



California Regional Water Quality Control Board

San Francisco Bay Region



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Secretary for
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Arnold Schwarzenegger
Governor

ORDER NO. R2-2008-0007 NPDES NO. CA0037664

The following Discharger is subject to waste discharge requirements as set forth in this Order.

Table 1. Discharger Information

Discharger	City and County of San Francisco
Name of Facility	Southeast Water Pollution Control Plant, North Point Wet Weather Facility, and Bayside Wet Weather Facilities and Wastewater Collection System.
Facility Address	San Francisco Public Utilities Commission (SFPUC) /Wastewater Enterprise
	750 Phelps St.
	San Francisco, CA 94124
	San Francisco County

The discharge by the City and County of San Francisco from the discharge points identified below is subject to waste discharge requirements as set forth in this Order:

Table 2. Treatment Plant and Combined Sewer Overflow Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
Treatment Plant Discharge Points				
EFF 001 Pier 80 Outfall	Blended primary and secondary treated effluent, including combined stormwater and wastewater	37° 44' 58"	122° 22' 22"	Lower San Francisco Bay
EFF 002 Quint Street Outfall	Secondary treated effluent, of combined stormwater and wastewater	37° 44' 50"	122° 23' 13"	Islais Creek
EFF 003 and EFF 004 Pier 33	Primary treated effluent of combined stormwater and wastewater	37° 48' 25"	122° 24' 11"	Central San Francisco Bay
EFF 005 and EFF 006 Pier 35	Primary treated effluent of combined stormwater and wastewater	37° 48' 36"	122° 24' 20"	Central San Francisco Bay
CSO Discharge Points				
009 Baker Street	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 48' 29"	122° 26' 48"	Marina Beach North Shore Drainage Basin

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
010 Pierce Street	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 48' 25"	122° 26' 24"	Marina Beach North Shore Drainage Basin
011 Laguna Street	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 48' 22"	122° 25' 53"	Yacht Harbor #2 North Shore Drainage Basin
013 Beach Street	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 48' 30"	122° 24' 24"	Pier 39 North Shore Drainage Basin
015 Sansome Street	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 48' 24"	122° 24' 11"	Pier 31 North Shore Drainage Basin
017 Jackson Street	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 47' 54"	122° 23' 41"	Pier 9 North Shore Drainage Basin
018 Howard Street	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 47' 35"	122° 23' 24"	Pier 14 Central Drainage Basin
019 Brannan Street	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 47' 7"	122° 23' 24"	Pier 32 Central Drainage Basin
022 Third Street	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 46' 38"	122° 23' 22"	Mission Creek Central Drainage Basin
023 Fourth Street North	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 46' 32"	122° 23' 29"	Mission Creek Central Drainage Basin
024 Fifth Street North	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 46' 26"	122° 23' 38"	Mission Creek Central Drainage Basin
025 Sixth Street North	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 46' 19"	122° 23' 46"	Mission Creek Central Drainage Basin

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
026 Division Street	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 46' 13"	122° 23' 51"	Mission Creek Central Drainage Basin
027 Sixth Street South	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 46' 17"	122° 23' 42"	Mission Creek Central Drainage Basin
028 Fourth Street South	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 46' 30"	122° 23' 28"	Mission Creek Central Drainage Basin
029 Mariposa Street	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 45' 53"	122° 23' 7"	Central Basin Central Drainage Basin
030 20 th Street	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 45' 40"	122° 22' 48"	Central Basin Central Drainage Basin
030A 22 nd Street	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 45' 28"	122° 22' 49"	Central Basin Central Drainage Basin
031 Third Street North	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 44' 52"	122° 23' 10"	Islais Creek Central Drainage Basin
031A Islais Creek North	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 44' 52"	122° 23' 15"	Islais Creek Central Drainage Basin
032 Marin Street	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 44' 55"	122° 23' 27"	Islais Creek Central Drainage Basin
033 Selby Street	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 44' 52"	122° 23' 27"	Islais Creek Central Drainage Basin
035 Third Street South	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 44' 50"	122° 23' 10"	Islais Creek Central Drainage Basin

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
037 Evans Avenue	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 44' 9"	122° 22' 26"	India Basin Southeast Drainage Basin
038 Hudson Avenue	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 44' 0"	122° 22' 26"	India Basin Southeast Drainage Basin
040 Griffith Street South	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 43' 23"	122° 22' 56"	Yosemite Canal Southeast Drainage Basin
041 Yosemite Avenue	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 43' 26"	122° 23' 8"	Yosemite Canal Southeast Drainage Basin
042 Fitch Street	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 43' 20"	122° 22' 55"	South Basin Southeast Drainage Basin
043 Sunnydale Avenue	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 44' 50"	122° 23' 13"	Candlestick Cove Southeast Drainage Basin

Table 3. Administrative Information

This Order was adopted by the Regional Water Board on:	January 30, 2008
This Order shall become effective on:	April 1, 2008
This Order shall expire on:	March 31, 2013
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Board have classified this discharge as a major discharge.	
CIWQS Regulatory Measure: 337351	
The Discharger shall file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of this Order expiration date as application for issuance of new waste discharge requirements.	

I, Bruce H. Wolfe, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on the date indicated above.

Bruce H. Wolfe, Executive Officer

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I. FACILITY INFORMATION

The following Discharger is subject to the waste discharge requirements as set forth in this Order:

Table 4. Facility Information

Discharger	City and County of San Francisco
Name of Facility	Southeast Water Pollution Control Plant, North Point Wet Weather Facility, Bayside Wet Weather Facilities and Wastewater Collection System.
Facility Address	San Francisco Public Utilities Commission (SFPUC)/Wastewater Enterprise.
	750 Phelps St.
	San Francisco, CA 94124
	San Francisco County
Facility Contact, Title, and Phone	Tommy Moala; Assistant General Manager, Wastewater Enterprise, (415) 554-2465, tmoala@sfgwater.org
Mailing Address	1155 Market Street, 11 th Floor, San Francisco, CA 94103
CIWQS Place Number	256499
CIWQS Party ID	39680
Type of Facility	Publicly Owned Treatment Works and Wet Weather Facilities
Facility Design Flow	<u>Southeast Water Pollution Control Plant:</u> 84.5 million gallons per day (MGD) – Average dry weather design flow capacity; 63 MGD – Average annual daily flow; 250 MGD – Wet weather design flow capacity; 150 MGD receives primary and secondary treatment, Additional 100 MGD receives only primary treatment.
	<u>North Point Wet Weather Facility:</u> 150 MGD - Wet weather design flow capacity (primary treatment).

II. FINDINGS

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

A. Background. The City and County of San Francisco, is the owner and operator of the Southeast Water Pollution Control Plant (Southeast Plant), the North Point Wet Weather Facility, the Bayside Wet Weather Facilities, and the Wastewater Collection System within the City and adjoining service areas. The Discharger is currently discharging under Order No. R2-2002-0073 (CIWQS Regulatory Measure 131370) and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0037664. The Discharger submitted a Report of Waste Discharge, dated November 30, 2006, and applied for an NPDES permit renewal to discharge:

- (1) From the Southeast Plant, during dry weather, up to 84.5 million gallons per day (MGD) of secondary treated wastewater through a deep water outfall at the end of Pier 80, and during wet weather up to 150 MGD of secondary treated and an additional 100 MGD of primary-only treated stormwater and wastewater. There would be a maximum flow of 110

MGD of mixed primary and secondary treated flow discharged through a deep water outfall at the end of Pier 80. There would also be an additional flow of 140 MGD of secondary treated flow discharged through a shallow water outfall into Islais Creek.

(2) From the North Point Wet Weather Facility, during wet weather, up to 150 MGD of primary treated combined wastewater and stormwater would be discharged to San Francisco Bay through outfalls at the end of Piers 33 and 35.

(3) From the Bayside Wet Weather Facilities during wet weather the equivalent of wet weather primary treated combined stormwater and industrial and domestic wastewater would be discharged through any of the 29 shoreline combined sewer overflow (CSO) structures,.

For the purposes of this Order, references to the “discharger” or “permittee” in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

B. Facility Description.

The Discharger’s combined sewer system is designed to collect and provide wastewater treatment for a service area that includes the City of San Francisco, the Bayshore Sanitary District (portions of Brisbane, and Daly City), the City of Brisbane (residential sector), and the North San Mateo County Sanitation District (portion of Daly City). The Discharger’s service area has a population of almost 556,000. The collection system consists of 600 miles of pipe and seven major and eleven minor pump stations. The Discharger is responsible for this collection system but the Discharger is not responsible for collection systems controlled by satellite agencies.

The Discharger’s combined sewer system consists of three main components: the Southeast Plant, the North Point Wet Weather Facility, and the Bayside Wet Weather Facilities. The Southeast Plant provides secondary wastewater treatment during dry weather conditions for the entire service area; during wet weather the Southeast Plant provides a combination of secondary and primary treatment for mixed stormwater and sewage and industrial wastes. The North Point Wet Weather Facility operates only during wet weather and provides primary treatment for combined stormwater and sewage and industrial wastes. The Bayside Wet Weather Facilities consist of a series of interconnected large underground rectangular tanks and tunnels that, during dry weather, are operated to transport combined wastewater and street runoff to the Southeast Plant. During wet weather conditions, these storage/transport structures provide storage and treatment that is equivalent to wet weather primary treatment.

The treatment process at the Southeast Plant consists of a headworks (with coarse and fine bar screens and grit removal), primary sedimentation tanks, pure oxygen aeration basins, secondary clarifiers, and chlorine contact basins (for chlorination with sodium hypochlorite and dechlorination with sodium bisulfite).

The Discharger presently discharges an annual average dry weather flow of 63 MGD although it has the wet weather capacity to process up to 250 MGD of combined stormwater and sewage. During wet weather, up to 150 MGD receives secondary

treatment, and the remaining 100 MGD receives only primary treatment. All the treated stormwater and wastewater is disinfected prior to discharge.

During dry weather conditions, all flow receives secondary treatment and is discharged through the Southeast Plant deep water outfall at Pier 80 (Discharge Point 001). At full wet weather capacity, the discharge at this outfall is maximized to 110 MGD, a blend of 100 MGD primary and 10 MGD secondary. The remaining 140 MGD receiving secondary treatment is discharged via the Quint Street shallow water outfall into Islais Creek (Discharge Point 002).

Primary and secondary sludge is processed via anaerobic digestion. The digested and dewatered sludge is beneficially re-used as alternative daily cover at a permitted landfill site or is land applied at a permitted site. The Discharger may elect to reuse its biosolids as Class A compost or through a waste to energy facility, or other recognized and approved reuse technology.

The treatment process at the North Point Wet Weather Facility consists of primary sedimentation, clarification, floatables removal, disinfection, and dechlorination operations. It treats only wet weather flow that consists of domestic and industrial wastewater mixed with stormwater runoff to a maximum capacity of 150 MGD. This level of treatment meets the minimum treatment specified by the USEPA *Combined Sewer Overflow Control Policy* (CSO Policy) 150 FR 18688; April 11, 1994.

The treated water is discharged from the North Point Wet Weather Facility into San Francisco Bay through four deep water outfalls: two at the end of Pier 33 (Discharge Points 003 and 004), and two at the end of Pier 35 (Discharge Points 005 and 006).

Primary sludge from this Facility is directed to the Southeast Plant for treatment.

The Discharger recently completed several upgrades to this Facility, including the addition of new screens, and new dechlorination facilities.

The treatment process at the Bayside Wet Weather Storage/Transport and Diversion Structures consists of a series of baffles and weirs that are designed to remove settleable solids and floatables. The level of treatment meets the minimum treatment specified by the CSO Policy. During dry weather these structures transport combined sewage and street runoff to the Southeast Plant. During wet weather, these structures provide storage for additional stormwater, while pumps continue to transfer combined stormwater and wastewater at a steady flow to the Southeast Plant.

In the event that the capacities of the Southeast Plant, the North Point Facility, and wet weather facilities and storage structures are exceeded, the combined stormwater and sewage, after receiving the equivalent of wet weather primary treatment in the transport structures, is discharged into San Francisco Bay through any one of the 29 shoreline combined sewer overflow (CSO) structures. The outfalls associated with these CSO structures are very wide diameter pipes or box culverts. All solids that settle out in the storage/transport structures are flushed to the Southeast Plant after the rainstorm subsides.

Attachment B provides a schematic showing the location of San Francisco's transport/storage structures, the Southeast Plant and the North Point Wet Weather Facility, and a map indicating the location of all the discharge points. Attachment C provides a process flow schematic diagram of the Southeast Plant and of the North Point Wet Weather Facility.

- C. Legal Authorities.** This Order is issued pursuant to CWA section 402 and implements regulations adopted by the USEPA and Chapters 5.5, Division 7 of the California Water Code (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from these combined facilities to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to Article 4, Chapter 4, Division 7 of the Water Code (commencing with section 13260).
- D. Background and Rationale for Requirements.** The Regional Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available sources. The Fact Sheet (Attachment F), which contains background information and rationale for Order requirements, is incorporated into this Order and constitutes part of the Findings for this Order. Attachments A through E and G and H are also incorporated into this Order.
- E. California Environmental Quality Act (CEQA).** Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100-21177.
- F. Technology-based Effluent Limitations.** Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, Title 40 of the Code of Federal Regulations¹, require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 CFR Part 133. For wet weather discharges, this Order includes technology-based requirements based on Best Professional Judgment in accordance with Part 125, section 125.3. A detailed discussion on the development of the technology-based effluent limitations and requirements is included in the Fact Sheet.
- G. Water Quality-based Effluent Limitations (WQBELs).** Section 301(b) of the CWA and section 122.44(d) of 40 CFR require that permits include limitations more stringent than federal technology-based requirements where necessary to achieve applicable water quality standards.

Section 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are, or may be, discharged at levels that have the reasonable potential to cause, or contribute to, an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (WQBELs) must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information;

¹ All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.

(2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state’s narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

Under this Order, numeric WQBELs have been established, as needed, for dry weather discharges from the Southeast Plant. For wet weather discharges, as specified in the CSO Policy, wet weather effluent from Discharge Point EFF-001 to EFF-006 and CSO wastes through Discharge Points 009 to 043 are presumed to meet water quality standards and thus there is no need for WQBELs for wet weather discharges.

H. Water Quality Control Plans. The Regional Water Board adopted a Water Quality Control Plan for the San Francisco Bay Basin (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Because of the marine influence on receiving waters of the San Francisco Bay the designation MUN is not applicable. Beneficial uses applicable to Lower San Francisco Bay and Central San Francisco Bay are as follows:

Table 5. Basin Plan Beneficial Uses of Lower and Central San Francisco Bay

Discharge Point	Receiving Water Name	Beneficial Uses
001, 002, 019, 022, 023, 024, 025, 026, 027, 028, 029, 030, 030A, 031, 031A, 032, 033, 035, 037, 038, 040, 041, 042, 043	Lower San Francisco Bay	Ocean, Commercial, and Sport Fishing (COMM) Estuarine Habitat (EST) Industrial Service Supply (IND) Fish Migration (MIGR) Navigation (NAV) Preservation of Rare and Endangered Species (RARE) Water Contact Recreation (REC-1) Noncontact Water Recreation (REC-2) Shellfish Harvesting (SHELL) Wildlife Habitat (WILD)
003, 004, 005, 006, 009, 010, 011, 013, 015, 017, 018	Central San Francisco Bay	Ocean, Commercial, and Sport Fishing (COMM) Estuarine Habitat (EST) Industrial Service Supply (IND) Industrial Process Supply (PROC) Fish Migration (MIGR) Fish Spawning (SPAWN) Navigation (NAV) Preservation of Rare and Endangered Species (RARE) Water Contact Recreation (REC-1) Noncontact Water Recreation (REC-2) Shellfish Harvesting (SHELL) Wildlife Habitat (WILD)

Requirements of this Order implement the Basin Plan.

- I. National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About forty criteria in the NTR applied in California. On May 18, 2000, USEPA adopted the CTR, which established new water quality criteria for toxic chemicals in California and incorporated the previously adopted NTR criteria that were applicable in the State. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority, toxic pollutants.
- J. State Implementation Policy.** On March 2, 2000, the State Water Board adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). The SIP became effective on April 28, 2000 with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives, and provisions for chronic toxicity control. Requirements of this Order implement the SIP.
- K. CSO Policy.** Facilities that treat combined sewer overflows are subject to Section 301(b)(1)(A) of the Clean Water Act; thus they are not subject to secondary treatment regulations. Wet weather flows are governed by compliance with the nine minimum controls contained in the CSO Policy (59 Federal Register 18688-18698) and further described in Combined Sewer Overflows, Guidance for Nine Minimum Controls, EPA 832-B-95-003, May 1995.
- L. Compliance Schedules and Interim Requirements.** Section 2.1 of the SIP provides that, based on a discharger's request and demonstration that it is infeasible for an existing discharger to achieve immediate compliance with an effluent limitation derived from a CTR criterion, compliance schedules may be allowed in an NPDES permit. Unless an exception has been granted under section 5.3 of the SIP, a compliance schedule may not exceed 5 years from the date that the permit is issued or reissued, nor may it extend beyond 10 years from the effective date of the SIP (or May 18, 2010) to establish and comply with CTR criterion-based effluent limitations. Where a compliance schedule for a final effluent limitation exceeds one year, this Order must include interim numeric limitations for that constituent or parameter. Where allowed by the Basin Plan, compliance schedules and interim effluent limitations or discharge specifications may also be granted to allow time to implement new or revised water quality objectives. This Order includes a compliance schedule. A detailed discussion of the basis for the compliance schedule is included in the Fact Sheet.
- M. Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards become effective for CWA purposes. [40 CFR §131.21; 65 Fed. Reg. 24641 (April 27, 2000)]. Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.

- N. Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based and water quality-based effluent limitations (WQBEL) for individual pollutants. The technology-based effluent limitations consist of restrictions on 5-day biochemical oxygen demand (BOD₅), total suspended solids (TSS), pH, oil and grease, and chlorine residual. Restrictions on these pollutants are specified in federal regulations as discussed in the Fact Sheet (Attachment F). WQBELs have been derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR §131.38. The procedures for calculating the individual WQBELs are based on the CTR-SIP, which was approved by USEPA on May 18, 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless “applicable water quality standards for purposes of the CWA” pursuant to 40 CFR §131.21 (c)(1). Collectively, this Order’s restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the CWA and the applicable water quality standards for purposes of the CWA.
- O. Antidegradation Policy.** NPDES regulations at 40 CFR §131.12 require that the State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California’s antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board’s Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. As discussed in the Fact Sheet, in this Order, the treatment is the same so the permitted discharge is consistent with the antidegradation provisions of 40 CFR §131.12 and Resolution No. 68-16.
- P. Anti-Backsliding Requirements.** CWA sections 402(o)(2) and 303(d)(4) and NPDES regulations at 40 CFR §122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. As discussed in detail in the Fact Sheet, the effluent limitations and requirements of this Order are consistent with anti-backsliding requirements of the CWA and NPDES regulations.
- Q. Endangered Species Act.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the State. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

- R. Monitoring and Reporting.** NPDES regulations at 40 CFR §122.48 require that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program, provided as Attachment E to this Order, establishes monitoring and reporting requirements to implement federal and State requirements.
- S. Standard and Special Provisions.** Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR §122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR §122.42, are provided in Attachment D. The Discharger must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR §122.42. The Regional Water Board has also included special provisions in this Order as Attachment G. A rationale for the provisions contained in this Order is provided in the attached Fact Sheet (Attachment F).
- T. Provisions and Requirements Implementing State Law.** The provisions/requirements in subsection VI.A.2 of this Order are included to implement State law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.
- U. Notification of Interested Parties.** The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet of this Order.
- V. Consideration of Public Comment.** The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet of this Order.

