 1400**

**OAKLAND, CA 94612**

**(510) 622 – 2300 Fax: (510) 622 - 2460**

**FACT SHEET**

**for**

**NPDES PERMIT and WASTE DISCHARGE REQUIREMENTS for**

**CITY AND COUNTY OF SAN FRANCISCO**

**SOUTHEAST WATER POLLUTION CONTROL PLANT,**

**NORTH POINT WET WEATHER FACILITY, AND**

**BAYSIDE WET WEATHER FACILITIES**

**SAN FRANCISCO, SAN FRANCISCO COUNTY**

**NPDES Permit No. CA0037664**

**Adopted June 19, 2002**

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## ATTACHED TABLES

- Table 1 – Discharger’s Effluent Data for Conventional Parameters
- Table 2 – Discharger’s Effluent Data for Priority Pollutants
- Table 3 – Basin Plan Water Quality Objectives and CTR Water Quality Criteria.
- Table 4 – Reasonable Potential Analysis
- Table 5 – Ambient Background Data for RPA and Limit Calculations.
- Table 6 – Final Limit Calculations Using SIP Procedures.
- Table 7 – Interim Mercury Mass-Based Limit Calculations
- Table 8 – Salinity Data

## I. PUBLIC NOTICE:

### 1. Written Comments

- Interested persons are invited to submit written comments concerning this draft permit.
- Comments should be submitted to the Regional Board no later than 5:00 p.m. on May 31, 2002.

### 2. Public Hearing

- The draft permit will be considered for adoption by the Regional Board at a public hearing during the Regional Board's regular monthly meeting at: Elihu Harris State Office Building, 1515 Clay Street, Oakland, CA; 1st floor Auditorium.
- This meeting will be held on: June 19, 2002, starting at 9:00 am.

### 3. Additional Information

- For additional information about this matter, interested persons should contact Regional Board staff member: Ms. Judy C. Huang, Phone: (510) 622-2363; email: [jch@rb2.swrcb.ca.gov](mailto:jch@rb2.swrcb.ca.gov)

This Fact Sheet contains information regarding an application for waste discharge requirements and National Pollutant Discharge Elimination System (NPDES) permit for the City and County of San Francisco for discharges from the City's Southeast Water Pollution Control Plant, North Point Wet Weather Facility, and Bayside Wet Weather Facilities. The Fact Sheet describes the factual, legal, and methodological basis for the proposed permit and provides supporting documentation to explain the rationale and assumptions used in deriving the limits.

## II. INTRODUCTION

The City and County of San Francisco, hereinafter called the discharger, has applied to the Board for reissuance of waste discharge requirements and permits to discharge treated wastewater to waters of the State and the United States under the National Pollutant Discharge Elimination System (NPDES) for Southeast Water Pollution Control Plant (NPDES Permit No. CA 0037664) and for Bayside Wet Weather Facilities including the North Point Wet Weather Facility (NPDES Permit No. CA 0038610). Since the permits CA0037664 and CA 0038610 regulate two different components of the same Bayside Wastewater treatment system, this permit will combine the two NPDES permits.

**Combined Sewer.** The discharger collects wastewater in a combined sewer system. This means the domestic sewage, industrial wastewater, and stormwater runoff are collected in the same pipes (combined sewer). Most other communities in California have a separated sewer system: one set of pipes for domestic sewage and industrial waste and another set for stormwater. The City has complied with federally mandated upgrades to secondary level treatment of its dry weather wastewater treatment plants to comply with the Clean Water Act as required of Publicly Owned Treatment Works (POTW). The combined sewer system facilities are not subject to the secondary treatment regulations of 40 Code of Federal Regulation (CFR) Section 133. The U.S. EPA's Office

of General Counsel has classified facilities that treat combined sewer overflows as point sources subject to Section 301(b)(1)(A) of the Clean Water Act. Under wet weather conditions, the City's combined sewer system is regulated under the Federal Combined Sewer Overflow Control Policy, (59FR 18688). Combined sewer system wet weather facilities must provide storage capacity for wet weather flows, maximize flow to treatment facilities, and minimize combined sewer overflows.

### **III. Facilities Description**

#### **1. Facility Location and Description**

- a. The Southeast Water Pollution Control Plant is located at 750 Phelps Street in San Francisco. It is a secondary wastewater treatment plant with a peak secondary treatment capacity of 150 million gallons per day (mgd). During wet weather, the Southeast wet weather facilities are engaged to provide primary treatment to an additional 100 mgd of mixed stormwater and sewage.
- b. The North Point Wet Weather Facility is located at 111 Bay Street in San Francisco. It operates only during wet weather and provides primary level treatment to combined stormwater and wastewater with a peak primary treatment capacity of 150 mgd. It is not a publicly owned treatment works (POTW) as defined in 40 Code of Federal Regulations (CFR) 122.2.
- c. Bayside Wet Weather Storage/Transport and Diversion Structures consist of a series of interconnected large underground rectangular tanks or tunnels that ring San Francisco like a moat, and 29 overflow structures. These storage/transport structures provide storage and treatment equivalent to primary treatment for additional stormwater and wastewater during wet weather conditions. When capacities at the wastewater treatment plants, wet weather facilities and storage/transport structures are exceeded, the excess flow is discharged into the Bay via the 29 shoreline overflow structures. In the event discharges from the Combined Sewer Overflow structures are necessary, these Storage/Transport facilities also provide treatment equivalent to primary treatment.
- d. The locations of the above facilities are listed in the table below and shown in Attachments A and B of the permit.

#### **2. Collection System, Wastewater Treatment, and Discharge System Descriptions**

- a. Wet Weather Day:
  - i. Definition: Wet weather day is defined as any day in which one of the following conditions exists as a result of rain fall:
    1. Instantaneous influent flow to the Southeast water Pollution Control Plant exceeds 110 mgd; or
    2. The average influent flow concentration of TSS or BOD is less than 100 mg/L, or

3. North Shore storage/transport wastewater elevation exceeds 100 inches.

Condition #1 above was established based on the maximum pumping capacity of San Francisco Southeast WPCP's deep water outfall booster pump station. Condition #2 above was established based on the minimum allowable influent concentration of TSS and BOD that Southeast WPCP can reliably achieve 85% removal. Condition #3 was established based on the maximum pumping capacity from the North Shore storage/transport to Southeast WPCP.

ii. During wet weather, combined stormwater and wastewater flows are treated at the Southeast Water Pollution Control Plant, the North Point Wet Weather Facility and the Bayside Wet Weather Storage/Transport and Diversion Structures as described below under *Discharge Process* (Section IV.2).

b. Dry Weather:

i. Definition: any day in the year, that is not defined as wet weather days.

ii. During dry weather, all the wastewater collected is treated at the Southeast Waste Water Treatment Plant.

c. The discharger treats domestic and industrial wastewater from the Southeast and North Shore areas of San Francisco, the Bayshore Sanitary District, City of Brisbane and a small part of the North San Mateo County Sanitation District.

3. The discharger presently discharges an average dry weather flow of 68 mgd from the Southeast Water Pollution Control Plant. Wet weather flow is maximized at the Southeast Water Pollution Control Plant at 250 mgd and at 150 mgd from the North Point Wet Weather Facility.

4. *Discharge Locations*. The discharge locations are as follows:

Outfall	Distance from shore/ Depth (Feet)	Receiving Water	Latitude	Longitude
<b>Waste 001</b> <b>Discharge E-001</b> Southeast Water Pollution Control Plant (Pier 80 Outfall)	810 feet from shore/ 42 feet below mean lower low water	Lower San Francisco Bay	37° 44' 58"	122° 22' 22"
<b>Waste 002</b> <b>Discharge E-002</b> Southeast Water Pollution Control Plant (Quint Street Outfall)	Shoreline Outfall	Islais Creek	37° 44' 50"	122° 23' 13"

<b>Outfall</b>	<b>Distance from shore/ Depth (Feet)</b>	<b>Receiving Water</b>	<b>Latitude</b>	<b>Longitude</b>
<b>Waste 003</b> <b>Discharges E-003-006</b> North Point Wet Weather Facility (Discharges 003 and 004, at Pier 33 and Discharges 005 and 006, at Pier 35)	Dual outfall both 800 feet from shore / 18 feet below mean lower low water	Central San Francisco Bay	37° 48' 25" & 37° 48' 36"	122° 24' 11" & 22° 24' 20"
<b>Waste 007</b> <b>Discharge E-007</b> Oceanside Water Pollution Control Plant (Southwest Ocean Outfall)	This discharge is not regulated by this permit and is only incorporated for reference. It is regulated in permit number CA00376981 City and County of San Francisco Oceanside Water Pollution Control Plant and Westside Wet Weather Combined Sewer System.			
Combined Sewer Overflow Sites				
<b>Waste CSO 001</b> <b>Discharge CSW-001</b>	These discharges are not regulated by this permit and are only incorporated for reference. They are regulated in permit number CA0037681 City and County of San Francisco Oceanside Water Pollution Control Plant and the Westside Wet Weather Combined Sewer System.			
<b>Waste CSO 002</b> <b>Discharge CSW-002</b>				
<b>Waste CSO 003</b> <b>Discharge CSW-003</b>				
<b>Waste CSO 004</b> <b>Discharge CSW-004</b>				
<b>Waste CSO 005</b> <b>Discharge CSW-005</b>				
<b>Waste CSO 006</b> <b>Discharge CSW-006</b>				
<b>Waste CSO 007</b> <b>Discharge CSW-007</b>				
<b>Waste CSO 008</b>	Discharge Eliminated			
<b>Waste CSO 009</b> <b>Discharge CSN-009</b> Baker Street	Shoreline Outfall	Marina Beach North Shore Drainage Basin	37° 48' 29"	122° 26' 48"
<b>Waste CSO 010</b> <b>Discharge CSN-010</b> Pierce Street	Shoreline Outfall	Marina Beach North Shore Drainage Basin	37° 48' 25"	122° 26' 24"