THEREFORE, IT IS HEREBY ORDERED, that this Order supersedes Order No. R2-2002-0073 except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

- A. Discharge of treated wastewater at a location or in a manner different from that described in this Order is prohibited.
- B. Discharge from Discharge Point 001 that does not receive an initial dilution of at least 36:1 is prohibited.
- C. Except during wet weather (as defined in Attachment A, Definitions), discharges from Discharge Points 002 through 006, and combined sewer overflow (CSO) discharges from Discharge Points 009 through 043 are prohibited.
- D. The bypass of untreated or partially treated wastewater to waters of the United States is prohibited except during wet weather and as provided for in the conditions stated in 40 CFR §122.41(m)(4) and in A.12 of the *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits*, August 1993 (**Attachment G**).
- E. An exceedance of the average dry weather flow, as measured at Monitoring Location EFF-001 described in the attached Monitoring and Reporting Program (MRP) Attachment E, of 84.5 MGD is prohibited. For compliance with this prohibition, actual average dry weather flow shall be determined from three consecutive dry weather months in each year.
- F. Degradation of harvestable shellfish in the area resulting from dry weather discharges from Discharge Point No. 001 is prohibited.
- G. Any sanitary sewer overflow that results in a discharge of untreated wastewater to waters of the United States is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001

1. Effluent Limitations – Discharge Point 001 (Dry Weather)

The Discharger shall maintain compliance with the following effluent limitations at Discharge Point No. 001 during dry weather (as defined in Attachment A) with compliance measured at Monitoring Location EFF-001 as described in the attached MRP (Attachment E).

- a. The discharge shall meet the limitations specified in Table 6.

Table 6. Effluent Limitations – Conventional Pollutants – Discharge Point 001 (Dry Weather)

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand (5-day @ 20 Deg. C) (BOD ₅)	mg/L	30	45	--	--	--
Total Suspended Solids (TSS)	mg/L	30	45	--	--	--
Oil and Grease	mg/L	10	--	20	--	--
pH ⁽¹⁾	standard units	--	--	--	6.0	9.0
Chlorine, Total Residual ⁽²⁾	mg/L	--	--	--	--	0.0

- (1) If the Discharger monitors pH continuously, pursuant to 40 CFR §401.17, the Discharger shall be in compliance with the pH limitation, provided that both of the following conditions are satisfied: (i) 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 (ii) no individual excursion from the range of pH values shall exceed 60 minutes.
- (2)
 - a. This requirement is defined as below the limit of detection in standard test methods, as defined in the latest edition of Standard Methods for the Examination of Water and Wastewater. For total residual chlorine (TRC) detection levels, the Discharger shall use a method for analysis of TRC that is identified as approved by USEPA for analysis of wastewaters at 40 CFR Part 136. The method of analysis shall achieve a method detection limit (MDL) at least as low as that achieved by the Amperometric Titration Method (4500-Cl D from *Standard Methods for Examination of Water and Wastewater*, Edition 20). The State Water Board is considering a statewide policy on chlorine residual. This Order may be reopened in the future to reflect any changes relating to chlorine residual.
 - b. The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine residual and/or sodium bisulfite (or other dechlorinating chemical) dosage (including a safety factor) and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Regional Water Board staff may conclude that these false positive chlorine residual exceedances are not violations of this permit limitation.

b. **BOD₅ and TSS 85 Percent Removal:** The average monthly percent removal of BOD₅ and TSS values, by concentration, shall not be less than 85 percent.

c. **Fecal Coliform Bacteria:** The discharge shall meet the following limitations of bacteriological quality:

- (1) The 30-day moving median value for fecal coliform density in final effluent samples shall not exceed 500 colony forming units (CFU) or most probable number (MPN)/100 mL; and

(2) No more than 10% of the samples in any 30-day period shall equal or exceed 1,100 CFU or MPN/100 mL.

d. **Enterococci Bacteria:** The monthly geometric mean enterococci bacteria density shall not exceed 35 MPN/100 mL.

e. **Toxic Pollutants:** The discharge of effluent at Discharge Point 001 (dry weather) shall not exceed the following limitations.

Table 7. Effluent Limitations - Toxic Pollutants – Discharge Point 001 (Dry Weather)

Parameter	Units	Effluent Limitations ⁽¹⁾⁽²⁾				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Priority Pollutants						
Copper ⁽³⁾	µg/L	71	--	100	--	--
Lead	µg/L	36	--	89	--	--
Mercury ⁽⁸⁾	µg/L	0.021	--	0.039	--	--
Silver	µg/L	7	--	22	--	--
Zinc	µg/L	490	--	720	--	--
Cyanide ^(4, 5)	µg/L	15	--	31	--	--
Dioxin-TEQ ⁽⁶⁾	mg/year	⁽⁷⁾	---	⁽⁷⁾	--	--
Tetrachloroethylene	µg/L	84	--	240	--	--
Bis (2-ethylhexyl) phthalate	µg/L	55	--	110	--	--
Ammonia	mg/L	190	--	290	--	--
Tributyltin	µg/L	0.032	--	0.065	--	--

- (1) (a) Limitations apply to the average concentration of all samples collected during the averaging period (daily = 24-hour period; monthly = calendar month).
 (b) All metals limitations are expressed as total recoverable metal.
- (2) A daily maximum or average monthly value for a given constituent shall be considered noncompliant with the effluent limitations only if it exceeds the effluent limitation and the Reporting Level for that constituent. As outlined in Section 2.4.5 of the SIP, the table below indicates the Minimum Level (ML) upon which the Reporting Level is based for compliance determination purposes. In addition, in order to perform reasonable potential analysis for future permit reissuance, the Discharger shall use methods with MLs lower than the applicable water quality objectives or water quality criteria (e.g., copper). An ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Minimum Levels for Pollutants with Effluent Limitations

Parameter	Minimum Level	Units
Copper	0.5	µg/L
Lead	0.5	µg/L
Mercury	0.0005	µg/L
Silver	0.25	µg/L
Zinc	1	µg/L
Cyanide	5	µg/L
Tetrachloroethylene	2	µg/L
Bis (2-ethylhexyl) phthalate	10	µg/L
Tributyltin	0.001	µg/L

Parameter	Minimum Level	Units
Dioxin-TEQ		--
2,3,7,8-TetraCDD	5	pg/L
1,2,3,7,8-PentaCDD	25	pg/L
1,2,3,4,7,8-HexaCDD	25	pg/L
1,2,3,6,7,8-HexaCDD	25	pg/L
1,2,3,7,8,9-HexaCDD	25	pg/L
1,2,3,4,6,7,8-HeptaCDD	25	pg/L
OctaCDD	50	pg/L
2,3,7,8-TetraCDF	5	pg/L
1,2,3,7,8-PentaCDF	25	pg/L
2,3,4,7,8-PentaCDF	25	pg/L
1,2,3,4,7,8-HexaCDF	25	pg/L
1,2,3,6,7,8-HexaCDF	25	pg/L
1,2,3,7,8,9-HexaCDF	25	pg/L
2,3,4,6,7,8-HexaCDF	25	pg/L
1,2,3,4,6,7,8-HeptaCDF	25	pg/L
1,2,3,4,7,8,9-HeptaCDF	25	pg/L
OctaCDF	50	pg/L

- (3) Alternate Effluent Limitations for Copper:
- If a copper SSO for the receiving water becomes legally effective, resulting in adjusted saltwater Criterion Continuous Concentration of 2.5 µg/L and Criterion Maximum Concentration (CMC) of 3.9 µg/L as documented in the *North of Dumbarton Bridge Copper and Nickel Site-Specific Objective (SSO) Derivation (Clean Estuary Partnership December 2004)*, upon its effective date, the following limitations shall supersede those copper limitations listed in Table 7. AMEL of 53 µg/L, and MDEL of 76 µg/L.
 - If a different copper SSO for the receiving water is adopted, the alternate WQBELs based on the SSO will be determined after the SSO effective date.
- (4) Alternate Effluent Limitations for Cyanide
- If a cyanide SSO for the receiving water becomes legally effective, resulting in adjusted saltwater Criterion Continuous Concentration of 2.9 µg/L (based on the Basin Plan Amendment, approved by the Regional Water Board, Resolution R2-2006-0086), upon its effective date, the following limitations shall supersede those cyanide limitations listed in Table 7. AMEL of 20 µg/L, and MDEL of 43 µg/L.
 - If a different cyanide SSO for the receiving water is adopted, the alternate WQBELs based on the SSO will be determined after the SSO effective date.
- (5) Compliance may be demonstrated by measurement of weak acid dissociable cyanide.
- (6) The limits for this pollutant becomes effective according to the compliance schedule described in VI.C.4. The final limitation for dioxin-TEQ shall become effective June 30, 2012. Compliance with the dioxin-TEQ effluent imitations may be demonstrated by implementation of a dioxin-TEQ mass offset program. Such a program must be approved at a hearing of the Regional Water Board through a Board Order amending this Order.
- (7) The dioxin-TEQ limit is 1.6 mg/year. Compliance to be based on the product of the average concentration in samples collected each year and the annual dry weather flow.
- (8) Alternate Effluent Limitations for Mercury. If a mercury watershed permit becomes effective that includes effluent limitations that implement a San Francisco Bay Mercury TMDL, that permit shall supersede these mercury limitations.

f. **Acute Toxicity:**

- (1) Representative samples of the effluent shall meet the following limits for acute toxicity. Bioassays shall be conducted in compliance with Section V.A of the Monitoring and Reporting Program (MRP), Attachment E.

The survival of organisms in undiluted combined effluent shall be an eleven (11) sample median value of not less than 90 percent survival, and an eleven (11) sample 90 percentile value of not less than 70 percent survival.

- (2) These acute toxicity limitations are further defined as follows.

11 sample median: 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 show less than 90 percent survival.

90th percentile: 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 show less than 70 percent survival.

- (3) Bioassays shall be performed using the most up-to-date USEPA protocol and the most sensitive species as specified in writing by the Executive Officer based on the most recent screening test results. Bioassays shall be conducted in compliance with “Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms,” currently 5th Edition (EPA-821-R-02-012), with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP) upon the Discharger’s request with justification.

g. **Chronic Toxicity**

- (1) Compliance with the Basin Plan narrative chronic toxicity objective shall be demonstrated according to the following tiered requirements based on results from representative samples of the treated final effluent meeting test acceptability criteria and Section V.B of the MRP (Attachment E). 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.

(a) Conduct routine monitoring.

(b) Accelerate monitoring after exceeding a three sample median value of 10 chronic toxicity units (TUC) or a single sample maximum of 20 TUC or greater. Accelerated monitoring shall consist of monthly monitoring.

(c) Return to routine monitoring if accelerated monitoring does not exceed either “trigger” in (b), above.

(d) If accelerated monitoring confirms consistent toxicity above either “trigger” in (b), above, initiate toxicity identification evaluation/toxicity reduction

evaluation (TIE/TRE) in accordance with a workplan submitted in accordance with Section V.B of the MRP (Attachment E), and that incorporates any and all comments from the Executive Officer;

- (e) Return to routine monitoring after appropriate elements of TRE workplan are implemented and either the toxicity drops below “trigger” levels in (b), above, or, based on the results of the TRE, the Executive Officer authorizes a return to routine monitoring.

(2) Test Species and Methods

The Discharger shall conduct routine monitoring using test species and protocols specified in Section V.B of the MRP (Attachment E). The Discharger shall also perform Chronic Toxicity Screening Phase monitoring as described in the Appendix E-1 of the MRP (Attachment E). Chronic Toxicity Monitoring Screening Phase Requirements, Critical Life Stage Toxicity Tests and definitions of terms used in the chronic toxicity monitoring are identified in Appendices E-1 and E-2 of the MRP (Attachment E).

2. Effluent Limitations – Discharge Point 001 (Wet Weather)

The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001 during wet weather (as defined in Attachment A) with compliance measured at Monitoring Location EFF-001 as described in the attached MRP (Attachment E).

- a. The discharge shall meet the limitations specified in Table 8.

Table 8. Effluent Limitations – Conventional Pollutants – Discharge Point 001 (Wet Weather)

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Chlorine, Total Residual ⁽¹⁾	mg/L	--	--	--	--	0.0

- (1) a. This requirement is defined as below the limit of detection in standard test methods, as defined in the latest edition of Standard Methods for the Examination of Water and Wastewater. For total residual chlorine (TRC) detection levels, the Discharger shall use a method for analysis of TRC that is identified as approved by USEPA for analysis of wastewaters at 40 CFR Part 136. The method of analysis shall achieve a method detection limit (MDL) at least as low as that achieved by the Amperometric Titration Method (4500-Cl D from *Standard Methods for Examination of Water and Wastewater*, Edition 20). The State Water Board is considering a statewide policy on chlorine residual. This Order may be reopened in the future to reflect any changes relating to chlorine residual.
- b. The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine residual and/or sodium bisulfite (or other dechlorinating chemical) dosage (including a safety factor) and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Regional Water Board staff may conclude that these false positive chlorine residual exceedances are not violations of this permit limitation.

b. **Fecal Coliform Bacteria:** The treated wastewater shall meet the following limitations of bacteriological quality:

(1) The 30-day moving median value for fecal coliform density in final effluent samples shall not exceed 500 CFU or MPN/100 mL; and

(2) No more than 10% of the samples in any 30-day period shall equal or exceed 1,100 CFU or MPN/100 mL.

c. **Enterococci Bacteria:** In samples of wastewater the enterococci bacteria density shall not exceed 104 MPN/100 mL.

B. Effluent Limitations – Discharge Points 002 through 006

1. Effluent Limitations – Discharge Points 002 through 006

The Discharger shall maintain compliance with the following effluent limitations at Discharge Points 002 through 006 during wet weather (as defined in Attachment A) with compliance measured at Monitoring Locations EFF-002 through EFF-003 as described in the attached MRP (Attachment E).

a. The discharge shall meet the limitations specified in Table 9.

Table 9. Effluent Limitations – Conventional Pollutants – Discharge Points 002 through 006 (Wet Weather)

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Chlorine, Total Residual ⁽¹⁾	mg/L	--	--	--	--	0.0

(1) a. This requirement is defined as below the limit of detection in standard test methods, as defined in the latest edition of Standard Methods for the Examination of Water and Wastewater. For total residual chlorine (TRC) detection levels, the Discharger shall use a method for analysis of TRC that is identified as approved by USEPA for analysis of wastewaters at 40 CFR Part 136. The method of analysis shall achieve a method detection limit (MDL) at least as low as that achieved by the Amperometric Titration Method (4500-Cl D from *Standard Methods for Examination of Water and Wastewater*, Edition 20). The State Water Board is considering a statewide policy on chlorine residual. This Order may be reopened in the future to reflect any changes relating to chlorine residual.

b. The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine residual and/or sodium bisulfite (or other dechlorinating chemical) dosage (including a safety factor) and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Regional Water Board staff may conclude that these false positive chlorine residual exceedances are not violations of this permit limitation.

b. **Fecal Coliform Bacteria:** The treated wastewater shall meet the following limitations of bacteriological quality:

(1) The 30-day moving median value for fecal coliform density in final effluent samples shall not exceed 500 CFU or MPN/100mL; and

(2) No more than 10% of the samples in any 30-day period shall equal or exceed 1,100 CFU or MPN/100mL.

- c. **Enterococci Bacteria:** In samples of treated wastewater the enterococci bacteria density shall not exceed 104 or MPN/100mL.

C. Reclamation Specifications

Not Applicable

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

1. Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. The discharges shall not cause the following in Lower San Francisco Bay or Central San Francisco Bay:
 - a. Floating, suspended, or deposited macroscopic particulate matter or foams;
 - 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 and 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 waste shall not cause the following limitations to be exceeded in waters of the State within one foot of the water surface:
 - a. Dissolved Oxygen 5.0 mg/L, minimum

The median dissolved oxygen concentration for any 3 consecutive months shall not be less than 80 percent of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.
 - b. Dissolved Sulfide Natural background levels
 - c. pH Within 6.5 and 8.5
 - d. 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.

B. Groundwater Limitations

Not Applicable

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with Federal Standard Provisions included in **Attachment D** of this Order.
2. The Discharger shall comply with all applicable items of the *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993 (Attachment G)*, including any amendments thereto. Where provisions or reporting requirements specified in this Order are different from equivalent or related provisions or reporting requirements given in the Federal Standard Provisions, the specifications of this Order and/or **Attachment G** shall apply in areas where those provisions are more stringent. Duplicative requirements in the federal Standard Provisions in VI.A.1, above (**Attachment D**) and the regional Standard Provisions (**Attachment G**) are not separate requirements. A violation of a duplicative requirement does not constitute two separate violations.

B. Monitoring and Reporting Program (MRP) Requirements

The Discharger shall comply with the MRP, and future revisions thereto, in Attachment E of this Order. The Discharger shall also comply with the requirements contained in *Self Monitoring Programs, Part A, August 1993 (Attachment G)*.

C. Special Provisions

1. Re-opener Provisions

The Regional Water Board may modify or re-open this Order prior to its expiration date in any of the following circumstances as allowed by law:

- a. If present or future investigations demonstrate that the discharge(s) governed by this Order will have, or will cease to have, a reasonable potential to cause or contribute to adverse impacts on water quality and/or beneficial uses of the receiving waters.
- b. If new or revised WQOs or TMDLs come into effect for the San Francisco Bay estuary and contiguous water bodies (whether statewide, regional, or site-specific). In such cases, effluent limitations in this Order will be modified as necessary to reflect updated WQOs and waste load allocations in TMDLs. Adoption of effluent limitations contained in this Order is not intended to restrict in any way future modifications based on legally adopted WQOs, TMDLs, or as otherwise permitted under Federal regulations governing NPDES permit modifications.
- c. If translator or other water quality studies provide a basis for determining that a permit condition(s) should be modified.

- d. If an administrative or judicial decision is made on a separate NPDES permit or WDR that addresses requirements similar to this discharge.
- e. Or as otherwise authorized by law.

The Discharger may request permit modification based on the above. The Discharger shall include with any such request an antidegradation and anti-backsliding analysis.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. Effluent Characterization for Selected Constituents

The Discharger shall continue to monitor and evaluate the dry weather discharge from Discharge Point 001 (measured at Monitoring Location EFF-001) for the constituents listed in Enclosure A of the Regional Water Board's August 6, 2001 Letter, according to the sampling frequency specified in the attached MRP (Attachment E). Compliance with this requirement shall be achieved in accordance with the specifications stated in the Regional Water Board's August 6, 2001 Letter under Effluent Monitoring for Major Dischargers.

The Discharger shall, on an annual basis, evaluate if concentrations of any constituent increase over past performance. The Discharger shall investigate the cause of the increase. The investigation may include, but need not be limited to, an increase in the effluent monitoring frequency, monitoring of internal process streams, and monitoring of influent sources. This may be satisfied through identification of these constituents as "Pollutants of Concern" in the Discharger's Pollutant Minimization Program described in Provision C.3.b, below. A summary of the annual evaluation of data and source investigation activities shall also be reported in the annual self-monitoring report.