<b>Outfall</b>	<b>Distance from shore/ Depth (Feet)</b>	<b>Receiving Water</b>	<b>Latitude</b>	<b>Longitude</b>
<b>Waste CSO 011</b> <b>Discharge CSN-011</b> Laguna Street	Shoreline Outfall	Yacht Harbor #2 North Shore Drainage Basin	37° 48' 22"	122° 25' 53"
<b>Waste CSO 012</b>	Discharge Eliminated			
<b>Waste CSO 013</b> <b>Discharge CSN-013</b> Beach Street	Shoreline Outfall	Pier 39 North Shore Drainage Basin	37° 48' 30"	122° 24' 24"
<b>Waste CSO 014</b>	Discharge Eliminated			
<b>Waste CSO 015</b> <b>Discharge CSN-015:</b> Sansome Street	Shoreline Outfall	Pier 31 North Shore Drainage Basin	37° 48' 24"	122° 24' 11"
<b>Waste CSO 016</b>	Discharge Eliminated			
<b>Waste CSO 017</b> <b>Discharge CSN-017</b> Jackson Street	Shoreline Outfall	Pier 9  North Shore Drainage Basin	37° 47' 54"	122° 23' 41"
<b>Waste CSO 018</b> <b>Discharge CSC-018</b> Howard Street	Shoreline Outfall	Pier 14  Central Drainage Basin	37° 47' 35"	122° 23' 24"
<b>Waste CSO 019</b>  <b>Discharge CSC-019</b>  Brannan Street	Shoreline Outfall	Pier 32  Central Drainage Basin	37° 47' 7"	122° 23' 24"
<b>Wastes CSO 020 &amp; CSO 021</b>	Discharges Eliminated			
<b>Waste CSO 022</b>  <b>Discharge CSC-022</b>  Third Street	Shoreline Outfall	Mission Creek  Central Drainage Basin	37° 46' 38"	122° 23' 22"
<b>Waste CSO 023</b> <b>Discharge CSC-023</b> Fourth Street North	Shoreline Outfall	Mission Creek Central Drainage Basin	37° 46' 32"	122° 23' 29"

<b>Outfall</b>	<b>Distance from shore/ Depth (Feet)</b>	<b>Receiving Water</b>	<b>Latitude</b>	<b>Longitude</b>
<b>Waste CSO 024</b> <b>Discharge CSC-024</b> Fifth Street North	Shoreline Outfall	Mission Creek Central Drainage Basin	37° 46' 26"	122° 23' 38"
<b>Waste CSO 025</b> <b>Discharge CSC-025</b> Sixth Street North	Shoreline Outfall	Mission Creek Central Drainage Basin	37° 46' 19"	122° 23' 46"
<b>Waste CSO 026</b> <b>Discharge CSC-026</b> Division Street	Shoreline Outfall	Mission Creek Central Drainage Basin	37° 46' 13"	122° 23' 51"
<b>Waste CSO 027</b> <b>Discharge CSC-027</b> Sixth Street South	Shoreline Outfall	Mission Creek Central Drainage Basin	37° 46' 17"	122° 23' 42"
<b>Waste CSO 028</b> <b>Discharge CSC-028</b> Fourth Street South	Shoreline Outfall	Mission Creek Central Drainage Basin	37° 46' 30"	122° 23' 28"
<b>Waste CSO 029</b> <b>Discharge CSC-029</b> Mariposa Street	Shoreline Outfall	Central Basin Central Drainage Basin	37° 45' 53"	122° 23' 7"
<b>Waste CSO 030</b> <b>Discharge CSC-030</b> 20 <sup>th</sup> Street	Shoreline Outfall	Central Basin Central Drainage Basin	37° 45' 40"	122° 22' 48"
<b>Waste CSO 030A</b> <b>Discharge CSC-030A</b> 22 <sup>nd</sup> Street	Shoreline Outfall	Central Basin Central Drainage Basin	37° 45' 28"	122° 22' 49"
<b>Waste CSO 031</b> <b>Discharge CSC-031</b> Third Street North	Shoreline Outfall	Islais Creek Central Drainage Basin	37° 44' 52"	122° 23' 10"

<b>Outfall</b>	<b>Distance from shore/ Depth (Feet)</b>	<b>Receiving Water</b>	<b>Latitude</b>	<b>Longitude</b>
<b>Waste CSO 031A</b> <b>Discharge CSC-031A</b> Islais Creek North	Shoreline Outfall	Islais Creek Central Drainage Basin	37° 44' 52"	122° 23' 15"
<b>Waste CSO 032</b> <b>Discharge CSC-032</b> Marin Street	Shoreline Outfall	Islais Creek Central Drainage Basin	37° 44' 55"	122° 23' 27"
<b>Waste CSO 033</b> <b>Discharge CSC-033</b> Selby Street	Shoreline Outfall	Islais Creek Central Drainage Basin	37° 44' 52"	122° 23' 27"
<b>Waste CSO 034</b>	Discharge Eliminated			
<b>Waste CSO 035</b> <b>Discharge CSC-035</b> Third Street South	Shoreline Outfall	Islais Creek Central Drainage Basin	37° 44' 50"	122° 23' 10"
<b>Waste 036</b>	Discharge Eliminated			
<b>Waste CSO 037</b> <b>Discharge CSS-037</b> Evans Avenue	Shoreline Outfall	India Basin Southeast Drainage Basin	37° 44' 9"	122° 22' 26"
<b>Waste CSO 038</b> <b>Discharge CSS-038</b> Hudson Avenue	Shoreline Outfall	India Basin Southeast Drainage Basin	37° 44' 0"	122° 22' 26"
<b>Waste CSO 039</b>	Discharge Eliminated			
<b>Waste CSO 040</b> <b>Discharge CSS-040</b> Griffith Street South	Shoreline Outfall	Yosemite Canal Southeast Drainage Basin	37° 43' 23"	122° 22' 56"

<b>Outfall</b>	<b>Distance from shore/ Depth (Feet)</b>	<b>Receiving Water</b>	<b>Latitude</b>	<b>Longitude</b>
<b>Waste CSO 041</b>  <b>Discharge CSS-041</b>  Yosemite Avenue	Shoreline Outfall	Yosemite Canal  Southeast Drainage Basin	37° 43' 26"	122° 23' 8"
<b>Waste CSO 042</b>  <b>Discharge CSS-042</b>  Fitch Street	Shoreline Outfall	South Basin  Southeast Drainage Basin	37° 43' 20"	122° 22' 55"
<b>Waste CSO 043</b>  <b>Discharge CSS-043</b>  Sunnydale Avenue	Shoreline Outfall	Candlestick Cove  Southeast Drainage Basin	37° 44' 50"	122° 23' 13"

CSN = North Drainage Basin  
 CSC = Central Drainage Basin  
 CSS = Southeast Drainage Basin  
 CSW = Westside Drainage Basin

5. The Discharge was previously regulated by Waste Discharge Requirements in Order Nos. 94-149, 95-039, and 96-116, adopted by the Board on October 19, 1994, February 15, 1995, and August 21, 1996, respectively. In addition, the SWRCB adopted Order No. WQ 95-04 in September 1995, which remanded portions of Order No. 94-149 based on an appeal of Order 94-149 by the Discharger. In particular, WQ 95-04 effectively removed effluent limitations for aldrin, chlordane, dieldrin, endrin, heptachlor, hexachlorobenzene, mercury, PAHs, PCBs (Total), TCDD equivalents, toxaphene, and tributyltin which were not supported by the Fact Sheet and findings.
6. The U.S. Environmental Protection Agency (U.S. EPA) and the Board have classified the discharges from Southeast Water Pollution Control Plant, North Point Wet Weather Facility, and Bayside Wet Weather Facilities as a major discharges.

#### **IV. Treatment Process Description**

##### **1. Treatment Process.**

- a. **Southeast Water Pollution Control Plant:** The treatment process consists of a headworks with coarse and fine bar screens, primary sedimentation tanks, pure oxygen aeration basins, secondary clarifiers and chlorine contact basins. The treatment process schematic diagrams for the Southeast Water Pollution Control Plant are included as Attachment B of this Order.

- b. **North Point Wet Weather Facility:** The treatment process consists of primary sedimentation, clarification, disinfection and dechlorination. It treats exclusively wet weather flow consisting of a combination of domestic and industrial wastewater mixed with stormwater runoff. The treatment level at this wet weather facility is equivalent to the minimum treatment specified by the *Combined Sewer Overflow Control Policy* (59 FR 18688) for the “Presumption” approach as defined in Finding 33.
  - c. **Bayside Wet Weather Storage/Transport and Diversion Structures:** The treatment process consists of a series of baffles and weirs that are designed to remove settleable solids and floatables. The treatment is equivalent to the minimum treatment specified by the *Combined Sewer Overflow Control Policy* for the “Presumption” approach.
2. **Discharge Process.**
- a. **Southeast Water Pollution Control Plant:** The Southeast Water Pollution Control Plant has the capacity to treat up to 250 mgd of combined stormwater and wastewater during wet weather conditions. Up to 150 mgd receive secondary treatment; the remaining 100 mgd receive primary treatment. The entire volume of treated stormwater and wastewater is disinfected prior to discharge. During dry weather, all flow is pumped to a deep-water outfall located at Pier 80 (E-001). The flow then discharges through an effluent diffuser located 810 feet offshore of Pier 80. The submerged diffuser is 42 feet below mean lower low water where initial dilution exceeds 10:1. At full wet weather capacity, the discharge via the Southeast Water Pollution Control Plant deep water outfall (E-001) is maximized to 110 mgd of a blended primary and secondary treated effluent. The remaining 140 mgd receive full secondary treatment and are discharged via the Quint St. shallow water outfall into Islais Creek (E-002).
  - b. **North Point Wet Weather Facility:** The North Point Wet Weather Facility is operational only during wet weather and provides primary treatment to combined stormwater and wastewater flow up to 150 mgd. Treated combined stormwater and wastewater (Waste E-003) is simultaneously discharged from the North Point Wet Weather Facility into San Francisco Bay through four forty-eight inch diameter deep water outfalls which terminate 800 feet offshore, two at the end of Pier 33 (E-003 & E-004) and two at the end of Pier 35 (E-005 & E-006). The entire volume of treated stormwater and wastewater is disinfected and dechlorinated prior to discharge. The outfalls are submerged at a depth of 17-26 feet below mean lower low water.
  - c. **Bayside Wet Weather Storage/Transport and Diversion Structures:**
    - i. The storage/transport structures operate to transport combined sewage and street runoff to the Southeast Water Pollution Control Plant during dry weather periods. During wet weather, these structures provide storage for additional stormwater and wastewater flow, while pumping facilities continue to transfer flow to the treatment facilities. In the event that the capacities of the treatment plant, wet weather facilities and storage structures are exceeded, the combined stormwater and wastewater receive equivalent of primary treatment in the transport

structures and are discharged into San Francisco Bay via one of twenty-nine shoreline Combined Sewer Overflow structures (CSO 009 to CSO 043).

- ii. Discharges from these structures occur only when the storm flow exceeds the combined storage capacity of the storage/transport and the capacity of the pumping facilities to transfer flows to the Southeast Water Pollution Control Plant and the North Point Wet Weather Facility. The design of the structures provides for the removal of settleable solids and floatable materials. The outfalls associated with these structures range in size from 18' diameter pipes to quadruple 8'3" x 9'6" box culverts.

### 3. *Solids Treatment, Handling and Disposal.*

- a. **Southeast Water Pollution Control Plant:** Primary and secondary sludge is processed via anaerobic digestion. Prior to digestion, the secondary sludge is thickened. The digested and dewatered sludge is applied to land as daily cover at permitted sites, or is beneficially re-used at the landfill.
- b. **North Point Wet Weather Facility:** Primary sludge is directed to Southeast Water Pollution Control Plant for treatment.
- c. **Bayside Wet Weather Storage/Transport and Diversion Structures:** All solids which settle out in the storage/transport are flushed to Southeast Water Pollution Control Plant after the rainstorm subsides.

### **Combined Sewer Overflow**

4. An opinion by the U.S. EPA's Office of General Counsel has classified facilities that treat combined sewer overflows as point sources subject to Section 301(b)(1)(A) of the Clean Water Act. Thus, they are not Publicly Owned Treatment Works (POTWs) subject to the secondary treatment regulations of 40 Code of Federal Regulations (CFR) Section 133. This opinion is supported by subsequent case law (646 F.2d 568(1980); Montgomery Environmental Coalition V. Costle).
5. Wet weather flows are intermittent in nature and subject to a high degree of variability throughout the wet weather season. Based on past rainfall records, the North Point Wet Weather Facility will be operated approximately 30 times per wet season, with the duration of each operation expected to average approximately 14 hours at a maximum flow rate of approximately 150 mgd. The sanitary fraction in controlled overflows averages 6% of the total flow.
6. In 1971 and 1974, San Francisco developed the "Master Plan for Wastewater Management" and "Master Plan Environmental Impact Statement and Report", respectively. These documents set the groundwork for San Francisco's wastewater control program by identifying the need for upgraded treatment levels and the principle of storing accumulated combined sewage flow during wet weather for later treatment at the wastewater treatment plants.

7. In 1979, the Board issued Order No. 79-67 for the wet-weather facilities. This order found that a long term average of 4 overflows per year for diversion structures CSN-009 through CSN-017 (North Shore Drainage Basin), a long term average of 10 overflows per year for diversion structures CSC-018 through CSC-035 (Central Basin Drainage), and a long term average of 1 overflow per year for diversion structures CSS-037 through CSS-043 (Southeast Drainage Basin) would provide adequate overall protection of beneficial uses. This conclusion is based on evidence presented at the public meeting concerning the costs of different types of facilities necessary to achieve specific overflow frequencies, the water quality benefits derived from construction of these facilities, and the effects of the combined sewer overflows to existing beneficial uses. Wet weather flows are governed under compliance with the nine minimum controls contained in the *Combined Sewer Overflow Control Policy* (59FR 18688). The Discharger is responsible for operating wet weather facilities, storage, transport and pumping facilities at maximum efficiency in order to maximize treatment of wet weather flow. The Discharger has successfully designed and completed construction of its wet weather facilities based upon criteria contained in Order No. 79-67. Operation and implementation of these facilities satisfies CSO Control Policy requirements. The system was designed and built based upon historical rainfall data to not exceed the overflow frequencies specified in Order No. 79-67. As specified in Order No. 79-67 and subsequent permits for these facilities, these long term design criteria will not be used to determine compliance or non-compliance. The Board recognizes that some years are wetter than others and may contribute more flow than anticipated in the system design criteria. The Discharger is required to maximize treatment and shall be considered in compliance as defined by adherence to the Wet Weather Effluent Performance Criteria defined in this permit and the Operations Plan and other permit conditions.
  
8. The storage and transport and hold structures, which surround the City like a moat, were designed with the capacity to capture wet weather flows for later treatment and prevent shoreline overflows. The system capacity was measured, designed, and constructed based upon a previous 70 year rainfall history pattern of California and the San Francisco Bay Area to capture flows as necessary to achieve the criteria specified in Order No. 79-67. In 1997, the City completed the major components of the Wastewater Master Plan, and is in compliance with the Federal Combined Sewer Overflow Control Policy. Citywide, this construction program cost more than \$1.4 billion dollars over a twenty-year period and represents an expenditure of nearly \$1,900 for every resident in the City of San Francisco. Approximately \$1 billion of the cost represents facilities needed to control wet weather flows. The remaining costs were for treatment upgrades to all facilities and construction of the Oceanside Water Pollution Control Plant. Discharges associated with the Oceanside Water Pollution Control Plant are regulated under NPDES Permit No. CA0038681.

The Board has determined using BPJ that the nine minimum control technologies represent the appropriate technology based limitations for combine sewer overflows (see BCT/BAT analysis, Attachment A).

### **Beneficial Uses**

The receiving waters for the subject discharges are the waters of Central and Lower San Francisco Bay. Beneficial uses for the Central and Lower San Francisco Bay receiving water, as identified in the Basin Plan and based on known uses of the receiving waters in the vicinity of the discharge, are:

*Central San Francisco Bay:*

- a. Ocean, Commercial, and Sport Fishing
- b. Estuarine Habitat
- c. Industrial Service Supply
- d. Industrial Process Supply
- e. Fish Migration
- f. Fish Spawning
- g. Navigation
- h. Preservation of Rare and Endangered Species
- i. Water Contact Recreation
- j. Noncontact Water Recreation
- k. Shellfish Harvesting
- l. Wildlife Habitat

*Lower San Francisco Bay:*

- a. Ocean, Commercial, and Sport Fishing
- b. Estuarine Habitat
- c. Industrial Service Supply
- d. Fish Migration
- e. Navigation
- f. Preservation of Rare and Endangered Species
- g. Water Contact Recreation
- h. Noncontact Water Recreation
- i. Shellfish Harvesting
- j. Wildlife Habitat

**Receiving Water Salinity**

The Basin Plan states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable WQOs. Freshwater objectives apply to discharges to waters both outside the zone of tidal influence and with salinities lower than 5 parts per thousand (ppt) at least 75 percent of the time. Saltwater objectives shall apply to discharges to waters with salinities greater than 5 ppt at least 75 percent of the time. For discharges to waters with salinities in between the two categories or tidally influenced freshwaters that support estuarine beneficial uses, the objectives shall be the lower of the salt or freshwater objectives, based on ambient hardness, for each substance (Basin Plan, pp. 4 – 13). The CTR states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable water quality criteria. Freshwater criteria shall apply to discharges to waters with salinities equal to or less than one ppt at least 95 percent of the time. Saltwater criteria shall apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to water with salinities in between these two categories, or tidally influenced freshwaters that support estuarine beneficial uses, the criteria shall be the lower of the salt or freshwater criteria, (the latter calculated based on ambient hardness), for each substance. The receiving waters for the subject discharge are the waters of Central and Lower San Francisco Bay. Regional Board staff evaluated RMP salinity data from the three nearest receiving water stations, Alameda, Golden Gate and Yerba Buena, for the period February 1996 – August 1999 (see **Table 11**,



**attached**). During that period, the receiving water’s minimum salinity was 12 parts per thousand (ppt) its maximum salinity was 35.9 ppt, and its average salinity was 25.3 ppt. These data are all well above both the Basin Plan and CTR thresholds for salt water; therefore the limits in this Order are based on salt water criteria.

**V. DESCRIPTION OF EFFLUENT**

Board Order No. 94-149, as amended by Order 96-114 and Order No. 95-039 (collectively the previous permit), presently regulates the discharge from the Southeast Water Pollution Control Plant, North Point Wet Weather Facility, and Bayside Wet Weather Facilities, respectively. The Discharger’s dry weather treated wastewater from the Southeast Water Pollution Control Plant has the characteristics summarized in Table A. Table A data represent at least monthly monitoring performed from January 1999 through December 2001 for metals and organic pollutants.