A final report that presents all the data shall be submitted to the Regional Water Board no later than 180 days prior to the Order expiration date. This final report shall be submitted with the application for permit reissuance.

b. Ambient Background Receiving Water Study

The Discharger shall collect or participate in collecting background ambient receiving water monitoring for priority pollutants that is required to perform RPA and to calculate effluent limitations. The data on the conventional water quality parameters (pH, salinity, and hardness) shall also be sufficient to characterize these parameters in the receiving water at a point after the discharge has mixed with the receiving waters. This provision may be met through monitoring through the Collaborative Bay Area Clean Water Agencies (BACWA) Study, or a similar ambient monitoring program for San Francisco Bay. This Order may be reopened, as appropriate, to incorporate effluent limitations or other requirements based on Regional Water Board review of these data.

The Discharger shall submit a final, summary report that presents all such receiving water data to the Regional Water Board 180 days prior to expiration of this Order. This final report shall be submitted with the application for permit reissuance.

c. Optional Mass Offset Plan

If the Discharger demonstrates that further net reductions of the total mass loadings of dioxin-TEQ to the receiving water cannot be achieved through economically feasible measures such as source control, wastewater reuse, and treatment plant optimization, but only through a mass offset program, the Discharger shall submit to the Regional Water Board for approval a mass offset plan to reduce net dioxin-TEQ discharges. The Regional Water Board may modify this Order to allow an approved mass offset program. The mass offset program shall be developed and implemented consistent with the compliance schedule shown in Table 10.

3. Best Management Practices and Pollution Minimization

a. Pollution Minimization Program

The Discharger shall continue to implement and improve, in a manner acceptable to the Executive Officer, its existing Pollutant Minimization Program (referred to by the Discharger as its Pollution Prevention Program) to reduce pollutant loadings to the combined sewer system and therefore to the receiving waters. The Discharger shall implement any applicable additional pollutant minimization measures described in Basin Plan implementation requirements associated with the copper SSO and cyanide SSO if and when each of those SSOs become effective and alternate limitations take effect.

b. Annual Pollution Minimization Report

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

- (1) *A brief description of its treatment plant, treatment plant processes and service area.*
- (2) *A discussion of the current pollutants of concern.* Periodically, the Discharger shall 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.
- (3) *Identification of sources for the pollutants of concern.* This discussion shall include how the Discharger intends to estimate and identify pollutant sources. 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.

- (4) *Identification of tasks to reduce the sources of the pollutants of concern.* This discussion shall identify and prioritize tasks to address the Discharger's pollutants of concern. The Discharger may implement the tasks themselves or 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.
- (5) *Outreach to employees.* The Discharger shall inform its employees about the pollutants of concern, potential sources, and how they might be able to help reduce the discharge of these pollutants. The Discharger may provide a forum for employees to provide input to the program.
- (6) *Continuation of Public Outreach Program.* The Discharger shall prepare a public outreach program to communicate pollution minimization measures to its service area. Outreach may include participation in existing community events such as county fairs, initiating new community events such as displays and contests during Pollution Prevention Week, conducting school outreach programs, conducting treatment plant tours, and providing public information in various media. Information shall be specific to target audiences. The Discharger shall coordinate with other agencies as appropriate.
- (7) *Discussion of criteria used to measure Program's and tasks' effectiveness.* The Discharger shall establish criteria to evaluate the effectiveness of its Pollution Minimization Program. This discussion shall include the specific criteria used to measure the effectiveness of each of the tasks in item b(3), b(4), b(5), and b(6).
- (8) *Documentation of efforts and progress.* This discussion shall detail all of the Discharger's activities in the Pollution Minimization Program during the reporting year.
- (9) *Evaluation of Program's and tasks' effectiveness.* The Discharger shall use the criteria established in b. (7) to evaluate the Program's and tasks' effectiveness.
- (10) *Identification of specific tasks and time schedules for future efforts.* Based on the evaluation, the Discharger shall detail how it intends to continue or change its tasks to more effectively reduce the amount of pollutants to the treatment Plant and subsequently its effluent.

c. Pollutant Minimization Program for Reportable Priority Pollutants

The Discharger shall develop and conduct a Pollutant Minimization Program as further described below when there is evidence (e.g., sample results reported as DNQ when the effluent limitation is less than the MDL, sample results from analytical methods more sensitive than those methods required by this Order,

presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either:

- (1) A sample result is reported as DNQ and the effluent limitation is less than the RL; or
 - (2) A sample result is reported as ND and the effluent limitation is less than the MDL, using definitions described in the SIP.
- d. If triggered by the reasons in c. above, the Discharger's Pollutant Minimization Program shall include, but not be limited to, the following actions and submittals acceptable to the Regional Water Board:
- (1) 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;
 - (2) 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;
 - (3) 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;
 - (4) Implementation of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and
 - (5) The annual report required by 3.b. above, shall specifically address the following items:
 - (a) All Pollutant Minimization Program monitoring results for the previous year;
 - (b) A list of potential sources of the reportable priority pollutant(s);
 - (c) A summary of all actions undertaken pursuant to the control strategy; and
 - (d) A description of actions to be taken in the following year.

4. Requirement to Assure Compliance with Final Limits

In an effort to assure compliance with final effluent limitations for dioxin-TEQ, the Discharger shall comply with the following tasks and dates:

Table 10. Requirements to Assure Compliance with Final Limitations

Task	Compliance Date
1. The Discharger shall enhance source control measures identified in its Dioxins Feasibility Assessment, to reduce loading of dioxin-TEQ to the Southeast Plant and its receiving waters.	Upon the effective date of this Order
2. The Discharger shall prepare and submit a plan to the Regional Water Board identifying the implementation of additional source control measures. The plan shall quantify the potential benefits of these measures in reducing the loading of dioxin-TEQ to the Southeast Plant.	Within 90 days of the effective date of this Order
3. The Discharger shall evaluate and report on the effectiveness of its source control measures.	Annually in the Annual Pollution Minimization Report required by Provision VI.C.3.b
4. If, by February 28, 2010, discharge data continue to show that the discharge would be out of compliance with the final WQBEL specified in Effluent Limitations and Discharge Specifications IV.A.1.a for dioxin-TEQ, the Discharger shall submit a plan and schedule of additional actions to reduce the loading of dioxin-TEQ. Additional actions could include, for example, implementation of a mass offset program ⁽¹⁾ to reduce the inflow of dioxin-TEQ to the treatment plant, or implementation of modifications to the treatment plant to increase removal of dioxin-TEQ or other means.	May 1, 2010
5. The Discharger shall commence implementation of the identified additional actions in accordance with the plan and schedule submitted in Task 4 above.	July 1, 2010
6. The Discharger shall annually report on the status of its activities under Task 5 in its Annual Self-Monitoring Reports.	February 1, 2010 February 1, 2011
7. The Discharger shall fully comply with IV Effluent Limitations and Discharge Specifications IV.A.1.a for dioxin-TEQ.	June 30, 2012

⁽¹⁾ To comply with the dioxin-TEQ limit through an offset program, the Regional Water Board must approve the offset program

5. Construction, Operation and Maintenance Specifications

a. Wastewater Facilities, Review and Evaluation, and Status Reports

- (1) The Discharger shall operate and maintain its wastewater collection, treatment, and disposal facilities in a manner to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary, in order to provide adequate and reliable transport, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the Discharger’s service responsibilities.
- (2) The Discharger shall regularly review and evaluate its wastewater facilities and operation practices in accordance with section a. (1) above. Reviews and evaluations shall be conducted as an ongoing component of the Discharger’s administration of its wastewater facilities.
- (3) The Discharger shall provide the Executive Officer, upon request, a report describing the current status of its wastewater facilities and operation practices, including any recommended or planned actions and an estimated time schedule for these actions. The Discharger shall also include, in each

annual self-monitoring report, a description or summary of review and evaluation procedures, and applicable wastewater facility programs or capital improvement projects.

b. Operations and Maintenance Manual (O&M), Review and Status Reports

- (1) The Discharger shall maintain an O&M Manual as described in the findings of this Order for the Discharger's wastewater facilities. The O&M Manual shall be maintained in usable condition and be available for reference and use by all applicable personnel.
- (2) The Discharger shall regularly review, revise, or update, as necessary, the O&M Manual(s) to ensure that the document(s) may remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and revisions or updates shall be completed as necessary. For any significant changes in treatment facility equipment or operation practices, applicable revisions shall be completed within 90 days of completion of such changes.
- (3) The Discharger shall provide the Executive Officer, upon request, a report describing the current status of its O&M manual, including any recommended or planned actions and an estimated time schedule for these actions. The Discharger shall also include, in each annual self-monitoring report, a description or summary of review and evaluation procedures and applicable changes to its operations and maintenance manual.

c. Contingency Plan, Review and Status Reports

- (1) The Discharger shall maintain a Contingency Plan as required by Regional Water Board Resolution No. 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.
- (2) The Discharger shall regularly review and update, as necessary, the Contingency Plan so that the plan may remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and updates shall be completed as necessary.
- (3) The Discharger shall provide the Executive Officer, upon request, a report describing the current status of its Contingency Plan review and update. The Discharger shall also include, in each annual self-monitoring report, a description or summary of review and evaluation procedures and applicable changes to its Contingency Plan.

6. Special Provisions for POTWs

a. Pretreatment Program Requirements

- (1) Pretreatment Program: The Discharger shall implement and enforce its approved pretreatment program in accordance with federal pretreatment regulations (40 CFR Part 403); pretreatment standards promulgated under CWA section 307(b), 307(c), and 307(d); pretreatment requirements specified at 40 CFR 122.44(j); and the requirements of Attachment H of this Order. The Discharger's responsibilities include, but are not limited to:
 - (a) Enforcement of National Pretreatment Standards established at 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 at 40 CFR Part 403 and its approved pretreatment program.
 - (c) Submission of reports to USEPA, the State Water Board, and the Regional Water Board, as described in Attachment H "Pretreatment Requirements."
 - (d) Evaluate the need to revise local limits pursuant to 40 CFR 403.5(c)(1) and within 180 days after the effective date of this Order, submit a report acceptable to the Executive Officer describing the changes with a plan and schedule for implementation.
- (2) The Discharger shall implement its approved pretreatment program and the program shall be an enforceable condition of this Order. If the Discharger fails to perform the pretreatment functions, the Regional Water Board, the State Water Board, or the USEPA may take enforcement actions against the Discharger as authorized by the Clean Water Act.

b. Sludge Management Practices Requirements

- (1) All sludge generated by the Discharger must be disposed of, managed, or reused in a municipal solid waste landfill, through land application, as Class A compost, through a waste to energy facility, or other recognized and approved technology, or disposed of in a sludge-only landfill in accordance with 40 CFR Part 503. If the Discharger desires to dispose of sludge by a different method, a request for permit modification must be submitted to USEPA 180 days before start-up of the alternative disposal practice. All the requirements in 40 CFR Part 503 are enforceable by USEPA whether or not they are stated in an NPDES permit or other permit issued to the Discharger. The Regional Water Board should be copied on relevant correspondence and reports forwarded to USEPA regarding sludge management practices.

- (2) Sludge treatment, storage and disposal or reuse shall not create a nuisance, such as objectionable odors or flies, or result in groundwater contamination.
- (3) The Discharger shall take all reasonable steps to prevent or minimize any sludge use or disposal which has a likelihood of adversely affecting human health or the environment.
- (4) The discharge of sludge shall not cause waste material to be in a position where it is or can be carried from the sludge treatment and storage site and deposited in waters of the State.
- (5) The sludge treatment and storage site shall have facilities adequate to divert surface runoff from adjacent areas, to protect boundaries of the site from erosion, and to prevent any conditions that would cause drainage from the materials in the temporary storage site. Adequate protection is defined as protection from at least a 100-year storm and protection from the highest possible tidal stage that may occur.
- (6) For sludge that is applied to the land, placed on a surface disposal site, or fired in a sludge incinerator as defined in 40 CFR Part 503, the Discharger shall submit an annual report to USEPA and the Regional Water Board containing monitoring results and pathogen and vector attraction reduction requirements as specified by 40 CFR §503, postmarked February 19 of each year, for the period covering the previous calendar year.
- (7) Sludge that is disposed of in a municipal solid waste landfill must meet the requirements of 40 CFR Part 258. In the annual self-monitoring report, the Discharger shall include the amount of sludge disposed of and the landfill(s) to which it was sent.
- (8) Permanent on-site sludge storage or disposal activities are not authorized by this Order. A report of Waste Discharge shall be filed and the site brought into compliance with all applicable regulations prior to commencement of any such activity by the Discharger.
- (9) Sludge Monitoring and Reporting Provisions of this Regional Water Board's Standard Provisions (**Attachment G**), apply to sludge handling, disposal and reporting practices.
- (10) The Regional Water Board may amend this Order prior to expiration if changes occur in applicable state and federal sludge regulations.

c. Sanitary Sewer Overflows and Sewer System Management Plan

The Discharger's collection system is predominantly a combined sewer system with some limited separate sanitary sewers. The Discharger must properly operate and maintain its entire sanitary sewer collection system (Attachment D, Standard Provisions – Permit Compliance, Section I.D). The Discharger must

report any noncompliance (Attachment D, Standard Provision – Reporting, Sections V.E.1 and V.E.2) and mitigate any discharge from the Discharger's separate sanitary sewer collection system in violation of this Order (Attachment D, Standard Provisions – Permit Compliance, Section I.C). The Discharger's limited separate sewer collection system is subject to the General Waste Discharge Requirements for Collection System Agencies (Order No. 2006-0003 DWQ), which has requirements for operation and maintenance of separate sanitary sewer collection systems and for reporting and mitigating sanitary sewer overflows. While the Discharger must comply with both the General Waste Discharge Requirements for Collection System Agencies (General Collection System WDR) and this Order, the General Collection System WDR more clearly and specifically stipulates requirements for operation and maintenance and for reporting and mitigating sanitary sewer overflows. Implementation of the General Collection System WDR requirements for proper operation and maintenance and mitigation of separate sanitary sewer system sewage spills will satisfy the corresponding federal NPDES requirements specified in this Order. Following reporting requirements in the General Collection System WDR will satisfy NPDES reporting requirements for sanitary sewage spills. Furthermore, the Discharger shall comply with the schedule for development of sewer system management plans for its sanitary sewer system as indicated in the letter issued by the Regional Water Board on July 7, 2005, pursuant to Water Code Section 13267. This section does not apply to operations of the combined sewer system.

7. Combined Sewer Overflow (CSO) Controls

In accordance with the USEPA Combined Sewer Overflow Control Policy's Nine Minimum Controls and the Discharger's Long-Term Control Plan, the Discharger must maximize flow to the Southeast Plant and pollutant removal during wet weather. Adherence to the following provisions will constitute compliance with the CSO Policy requirements for control of discharges from the Discharger's combined sewer system (CSS).

- a. **Combined Sewer System Operation and Maintenance Plan (Plan).** The Discharger shall revise and update as necessary its Plan that ensures compliance with the nine minimum controls and long term control plan requirements included below. The revised Plan shall be filed by August 31, 2008, 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 Plan.
- b. **Nine Minimum Controls.** The Discharger shall implement and comply with the following technology-based requirements for their combined sewer system.
 - (1) **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 the Combined Sewer System.** The Discharger shall designate a person to be responsible for the wastewater collection system and serve as the contact person regarding the operation of the combined sewer system. 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 the Combined Sewer System.** 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 an overflow occurred or could potentially occur during dry weather flow conditions.
 - Record the results of the inspections in a maintenance log.
 - iii. **Provision for Trained Staff.** The Discharger shall provide adequate staff to carry out the operation, maintenance, repair and testing functions required to ensure compliance with the terms and conditions of this Order. Each staff person 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 Plan.
- (2) Maximize Use of the Collection System for Storage.** The Discharger shall continue to maximize the use of sewers as inline storage capacity. (This provision does not refer to the Bayside wet weather storage/transport and diversion structures.)
- (3) Review and Modify Pretreatment Program.** The Discharger shall continue to implement selected controls to minimize the impact of non-domestic discharges. Every three years the Discharger shall re-evaluate whether additional modifications to its pretreatment program are feasible or practical. The Discharger shall keep records to document this evaluation and to document implementation of the selected controls to minimize non-domestic discharges.

(4) Maximize Flow to the Southeast Plant and North Point Wet Weather Facility. The Discharger shall operate the Southeast Plant at a maximum treatable flow during wet weather flow conditions. The Discharger shall report rainfall and flow data to the Regional Water Board as part of the Self-Monitoring Report.

The Discharger shall ensure that the Operations and Maintenance Plan is implemented to achieve the following objective:

- i. To maximize the volume of wastewater treated, at either the Southeast 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.

(5) Prohibit Combined Sewer Overflows During Dry Weather. Dry weather overflows from Discharge Points 002 through 006 and 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.

(6) Control Solid and Floatable Materials in Combined Sewer Overflows.

The Discharger shall continue to implement measures to control solid and floatable materials in its overflows. These measures shall include:

- i. Ensuring that all overflows from the combined sewer diversion structures are baffled or that other means are used to reduce the volume of floatable materials.
- ii. Removing solid or floatable materials captured in the storage/transport system, in an acceptable manner prior to discharge to the receiving water.

(7) Develop and Implement a Pollution Prevention Program. The Discharger shall continue to implement a pollution prevention program focused on reducing the impact of treated overflows on receiving waters. This pollution prevention program is authorized by the Basin Plan and federal regulations on combined sewer overflows. The Discharger shall keep records to document pollution prevention implementation activities. This program shall be developed and implemented in accordance with Special Provision VI.C.3, and shall include conducting street sweeping and catch basin modification or cleaning at a frequency that will prevent large accumulations of pollutants and debris.

(8) Notify the Public of Overflows. The Discharger shall continue to implement a public notification plan to inform citizens of when and where combined sewer overflows occur. The plan must include:

- i. A mechanism to alert persons using recreational beaches affected by overflows.
- ii. A system that informs persons of the nature and duration of conditions due to overflows that are potentially harmful to users of these receiving water bodies.

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 should be posted on the same day as each 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 Discharger'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 other signs will be posted when it is unsafe to enter the water, and also warn 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. The City also provides color coded descriptions of beach water quality conditions (green/open; red/posted) on the internet at <http://beaches.sfwater.org> and <http://www.earth911.org>.

- iii. The Discharger shall update the June 19, 2006 Bayside Recreational Use Study of the bayside beaches and water use areas (Candlestick Point Recreation Area, Islais Creek and Mission Bay) in order to determine the number of users impacted from combined sewer overflow events. The study shall commence in the first wet weather period after adoption of this Order and shall assess and report the current levels of recreational use of the shoreline and nearshore waters and will identify types and frequency of use. The study shall also, at minimum, encompass two full wet weather seasons in order to get adequate information relating combined sewer overflow events and recreational use data. A final report documenting the findings of the study shall be submitted to the Executive Officer not later than one year prior to the expiration of this permit.

(9) Monitor to Effectively Characterize Overflow Impacts and the Efficacy of Combined Sewer Overflow Controls. The Discharger shall monitor wet weather outfalls to effectively characterize overflow impacts and efficacy of

combined sewer overflow controls. This monitoring shall specifically build on efforts and results provided by the Discharger in its June 19, 2006, Bayside Study to Effectively Characterize Overflow Impacts and the Efficacy of Combined Sewer Overflow Controls. In particular, the Discharger is required to revise the existing monitoring study plan to incorporate the following additional requirements:

- i. Monitoring of wet weather discharges from selected Discharge Points 009 through 043. Representative discharge points are 010, 029, and 033. Additional or other Discharge Points may be monitored depending on discharge frequency and feasibility of sample collection.
- ii. Expand the list of pollutants of concern to be monitored to include all CTR criteria for the protection of marine aquatic life.
- iii. Develop an assessment of the environmental benefits provided by the existing stormwater treatment controls.