Table A. Summary of Effluent Data for Outfall E-001 (dry weather)

<b>Constituent</b>	<b>Average</b>	<b>Maximum</b>
pH, range min/max (s.u.)	6.25	7.4
BOD <sub>5</sub> (mg/L)	14.5	41
TSS (mg/L)	15.5	53
Arsenic (µg/L)	2.04	5.1
Cadmium (µg/L)	0.26	5.21
Chromium (µg/L)	1.29	9.2
Copper (µg/L)	14.6	33.3
Lead (µg/L)	2.49	14.9
Mercury (µg/L)	0.02	0.169
Nickel (µg/L)	3.94	8.2
Selenium (µg/L)	0.55	1.9
Silver (µg/L)	1.03	3.6
Zinc (µg/L)	61.77	364.87
Cyanide (µg/L)	< 10	< 10
Bis(2-ethylhexyl)Phthalate(µg/L)	3.15	7.9
Total Oil and Grease (mg/L)	6	23
4,4 DDE (µg/L)	< 0.26	< 0.26
Dieldrin (µg/L)	< 0.22	< 0.25

**VI. GENERAL RATIONALE**

The following documents are the bases for the requirements contained in the proposed Order, and are referred to under the specific rationale section of this Fact Sheet.

- Federal Water Pollution Control Act, as amended (the CWA).
- Code Federal of Regulations, Title 40 - Parts 122-129 (40 CFR Parts 122 - 129) - Protection of Environment, Chapter 1, Environmental Protection Agency, Subchapter D, Water Programs.

- The Regional Board’s *Water Quality Control Plan, San Francisco Bay Basin(Region 2)* (the Basin Plan). The Basin Plan defines beneficial uses and contains WQOs for waters of the State within the San Francisco Bay region, including Lower San Francisco Bay. Section 4 of the Basin Plan states that “The Regional Board intends to implement the federal CSO Control Policy for the combined sewer overflows from the City and County of San Francisco”. The Regional Board adopted the Basin Plan on June 21, 1995 , State Water Resources Control Board (the State Board) approved it on July 20, 1995 the Office of Administrative Law approved it on November 13, 1995.
- *Combined Sewer Overflow Control Policy* EPA Federal Register 59 FR 18688, April 19, 1994 (hereinafter referred to as the CSO Control Policy)
- California Toxics Rule (the CTR), Federal Register, Vol. 65, No. 97, May 18, 2000.
- National Toxics Rule (the NTR) 57 FR 60848, December 22, 1992, as amended.
- The State Board’s *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (the State Implementation Policy, or SIP). The SIP only applies to this discharge during the Dry Weather period.
- The U.S. EPA’s 1986 *Quality Criteria for Water, 440/5-86-001*.,
- The U.S. EPA’s January 1986 *Ambient Water Quality Criteria for Bacteria – 1986, 440/5-84-002*,
- Combined Sewer Overflows, Guidance For Nine Minimum Controls (Nine Minimum Control, EPA 832-B-95-003, May 1995
- Manual, Combined Sewer Overflow Control, EPA/625/R-93/007, September 1993
- Combined Sewer Overflows, Guidance For Permit Writers, EPA 832-B-95-008, September 1995
- Combined Sewer Overflows, Guidance For Long-Term Control Plan, EPA 832-B-95-002
- Coordinating Combined Sewer Overflow (CSO) Long-Term Planning with Water Quality Standards Reviews (EPA-833-R-01-002)

## **VII. SPECIFIC RATIONALE**

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

### **1. Recent Plant Performance**

Section 402(o) of the CWA and 40 CFR 122.44(l) require that water quality-based effluent limits (WQBELs) in re-issued permits be at least as stringent as in the previous permit. The SIP specifies that interim effluent limitations, if required, must be based on current treatment facility performance. Regional Board staff used best professional judgment (BPJ) to evaluate recent plant performance.

Dry Weather effluent monitoring data collected from 1999 to 2001 are considered representative of recent plant performance, based on the following rationale:

- It accounts for flow variation.
- For most of the organic pollutants, 3 years of data were used as this provides an adequate set of effluent data for determining their reasonable potential.
- For mercury, pooled ultra-clean data from more than 20 POTWs from January 2000 to March 2001 were used to allow a valid statistical calculation of an interim concentration limit based on the best available information. For calculation of an interim mass limit, it provides a balanced set of effluent data, which comprise monitoring results measured by both an outdated analytical method and the recent “ultra-clean” method.

## 2. Impaired Water Bodies in 303(d) List

The U.S. EPA Region 9 office approved the State’s 303(d) list of impaired waterbodies on May 12, 1999. The list was prepared in accordance with Section 303(d) of the CWA to identify specific water bodies where it is not expected water quality standards will be met after implementation of technology-based effluent limitations on point sources. The current 303(d) list includes Central and Lower San Francisco Bay as impaired by copper, mercury, nickel, exotic species, total PCBs, dioxin and furan compounds, chlordane, DDT, dieldrin, diazinon, and dioxin-like PCBs.

The SIP requires final effluent limits for all 303(d)-listed pollutants to be based on total maximum daily loads (TMDL) and waste load allocation (WLA) results. The SIP and federal regulations also require that final concentration limits be included for all pollutants demonstrated to have reasonable potential to cause or contribute to an exceedence of water quality objectives (have reasonable potential). The SIP requires permits to establish interim performance-based concentration limits (concentration-based IPBLs), and performance-based mass limits for bioaccumulative pollutants, where the Discharger has demonstrated infeasibility to meet the final WQBELs, together with a compliance schedule for attainment of the final WQBELs. The SIP also requires the inclusion of appropriate provisions for waste minimization and source control in these cases.

## 3. Basis for Prohibitions

- a) Prohibition A.1 (no discharges other than as described in the permit): This prohibition is based on the Basin Plan, previous permit and BPJ.
- b) Prohibition A.2 (10:1 dilution): This prohibition is based on the Basin Plan. The Basin Plan prohibits discharges not receiving 10:1 dilution (Chapter 4, Discharge Prohibition No. 1). The Basin Plan also identifies exceptions that may be granted under certain conditions.
- c) Prohibition A.3 (no discharges from wet weather outfalls during dry weather period): This prohibition is based on the Nine Minimum Controls, previous permit, and BPJ.
- d) Prohibition A.4 (no bypass): This prohibition is based on the Basin Plan. The Basin Plan prohibits the discharge of partially treated and untreated wastes (Chapter 4, Discharge Prohibition No.15). This prohibition is based on general concepts contained in Sections 13260 through 13264 of the California Water Code that relate to the discharge of waste to State waters without filing for and

being issued a permit. Under certain circumstances, as stated in 40 CFR 122.41(m)(4), the facilities may bypass waste streams in order to prevent loss of life, personal injury, or severe property damage, or if there were no feasible alternatives to the bypass and the Discharger submitted notices of the anticipated bypass. This prohibition pertains to dry weather discharges only. Wet weather discharges are regulated under the EPA *Combined Sewer Overflow Control Policy* (59 FR 18688).

- e) Prohibition A.5 (no degradation of shellfish harvest during dry weather): This prohibition is based on previous permit and BPJ.
- f) Prohibition A.6 (flow limit): This prohibition is based on the reliable treatment capacity of the plant. This provision is based on best professional judgment.

**4. Basis for Dry Weather Effluent Limitations**

- a) Dry Weather Effluent Limitations B.1 (Discharges to Lower San Francisco Bay; listed below):

Permit Limit	Parameter	Units	Monthly Average	Weekly Average	Daily Maximum	Instantaneous Maximum
B.1.a.i.	Biochemical Oxygen Demand (BOD)	mg/L	30	45	--	--
B.1.a.ii.	Total Suspended Solids (TSS)	mg/L	30	45	--	--
B.1.a.iii.	Oil & Grease	mg/L	10	--	20	--
B.1.a.iv.	Settleable Matter	ml/L-hr	0.1	--	0.2	--
B.1.b.	pH	>6.0, <9.0				
B.1.c.	BOD and TSS Removal	%	Monthly average, minimum 85% removal			
B.1.d.	Fecal Coliform	CFU/100 ml	500 30-day median, 1100 90 percentile			
B.1.e.	Total Chlorine Residual <sup>(1)</sup>	mg/L	--	--	--	0.0

Footnotes to effluent limitations:

- 1. Requirement defined as below the limit of detection in the latest edition of "Statistical Methods for Examination of Water and Wastewater."
- b) Effluent Limitations B.1.a-e limits are technology-based limits representative of and intended to ensure adequate and reliable secondary level wastewater treatment during dry weather. These limits are based on the Basin Plan (Chapter 4, page 4-8, and Table 4-2, at page 4-69). All limits apply independently to the discharges to dry weather discharges to Central and Lower San Francisco Bay.
- c) BOD and TSS, 30 mg/L monthly average and 45 mg/L weekly average (Effluent Limitation B.1.a.i. & ii.): These are standard secondary treatment requirements, and existing permit effluent limitations that are based on Basin Plan requirements, derived from federal requirements (40 CFR 133.102). These effluent limitations apply only to dry weather discharges.
- d) Oil & Grease, Settleable Matter and Total Chlorine Residual: Standard secondary treatment requirements, and existing permit effluent limitations, based on Basin Plan requirements.
- e) Effluent Limitation B.1.b. (pH): The pH limit is based on the Basin Plan (Table 4-2, pg. 4 – 69) and the excursion allowance is based on 40 CFR 133.102, which applies to indirect industrial dischargers. Based on Regional Board staff's best professional judgment, the excursion allowance is extended to the Discharger.

- f) Effluent Limitation B.1.c. (BOD and TSS monthly average 85 percent removal): These are standard secondary treatment requirements (Table 4-2, pg. 4 – 69), and existing permit effluent limitations based on Basin Plan requirements, derived from federal requirements (40 CFR 133.102; definition in 133.101). Compliance has been demonstrated by existing plant performance for dry weather flows . During the past 3 years, the Discharger has consistently met these removal efficiency limits.
- g) Effluent Limitation B.1.d. (Fecal Coliform): The purpose of this effluent limitation is to ensure adequate disinfection of the discharge in order to protect beneficial uses of the receiving waters. Effluent limits are based on water quality objectives for bacteriological parameters for receiving water beneficial uses. Water quality objectives are given in terms of parameters which serve as surrogates for pathogenic organisms. The traditional parameter in this regard is coliform bacteria, either as total coliform or as fecal coliform. The Basin Plan’s Table 4-2 (pg. 4 – 69) and its footnotes allow fecal coliform limitations to be substituted for total coliform limitations provided that the Discharger conclusively demonstrates “through a program approved by the Regional Board that such substitution will not result in unacceptable adverse impacts on the beneficial uses of the receiving waters”.
- h) Wet Weather Effluent Limitations B.2 (Discharges to Lower San Francisco Bay; listed below):

Permit Limit	Parameter	Units	Monthly Average	Weekly Average	Daily Maximum	Instantaneous Maximum
B.2.a.	Fecal Coliform	CFU/100 ml	500	30-day median,	1100	90 percentile
B.2.b.	Total Chlorine Residual <sup>(1)</sup>	mg/L	--	--	--	0.0

Footnotes to effluent limitations:

- 1. Requirement defined as below the limit of detection in the latest edition of “Statistical Methods for Examination of Water and Wastewater.”

Effluent Limitations B.2.a-d limits are performance-based limits representative of and intended to ensure adequate implementation of the Nine Minimum Controls. These limits are based on the previous permit.

- i) Effluent Limitation B.3 (Whole Effluent Toxicity) The Basin Plan specifies a narrative objective for toxicity, requiring that all waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental response on aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alternations in population, community ecology, or receiving water biota. These effluent toxicity limits are necessary to ensure that this objective is protected. The acute toxicity limit is based on the Basin Plan (Table 4-4, pg. 4 – 70).
- j) Effluent Limitation B.4 (Chronic Toxicity): The chronic toxicity limit which applies to dry weather discharges is based on the Basin Plan’s narrative toxicity definition on Page 3 – 4, and is consistent with the SIP requirements. The Discharger performed chronic toxicity screening prior to the application of permit renewal. The results of the screening study indicated that echinoderms appeared to be the most sensitive species.
- k) Effluent Limitation B.5 (Toxic Substances):

1. Reasonable Potential Analysis (RPA):

- a. 40 CFR 122.44(d)(1)(i) specifies that permits are required to include WQBELs for all pollutants “which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard” (have reasonable potential). Thus, the fundamental step in determining whether or not a WQBEL is required is to assess a pollutant’s reasonable potential of causing or contributing to an excursion above its applicable water quality objective or criterion. The following section describes the reasonable potential analysis and the results of such an analysis for the pollutants identified in the Basin Plan and the CTR.
  - i) *WQOs and WQCs*: The RPA involves the comparison of effluent data with appropriate WQOs including narrative toxicity objectives in the Basin Plan and the applicable WQCs in the CTR/NTR (collectively WCOs). The Basin Plan objectives and CTR criteria are shown in **Table 7, attached (WQOs and WQCs)**.
  - ii) *Methodology*: RPA is conducted using the method and procedures prescribed in Section 1.3 of the SIP. Board staff and the Discharger have analyzed the effluent data to determine if the discharge has reasonable potential. **Table 6, attached (Reasonable Potential Analysis)**, shows the step-wise process described in Section 1.3 of the SIP.
- b. *Effluent and background data*: The RPA is based on effluent data collected by the Discharger from January 1999 through December 2001 for metals, mercury, cyanide, and organic pollutant effluent data, as depicted in **Tables 1 through 5, attached (Priority Pollutant Data)**, attached to this Fact Sheet. Water-quality data collected from San Francisco Bay at the Yerba Buena Island and Richardson Bay monitoring stations through the Regional Monitoring Program in 1993-2000 were reviewed to determine the maximum observed background values - see Table 8, attached (Ambient Background).
  - i. RPA determination: The RPA results are shown in Table B, below (as well as in Table 6 (RPA), attached to this Fact Sheet). Pollutants with reasonable potential were copper, lead, nickel, mercury, silver, zinc, dioxin TEQ, bis(2-ethylhexyl)phthalate, tributyltin, 4,4-DDE, and dieldrin.

TABLE B. Summary of Reasonable Potential Results

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL <sup>1</sup> (mg/L)	Governing WQO (ug/L)	Maximum Background (mg/L)	RPA Results <sup>2</sup>
2	Arsenic	5.1	36	2.22	N
4	Cadmium	5.21	9.3	0.13	N
5b	Chromium (VI)	9.2	50	4.4	N
6	<b>Copper</b>	<b>33.3</b>	<b>3.7</b>	<b>2.45</b>	<b>Y</b>
7	<b>Lead</b>	<b>14.9</b>	<b>5.6</b>	<b>2.38</b>	<b>Y</b>
8	<b>Mercury</b>	<b>0.169</b>	<b>0.025</b>	<b>0.0064</b>	<b>Y</b>
9	<b>Nickel</b>	<b>8.2</b>	<b>7.1</b>	<b>5.9</b>	<b>Y</b>

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL <sup>1</sup> (mg/L)	Governing WQO (ug/L)	Maximum Background (mg/L)	RPA Results <sup>2</sup>
10	Selenium	1.9	5	0.19	N
<b>11</b>	<b>Silver</b>	<b>3.6</b>	<b>2.3</b>	<b>0.068</b>	<b>Y</b>
<b>13</b>	<b>Zinc</b>	<b>364.8</b>	<b>58</b>	<b>13.3</b>	<b>Y</b>
14	Cyanide	<10	1	1.0	N
<b>16</b>	<b>2,3,7,8-TCDD (Dioxin)</b>	<b>&lt;3.17E-06</b>	<b>1.4E-08</b>	<b>NA</b>	<b>Y</b>
17	Acrolein	<0.2	780	NA	Ub
18	Acrylonitrile	<1.1	0.66	NA	Ub,Ud
19	Benzene	<0.5	71	NA	Ub
20	Bromoform	<0.7	360	NA	Ub
21	Carbon Tetrachloride	<0.5	4.4	NA	Ub
22	Chlorobenzene	<0.5	21000	NA	Ub
23	Chlordibromomethane	1.2	34	NA	Ub
24	Chloroethane	0.6	N/A	NA	Ub, Uo
25	2-Chloroethylvinyl Ether	<10	N/A	NA	Ub, Uo
26	Chloroform	15	N/A	NA	Ub, Uo
27	Dichlorobromomethane	4.08	46	NA	Ub
28	1,1-Dichloroethane	<0.5	N/A	NA	Ub, Uo
29	1,2-Dichloroethane	<0.5	99	NA	Ub
30	1,1-Dichloroethylene	<0.5	3.2	NA	Ub
31	1,2-Dichloropropane	<0.5	39	NA	Ub
32	1,3-Dichloropropylene	<0.5	1700	NA	Ub
33	Ethylbenzene	1.8	29000	NA	Ub
34	Methyl Bromide	<0.5	4000	NA	Ub
35	Methyl Chloride	1.3	N/A	NA	Ub,Uo
36	Methylene Chloride	3.8	1600	NA	Ub
37	1,1,2,2-Tetrachloroethane	<0.5	11	NA	Ub
39	Toluene	3.6	200000	NA	Ub
40	1,2-Trans-Dichloroethylene	<0.5	140000	NA	Ub
41	1,1,1-Trichloroethane	<0.5	N/A	NA	Ub, Uo
42	1,1,2-Trichloroethane	<0.5	42	NA	Ub
43	Trichloroethylene	<0.5	81	NA	Ub
44	Vinyl Chloride	<0.5	525	NA	Ub
45	Chlorophenol	<0.92	400	NA	Ub
46	2,4-Dichlorophenol	<0.77	790	NA	Ub
47	2,4-Dimethylphenol	<2.9	2300	NA	Ub
48	2-Methyl-4,6-Dinitrophenol	<0.41	765	NA	Ub
49	2,4-Dinitrophenol	<0.4	14000	NA	Ub
50	2-Nitrophenol	<0.54	NA	NA	Ub, Uo
51	4-Nitrophenol	<0.21	NA	NA	Ub, Uo
52	3-Methyl-4-Chlorophenol	<1.77	NA	NA	Ub,Uo,Ud
53	Pentachlorophenol	<0.59	7.9	NA	Ub
54	Phenol	<0.5	4600000	NA	Ub
55	2,4,6-Trichlorophenol	<0.69	6.5	NA	Ub
56	Acenaphthene <sup>3</sup>	<0.6	2700	0.0015	N
57	Acenaphthylene <sup>3</sup>	<1.1	NA	0.00053	Uo