The study shall, at minimum, encompass two full wet weather seasons in order to get adequate information for combined sewer events. The Discharger shall submit a final report documenting the findings of the study not later than one year prior to expiration of the permit.

- c. Long-Term Control Plan.** The Discharger has designed, built, and implemented long-term control and treatment strategies to address wet weather flow conditions. To protect beneficial uses the Discharger shall comply with the following provisions.

(1) Wet Weather Effluent Performance Criteria

The Discharger designed its combined sewer system based on historical rainfall to achieve the following long-term average goals:

- i. Eight combined sewer overflow events per year on the west side area of the City;
- ii. Four combined sewer overflow events per year along the north shore area of the City;
- iii. Ten combined sewer overflow events per year within the central basin area of the City; and
- iv. One combined sewer overflow event per year along the southeast sector of the City.

As specified in Regional Water Board Order No. 79-67 and permits for these facilities subsequent to that order, these long term design criteria will not be used to determine compliance or non-compliance. The Regional Water 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 optimize the operation of its system to minimize overflows and maximize pollutant removal. Allowances may be made in an offset program that increases pollutant removal but may incrementally increase the number of combined sewer overflows. For each combined sewer overflow event, the Discharger shall report the average duration and volume of the overflow in its monthly Self Monitoring Report. To be considered a discrete overflow event, the overflow must be separated by six hours in time from any other overflow.

(2) Wet Weather Operation of Bayside Facilities

- i. NORTH DRAINAGE BASIN: Activation and operation of the North Point Wet Weather Facility depends on rainfall, forecasts and storage conditions in the North Drainage Basin and the Central Drainage Basin.
 - The North Point Wet Weather Facility shall be activated when the level of combined sewage and stormwater in the North Shore Storage/Transport Box is at 200 inches.
 - The North Point Wet Weather Facility shall be activated to treat 135 to 145 MGD of combined in-flow within 60 minutes of a discharge through Discharge Points 013 to 017.
 - The North Point Wet Weather Facility shall remain operational as long as necessary to minimize the likelihood of storage transport discharges in the Central or Southeast Drainage Basins.
- ii. CENTRAL DRAINAGE BASIN: Activation and operation of the Channel Pump Station depends on rainfall, forecasts and storage conditions in the Central Drainage Basin and the Southeast Drainage Basin.
 - The Channel Pump Station shall pump 80 MGD to the Southeast Plant or Southeast influent shall be at 250 MGD (from the Channel and Flynn Pump Stations and the Southeast Plant Lift Station) before there are any storage/transport discharges to Mission Creek (Discharge Points 022 to 027).
 - Flow from Channel Pump Station to the Southeast Plant 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 Flynn Pump Station) become unbalanced, e.g., Griffith and/or Flynn storage levels continue to rise while the Southeast Plant is at a maximum flow.
- iii. Mariposa Pump Station

- The Mariposa Pump Station (two wet weather pumps) shall be operated at full capacity prior to discharge through Discharge Point 029.
- iv. 20th Street Pump Station
- The 20th St. Pump Station (two wet weather pumps) shall be operated at full capacity prior to discharge through Discharge Point 030 or 030A.
- v. SOUTH DRAINAGE BASIN: Southeast Plant operation depends on rainfall, forecasts and storage conditions in the Central Drainage Basin and the Southeast Drainage Basin.
- The Southeast Plant shall have an influent flow rate of 240 to 250 MGD prior to discharge into Islais Creek from Discharge Point Nos. 031 through 035.
- vi. Griffith Pump Station
- The Griffith Pump Station (four wet weather pumps) shall be operated at full capacity prior to discharge through Discharge Points 040 through 042.
- vii. Sunnydale Pump Station
- The Sunnydale Pump Station (3 wet weather pumps) shall be operated at full capacity prior to discharge through Discharge Point 043.
- (3) **Post Rain Activities.** Treatment at the Southeast Plant and North Point Wet Weather Facility shall continue until North, Central and Southeast Drainage Basin storage/transport are substantially empty of stormwater flows.
- i. If the National Weather Service predicts rain during the next 24 hours:
- Pumping shall occur until the level of combined sewage/stormwater in the Channel Pump Station Box is between 100 to 150 inches,
 - Pumping shall occur until the level of combined sewage/stormwater in the North Shore Box is at 100 inches, and
 - Pumping shall occur until the Islais Creek storage level is essentially zero.
- ii. If the National Weather Service does not predict rain:
- Pumping shall occur until the level of combined sewage/stormwater in the Channel Pump Station Box is below 150 inches,
 - Pumping shall occur until the level of combined sewage/stormwater in the North Shore Box is below 150 inches, and

- Pumping shall occur until the Islais Creek storage level is essentially zero.

8. Other Special Provisions

Cyanide Action Plan

The Discharger shall initiate implementation of an action plan for cyanide as described in Appendix I of "Staff Report on Proposed Site-Specific Water Quality Objectives for Cyanide for San Francisco Bay," December 4, 2006.

Copper Action Plan

If and when the copper alternate limits in IV become effective, the Discharger shall initiate implementation of an action plan for copper, consistent with the copper SSO Basin Plan Amendment.

VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in section IV of this Order will be determined as specified below:

A. General

Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined in the MRP, Attachment E and Section VI of the Fact Sheet of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

B. Multiple Sample Data

When determining compliance with an AMEL or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

1. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
2. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ), also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

$$\text{Arithmetic mean} = \mu = \Sigma x / n \quad \text{where:} \quad \Sigma x \text{ is the sum of the measured ambient water concentrations, and } n \text{ is the number of samples.}$$

Average Monthly Effluent Limitation (AMEL): the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL): the highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Bioaccumulative pollutants are those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Carcinogenic pollutants are substances that are known to cause cancer in living organisms.

Coefficient of Variation (CV) is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

Daily Discharge: Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the Order), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of 1 day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ) are those sample results less than the RL, but greater than or equal to the laboratory's MDL.

Dilution Credit is the amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

Dry Weather is any day in the year that is not defined as wet weather.

Effluent Concentration Allowance (ECA) is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in USEPA guidance (*Technical Support Document For Water Quality-based Toxics Control*, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration is the estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters include, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Inland Surface Waters are all surface waters of the State that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation: the highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation: the lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Maximum Daily Effluent Limitation (MDEL) means the highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged

over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Median is the middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the $n/2$ and $n/2+1$).

Method Detection Limit (MDL) is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in title 40 of the Code of Federal Regulations, Part 136, Attachment B, revised as of July 3, 1999.

Minimum Level (ML) is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Mixing Zone is a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

Not Detected (ND) are those sample results less than the laboratory's MDL.

Ocean Waters are the territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. Discharges to ocean waters are regulated in accordance with the State Water Board's California Ocean Plan.

Persistent pollutants are substances for which degradation or decomposition in the environment is nonexistent or very slow.

Pollutant Minimization Program (PMP) means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

Pollution Prevention means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product

reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State or Regional Water Board.

Reporting Level (RL) is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

Satellite Collection System is the portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility that a sanitary sewer system is tributary to.

Source of Drinking Water is any water designated as municipal or domestic supply (MUN) in a Regional Water Board Basin Plan.

Standard Deviation (σ) is a measure of variability that is calculated as follows:

$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:

- x is the observed value;
- μ is the arithmetic mean of the observed values; and
- n is the number of samples.

Toxicity Reduction Evaluation (TRE) is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity.

The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

Wet Weather is defined as any day in which any 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

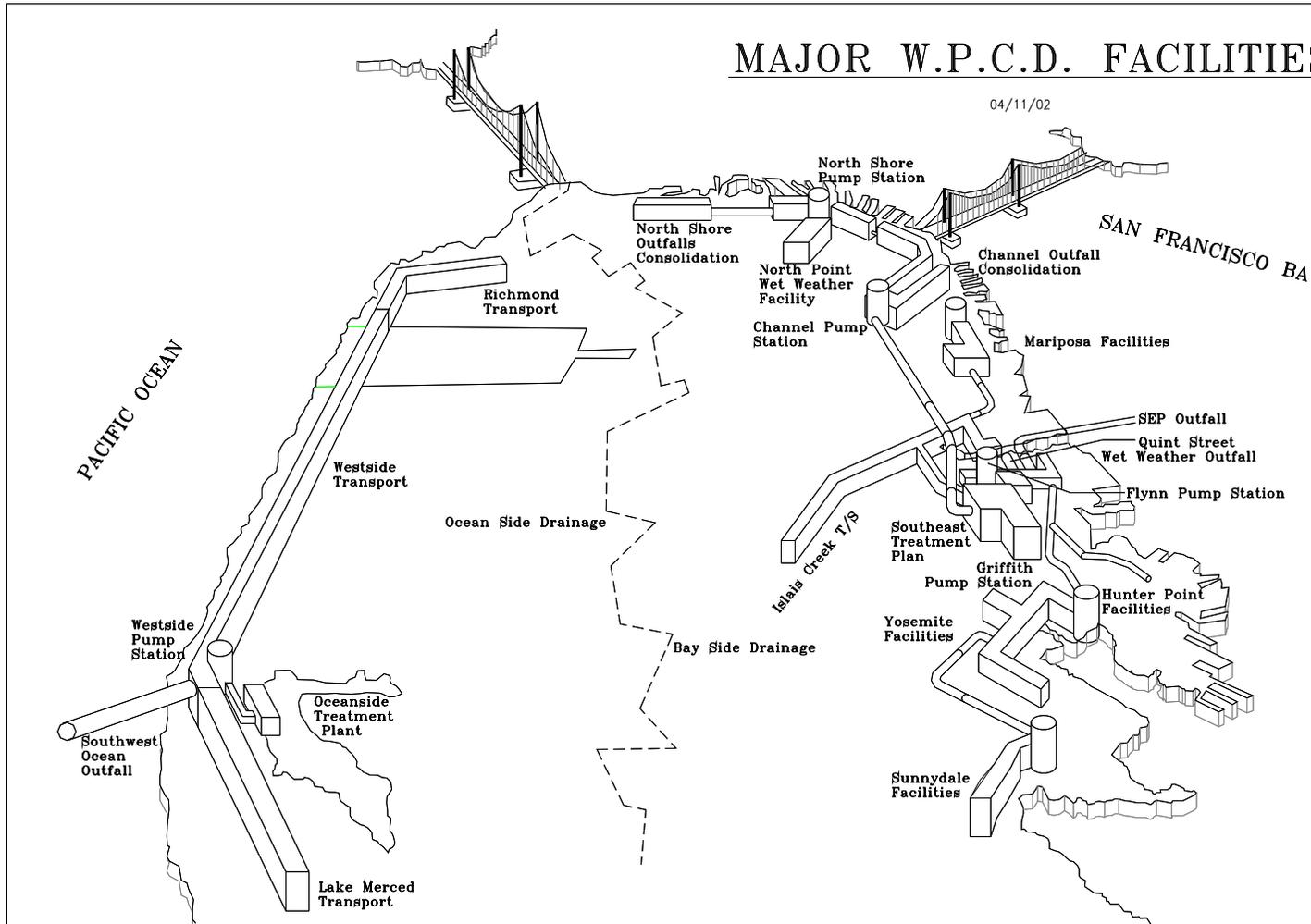
2. The average influent flow concentration of TSS or BOD is less than 100 mg/L, or
3. North Shore storage/transport wastewater elevation exceeds 100 inches.