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL <sup>1</sup> (mg/L)	Governing WQO (ug/L)	Maximum Background (mg/L)	RPA Results <sup>2</sup>
58	Anthracene <sup>3</sup>	<1.0	110000	0.0005	N
59	Benzidine	<0.05	0.00054	NA	Ub,U(dl)
60	Benzo(a)Anthracene <sup>3</sup>	<0.84	0.049	0.0053	U(dl)
61	Benzo(a)Pyrene	<1.20	0.049	0.0025	U(dl)
62	Benzo(b)Fluoranthene <sup>3</sup>	<1.65	0.049	0.0046	U(dl)
63	Benzo(ghi)Perylene <sup>3</sup>	<1.65	NA	0.006	Uo
64	Benzo(k)Fluoranthene <sup>3</sup>	<1.14	0.049	0.0015	U(dl)
65	Bis(2-Chloroethoxy)Methane	<1.01	NA	NA	Ub, Uo
66	Bis(2-Chloroethyl)Ether <sup>3</sup>	<0.91	1.4	NA	Ub,U(dl)
67	Bis(2-Chloroisopropyl)Ether	0.85	170000	NA	Ub
<b>68</b>	<b>Bis(2-Ethylhexyl)Phthalate</b>	<b>7.9</b>	<b>5.9</b>	<b>NA</b>	<b>Y</b>
69	4-Bromophenyl Phenyl Ether	<1.03	NA	NA	Ub, Uo
70	Butylbenzyl Phthalate	<0.62	5200	NA	Ub
71	2-Chloronaphthalene	<2.85	4300	NA	Ub
72	4-Chlorophenyl Phenyl Ether	<1.1	NA	NA	Ub, Uo
73	Chrysene <sup>3</sup>	<1.01	0.049	0.0041	U(dl)
74	Dibenzo(a,h)Anthracene <sup>3</sup>	<1.41	0.049	0.0006	U(dl)
75	1,2 Dichlorobenzene	1.2	17000	NA	Ub
76	1,3 Dichlorobenzene	0.74	2600	NA	Ub
77	1,4 Dichlorobenzene	1	2600	NA	Ub
78	3,3 <sup>1</sup> -Dichlorobenzidine	<1.32	0.077	NA	Ub, U(dl)
79	Diethyl Phthalate	<0.32	120000	NA	Ub
80	Dimethyl Phthalate	<0.35	2900000	NA	Ub
81	Di-n-Butyl Phthalate	<0.7	12000	NA	Ub
82	2,4-Dinitrotoluene	<0.96	9.1	NA	Ub
83	2,6-Dinitrotoluene	<1.18	NA	NA	Ub,Uo
84	Di-n-Octyl Phthalate	<0.9	NA	NA	Ub,Uo
85	1,2-Diphenylhydrazine	<10	0.54	NA	Ub, U(dl)
86	Fluoranthene <sup>3</sup>	<0.086	370	0.007	N
87	Fluorene <sup>3</sup>	<1	14000	0.002078	N
88	Hexachlorobenzene	<0.04	0.00077	NA	Ub, U(dl)
89	Hexachlorobutadiene	<0.55	50	NA	Ub
90	Hexachlorocyclopentadiene	<0.33	17000	NA	Ub
91	Hexachloroethane	<0.59	8.9	NA	Ub
92	Indeno(1,2,3-cd) Pyrene <sup>3</sup>	<1.35	0.049	0.004	U(dl)
93	Isophorone	<0.91	600	NA	Ub
94	Naphthalene <sup>3</sup>	<0.001	NA	0.00229	Uo
95	Nitrobenzene	<0.91	1900	NA	Ub
96	N-Nitrosodimethylamine	<5	8.1	NA	Ub, U(dl)
97	N-Nitrosodi-n-Propylamine	<0.94	1.4	NA	Ub, U(dl)
98	N-Nitrosodiphenylamine	<5	16	NA	Ub
99	Phenanthrene <sup>3</sup>	<1	NA	0.0061	Uo



# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL <sup>1</sup> (mg/L)	Governing WQO (ug/L)	Maximum Background (mg/L)	RPA Results <sup>2</sup>
100	Pyrene <sup>3</sup>	<0.87	11000	0.0051	N
101	1,2,4-Trichlorobenzene	<1.26	NA	NA	Ub, Uo
102	Aldrin	<0.002	0.00014	NA	Ub, U(dl)
103	alpha-BHC	<0.001	0.013	NA	N
104	beta-BHC	<0.0016	0.046	NA	Ub
105	gamma-BHC	<0.0011	0.063	NA	Ub
106	delta-BHC	<0.001	NA	NA	Ub,Uo
107	Chlordane	<0.0034	0.00059	0.00018	U(dl)
108	4,4-DDT	<0.0033	0.00059	0.000066	U(dl)
<b>109</b>	<b>4,4-DDE</b>	<b>&lt;0.0018</b>	<b>0.00059</b>	<b>0.00069</b>	<b>Y</b>
110	4,4-DDD	<0.003	0.00084	0.000313	U(dl)
<b>111</b>	<b>Dieldrin</b>	<b>&lt;0.0019</b>	<b>0.00014</b>	<b>0.000264</b>	<b>Y</b>
112	alpha-Endosulfan	<0.0026	0.0087	0.000031	U(dl)
113	beta-Endosulfan	<0.0018	0.0087	0.000069	U(dl)
114	Endosulfan Sulfate	<0.0022	240	0.000011	N
115	Endrin	<0.0024	0.0023	0.000016	U(dl)
116	Endrin Aldehyde	<0.001	0.81	NA	Ub
117	Heptachlor	<0.0012	0.00021	0.000019	U(dl)
118	Heptachlor Epoxide	<0.0012	0.00011	0.000094	U(dl)
119-125	PCBs	<0.01	0.00017	NA	Ub, U(dl)
126	Toxaphene	<0.035	0.0002	NA	Ub, U(dl)
	<b>Tributyltin</b>	<b>0.02</b>	<b>0.01</b>	<b>NA</b>	<b>Y</b>

- 1) Maximum Effluent Concentration (MEC) in bold is the actual detected MEC, otherwise the MEC shown is the minimum detection level (if any of reported DLs < WQO).

NA = Not Available (there is not monitoring data for this constituent).

- 2) RP = Yes, if either MEC, or Background > WQO, or based on other information.  
 RP = No, if both MEC or background < WQO.  
 RP = Ud (undetermined due to lack of effluent monitoring data).  
 RP = Ub (undetermined due to lack of background data) if MEC < WQO and background is not available.  
 RP = U(dl) (undetermined due to high detection levels)  
 RP = Uo (undetermined if no objective promulgated).
- ii. *Organic constituents with limited data*: Reasonable potential could not be determined for a majority of the organic priority or toxic pollutants due to
- applicable WQOs are lower than current analytical techniques can measure,
  - applicable WQOs or WQCs, or
  - adequate background data are absent.

- iii. *Pollutant Monitoring.* Additional sampling for Constituents in the SIP is addressed in the Regional Board staff’s August 6, 2001 letter “Requirements for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy” (the August 6, 2001 letter). As required by the letter, the Discharger is required to initiate or continue to monitor for those pollutants in this category using analytical methods that provide the best detection limits reasonably feasible. If detection limits improve to the point where it is feasible to evaluate compliance with applicable water quality criteria, these pollutants’ RPA will be reevaluated in the future to determine whether there is a need to add numeric effluent limits to the permit or to continue monitoring.
  - iv. *Pollutants with no reasonable potential:* The Order does not contain WQBELs for constituents that do not have reasonable potential. However, monitoring for those pollutants is still required, as specified in the Order’s Self-Monitoring Program and the Regional Board’s August 6, 2001 letter formally requiring (pursuant to Section 13267 of the California Water Code) the Discharger to conduct ambient background monitoring for those constituents not currently sampled by the RMP and to provide this technical information to the Regional Board. If concentrations or mass loads of these constituents are found to have increased significantly, the Discharger will be required to investigate the source(s) of the increase(s). Remedial measures are required if the increases pose a threat to the receiving water’s quality.
  - v. *Permit Reopener:* The permit includes a reopener provision to allow adding numeric effluent limits for any constituent that in the future exhibits reasonable potential. That determination will be made by the Regional Board, based on monitoring results.
2. Final Water Quality-Based Effluent Limits (WQBELs): The final effluent limitations in the Permit’s Table 7, attached, Toxic Substances, are water quality-based. They were developed and set for the toxic and priority pollutants that were determined to have reasonable potential. Final effluent limitations were calculated based on appropriate WQOs, background concentrations at two central bay monitoring locations (Yerba Buena Island and Richardson Bay), a maximum dilution credit of 10:1 (for non-bioaccumulative pollutants), and the appropriate procedures specified in Section 1.4 of the SIP (See Table 6, attached of this Fact Sheet). For the purpose of the Proposed Order, final WQBELs refer to all non-interim effluent limitations. The WQO used for each pollutant with RP is indicated in Table C, below, as well as in Table 7, attached (WQOs).

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

<b>Pollutant</b>	<b>Human Health WQO (µg/L)</b>	<b>Chronic WQO (µg/L)</b>	<b>Acute WQO (µg/L)</b>	<b>Basis of Lowest WQO Used in RP</b>
Copper		3.7	5.8	CTR
Lead		5.6	140	Basin Plan
Mercury		0.025	2.1	Basin Plan
Nickel		7.1	140	Basin Plan
Silver		-	2.3	Basin Plan

Pollutant	Human Health WQO (µg/L)	Chronic WQO (µg/L)	Acute WQO (µg/L)	Basis of Lowest WQO Used in RP
Zinc		58	170	Basin Plan
Dioxin TEQ	0.000000014			CTR
Tributyltin		0.01		Basin Plan Narrative Objective, BPJ
Bis (2-ethyhexyl) Phthalate	5.9			CTR
4,4-DDE		0.00059	-	CTR
Dieldrin		0.00014	-	CTR

3. BASIS for 10:1 DILUTION CREDIT – Board staff believes a conservative limit of 10:1 dilution credit for discharges to the Bay is necessary for protection of beneficial uses.