ATTACHMENT B – MAPS

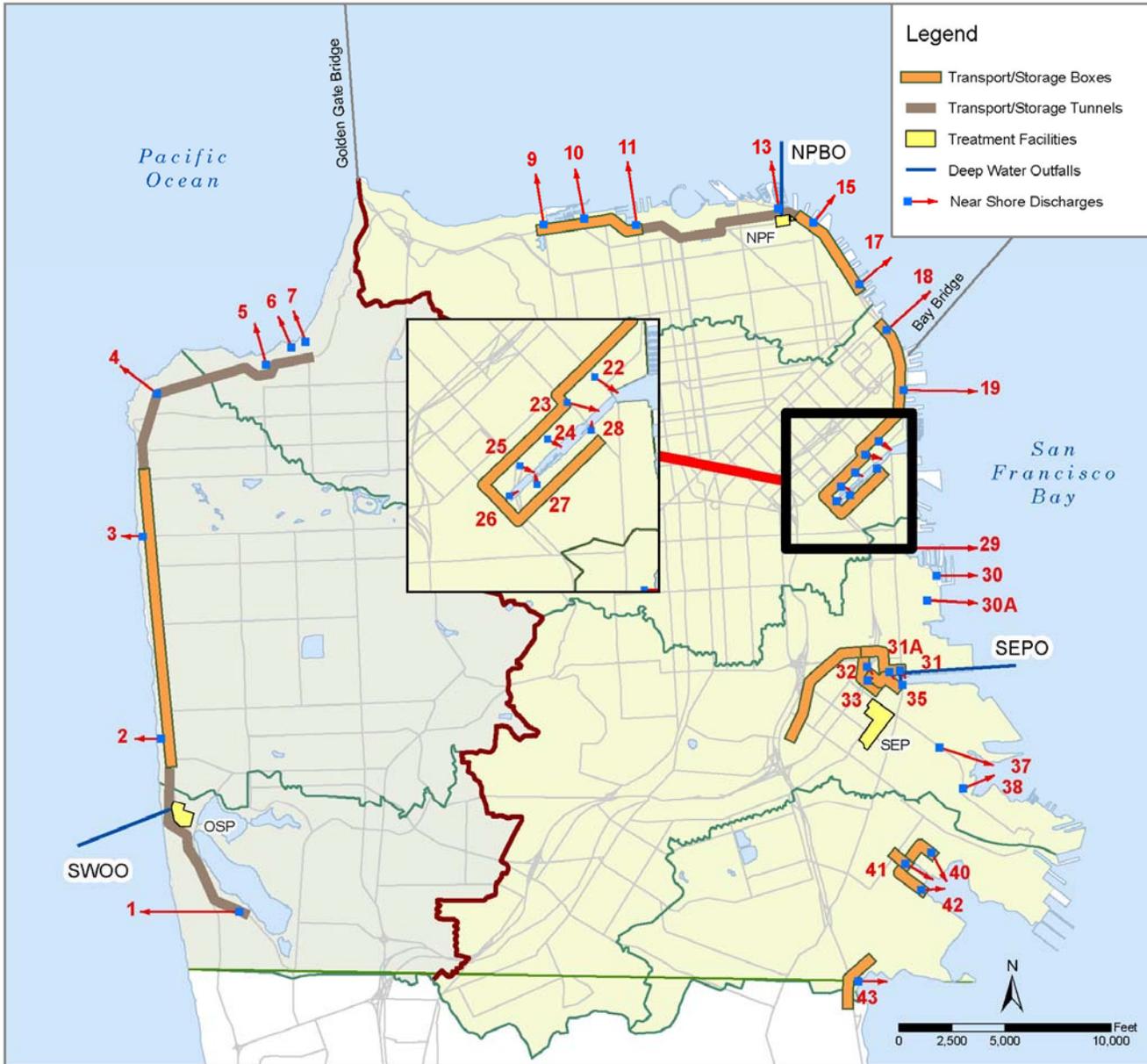
DISCHARGE FACILITY LOCATION MAP



DISCHARGE FACILITIES

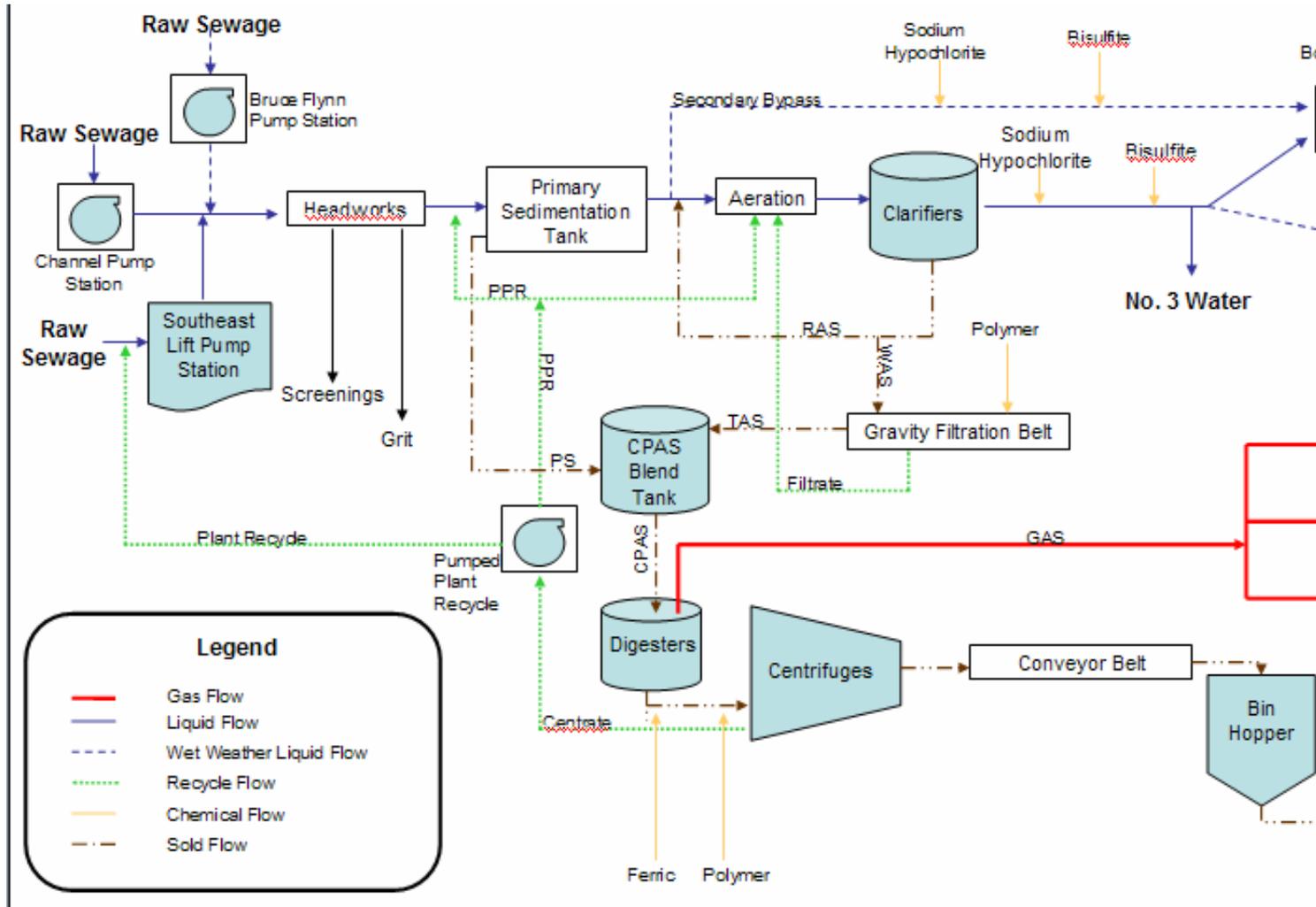


MAJOR DRAINAGE BASINS AND CSO OUTFALL LOCATIONS

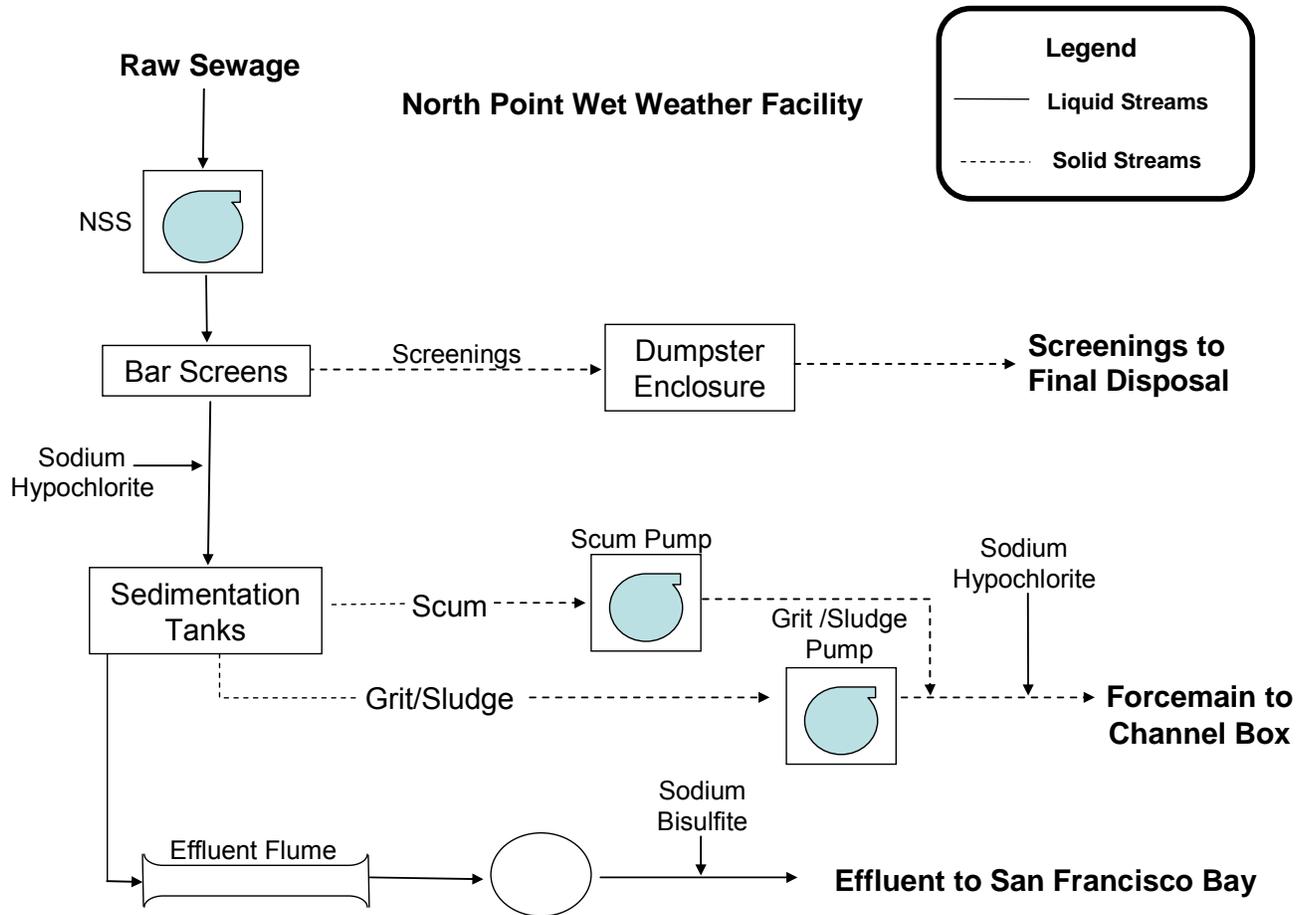


CSO Discharge Point	Water Body	Discharge Point	Water Body
001 to 007	Regulated under Oceanside Permit	029	Central Basin
009	Marina Beach	030	Central Basin
010	Marina Beach	030A	Central Basin
011	St. Francis Yacht Harbor	031 to 035	Islais Creek
013	Pier 39	037	India Basin
015	Pier 31	038	India Basin
017	Pier 9	040	Yosemite Canal
018	Pier 14	041	Yosemite Canal
019	Pier 32	042	South Basin
022 to 028	Mission Creek	043	Candlestick Cove

ATTACHMENT C: FLOW SCHEMATIC FOR THE SOUTHEAST PLANT



ATTACHMENT C, FLOW SCHEMATIC FOR NORTH POINT WET WEATHER FACILITY



ATTACHMENT D –STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 CFR §122.41(a).)
2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 CFR §122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 CFR §122.411.)

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 CFR §122.41(d).)

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order (40 CFR §122.41(e)).

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 CFR §122.41(g).)
2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 CFR §122.51.)

F. Inspection and Entry

The Discharger shall allow the Regional Water Board, State Water Board, United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 CFR §122.41(i); Wat. Code, §13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (40 CFR §122.41(i)(1));
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (40 CFR §122.41(i)(2));
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (40 CFR §122.41(i)(3)); and
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (40 CFR §122.41(i)(4).)

G. Bypass

1. Definitions
 - a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 CFR §122.41(m)(1)(i).)
 - b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 CFR §122.41(m)(1)(ii).)
2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 CFR §122.41(m)(2).)
3. Prohibition of bypass. Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless (40 CFR §122.41(m)(4)(i)):
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 CFR §122.41(m)(4)(i)(A));

- b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 CFR §122.41(m)(4)(i)(B)); and
 - c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 CFR §122.41(m)(4)(i)l.)
4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 CFR §122.41(m)(4)(ii).)
5. Notice
 - a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 CFR §122.41(m)(3)(i).)
 - b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions – Reporting V.E below (24-hour notice). (40 CFR §122.41(m)(3)(ii).)

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 CFR §122.41(n)(1).)

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 CFR §122.41(n)(2).)
2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 CFR §122.41(n)(3)):

- a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 CFR §122.41(n)(3)(i));
 - b. The permitted facility was, at the time, being properly operated (40 CFR §122.41(n)(3)(ii));
 - c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 CFR §122.41(n)(3)(iii)); and
 - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 CFR §122.41(n)(3)(iv).)
3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 CFR §122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 CFR §122.41(f).)

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 CFR §122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of this Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 CFR §122.41(l)(3); §122.61.)

III. STANDARD PROVISIONS – MONITORING

- A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 CFR §122.41(j)(1).)
- B. Monitoring results must be conducted according to test procedures under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503 unless other test procedures have been specified in this Order. (40 CFR §122.41(j)(4); §122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

- A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least 5 years (or longer as required by Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time. (40 CFR §122.41(j)(2).)
- B. Records of monitoring information shall include:
1. The date, exact place, and time of sampling or measurements (40 CFR §122.41(j)(3)(i));
 2. The individual(s) who performed the sampling or measurements (40 CFR §122.41(j)(3)(ii));
 3. The date(s) analyses were performed (40 CFR §122.41(j)(3)(iii));
 4. The individual(s) who performed the analyses (40 CFR §122.41(j)(3)(iv));
 5. The analytical techniques or methods used (40 CFR §122.41(j)(3)(v)); and
 6. The results of such analyses. (40 CFR §122.41(j)(3)(vi).)
- C. Claims of confidentiality for the following information will be denied (40 CFR §122.7(b)):
1. The name and address of any permit applicant or Discharger (40 CFR §122.7(b)(1)); and
 2. Permit applications and attachments, permits and effluent data. (40 CFR §122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, State Water Board, or USEPA within a reasonable time, any information which the Regional Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Water Board, State Water Board, or USEPA copies of records required to be kept by this Order. (40 CFR §122.41(h); Wat. Code, §13267.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 CFR §122.41(k).)
2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA). (40 CFR §122.22(a)(3).)
3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 CFR §122.22(b)(1));
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of Plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 CFR §122.22(b)(2)); and
 - c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 CFR §122.22(b)(3).)
4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 CFR §122.22I.)
5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, 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 for knowing violations.” (40 CFR §122.22(d).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 CFR §122.22(l)(4).)
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 CFR §122.41(l)(4)(i).)
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 CFR §122.41(l)(4)(ii).)
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 CFR §122.41(l)(4)(iii).)

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 CFR §122.41(l)(5).)

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 CFR §122.41(l)(6)(i).)
2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 CFR §122.41(l)(6)(ii)):
 - a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 CFR §122.41(l)(6)(ii)(A).)
 - b. Any upset that exceeds any effluent limitation in this Order. (40 CFR §122.41(l)(6)(ii)(B).)

3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 CFR §122.41(l)(6)(iii).)

F. Planned Changes

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 CFR §122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 CFR §122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 CFR §122.41(l)(1)(ii).)
3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 CFR §122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements. (40 CFR §122.41(l)(2).)

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. (40 CFR §122.41(l)(7).)

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 CFR §122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

- A. The Regional Water Board is authorized to enforce the terms of this Order under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Regional Water Board of the following (40 CFR §122.42(b)):

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to sections 301 or 306 of the CWA if it were directly discharging those pollutants (40 CFR §122.42(b)(1)); and
2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of this Order. (40 CFR §122.42(b)(2).)
3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 CFR §122.42(b)(3).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

NPDES regulations at 40 CFR §122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements, which implement the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

- A. The Discharger shall comply with the MRP for this Order as adopted by the Regional Water Board, and with all of the Self-Monitoring Program, Part A, adopted August 1993 (SMP). The MRP and SMP may be amended by the Executive Officer pursuant to USEPA regulations 40 CFR §§122.62, 122.63, and 124.5. If any discrepancies exist between the MRP and SMP, the MRP prevails.
- B. Sampling is required during the entire year when discharging. All analyses shall be conducted using current USEPA methods, or that have been approved by the USEPA Regional Administrator pursuant to 40 CFR §§136.4 and 40 CFR 136.5, or equivalent methods that are commercially and reasonably available, and that provide quantification of sampling parameters and constituents sufficient to evaluate compliance with applicable effluent limitations and to perform reasonable potential analysis. Equivalent methods must be more sensitive than those specified in 40 CFR Part 136, must be specified in the permit, and must be approved for use by the Executive Officer, following consultation with the State Water Quality Control Board's Quality Assurance Program.
- C. Sampling and analysis of additional constituents is required pursuant to Table 1 of the Regional Water Board's August 6, 2001 Letter entitled, *Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy (Attachment G)*.
- D. *Minimum Levels*. For compliance and reasonable potential monitoring, analyses shall be conducted using the commercially available and reasonably achievable detection levels that are lower than applicable water quality objectives or criteria, or the effluent limitations, whichever is lower. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to the minimum levels (MLs) given below.

MLs are the concentrations at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed. All MLs are expressed as µg/L.

Table E-1 lists the test methods the Discharger may use for compliance and reasonable potential monitoring for the pollutants with effluent limitations.

Table E-1. Test Methods and Minimum Levels for Pollutants with Reasonable Potential

CTR #	Constituent	Types of Analytical Methods ⁽¹⁾ Minimum Levels (µg/L)					
		GC	GCMS	Color	ICP	ICPMS	CVAA
6	Copper				10	0.5	
7	Lead				5	0.5	
8	Mercury ⁽²⁾						0.0005
11	Silver				10	0.25	
13	Zinc				20	1	
14	Cyanide			5			
	Dioxin-TEQ ⁽³⁾						
38	Tetrachloroethene	0.5	2				
68	Bis (2-ethylhexyl) phthalate	10	5				
	Ammonia ⁽⁵⁾						
	Tributyltin ⁽⁴⁾		0.005				

⁽¹⁾ Analytical Methods / Laboratory techniques are defined as follows:

- Color = Colorimetric
- FAA = Furnace Atomic Absorption
- GC = Gas Chromatography
- GCMS = Gas Chromatography Mass Spectroscopy
- ICP = Inductively Coupled Plasma
- ICPMS = Inductively Coupled Plasma/Mass Spectrometry

- ⁽²⁾ Mercury: The discharger may, at its option, sample effluent mercury either as grab or as 24-hour composite samples. Use ultra-clean sampling (USEPA Method 1669) to the maximum extent practicable, and ultra-clean analytical methods (USEPA Method 1631) for mercury monitoring. The Discharger may only use alternative methods if the method has an ML of 0.5 ng/L or less, and approval is obtained from the Executive Officer prior to conducting the monitoring.
- ⁽³⁾ Use USEPA Method 1613. Minimum levels for the various congeners are shown as footnotes in the Section IV.A.1 of the Order.
- ⁽⁴⁾ To determine tributyltin, the Discharger shall use GC-FPD, GC/MS or an USEPA approved method; the method shall be capable of speciating organotins and detecting concentrations at low limits on the order of 5 ng/l. Alternative methods of analysis must be approved by the Executive Officer.
- ⁽⁵⁾ Ammonia-N measured by Ammonia Selective Electrode Method. Reference SM 4500-NH3 F (18th Edition) Minimum Detection Level 0.1 mg/L.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table E-2. Monitoring Station Locations

Type of Sampling Location	Monitoring Location Name	Monitoring Location Description
Influent Station	INF-001	Formerly Sampling Station A-001, Southeast Water Pollution Control Plant Station, 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. Latitude 37° 44' 40.6", Longitude 122° 23' 31.6"
Influent Station	INF-002	Formerly Sampling Station A-002, North Point Wet Weather Facility, at any point at which all waste tributary to the system is present and preceding any phase of treatment. Latitude 37° 48' 22.8", Longitude 122° 24' 33.8"
Effluent Station	EFF-001A	Formerly Sampling Station E-001, Southeast Plant. Under dry weather discharge conditions, at any point in the sewerage system, between the point at which all wastes have gone through complete secondary treatment, including disinfection and the point of discharge to deep water. Latitude 37° 44' 36.9", Longitude 122° 23' 24"
Effluent Station	EFF-001B	Formerly Sampling Station E-001, Southeast Plant. Under wet weather discharge conditions, at any point in the sewerage system, between the point at which adequate contact with the disinfectant is assured and the point of discharge to deep water. Latitude 37° 44' 36.9", Longitude 122° 23' 24"
Effluent Station	EFF-001D	Formerly Sampling Station E-001-D, Southeast Plant, at any point in the disinfection facilities at which point adequate contact with the disinfectant is assured (may be the same location as EFF-001A). Latitude 37° 44' 36.9", Longitude 122° 23' 24"
Effluent Station	EFF-002	Formerly E-002, Southeast Plant, wet weather discharge only, at any point in the sewerage system, between the point at which all wastes have gone through complete secondary treatment, including disinfection and the point of discharge into Islais Creek. Latitude 37° 44' 49.1", Longitude 122° 23' 17.4"
Effluent Station	EFF-002D	Formerly E-002-D, Southeast Plant, wet weather discharge only, at any point in the disinfection facilities at which point adequate contact with the disinfectant is assured (may be the same location as EFF-002). Latitude 37° 44' 49.1", Longitude 122° 23' 17.4"
Effluent Station	EFF-003	Formerly E-003, North Point Wet Weather Facility, at any point in the facility system between the point of discharge to Pier 33 (Discharge Point Nos. 003 and 004) and Pier 35 (Discharge Point 005 and 006) outfalls and the point at which all waste tributary to those outfalls is present. Latitude 37° 44' 24", Longitude 122° 24' 26.8"
Effluent Station	EFF-003D	Formerly E-003-D, North Point Wet Weather Facility, at any point in the disinfection facilities for Discharge Point 003 through 006 at which point adequate contact with the disinfectant is assured (may be the same as EFF-003). Latitude 37° 48' 31.5", Longitude 122° 24' 15.3"
Sanitary Sewer Overflows and Bypass Station	OV-1 thru OV-n	Bypass or sanitary sewer overflows from treatment facility, manholes, pump stations, and interceptors under the discharger's control.
Shoreline Station	S-202.5	Crissy Field West Latitude 37° 48.42', Longitude 122° 28.12'

Type of Sampling Location	Monitoring Location Name	Monitoring Location Description
Shoreline Station	S-202.4	Crissy Field (east of Lagoon) Latitude 37° 48.37', Longitude 122° 27.10'
Shoreline Station	S-210.1	Aquatic Park (Hyde St. Pier) Latitude 37° 48.54', Longitude 122° 25.33'
Shoreline Station	S-211	Aquatic Park Beach East End Latitude 37° 48.53', Longitude 122° 25.27'
Shoreline Station	S-300.1	Candlestick Point SRA (Sunnydale Cove Beach) Latitude 37° 42.57', Longitude 122° 23.39'
Shoreline Station	S-301.1	Candlestick Point SRA (Windsurfer Circle) Latitude 37° 42.55', Longitude 122° 22.94'
Shoreline Station	S-301.2	Candlestick Point SRA (Jack Rabbit Beach) Latitude 37° 42.67', Longitude 122° 22.81'

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. The Discharger shall monitor influent to the Southeast Plant during dry weather at INF-001 as follows.

Table E-3. Influent Monitoring – Dry Weather

Parameter	Units	Minimum Sampling Frequency	Required Analytical Test Method
		C-24 ⁽¹⁾	
Flow rate ⁽²⁾	MGD	Cont/D	Meter
Biochemical Oxygen Demand (5-day @ 20 Deg. C) (BOD ₅)	mg/L	W	(3)
Total Suspended Solids (TSS)	mg/L	5/W	(3)

(1) Weekly composite samples of influent shall be collected on varying days selected at random and shall not include any Plant recirculation or other side stream waste, and shall coincide with effluent composite sampling days for these same constituents. Deviation from this must be approved by the Executive Officer.

(2) For influent flows, the following information shall also be reported monthly:

- Daily: Total Daily Flow Volume (Million gallons)
- Daily: Daily Average Flow (MGD)
- Monthly: Monthly Average Flow (MGD)
- Daily: Maximum Daily Flow (MGD)
- Daily: Minimum Daily Flow (MGD)
- Monthly: Total Flow Volume (million gallons)

(3) Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.

B. Monitoring Location INF-002

1. The Discharger shall monitor influent to the North Point Wet Weather Facility during wet weather at INF-002 as follows.