The basis for limiting the dilution credit is based on SIP provisions in Section 1.4.2. The following outlines the basis for derivation of the dilution credit. Detailed explanation of each point follows the list:

- a. A far-field background station is appropriate because the receiving waterbody (Bay) is a very complex estuarine system with highly variable and seasonal upstream freshwater inflows and diurnal tidal saltwater inputs.
- b. Due to the complex hydrology of the San Francisco Bay, a mixing zone cannot be accurately established.
- c. Previous dilution studies do not fully account for the cumulative effects of other wastewater discharges to the system.
- d. The SIP allows limiting a mixing zone and dilution credit for persistent pollutants (e.g., copper, silver, nickel and lead).

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

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

With this in mind, the Yerba Buena Island and Richardson Bay Stations also fit the guidance for ambient background in the SIP compared to other stations in the Regional Monitoring Program. Section 1.4.3 of the SIP specifies that “preference should be given

to...concentrations immediately upstream or near the discharge, but not within an allowed mixing zone for the discharge.” The SIP further states that data are applicable if they are “representative of the ambient receiving water column that will mix with the discharge.” Data from these stations are upstream, not within a mixing zone, and do represent water that will mix with the discharge. These stations are located near the Golden Gate. They are upstream in that they represent the water flushing in and out with each tidal cycle. This water is a blend of fresh ocean water and Bay water. About 20 to 25 percent of the water in the Bay is exchanged with each tidal cycle (Water Quality Control Plan Report, San Francisco Bay Basin, April 1975, Part II Supporting Information, Chapter 11). For most of the Bay, the waters represented by these stations make up a large part of the receiving water that will mix with the discharge.

- b. Uncertainties Prevent Accurate Mixing Zones in Complex Estuarine Systems** - There are uncertainties in accurately determining the mixing zones for each discharge. The models that have been used by dischargers to predict dilution have not considered the three-dimensional nature of the currents in the estuary resulting from the interaction of tidal flushes and seasonal fresh water outflows. Salt water is heavier than fresh water. Colder salt water from the ocean flushes in twice a day generally under the warmer fresh rivers waters that flows out annually. When these waters mix and interact, complex circulation patterns occur due to the different densities of these waters. These complex patterns occur throughout the estuary but are most prevalent in the San Pablo Bay, Carquinez Strait, and Suisun Bay areas. The locations change depending on the strength of each tide and the variable rate of delta outflow. Additionally, sediment loads to the Bay from the Central Valley also change on a longer-term basis. These changes can result in changes to the depths of different parts of the Bay making some areas more shallow and/or other areas more deep. These changes affect flow patterns that in turn can affect the initial dilution achieved by a discharger’s diffuser.
- c. Dye studies do not account for cumulative effects from other discharges** - The tracer and dye studies conducted are often not long enough in duration to fully assess the long residence time of a portion of the discharge that is not flushed out of the system. In other words, some of the discharge, albeit a small portion, makes up part of the dilution water. So unless the dye studies are of long enough duration, the diluting effect on the dye measures only the initial dilution with “clean” dilution water rather than the actual dilution with “clean” dilution water plus some amount of original discharge that resides in the system. Furthermore, both models and dye studies that have been conducted have not considered the effects of discharges from other nearby discharge sources, nor the cumulative effect of discharges from over 20 other major dischargers to San Francisco Bay system. While it can be argued the effects from other discharges are accounted for by factoring in the local background concentration in calculating the limits, accurate characterization of local background levels are also subject to uncertainties resulting from the interaction of tidal flushing and seasonal fresh water outflows described above.
- d. Mixing Zone Is Further Limited for Persistent Pollutants**- Discharges to the Bay are not completely-mixed discharges as defined by the SIP. Thus, the dilution credit should be determined using site specific information for incompletely-mixed discharges. The SIP in section 1.4.2.2 specifies that the Regional Board “significantly limit a mixing zone and dilution credit as necessary... For example, in determining the extent of ... a

mixing zone or dilution credit, the RWQCB shall consider the presence of pollutants in the discharge that are ... persistent.” The SIP defines persistent pollutants to be “substances for which degradation or decomposition in the environment is nonexistent or very slow.” The pollutants at issue here are persistent pollutants (e.g., copper, lead, nickel). The dilution studies that estimate actual dilution do not address the effects of these persistent pollutants in the Bay environment, such as their long-term effects on sediment concentrations.”

4. This Order sets interim limits for copper, and mercury, based on the Discharger’s April 25, 2002, Feasibility Study, which demonstrated that immediate compliance with the WQBELs for those pollutants is infeasible. The interim limit for copper is based on the previous permit limit because the calculated plant performance (Table 10) is higher than the previous permit limit. The interim limit for mercury is based on a statistical analysis of pooled ultraclean mercury data for POTWs throughout the San Francisco Bay Region.
5. The interim limits for tributyltin and Bis(2-ethylhexyl)phthalate cannot be calculated because there are not enough data available to calculate performance based interim limit and there is no previous permit limit. Therefore, based on Regional Board staff’s best professional judgment, and consistent with the approach used in similar situations for other POTWs dischargers, the discharger is required to conduct accelerated monitoring to collect data for interim limit calculations.
6. The interim limit for dioxin TEQ cannot be calculated because the detection limits used by the Discharger for dioxin congeners is insufficient to determine the concentration of the congeners.
7. Compliance Schedules and Infeasibility Analysis

If the Discharger is unable to immediately comply with the WQBELs contained in this Permit, it is required to demonstrate its infeasibility to immediately comply with these limits by demonstrating the extent to which past pollution prevention efforts have been implemented, as well as measurements of the efforts’ effectiveness and future plans for focused pollution prevention efforts.

8. Further Discussion and Rationale for Mercury WQBELs and Mass-Based Effluent Limitations

As shown in the attached Table 9, attached (Limits), the calculated final average monthly and daily maximum effluent limits for mercury are 0.020 µg/L and 0.041 µg/L, respectively. Due to the limited data set of ultraclean mercury results for this Discharger, it is not possible to accurately predict its ability to immediately comply with these WQBELs. Therefore, based on Regional Board staff’s Best Professional Judgment, it is appropriate to set an IPBL for mercury of 0.087 µg/L, based on the statistical analysis of pooled ultraclean mercury for POTWs, as described in the June 11, 2001 staff report referenced in the Order.

The Order also includes an interim mercury mass-based effluent limitation of 0.30 kilograms per month. This mass-based effluent limitation is calculated as shown in Table 12, attached (Mercury Mass Limit), and is based on facility flow and mercury concentration data collected

between November 1998 and December 2001. This mass-based effluent limitation will maintain current loadings until a TMDL is established. The final mass-based effluent limitation will likely be based on the WLA contained in the mercury TMDL.

#### **5. Basis for Wet Weather Effluent Performance Criteria**

These criteria were derived from the design criteria of the wet weather facilities. This requirement is based on the CSO Policy and BPJ.

#### **6. Basis for Receiving Water Limitations**

- a) Receiving water limitations D.1 (conditions to be avoided): These limits are based on the previous Order and the narrative/numerical objectives contained in Chapters 2 and 3 of the Basin Plan
- b) Receiving water limitation D.2 (compliance with State Law): This requirement is in the previous permit, requires compliance with Federal and State law, and is self-explanatory.
- c) Receiving water limitation D.3 (Water Quality Standards): This requirement is based on the previous permit and BPJ.

#### **7. Basis for Self Monitoring Program Requirements**

The SMP includes monitoring for conventional, non-conventional, and toxic pollutants, and acute and chronic toxicity. For the most part, dry weather monitoring is similar to that required by the previous Order, including the amended requirements for fecal coliform. The TSS monitoring for the influent is five times per week because the Regional Board believes that these levels of performance monitoring are appropriate for large municipal treatment facilities. Current knowledge indicates that TSS is a better indicator of proper functioning for solids removal than settleable solids and therefore, based on Regional Board staff's best professional judgment, settleable matter monitoring is reduced from five times per week in the previous permit to monthly in this one. In addition, the influent BOD and TSS monitoring frequencies are now consistent with effluent monitoring for these parameters. This will allow better evaluation of percent removal efficiency. Monthly metals, mercury, and cyanide monitoring is consistent with the previous order. Monitoring for bis(2-ethylhexyl)phthalate, 4,4-DDE, dieldrin, and tributyltin is required to demonstrate compliance with effluent limits. Finally, previous monitoring for toxic organic pollutants is replaced by more comprehensive monitoring as demonstrated by participation in the Regional Ambient Monitoring Program.

#### **8. Basis for Sludge Management Practices**

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

#### **9. Basis for Provisions**

- a) Provisions 1. (Permit compliance and rescission of previous permit): Time of compliance is based on 40 CFR 122. The basis of the order superseding and rescinding the previous permit order is 40 CFR 122.46.
- b) Provision 2. (Effluent Characterization Study): This provision is based on the SIP.

- c) Provision 3. (Ambient Background Receiving Water Study): This provision is based on the Basin Plan and the SIP.
- d) Provision 4 (Wet Weather Facility System Study): This is based on the Basin Plan and BPJ. Since the nine minimum controls are primarily narrative, it is necessary to occasionally audit the Discharger's operation and maintenance using experts in the field. This is primarily to ensure that the Discharger has minimized overflows and maximized treatment.
- e) Provision 5 (Dioxin Special Study): This based on the Basin and BPJ. The detection limit used by the Discharger is insufficient to determine the concentration of the dioxin congeners. Therefore, an interim limit for dioxin TEQ cannot be calculated. This provision requires the Discharger to investigate lowering the detection limit for dioxin TEQ congeners and conduct additional monitoring which would allow the Board to calculate an interim limit for dioxin TEQ.
- f) Provision 6 (Tributyltin Special Study): This is based on the SIP and BPJ. Since there is no background data to calculate final effluent limitations and interim limitations, it is necessary for the discharger to conduct additional effluent monitoring.
- g) Provision 7 (Bis(2-ethylhexyl)phthalate Special Study): This is based on the Basin Plan and BPJ. There is insufficient data to calculate an interim effluent limit for bis(2-ethylhexyl)phthalate. In addition, the Discharger has presented comments that some detections of bis(2-ethylhexyl)phthalate in the effluent might be due to laboratory contamination. Therefore, this provision requires the Discharger to investigate and improve sampling and analysis procedures for bis(2-ethylhexyl)phthalate to avoid laboratory contamination. It also requires the Discharger to conduct additional effluent monitoring.
- h) Provision 8 (Odor Control Master Plan): This is based on the Basin Plan, and BPJ. Frequently, the neighbors complain that odor from the Discharger's collection system and treatment facilities create a nuisance condition. This provision requires the Discharger to update and revise its Odor Control Master Plan to include source investigation, source mitigation, air monitoring, and an implementation schedule.
- h) Provision 9. (Pollution Prevention and Pollutant Minimization Program): This provision is based on the Basin Plan (pp 4 – 25 and 4 – 26) and the SIP (section 2.1, Compliance Schedule).
- i) Provision 10. (Nine Minimum Controls): This provision establishes technology based requirements for the Discharger's wet weather operations. This is based on the CSO Policy, Nine Minimum Controls, previous permit, and BPJ.
- j) Provision 11. (Whole Effluent Acute Toxicity): This provision establishes conditions by which compliance with permit effluent limits for acute toxicity will be demonstrated. Conditions include the use of 96-hour bioassays, flow-through bioassays for discharges to Central and Lower San Francisco Bay, the use of three-spine stickleback as the test species for 3<sup>rd</sup> Edition U.S. EPA protocol and fathead minnow or rainbow trout as the test species for 4<sup>th</sup> Edition U.S. EPA protocol, and use of approved test methods as specified. On July 1, 2003, the Discharger shall change from 3<sup>rd</sup> to 4<sup>th</sup> Edition U.S. EPA protocols. These conditions are based on the effluent limits for acute toxicity given in the Basin Plan, Chapter 4, and BPJ.

- k) Provision 12. (Whole Effluent Chronic Toxicity): This provision establishes conditions and protocol by which compliance with the Basin Plan narrative water quality objective for toxicity will be demonstrated. Conditions include required monitoring and evaluation of the effluent for chronic toxicity and numerical values for chronic toxicity evaluation to be used as 'triggers' for initiating accelerated monitoring and toxicity reduction evaluation(s). These conditions apply to the discharges to Central and Lower San Francisco Bay and the numerical values for chronic toxicity evaluation are based on a minimum initial dilution credit of 10:1. This provision also requires the Discharger to conduct a screening phase monitoring requirement and implement toxicity identification and reduction evaluations when there is consistent chronic toxicity in the discharge. New testing species and/or test methodology may be available before the next permit renewal. Characteristics, and thus toxicity, of the process wastewater may also have been changed during the life of the permit. This screening phase monitoring is important to help determine which test species is most sensitive to the toxicity of the effluent for future compliance monitoring. The proposed conditions in the draft permit for chronic toxicity are based on the Basin Plan narrative water quality objective for toxicity, Basin Plan effluent limits for chronic toxicity (Basin Plan, Chapter 4), U.S. EPA and SWRCB Task Force guidance, applicable federal regulations [40 CFR 122.44(d)(1)(v)], and BPJ.
- l) Provision 13. (Regional Monitoring Program): This provision, which requires the Discharger to continue to participate in the Regional Monitoring Program, is based on the previous Order and the Basin Plan.
- m) Provision 14. (Pretreatment Program): The Discharger has implemented and is maintaining a U.S. EPA approved pretreatment program in accordance with Federal pretreatment regulations (40 CFR 403) and the requirements specified in Attachment F "Pretreatment Requirements" and its revisions thereafter.
- n) Provision 15. (Optional Mass Offset): This option is provided to encourage the Discharger to implement aggressive reduction of mass loads to Central and Lower San Francisco Bay. San Francisco has already accomplished a significant reduction of pollutant loading during wet weather conditions as a result of the Combined Sewer System and Operations.
- o) Provision 16. (Copper Translator Study): This provision allows the Discharger to conduct an optional copper translator study, based on SIP Section 1.4 ("Translator for Metals and Selenium") and BPJ. This provision is based on the need to gather site-specific information in order to apply a different translator from the default translator specified in the CTR and SIP. Without site-specific data, the default translator of 0.83 has been used with the CTR criterion to obtain a total copper objective of 3.7 µg/L.
- p) Provision 17. (Wastewater Facilities, Review and Evaluation, and Status Reports): This provision is based on the previous Order and the Basin Plan.
- q) Provision 18. (Operations and Maintenance Manual, Review and Status Reports): This provision is based on the Basin Plan, requirements of 40 CFR 122 and the previous permit.
- r) Provision 19. (Contingency Plan). The Contingency Plan provision is based on the requirements stipulated in Board Resolution No. 74-10 and the previous permit.



- s) Provisions 20. (Annual Status Reports): The Annual Status Reports are based on the previous permit and the Basin Plan.
- t) Provision 21. (303(d)-listed Pollutants Site-Specific Objective and TMDL Status Review): This provision requires participation in the development of a TMDL or site-specific objective for copper, nickel, mercury, 4,4 DDE, and dieldrin. By January 31 of each year, the Discharger shall submit an update to the Regional Board to document progress made on source control and pollutant minimization measures and development of TMDL or site-specific objective. Regional Board staff shall review the status of TMDL development. The order may be reopened in the future to reflect any changes required by TMDL development.
- u) Provision 22. (New Water Quality Objectives): This provision allows future modification of the permit and permit effluent limits as necessary in response to updated water quality objectives that may be established in the future. This provision is based on 40 CFR 123.
- v) Provision 23. (Self-Monitoring Program Requirement): The Discharger is required to conduct monitoring of the permitted discharges in order to evaluate compliance with permit conditions. Monitoring requirements are given in the Self Monitoring Program (SMP) of the Permit. This provision requires compliance with the SMP, and is based on 40 CFR 122.44(i), 122.62, 122.63 and 124.5. The SMP is a standard requirement in almost all NPDES permits (including the Order) issued by the Regional Board. In addition to containing definitions of terms, it specifies general sampling/analytical protocols and the requirements of reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and Board's policies. The SMP also contains a sampling program specific for the Discharger's treatment facilities. It defines the sampling stations and frequency, pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are specified. Additional constituents, for which no effluent limitations are established, are also required to be monitored to provide data for future determination of their reasonable potential of exceeding the applicable WQOs or WQCs in the receiving water.
- w) Provision 24. (Standard Provisions and Reporting Requirements): The purpose of this provision is to require compliance during dry weather with the standard provisions and reporting requirements given in this Board's document titled, Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993, or any amendments thereafter. This document is included as part of the permit as an attachment of the permit. Where provisions or reporting requirements specified in the permit are different from equivalent or related provisions or reporting requirements given in 'Standard Provisions', the specifications given in the permit shall apply. The standard provisions and reporting requirements given in the above document are based on various state and federal regulations with specific references cited therein.
- x) Provision 25. (Change in Control or Ownership): This provision is based on 40 CFR 122.61.
- y) Provision 26. (Permit Reopener): This provision is based on 40 CFR 123.
- z) Provision 27. (NPDES Permit and U.S. EPA concurrence). This provision is based on 40 CFR 123.
- aa) Provision 28. (Permit Expiration and Reapplication): This provision is based on 40 CFR 122.46 (a)

## 9. WRITTEN COMMENTS

- Interested persons are invited to submit written comments concerning this draft permit.
- Comments should be submitted to the Regional Board no later than **5:00 P.M. on May 31, 2002.**
- Comments received after this date may not receive full consideration in the formulation of final determinations of permit conditions.
- Comments should be submitted to the Regional Board at the address given on the first page of this fact sheet, and addressed to the attention of: Ms. Judy C. Huang.

## 10. PUBLIC HEARING

- The draft permit will be considered for adoption by the Regional Board at a public hearing during the Regional Board's regular monthly meeting to be held on: June 19, 2002, starting at 9:00 a.m.
- This meeting will be held at:

**Main Floor Auditorium  
Elihu Harris State Office Building  
1515 Clay Street, Oakland, California**

## 11. WASTE DISCHARGE REQUIREMENT APPEALS

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

## 12. ADDITIONAL INFORMATION

For additional information about this matter, interested persons should contact the following Regional Board staff member: Ms. Judy C. Huang, Phone number: (510) 622-2363, or by email at [jch@rb2.swrcb.ca.gov](mailto:jch@rb2.swrcb.ca.gov).

## 13. ATTACHED TABLES

- Table 1 – Discharger's Effluent Data for Metals
- Table 2 – Discharger's Effluent Data for Organic Pollutants
- Table 3 – Discharger's Effluent Data for PAHs
- Table 4 – Discharger's Effluent Data for Cyanide
- Table 5 – Discharger's Effluent Data for Dioxin
- Table 6 – Reasonable Potential Analysis
- Table 7 – Basin Plan Water Quality Objectives and CTR Water Quality Criteria.
- Table 8 – Ambient Background Data for RPA and Limit Calculations.
- Table 9 – Final Limit Calculations Using SIP Procedures.
- Table 10 – Interim Copper Concentration Limit Calculations
- Table 11 – Salinity Data

Table 12 – Mercury Mass Limit Calculation

#### **14. ATTACHED DOCUMENTS**

Attachment A: Determination of Technology-Based Requirements for NPDES Permit No. CA0038610, Bayside Facilities, City and County of San Francisco