Table E-4. Influent Monitoring – Wet Weather

Parameter	Units	Minimum Sampling Frequency		Required Analytical Test Method
		C-X		
Flow rate ⁽¹⁾	MGD	Cont/E		Meter

⁽¹⁾ For influent flows, the following information shall also be reported monthly:

- Daily: Total Daily Flow Volume (Million gallons)
- Daily: Daily Average Flow (MGD)
- Monthly: Monthly Average Flow (MGD)
- Daily: Maximum Daily Flow (MGD)
- Daily: Minimum Daily Flow (MGD)
- Monthly: Total Flow Volume (Million gallons)

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001A

1. The Discharger shall monitor treated effluent from the Southeast Plant during dry weather conditions as follows:

Table E-5. Effluent Monitoring Dry Weather

Parameter	Units	Minimum Sampling Frequency			Required Analytical Test Method
		Continuous	C-24	G	
Flow ⁽¹⁾	MGD	Cont/D			meter
pH	standard units			5/W	⁽²⁾
BOD ₅ ^(3,4)	mg/L		W		⁽²⁾
COD ⁽⁴⁾	mg/L		5/W		⁽²⁾
TSS ⁽³⁾	mg/L		5/W		⁽²⁾
Oil and Grease ⁽⁵⁾	mg/L			M	⁽²⁾
Fecal Coliform ⁽⁶⁾	CFU or MPN/100 mL			W	⁽²⁾
Enterococci Bacteria ⁽¹⁴⁾	MPN/100mL			W	⁽²⁾
Chlorine, Total Residual	mg/L	⁽⁷⁾			⁽²⁾
Acute Toxicity ⁽⁸⁾	% Survival		M		⁽²⁾
Chronic Toxicity ⁽⁹⁾	TUc		2/Y		⁽²⁾
Copper	µg/L		M		⁽²⁾
Lead	µg/L		M		⁽²⁾
Mercury ⁽¹⁰⁾	µg/L & kg/month		M		⁽²⁾
Silver	µg/L		M		⁽²⁾
Zinc	µg/L		M		⁽²⁾
Cyanide ⁽¹¹⁾	µg/L			M	⁽²⁾
Dioxin (TEQ) ⁽¹²⁾	µg/L & mg/year			2/Y	⁽²⁾
Tetrachloroethylene	µg/L			2/Y	⁽²⁾
Bis (2-ethylhexyl) phthalate	µg/L			Q	⁽²⁾
Ammonia	mg/L			M	⁽²⁾
Tributyltin	µg/L			Q	⁽²⁾
CTR Priority Pollutants	µg/L	1/Y and in accordance with			⁽²⁾

Parameter	Units	Minimum Sampling Frequency			Required Analytical Test Method
		Continuous	C-24	G	
except those listed above ⁽¹³⁾		the August 6, 2001 Letter			

- (1) Flow Monitoring:
 For effluent flows, the following information shall also be reported monthly:
 Daily: Total Daily Flow Volume (Million gallons)
 Daily: Daily Average Flow (MGD)
 Monthly: Monthly Average Flow (MGD)
 Daily: Maximum Daily Flow (MGD)
 Daily: Minimum Daily Flow (MGD)
 Monthly: Total Flow Volume (Million gallons)
- (2) Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136. For priority pollutants, the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP. Where no methods are specified for a given pollutant, the methods must be approved by this Regional Water Board or the State Water Board.
- (3) The percent removal for BOD₅ and TSS shall be reported for each calendar month.
- (4) The Discharger will analyze COD five times per week. If the effluent COD concentration exceeds 75 mg/L on 2 consecutive days, the Discharger will initiate daily BOD₅ sampling until it is shown that the effluent BOD₅ concentration is below a concentration of 30 mg/L.
- (5) Each oil and grease sample event shall consist of a composite sample comprised of three grab samples taken at equal intervals during the sample date, with each grab sample being collected in a glass container.
- (6) 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.
- (7) 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 2 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. The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine residual and/or sodium bisulfite (or other dechlorinating chemical) dosage (including a safety factor) concentration(s) to demonstrate that chlorine residual exceedances are false positives.
- (8) Acute bioassay tests shall be performed and reported in accordance with the Whole Effluent Acute Toxicity Requirements specified in Section V.A of this MRP.
- (9) Critical Life Stage Toxicity Test shall be performed and reported in accordance with the Whole Effluent Chronic Toxicity Requirements specified in Sections V.B of the MRP.
- (10) Mercury: The Discharger may, at its option, sample effluent mercury either as grab or as 24-hour composite samples. Use ultra-clean sampling (USEPA Method 1669) to the maximum extent practicable and ultra-clean analytical methods (USEPA Method 1631) for mercury monitoring. The Discharger may only use alternative methods if the method has an ML of 0.5 ng/L or less, and approval is obtained from the Executive Officer prior to conducting the monitoring.
- (11) The Discharger may analyze for cyanide as Weak Acid Dissociable Cyanide using protocols specified in Standard Methods Part 4500-CN-I, USEPA Method OI 1677, or an equivalent alternative as specified in the latest edition of Standard Methods for Analysis of Water and Wastewater. Alternative methods of analysis must be approved by the Executive Officer.
- (12) The Discharger shall use USEPA Method 1613 for analysis using this Order's specified MLs. The minimum levels for dioxin and fur congeners is given in Table 7 of the permit. Analysis results below these MLs are considered zero for use in calculation for compliance determination with the effluent limit. However, all estimated concentrations from the laboratory that are above detection but below the lowest calibration standard shall be reported in the Self-Monitoring Reports. The annual mass discharge shall be the product of average concentrations in samples collected each year and the total dry weather flow for that year.
- (13) Those pollutants identified as Compound Nos. 1 – 126 by the California Toxics Rule at 40 CFR §131.38 (b)(1).
- (14) The Discharger shall monitor for enterococci using USEPA's Membrane Filter Test Method 1600, or an EPA approved method such as Enterolert.

B. Monitoring Locations EFF-001B, EFF-002, and EFF-003

1. The Discharger shall monitor effluent during wet weather from the Southeast Plant at EFF-001B and EFF-002, and effluent during wet weather from the North Point Wet Weather Facility at EFF-003 as follows:

Table E-6. Effluent Monitoring – Wet weather Monitoring Locations

Parameter	Units	Minimum Sampling Frequency			Required Analytical Test Method
		Continuous	C-X	G	
Flow ⁽¹⁾	MGD	Cont/E			meter
COD	mg/L		(2)		(3)
Oil and Grease ⁽⁴⁾	mg/L			(2)	(3)
Fecal Coliform ⁽⁵⁾	CFU or MPN/100 mL			(6)	(3)
Enterococci Bacteria	MPN/100mL			(2)	(8)
Chlorine Residual	mg/L	(7)			(3)
Acute Toxicity	Percent Survival		(2)		(3)
Copper	µg/L		(2)		(3)
Lead	µg/L		(2)		(3)
Mercury	µg/L & kg/month		(2)		(3)
Silver	µg/L		(2)		(3)
Zinc	µg/L		(2)		(3)
Cyanide	µg/L		(2)		(3)
Ammonia	mg/L			(2)	(3)

- (1) Flow Monitoring:
 For effluent flows, the following information shall also be reported monthly:
 Daily: Total Daily Flow Volume (million gallons)
 Daily: Daily Average Flow (MGD)
 Monthly: Monthly Average Flow (MGD)
 Daily: Maximum Daily Flow (MGD)
 Daily: Minimum Daily Flow (MGD)
 Monthly: Total Flow Volume (million gallons)
- (2) Under wet weather conditions, sample one event of each month when wet weather facilities are operational.
- (3) Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136. For priority pollutants, the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP. Where no methods are specified for a given pollutant, the methods must be approved by this Regional Water Board or the State Water Board.
- (4) Oil and Grease samples shall be collected only from monitoring point EFF-003. During wet weather, each oil and grease sample event shall consist of a composite sample comprised of three grab samples taken at appropriate intervals during the wet weather event (at the beginning, during the middle, and towards the end), with each grab sample being collected in a glass container. After the wet weather event, the grab samples shall be mixed. 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.
- (5) 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 at a time when sampling for chlorine residual.
- (6) Under wet weather conditions, the monitoring frequency shall be per event (E). 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 the 30-day moving median, effluent concentration shall assume to be zero on the days of no discharge.
- (7) 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 2 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. The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine residual and/or sodium bisulfite (or other dechlorinating chemical) dosage (including a safety factor) and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Regional Water Board staff may conclude that these false positive chlorine residual exceedances are not violations of this permit limitation.

- (8) The Discharger shall monitor for enterococci using USEPA's Membrane Filter Test Method 1600, or an EPA approved method such as Enterolert.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

The Discharger shall monitor acute and chronic toxicity as follows:

A. Whole Effluent Acute Toxicity - Monitoring Location EFF-001A

1. Compliance with the acute toxicity effluent limitations of this Order shall be evaluated by measuring survival of test organisms exposed to 96-hour continuous flow-through bioassays.
2. Test organisms shall be the fathead minnow (*Pimephales promelas*) or rainbow trout unless specified otherwise in writing by the Executive Officer.
3. All bioassays shall be performed according to the most up-to-date protocols in 40 CFR Part 136, currently in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms," 5th Edition.
4. Effluent used for fish bioassays must be dechlorinated prior to testing. Monitoring of the bioassay water shall include, on a daily basis, the following parameters: pH, dissolved oxygen, ammonia (if toxicity is observed), temperature, hardness, and alkalinity. These results shall be reported. If a violation of acute toxicity requirements occurs or if the control fish survival rate is less than 90 percent, the bioassay test shall be restarted with new batches of fish and shall continue back to back until compliance is demonstrated.

B. Whole Effluent Acute Toxicity - Monitoring Locations EFF-001B, EFF-002, and EFF-003

1. Due to the fact that discharges from these points are discrete events, compliance with the acute toxicity effluent limitations of this Order shall be evaluated by measuring survival of test organisms exposed to 96-hour static bioassays.
2. Test organisms shall be the fathead minnow (*Pimephales promelas*) or rainbow trout unless specified otherwise in writing by the Executive Officer.
3. All bioassays shall be performed according to the most up-to-date protocols in 40 CFR Part 136, currently in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms," 5th Edition.

4. Effluent used for fish bioassays must be dechlorinated prior to testing. The Discharger may use organic buffers to maintain the effluent test pH at or near discharge pH. Monitoring of the bioassay water shall include, on a daily basis, the following parameters: pH, dissolved oxygen, ammonia (if toxicity is observed), temperature, hardness, and alkalinity. These results shall be reported. If a violation of acute toxicity requirements occurs or if the control fish survival rate is less than 90 percent, the bioassay test shall be restarted with new batches of fish and shall continue back to back until compliance is demonstrated.

C. Whole Effluent Chronic Toxicity – Monitoring Location EFF-001A

1. Chronic Toxicity Monitoring Requirements

- a. *Sampling.* The Discharger shall collect 24-hour composite samples of the effluent for critical life stage toxicity testing as indicated below. For toxicity tests requiring renewals, 24-hour composite samples collected on consecutive days are required.
- b. *Test Species.* Echinoderm embryo development with the sand dollar (*Dendraster excentricus*) was selected as the most sensitive species for chronic testing in a study completed in November 2006. The purple sea urchin (*Strongylocentrotus purpuratus*) may be used as an alternate test species when *Dendraster* is not gravid.
- c. *Methodology.* Sample collection, handling and preservation shall be in accordance with USEPA protocols. In addition, bioassays shall be conducted in compliance with the most recently promulgated test methods, as shown in **Appendix E-2**. These are “Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms,” currently (EPA/600/R-95/136. August 1995), and “Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms,” currently fourth Edition (EPA-821-R-02-013), with exceptions granted the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).
- d. *Dilution Series.* The Discharger shall conduct tests at 20%, 15%, 10%, 5%, and 2%. The “%” represents percent effluent as discharged. The Discharger may remove ammonia from the effluent prior to toxicity testing.

2. Chronic Toxicity Reporting Requirements

- a. *Routine Reporting.* Toxicity test results for the current reporting period shall include, at a minimum, for each test:
 - (1) Sample date(s)
 - (2) Test initiation date
 - (3) Test species

- (4) End point values for each dilution (e.g., number of young, growth rate, percent survival)
 - (5) NOEC value(s) in percent effluent
 - (6) IC15, IC25, IC40, and IC50 values (or EC15, EC25 ... etc.) as percent effluent
 - (7) TUc values (100/NOEC, 100/IC25, or 100/EC25)
 - (8) Mean percent mortality (\pm s.d.) after 96 hours in 100% effluent (if applicable)
 - (9) NOEC and LOEC values for reference toxicant test(s)
 - (10) IC50 or EC50 value(s) for reference toxicant test(s)
 - (11) Available water quality measurements for each test (pH, D.O., temperature, salinity, ammonia)
- b. *Compliance Summary.* The results of the chronic toxicity testing shall be provided in the 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 items listed above under 2.a, specifically item numbers i, iii, v, vi (IC25 or EC25), vii, and viii.
3. Chronic Toxicity Reduction Evaluation (TRE)
- a. *Prepare Generic TRE Work Plan.* To be ready to respond to toxicity events, the Discharger shall prepare a generic TRE work plan within 90 days of the effective date of this Order. The Discharger shall review and update the work plan as necessary to remain current and applicable to the discharge and discharge facilities.
 - b. *Submit Specific TRE Work Plan.* Within 30 days of exceeding either trigger for accelerated monitoring, the Discharge shall submit to the Regional Water Board a TRE work plan, which should be the generic work plan revised as appropriate for this toxicity event after consideration of available discharge data.
 - c. *Initiate TRE.* Within 30 days of the date of completion of the accelerated monitoring tests observed to exceed either trigger, the Discharger shall initiate a TRE in accordance with a TRE work plan that incorporates any and all comments from the Executive Officer.
 - d. The TRE shall be specific to the discharge and be prepared in accordance with current technical guidance and reference materials, including USEPA guidance materials. The TRE shall be conducted as a tiered evaluation process, such as summarized below:
 - i. Tier 1 consists of basic data collection (routine and accelerated monitoring).

- ii. Tier 2 consists of evaluation of optimization of the treatment process, including operation practices and in-Plant process chemicals.
 - iii. Tier 3 consists of a toxicity identification evaluation (TIE).
 - iv. Tier 4 consists of evaluation of options for additional effluent treatment processes.
 - v. Tier 5 consists of evaluation of options for modifications of in-Plant treatment processes.
 - vi. Tier 6 consists of implementation of selected toxicity control measures, and follow-up monitoring and confirmation of implementation success.
- e. The TRE may be ended at any stage if monitoring finds there is no longer consistent toxicity (complying with requirements of Section IV.A.1 of this Order).
 - f. 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.
 - g. 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.
 - h. 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.
 - i. The Regional Water 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 Regional Water Board will be based in part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.

VI. LAND DISCHARGE MONITORING REQUIREMENTS

Not Applicable

VII. RECLAMATION MONITORING REQUIREMENTS

Not Applicable

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Regional Monitoring Program

The Discharger shall continue to participate in the Regional Monitoring Program, which involves collection of data on pollutants and toxicity in water, sediment and biota of the Estuary. The Discharger’s participation and support of the RMP is used in consideration of the level of receiving water monitoring required by this Order.

B. Shoreline Monitoring

The Discharger shall monitor receiving waters at shoreline stations S-202.4, S-202.5, S-210.1, S-211, S-300.1, S-301.1, and S-301.2 as follows:

Table E-7. Shoreline Monitoring – Monitoring Locations S-202.4, S-202.5, S-210.1, S-211, S-300.1, S-301.1, and S-301.2

Parameter	Units	Minimum Sampling Frequency	Required Analytical Test Method
		G	
Fecal Coliform ¹	MPN/100 mL	W	1
Enterococci ²	MPN/100 mL	W	2

¹ May be satisfied by measuring *E.coli* as recommended in the USEPA Beach Monitoring Program. Total coliform bacteria and *E. coli* may be measured using the *Colisure* method of analysis.

² The Discharger shall monitor for enterococci using USEPA’s Membrane Filter Test Method 1600, or an EPA approved method such as Enterolert.

C. Additional Monitoring

With each annual self-monitoring report, the Discharger shall document how it complies with Receiving Water Limitations. This may include discharge characteristics (e.g. mass balance with effluent data and closest RMP station), receiving water data, or a combination of both.

IX. LEGEND FOR MRP TABLES

Types of Samples

- C-24 = composite sample, 24 hours
(includes continuous sampling, such as for flows)
- C-X = composite sample, X hours
- G = grab sample

Frequency of Sampling

- Cont. = continuous
- Cont/D = continuous monitoring & daily reporting
- Cont/E = continuous monitoring & reporting for each occurrence
- 2H = once every two hours
- E = each occurrence

- W = once each week
- 5/W = five times each week
- M = once each month
- Q = once each quarter (at about three month intervals)
- 1/Y = once each calendar year
- 2/Y = twice each calendar year (at about 6 month intervals, once during dry season, once during wet season)

Parameter and Unit Abbreviations

- BOD₅ = Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C)
- CFU/100 mL = Coliform Forming Units per 100 milliliters
- COD = Chemical Oxygen Demand
- D.O. = Dissolved Oxygen
- Est V = Estimated Volume (gallons)
- Metals = multiple metals; See SMP Section VI.G.
- PAHs = Polycyclic Aromatic Hydrocarbons; See SMP Section VI.H.
- TSS = Total Suspended Solids
- MGD = million gallons per day
- mg/L = milligrams per liter
- mL/L-hr = milliliters per liter, per hour
- µg/L = micrograms per liter
- µmhos/cm = micromhos per centimeter
- kg/d = kilograms per day
- kg/mo = kilograms per month
- TU_C = Toxic Unit Chronic
- MPN/100 mL = Most Probable Number per 100 milliliters

X. OTHER MONITORING REQUIREMENTS

A. Separate Sanitary Sewer System Overflows

Those portions of the sewer system that are operated as a separate sewer system shall monitor sanitary sewer overflows and report the date(s) and times of overflows beginning and end, estimated volume of each overflow event, the duration of the event, and the corrective action measures taken as required in the State Water Board General Waste Discharge Requirements for Sanitary Sewer Systems.

B. Bypasses Monitoring Requirements

The Discharger is served predominantly by a combined sewer system and required to operate this system under requirements of the CSO Control Policy to maximize flows to the treatment plants and to minimize overflows. Therefore, under wet weather conditions, there are no bypasses of treatment plant processes. Bypasses of treatment plant processes during dry weather are subject to the monitoring requirements listed below.

Table E-8. Bypasses Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow and Total Volume	MGD	Continuous	1/Day	(1)
Duration	hours	Continuous	1/Day	(1)
BOD ₅	mg/L; kg/d	Grab	1/Day	(1)
TSS	mg/L; kg/d	Grab	1/Day	(1)
Enterococci Bacteria	MPN/100 mL	Grab	1/Day	(1)
Fecal Coliform Bacteria	MPN/100 mL	Grab	1/Day	(1)
Total Coliform	MPN/100 mL	Grab	1/Day	(1)
Standard Observations	--	Observation	Each Occurrence	--

(1) Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.

C. Sludge Monitoring

The Discharger shall adhere to sludge monitoring requirements required by 40 CFR Part 503.

XI. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this Order, the State or Regional Water Board may notify the Discharger to electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (<http://www.waterboards.ca.gov/ciwqs/index.html>). Until such notification is given, the Discharger shall submit paper copies of SMRs. The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.
2. The Discharger shall submit monthly Self-Monitoring Reports including the results of all required monitoring using USEPA approved test methods or other test methods specified in this Order for each calendar month. Monthly SMRs shall be due on the 30th day following the end of each calendar month, covering samples collected during that calendar month; Annual Reports shall be due on February 1 following each calendar year.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-9. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period
Cont.	Day after permit effective date	All
Cont/D	Day after permit effective date	All
Cont/E	Day after permit effective date	All
2H	Day after permit effective date	All
W	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday
5/W	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday
1/Month	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	1 st day of calendar month through last day of calendar month
Q	Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31
2/Y	Closest of January 1 or July 1 following (or on) permit effective date	January 1 through June 30 July 1 through December 31
1/Y	January 1 following (or on) permit effective date	January 1 through December 31

4. Reporting Protocols. The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR Part 136.

The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

- a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
- b. Sample results less than the RL, but greater than or equal to the laboratory’s MDL, shall be reported as “Detected, but Not Quantified,” or DNQ. The estimated chemical concentration of the sample shall also be reported.

For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words “Estimated Concentration” (may be shortened to “Est. Conc.”). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (\pm a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

- c. Sample results less than the laboratory’s MDL shall be reported as “Not Detected,” or ND.

- d. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve.
5. Compliance Determination. Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined above and Attachment A of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).
6. The Discharger shall submit SMRs in accordance with the following requirements:
 - a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.
 - b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.
 - c. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below:

Executive Officer
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612
ATTN: NPDES Wastewater Division

C. Discharge Monitoring Reports (DMRs)

1. As described in Section XI.B.1 above, at any time during the term of this Order, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.

2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharge shall submit the original DMR and one copy of the DMR to the address listed below:

Standard Mail	FedEx/UPS/Other Private Carriers
State Water Resources Control Board Division of Water Quality c/o DMR Processing Center PO Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15th Floor Sacramento, CA 95814

3. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Computer generated forms may be accepted with authorization from the USEPA.

D. Modifications to Part A of Self-Monitoring Program (Attachment G)

1. If any discrepancies exist between SMP Part A, August 1993 (Attachment G) and this MRP, this MRP prevails.
2. Modify Section F.4 as follows:

Self-Monitoring Reports

[Add the following to the beginning of the first paragraph]

For each calendar month, a self-monitoring report (SMR) shall be submitted to the Regional Water Board by the 30th day after the end of each calendar month, in accordance with the requirements listed in Self-Monitoring Program, Part A. The purpose of the report is to document treatment performance, effluent quality and compliance with waste discharge requirements prescribed by this Order, as demonstrated by the monitoring program data and the Discharger's operation practices.

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

- g. If the Discharger wishes to invalidate any measurement, the letter of transmittal will include a formal request to invalidate the measurement; the original measurement in question, the reason for invalidating the measurement, all relevant documentation that supports the invalidation (e.g., laboratory sheet, log entry, test results, etc.), and discussion of the corrective actions taken or planned (with a time schedule for completion), to prevent recurrence of the sampling or measurement problem. The invalidation of a measurement requires the approval of Regional Water Board staff and will be based solely on the documentation submitted at that time, or within 60 days of the report due date if additional time is necessary to obtain the necessary evidence.

- h. 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. If the Discharger chooses to submit SMRs electronically, the following shall apply:

- 1) Reporting Method: The Discharger shall submit SMRs electronically via the process approved by the Executive Officer in a letter dated December 17, 1999, Official Implementation of Electronic Reporting System (ERS) and in the Progress Report letter dated December 17, 2000, or in a subsequently approved format that the Permit has been modified to include.
- 2) Monthly or Quarterly Reporting Requirements: For each reporting period (monthly or quarterly as specified in SMP Part B), an electronic SMR shall be submitted to the Regional Water Board in accordance with Section F.4.a-g. above. However, until USEPA approves the electronic signature or other signature technologies, Dischargers that are using the ERS must submit a hard copy of the original transmittal letter, an ERS printout of the data sheet, a violation report, and a receipt of the electronic transmittal.
- 3) Annual Reporting Requirements: Dischargers who have submitted data using the ERS for at least 1 calendar year are exempt from submitting an annual report electronically, but a hard copy of the annual report shall be submitted according to Section F.5 below.

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

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

E. Other Reports

Annually, by February 1st of each year, the Discharger shall report the results of any special studies, monitoring, and reporting required by section VII.C.2 (Special Studies, Technical Reports, and Additional Monitoring Requirements) of this Order.

APPENDIX E-1 CHRONIC TOXICITY DEFINITION OF TERMS AND SCREENING PHASE REQUIREMENTS

I. Definition of Terms

- A. No observed effect level (NOEL) for compliance determination is equal to IC25 or EC25. If the IC25 or EC25 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. EC25 is the concentration of toxicant (in percent effluent) that causes a response in 25 percent 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 nonlethal, nonquantal biological measurement, such as growth. For example, an IC25 is the estimated concentration of toxicant that would cause a 25 percent reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as USEPA'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 source control 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 Appendix E-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 **Appendix E-2** (attached).
 - 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.
 4. Concurrent reference toxicant tests.
 5. Dilution series should bracket the permit trigger of 10% as follows: 20%, 15%, 10%, 5%, 2.5%, 0 %, where “%” is percent effluent as discharged, or as otherwise approved the Executive Officer.
- C. The Discharger shall submit a screening phase proposal acceptable to the Executive Officer. The proposal shall address each of the elements listed above. If within 30 days, the Executive Officer does not comment, the Discharge shall commence with screening phase monitoring.

APPENDIX E-2 SUMMARY OF TOXICITY TEST SPECIES REQUIREMENTS

Critical Life Stage Toxicity Tests for Estuarine Waters

Species	(Scientific Name)	Effect	Test Duration	Reference
Alga	<i>(Skeletonema costatum)</i> <i>(Thalassiosira pseudonana)</i>	Growth rate	4 days	1
Red alga	<i>(Champia parvula)</i>	Number of cystocarps	7–9 days	3
Giant kelp	<i>(Macrocystis pyrifera)</i>	Percent germination; germ tube length	48 hours	2
Abalone	<i>(Haliotis rufescens)</i>	Abnormal shell development	48 hours	2
Oyster Mussel	<i>(Crassostrea gigas)</i> <i>(Mytilus edulis)</i>	Abnormal shell development; percent survival	48 hours	2
Echinoderms - Urchins Sand dollar	<i>(Strongylocentrotus purpuratus, S. franciscanus)</i> <i>(Dendraster excentricus)</i>	Percent fertilization Development test	1 hour 72 hours	2
Shrimp	<i>(Mysidopsis bahia)</i>	Percent survival; growth	7 days	3
Shrimp	<i>(Holmesimysis costata)</i>	Percent survival; growth	7 days	2
Topsmelt	<i>(Atherinops affinis)</i>	Percent survival; growth	7 days	2
Silversides	<i>(Menidia beryllina)</i>	Larval growth rate; percent survival	7 days	3

Toxicity Test References:

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 Effluent 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 Effluent and Receiving Waters to Marine and Estuarine Organisms. EPA/600/4-90/003. July 1994.

Critical Life Stage Toxicity Tests for Fresh Waters

Species	(Scientific Name)	Effect	Test Duration	Reference
Fathead minnow	<i>(Pimephales promelas)</i>	Survival; growth rate	7 days	4
Water flea	<i>(Ceriodaphnia dubia)</i>	Survival; number of young	7 days	4
Alga	<i>(Selenastrum capricornutum)</i>	Cell division rate	4 days	4

Toxicity Test Reference:

4. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, third edition. EPA/600/4-91/002. July 1994.

Toxicity Test Requirements for Stage One Screening Phase

Requirements	Receiving Water Characteristics		
	Discharges to Coast	Discharges to San Francisco Bay ^[2]	
	Ocean	Marine/Estuarine	Freshwater
Taxonomic diversity	1 Plant 1 invertebrate 1 fish	1 Plant 1 invertebrate 1 fish	1 Plant 1 invertebrate 1 fish
Number of tests of each salinity type: Freshwater ^[1]	0	1 or 2	3
Marine/Estuarine	4	3 or 4	0
Total number of tests	4	5	3

[1] The freshwater species may be substituted with marine species if:

- (a) The salinity of the effluent is above 1 part per thousand (ppt) greater than 95 percent of the time, or
- (b) The ionic strength (TDS or conductivity) of the effluent at the test concentration used to determine compliance is documented to be toxic to the test species.

- [2] (a) Marine/Estuarine refers to receiving water salinities greater than 1 ppt at least 95 percent of the time during a normal water year.
- (b) Fresh refers to receiving water with salinities less than 1 ppt at least 95 percent of the time during a normal water year.

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in Section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for dischargers in California. Only those sections or subsections of this Order that are specifically identified as “not applicable” have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as “not applicable” are fully applicable to this Discharger.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	2 386010001
Discharger	City and County of San Francisco
Name of Facility	Southeast Water Pollution Control Plant, North Point Wet Weather Facility, and Bayside Wet Weather Facilities
Facility Address	San Francisco Public Utilities Commission (SFPUC)/Wastewater Enterprise
	750 Phelps St.
	San Francisco, CA 94124
	San Francisco County
CIWQS Place Number	256499
Facility Contact, Title, Phone	Tommy Moala; Assistant General Manager, Wastewater Enterprise, (415) 554-2465, tmoala@sfwater.org
Authorized Person to Sign and Submit Reports	Johnson Ho, Superintendent, Wastewater Operations Division, (415) 242-2256, ext. 1324, jho@sfwater.org
Mailing Address	San Francisco Public Utilities Commission
	1155 Market Street, 11 th Floor
	San Francisco, CA 94103
CIWQS Party ID	39680
Billing Address	SAME
Type of Facility	Publicly Owned Treatment Works
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Yes
Reclamation Requirements	N/A
Facility Permitted Flow	84.5 million gallons per day (MGD)

Facility Design Flow	<u>Southeast Water Pollution Control Plant:</u> 84.5 MGD – Average dry weather design flow capacity; 63 MGD – Average annual daily flow; 250 MGD – Wet weather design flow capacity in which 150 MGD receives primary and secondary treatment and an additional 100 MGD receives only primary treatment. <u>North Point Wet Weather Facility:</u> 150 MGD - Wet weather design flow capacity which receives primary treatment.
CIWQS Regulatory Measure	337351
Watershed	San Francisco Bay
Receiving Water	Central San Francisco Bay
Receiving Water Type	Marine

A. The City and County of San Francisco, (hereinafter Discharger) is the owner and operator of the Southeast Water Pollution Control Plant (Southeast Plant), North Point Wet Weather Facility, and Bayside Wet Weather Facilities.

For the purposes of this Order, references to the “discharger” or “permittee” in applicable federal and state laws, regulations, plans, or policies are held to be equivalent to references to the Discharger herein.

B. The Southeast Plant, North Point Wet Weather Facility, and Bayside Wet Weather Facilities discharge a combination of primary and secondary treated combined wastewater and stormwater into the Lower San Francisco Bay and the Central San Francisco Bay, waters of the United States, and are currently regulated by Order No. R2-2002-0073 (CIWQS Regulatory Measure 131370) and NPDES Permit No. CA0037664, which was adopted on June 19, 2002, and expires on May 31, 2007.

C. The Discharger filed a Report of Waste Discharge and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and NPDES permit on November 30, 2006.

II. FACILITY DESCRIPTION

The Discharger’s combined sewer system is designed to collect and provide wastewater treatment for a service area that includes the City of San Francisco, the Bayshore Sanitary District (portions of Brisbane, Colma, South San Francisco, and Daly City), the City of Brisbane (residential sector), and the North San Mateo County Sanitation District (portion of Daly City). The Discharger’s service area has a population of almost 556,000. The collection system consists of 600 miles of pipe and seven major and eleven minor pump stations. The Discharger is responsible for this collection system but the Discharger is not responsible for collection systems controlled by satellite agencies.

The Discharger’s combined sewer system consists of three main components: the Southeast Plant, the North Point Wet Weather Facility, and the Bayside Wet Weather Facilities. The Southeast Plant provides secondary wastewater treatment during dry weather conditions; and during wet weather the Plant also provides primary treatment for the combined stormwater and sewage. The North Point Wet Weather Facility operates

only during wet weather and provides primary treatment of combined stormwater and sewage and industrial wastewater. The Bayside Wet Weather Facilities are a series of interconnected large underground rectangular tanks and tunnels that, during dry weather, transport sewage and industrial wastewater to the Southeast Plant but, during wet weather, these storage/transport structures also provide the equivalent of wet weather primary treatment to the combined stormwater and wastewater. When capacities at the treatment plant, wet weather facilities, and storage/transport structures are exceeded, the excess flow is discharged into San Francisco Bay via 29 shoreline combined sewer overflow (CSO) structures.

The combined sewer system, with exceptions noted, provides treatment of all dry weather and wet weather flows. The exceptions are small isolated areas within San Francisco that are served by separate sanitary and storm drains that include parts of the Lake Merced, Pine Lake, Golden Gate Park, Seacliff, and McLaren Park neighborhoods; Candlestick Point; Presidio National Park; and Port of San Francisco property.

A. Description of Wastewater and Biosolids Treatment or Controls

The treatment process at the Southeast Plant consists of a headworks (with coarse and fine bar screens and grit removal), primary sedimentation tanks, pure oxygen aeration basins, secondary clarifiers and chlorine contact basins (for chlorination using sodium hypochlorite and dechlorination using sodium bisulfite). A schematic diagram of the treatment process is included as Attachment C of this Order.

The Southeast Plant has a dry weather design capacity of 84.5 MGD and has had an average dry weather flow of 63 MGD. During wet weather the Southeast Plant can process up to 250 MGD of combined stormwater and sewage. Up to 150 MGD receives both primary and secondary treatment, and the remaining 100 MGD receives only primary treatment. The entire volume is disinfected prior to discharge.

During dry weather conditions, all flow is discharged through the Southeast Plant deep water outfall at Pier 80 (Discharge Point 001), during wet weather, this discharge is maximized to 110 MGD. This can be a mixture of primary and secondary treated wastewater. During wet weather up to an additional 140 MGD of secondary treated combined stormwater and wastewater is discharged via the Quint Street shallow water outfall into Islais Creek (Discharge Point No. 002).

Sludge from the primary and secondary clarification operations is processed via anaerobic digestion. The digested and dewatered sludge is beneficially re-used as alternative daily cover at a permitted landfill site or is land applied at a permitted site. The Discharger is exploring options to reuse biosolids in a Class A compost facility or in a waste to energy facility.

The treatment process at the North Point Wet Weather Facility consists of primary sedimentation, clarification, floatables removal, 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 meets the minimum treatment specified by the USEPA *Combined Sewer Overflow Control Policy* (50 FR 18688; April 11, 1994). The facility is operational only during wet weather

and has the capacity to provide primary treatment to a maximum of 150 MGD of combined stormwater and sewage and industrial wastewater.

Treated wastewater from the North Point Wet Weather Facility is discharged into San Francisco Bay through four deep water outfalls, two of which terminate at the end of Pier 33 (Discharge Points 003 and 004), and two of which terminate at the end of Pier 35 (Discharge Points 005 and 006). The entire volume of treated wastewater is disinfected and dechlorinated prior to discharge. Primary sludge from this facility is directed to the Southeast Plant for digestion. The Discharger recently completed several upgrades to the North Point Wet Weather Facility, including the following:

- Addition of new screens, new dechlorination facilities;
- Replacement of existing wet weather pumps, motors, drives, and bar screens at the North Shore Pump Station (two for dry weather, one for wet weather);
- Replacement of existing 3/4-inch bar screens with new 3/8 -inch bar screens in the receiving structure and dumpster enclosure;
- Installation of higher capacity sludge/grit pumps to dewater the sedimentation buildings;
- Upgrade of selected HVAC systems;
- Installation of a new odor control system;
- Installation of new sodium bisulfite unloading, transfer, storage, and recirculation systems; and
- Upgrade of electrical systems; and installation of new instrumentation and controls.

In the Bayside Wet Weather Storage/Transport and Diversion Structures, the wastewater, sewage, stormwater and industrial wastewater is exposed to 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 USEPA *Combined Sewer Overflow Control Policy* (50 FR 18688; April 11, 1994). During dry weather, these storage/transport structures transport wastewater to the Southeast Plant, but during wet weather, these structures provide storage capacity for stormwater flows, while pumps transfer the combined wastewater and stormwater to the Southeast Plant at a steady flow rate. If, in wet weather, the capacity of the storage structure is exceeded, the combined wastewater and stormwater, after receiving the equivalent of wet weather primary treatment, is discharged into San Francisco Bay via any one of the 29 shoreline combined sewer overflow structures. After the rainstorm subsides, the solids that settle out in primary treatment are flushed to the Southeast Plant for anaerobic digestion.

The Discharger is responsible for operating the combined sewer system at optimal efficiency in order to maximize treatment during wet weather. The previous Order (R2-2002-0073) defined performance criteria for operation of the Discharger's combined sewer system, identified the average number of combined sewer overflow occurrences by areas within the City based upon system design criteria, and defined specific operational activities to occur during and after rainstorm events. Details of these performance criteria are provided in Section IV of this Fact Sheet.

B. Discharge Points and Receiving Waters

The discharge points, authorized by this Order, and the receiving water, are shown in the Table below:

Table F-2. Treatment Plant and Combined Sewer Outfall Locations

Discharge Point No.	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
Treatment Plant Discharge Points				
EFF 001 Pier 80 Outfall	Blended primary and secondary treated effluent, including combined stormwater and sewage and industrial wastewater	37° 44' 58"	122° 22' 22"	Lower San Francisco Bay
EFF 002 Quint Street	Secondary treated effluent of combined stormwater and sewage and industrial wastewater	37° 44' 50"	122° 23' 13"	Islais Creek
EFF 003 and EFF 004 Pier 33	Primary treated effluent of combined stormwater and sewage and industrial wastewater	37° 48' 25"	122° 24' 11"	Central San Francisco Bay
EFF 005 and EFF 006 Pier 35	Primary treated effluent of combined stormwater and sewage and industrial wastewater	37° 48' 36"	122° 24' 20"	Central San Francisco Bay
CSO Discharge Points				
009 Baker Street	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial wastewater	37° 48' 29"	122° 26' 48"	Marina Beach North Shore Drainage Basin
010 Pierce Street	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 48' 25"	122° 26' 24"	Marina Beach North Shore Drainage Basin
011 Laguna Street	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 48' 22"	122° 25' 53"	Yacht Harbor #2 North Shore Drainage Basin

Discharge Point No.	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
013 Beach Street	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 48' 30"	122° 24' 24"	Pier 39 North Shore Drainage Basin
015 Sansome Street	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 48' 24"	122° 24' 11"	Pier 31 North Shore Drainage Basin
017 Jackson Street	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 47' 54"	122° 23' 41"	Pier 9 North Shore Drainage Basin
018 Howard Street	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 47' 35"	122° 23' 24"	Pier 14 Central Drainage Basin
019 Brannan Street	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 47' 7"	122° 23' 24"	Pier 32 Central Drainage Basin
022 Third Street	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 46' 38"	122° 23' 22"	Mission Creek Central Drainage Basin
023 Fourth Street North	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 46' 32"	122° 23' 29"	Mission Creek Central Drainage Basin
024 Fifth street North	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 46' 26"	122° 23' 38"	Mission Creek Central Drainage Basin

Discharge Point No.	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
025 Sixth Street North	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 46' 19"	122° 23' 46"	Mission Creek Central Drainage Basin
026 Division Street	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 46' 13"	122° 23' 51"	Mission Creek Central Drainage Basin
027 Sixth Street South	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 46' 17"	122° 23' 42"	Mission Creek Central Drainage Basin
028 Fourth Street South	Equivalent-to-primary treated effluent of combined stormwater and wastewater	37° 46' 30"	122° 23' 28"	Mission Creek Central Drainage Basin
029 Mariposa Street	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 45' 53"	122° 23' 7"	Central Basin Central Drainage Basin
030 20 th Street	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 45' 40"	122° 22' 48"	Central Basin Central Drainage Basin
030A 22 nd Street	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 45' 28"	122° 22' 49"	Central Basin Central Drainage Basin
031 Third Street North	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 44' 52"	122° 23' 10"	Islais Creek Central Drainage Basin
031A Islais Creek North	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 44' 52"	122° 23' 15"	Islais Creek Central Drainage Basin

Discharge Point No.	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
032 Marin Street	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 44' 55"	122° 23' 27"	Islais Creek Central Drainage Basin
033 Selby Street	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 44' 52"	122° 23' 27"	Islais Creek Central Drainage Basin
035 Third Street South	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 44' 50"	122° 23' 10"	Islais Creek Central Drainage Basin
037 Evans Avenue	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 44' 9"	122° 22' 26"	India Basin Southeast Drainage Basin
038 Hudson Avenue	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 44' 0"	122° 22' 26"	India Basin Southeast Drainage Basin
040 Griffith Street South	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 43' 23"	122° 22' 56"	Yosemite Canal Southeast Drainage Basin
041 Yosemite Avenue	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 43' 26"	122° 23' 8"	Yosemite Canal Southeast Drainage Basin
042 Fitch Street	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 43' 20"	122° 22' 55"	South Basin Southeast Drainage Basin

Discharge Point No.	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
043 Sunnydale Avenue	Equivalent-to-primary treated effluent of combined stormwater and sewage and industrial and wastewater	37° 44' 50"	122° 23' 13"	Candlestick Cove Southeast Drainage Basin

Lower San Francisco Bay is located in the South Bay Basin watershed management area.
 Central San Francisco Bay is located in the Central Basin watershed management area.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

1. Effluent limitations contained in the previous Order for dry weather discharges from the Southeast Plant through Outfall EFF-001 and representative monitoring data from the term of the previous Order are presented in the following two tables.

Table F-3. Historic Conventional Parameter Effluent Limitations and Monitoring Data (Outfall EFF-001 During Dry Weather)

Parameter	Units	Effluent Limitations			Monitoring Data (From Jan 2003 to Dec 2006)		
		Monthly Average	Weekly Average	Daily Maximum	Highest Monthly Average	Highest Weekly Average	Highest Daily Discharge
Biochemical Oxygen Demand (5-day @ 20°C) (BOD ₅)	mg/L	30	45	--	25.42	38.5	--
	% Removal	85 ¹	--	--	84	--	--
Total Suspended Solids (TSS)	mg/L	30	45	--	28.06	43.61	--
	% Removal	85 ¹	--	--	87	--	--
Oil and Grease	mg/L	10	--	20	9.4	--	14.9
Settleable Matter	mL/L-hr	0.1	--	0.2	0	--	0
Total Chlorine Residual (TRC)	mg/L	--	--	(2)	--	--	1.1
pH	s.u.	(3)			6.8—8.69		
Fecal Coliform Bacteria	MPN/100 mL	(4)	--	--	20 ⁽⁵⁾	--	--
Acute Toxicity	% Survival	(6)	(7)	--	90 ⁽⁶⁾⁽⁸⁾	75 ⁽⁷⁾⁽⁹⁾	--

ND = Non-Detect
 NR = Not Reported
 NA = Not Applicable

(1) The arithmetic mean of the 5-day biochemical oxygen demand (BOD₅) 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.

(2) For TRC, 0.0 mg/L was established as an instantaneous maximum effluent limitation.

(3) The pH shall not exceed 9.0 nor be less than 6.0.

- (4) Treated wastewater, at some point in the treatment process prior to discharge, shall meet the following limits of bacteriological quality: 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 1,100 CFU/100 mL.
- (5) Represents the maximum 30-day moving median fecal coliform density.
- (6) The survival of bioassay test organisms in 96-hour bioassays of undiluted effluent shall be an 11-sample median value of not less than 90 percent survival.
- (7) The survival of bioassay test organisms in 96-hour bioassays of undiluted effluent shall be an 11-sample 90th percentile value of not less than 70% survival.
- (8) Represents the lowest 11-sample median survival of bioassay test organisms in 96-hour bioassays of undiluted effluent.
- (9) Represents the lowest 11-sample 90th percentile survival of bioassay test organisms in 96-hour bioassays of undiluted effluent.

Table F-4. Historic Toxic Parameter Effluent Limitations and Monitoring Data (Outfall EFF-001 During Dry Weather)

Parameter	Units	Water Quality-Based Effluent Limitations (WQBELs)		Interim Limitations		Monitoring Data (From 1/03 to 12/06)
		Daily Maximum	Monthly Average	Daily Maximum	Monthly Average	Highest Daily Discharge
Copper	µg/L	--	--	37	--	16.49
Mercury	µg/L	--	--	--	0.087	0.026
Lead	µg/L	89	36	--	--	14.7
Nickel	µg/L	59	34	--	--	7.95
Silver	µg/L	22	12	--	--	5.81 (DNQ)
Zinc	µg/L	720	490	--	--	176
Dieldrin	µg/L	0.00028	0.00014	--	--	ND
4,4-DDE	µg/L	0.0012	0.00059	--	--	ND

ND = Non-Detect

DNQ = Detected but Not Quantified (an estimated value)

- 2. Effluent limitations contained in the previous Order for wet weather discharges from the Southeast Plant Discharge Point 001 and representative monitoring data from the term of the previous Order are presented in the table below. During wet weather, apart from fecal coliform, there are no effluent limits on the discharge.

Table F-5. Historic Conventional Parameter Monitoring Data (Outfall EFF-001 During Wet Weather)

Parameter	Units	Monitoring Data (From 1/03 – 12/06)		
		Highest Monthly Average	Highest Weekly Average	Highest Daily Discharge
Total Chlorine Residual (TRC)	mg/L	--	--	0
Fecal Coliform Bacteria	MPN/100 mL	40 ⁽¹⁾	300 ⁽²⁾	560
Chemical Oxygen Demand	mg/L	--	--	232
Oil and Grease	mg/L	--	--	17
Settleable Solids	mL/L-hr	--	--	0
Acute Toxicity	% survival	--	--	80 ⁽³⁾

(1) Represents the maximum 30-day moving median fecal coliform density.

(2) Represents the maximum monthly 90th percentile fecal coliform density.

(3) Represents the lowest 11-sample median percent survival.

3. Effluent limitations contained in the previous Order for wet weather discharges from the Southeast Plant into Islais Creek and representative monitoring data from the term of the previous Order are as follows:

Table F-6. Historic Conventional Parameter Monitoring Data (Outfall EFF-002)

Parameter	Units	Monitoring Data (From 1/03 – 12/06)		
		Highest Monthly Average	Highest Weekly Average	Highest Daily Discharge
Total Chlorine Residual (TRC)	mg/L	--	--	NA
Fecal Coliform Bacteria	MPN/100 mL	220 ⁽¹⁾	300 ⁽²⁾	1900
Chemical Oxygen Demand	mg/L	--	--	133.5
Oil and Grease	mg/L	--	--	25.6
Settleable Solids	mL/L-hr	--	--	0
Acute Toxicity	% survival	--	--	90 ⁽³⁾

(1) Represents the maximum 30-day moving median fecal coliform density.

(2) Represents the maximum monthly 90th percentile fecal coliform density.

(3) Represents the lowest 11-sample median percent survival.

4. Effluent limitations contained in the previous Order for wet weather discharges from the North Point Wet Weather Facility and representative monitoring data from the term of the previous Order are presented in the table below.

Table F-7. Historic Conventional Parameter Monitoring Data (Outfall EFF-003)

Parameter	Units	Monitoring Data (From 1/03 – 12/06)		
		Highest Monthly Average	Highest Weekly Average	Highest Daily Discharge
Total Chlorine Residual (TRC)	mg/L	--	--	NA
Fecal Coliform Bacteria	MPN/100 mL	<10 ⁽¹⁾	690 ⁽²⁾	>1600
Chemical Oxygen Demand	mg/L	--	--	280
Oil and Grease	mg/L	--	--	34.6
Settleable Solids	mL/L-hr	--	--	<0.1
Acute Toxicity	% survival	--	--	25 ⁽³⁾

(1) Represents the maximum 30-day moving median fecal coliform density.

(2) Represents the maximum monthly 90th percentile fecal coliform density.

(3) Represents the lowest 11-sample median percent survival.

The Discharger also monitored for all the CTR toxic pollutants, including dioxins and furans for wet weather discharges from the North Point Wet Weather Facility. A summary of the detected values is provided in Attachment I.

- Data related to the combined sewer overflow (CSO) events that occurred during the last year of the previous Order is summarized below:

Table F-8. Summary of Combined Sewer Overflow Events that Occurred During the Previous Year (2006)

Outfall Number	Number of Events	Average Duration of Event (hours)	Minimum Rainfall That Caused Event (inches)
CSO-009	0	NA	NA
CSO-010	0	NA	NA
CSO-011	0	NA	NA
CSO-013	0	NA	NA
CSO-015	6	1.02	0.38
CSO-017	0	NA	NA
CSO-018	12	4.45	0.49
CSO-019	1	7.5	0.84
CSO-022	1	6.32	0.71
CSO-023	0	NA	NA
CSO-024	3	0.28	0.57
CSO-025	4	1.15	0.57
CSO-026	8	3.45	0.38
CSO-027	0	NA	NA
CSO-028	0	NA	NA
CSO-029	10	1.61	0.57
CSO-030	3	4.87	0.7
CSO-030A	0	NA	NA
CSO-031	1	3.73	0.6
CSO-031A	9	5.86	0.6
CSO-032	0	NA	NA
CSO-033	0	NA	NA
CSO-035	1	3.46	0.6
CSO-037	0	NA	NA
CSO-038	0	NA	NA
CSO-040	2	1.3	1.73
CSO-041	2	1.35	1.73
CSO-042	2	1.41	1.73
CSO-043	2	3.65	1.73

NA = Not Available

D. Compliance Summary

- Compliance with Numeric Effluent Limitations.** From January 2003 through December 2006, the Discharger reported one violation of effluent limitations (CIWQS violation ID 268474) contained in Order No. R2-2002-0073 (CIWQS Regulatory Measure 131370) for dry weather discharges from the Southeast Plant to Lower San Francisco Bay. This was a chlorine residual exceedance due to an operational malfunction that was corrected after 10 minutes.

Table F-9: Summary of Effluent Violations from the Southeast Plant

Date of Violation	Effluent Limitation Described	Effluent Limit	Reported Value
10/30/04	Total Chlorine Residual, Instantaneous Maximum	0.0 mg/L	1.1 mg/L

2. Compliance with Permit Provisions. The special activities required in the provisions for Order No. R2-2002-0073 were all completed.

3. Compliance with Submittal of Self-Monitoring Reports. The Discharger submitted all Self-Monitoring Reports on or before the due date during the term of the previous Order.

E. Planned Changes

Not Applicable

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in the proposed Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order is issued pursuant to CWA section 402 and implementing regulations adopted by the USEPA and Chapter 5.5, Division 7 of the California Water Code (CWC) (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this facility to surface waters. This Order also serves as WDRs pursuant to CWC Article 4, Chapter 4, Division 7 (commencing with section 13260).

B. California Environmental Quality Act (CEQA)

Under CWC section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100 through 21177.

C. State and Federal Regulations, Policies, and Plans

1. Water Quality Control Plans

The *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan) is the Regional Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Regional Water Board and approved by the State Water Resources Control Board, USEPA, and the Office of Administrative Law where required. In addition, the Basin Plan implements State Water Board Resolution No. 88-63, which establishes State policy that all waters, with certain exceptions, should be

considered suitable or potentially suitable for municipal or domestic supply (MUN). Because of the marine influence on receiving waters of the San Francisco Bay, total dissolved solids levels in the Bay commonly (and often significantly) exceed 3,000 mg/L and thereby meet an exception to State Water Board Resolution No. 88-63. Therefore, the MUN designation will not be applicable to the Lower San Francisco Bay and Central San Francisco Bay. Beneficial uses applicable to the Lower San Francisco Bay and Central San Francisco Bay are as follows:

Table F-10. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Uses
001, 002, 019, 022, 023, 024, 025, 026, 027, 028, 029, 030, 030A, 031, 031A, 032, 033, 035, 037, 038, 040, 041, 042, 043	Lower San Francisco Bay	Ocean, Commercial, and Sport Fishing (COMM) Estuarine Habitat (EST) Industrial Service Supply (IND) Fish Migration (MIGR) Navigation (NAV) Preservation of Rare and Endangered Species (RARE) Water Contact Recreation (REC-1) Noncontact Water Recreation (REC-2) Shellfish Harvesting (SHELL) Wildlife Habitat (WILD)
003, 004, 005, 006, 009, 010, 011, 013, 015, 017, 018	Central San Francisco Bay	Ocean, Commercial, and Sport Fishing (COMM) Estuarine Habitat (EST) Industrial Service Supply (IND) Industrial Process Supply (PROC) Fish Migration (MIGR) Fish Spawning (SPAWN) Navigation (NAV) Preservation of Rare and Endangered Species (RARE) Water Contact Recreation (REC-1) Noncontact Water Recreation (REC-2) Shellfish Harvesting (SHELL) Wildlife Habitat (WILD)

Requirements of this Order implement the Basin Plan.

2. National Toxics Rule (NTR) and California Toxics Rule (CTR)

USEPA adopted the NTR on December 22, 1992, which was amended on May 4, 1995, and November 9, 1999. About 40 water quality criteria (WQC) in the NTR applied in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority pollutants.

3. State Implementation Policy

On March 2, 2000, State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005 that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

4. Wet Weather Discharges (CSO Policy)

- a. According to the USEPA *Combined Sewer Overflow Control Policy*, dischargers should develop long-term control plans for controlling combined sewer overflows (CSOs). A discharger may use one of two approaches: 1) demonstrate that its plan is adequate to meet the water quality-based requirements of the CWA (“demonstration approach”), or 2) implement a minimum level of treatment (e.g., primary clarification of at least 85 percent of the collected combined sewage flows) that is presumed to meet the water quality-based requirements of the CWA, unless data indicate otherwise (“presumption approach”).
- b. The Discharger’s long term control plan complies with the presumption approach. The presumption approach, as described in the USEPA CSO Policy, is shown below:

“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 Combined Sewer System 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.”*

The Discharger’s long term control plan exceeds the specifications of the presumption approach. The Discharger captures and provides treatment to 100 percent of the combined sewer flows rather than the 85 percent identified in option ii. As defined in the USEPA CSO Policy, the Discharger has no remaining untreated CSO events; the CSOs that occur receive treatment (within the storage/transport boxes) consisting of removal of floatables and settleable solids.

The wet weather conditions in this Order require continued implementation of the Long Term Control Plan such that pollutant removal is maximized (see discussion under Section VII.C.7 below).

5. Alaska Rule

On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes [40 CFR §131.21, 65 Fed. Reg. 24641 (April 27, 2000)]. Under the revised regulation (also known as the Alaska Rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.

6. Stringency of Requirements for Individual Pollutants

This Order contains restrictions on individual pollutants that are no more stringent than required by the federal CWA. Individual pollutant restrictions consist of technology-based restrictions and water quality-based effluent limitations. The technology-based effluent limitations consist of restrictions on 5-day biochemical oxygen demand (BOD5), total suspended solids (TSS), pH, oil and grease, and chlorine residual. Water quality-based effluent limitations have been derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal

water quality standards. To the extent that toxic pollutant water quality-based effluent limitations were derived from the CTR, the CTR is the applicable standard pursuant to section 131.38. The procedures for calculating the individual water quality-based effluent limitations are based on the CTR-SIP, which was approved by USEPA on May 18, 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless “applicable water quality standards for purposes of the CWA” pursuant to section 131.21(c)(1). Collectively, this Order’s restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the CWA and the applicable water quality standards for purposes of the CWA.

7. Antidegradation Policy

NPDES regulations at 40 CFR 131.12 required that State water quality standards include an antidegradation policy consistent with the Federal policy. The State Water Board established California’s antidegradation policy in State Water Board Resolution 68-16, which incorporates the requirements of the Federal antidegradation policy. Resolution 68-16 requires that existing water quality is maintained unless degradation is justified based on specific findings.

The permitted discharge is consistent with the antidegradation provision of 40 CFR §131.12 and State Water Board Resolution 68-16, and the final limitations in this Order are in compliance with antidegradation requirements and meet the requirements of the SIP because these limits hold the Discharger to performance levels that will not cause or contribute to water quality impairment or further quality degradation that could result from an increase in permitted design flow or a reduction in the level of treatment. This Order does not provide for an increase in the permitted design flow or allow for a reduction in the level of treatment.

For cyanide, the effluent limits are higher than those in the previous permit, but these revised limits will not degrade water quality because the permitted flow will remain unchanged and the level of treatment provided by the plant will not be reduced. The new limits are equivalent to those anticipated in the antidegradation analysis section of the Staff Report supporting the cyanide site-specific objectives. That analysis concluded that these new limits would not likely result in degradation and that any increase would not have a measurable impact on ambient cyanide levels in the Bay. Since the limits anticipated with the site-specific objectives would not degrade the quality of the receiving water, neither will the increased limits in this permit. As such there will be no lowering of water quality beyond the current level authorized in the previous permit, which is the baseline by which to measure whether degradation will occur. Moreover, this Order requires implementation of action plans for cyanide source identification and pollution prevention. These measures will further ensure that existing water quality is maintained or improved.

8. Anti-backsliding Requirements

CWA sections 402 (o) (2) and 303 (d) (4) and NPDES regulations at 40 CFR 122.44 (l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit be as stringent as those in the previous Order, with some exceptions in which limitations may be relaxed. All limitations and requirements of the Order are consistent with anti-backsliding requirements of the CWA and NPDES regulations.

D. Impaired Water Bodies on CWA 303(d) List

On November 30, 2006, the USEPA approved a revised list of impaired water bodies prepared by the State (hereinafter referred to as the 303(d) list), prepared pursuant to provisions of CWA section 303(d), which requires identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. Lower and Central San Francisco Bay are listed as impaired waterbodies. The pollutants impairing both Lower and Central San Francisco Bay include chlordane, DDT, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, PCBs, and dioxin-like PCBs; Central San Francisco Bay is also listed as impaired for selenium. The SIP requires final effluent limitations for all 303(d)-listed pollutants to be consistent with total maximum daily loads (TMDLs) and associated waste load allocations.

1. Total Maximum Daily Loads

The Regional Water Board plans to adopt TMDLs for pollutants on the 303(d) list in Lower and Central San Francisco Bay within the next 10 years. Future review of the 303(d) list for Lower and Central San Francisco Bay may provide schedules or result in revision of the schedules for adoption of TMDLs.

2. Waste Load Allocations

The TMDLs will establish waste load allocations (WLAs) for point sources and load allocations (LAs) for non-point sources, and will result in achieving the water quality standards for the waterbodies. Final water quality-based effluent limitations (WQBELs) for 303(d) listed pollutants in this discharge will be based on WLAs contained in the respective TMDLs. If a TMDL is developed and WLAs are established for San Francisco, the stormwater and wastewater WLAs may be combined to be met collectively by the wastewater and stormwater effluent loads.

3. Implementation Strategy

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

- a. Data Collection.** The Regional Water Board has given dischargers to San Francisco Bay 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 (WQOs)/water quality criteria (WQC). The Regional Water Board will require dischargers to

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

- b. Funding Mechanism.** The Regional Water Board has received, and anticipates continuing to receive, resources from federal and State agencies for TMDL development. To ensure timely development of TMDLs, the Regional Water Board intends to supplement these resources by allocating development costs among dischargers through the Regional Monitoring Program or other appropriate funding mechanisms.

E. Other Plans, Polices and Regulations

This Order is also based on the following plans, polices, and regulations:

1. The Federal *Water Pollution Control Act*, Sections 301 through 305, and 307, and amendments thereto, as applicable (CWA);
2. The State Water Board's March 2, 2000 *Policy for the USEPA's May 18, 2000 Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* or CTR, 40 CFR §131.38(b) and amendments.
3. The USEPA's *Quality Criteria for Water* [EPA 440/5-86-001, 1986] and subsequent amendments (the USEPA Gold Book);
4. Applicable Federal Regulations [40 CFR Parts 122 and 131];
5. 40 CFR §131.36(b) and amendments [Federal Register Volume 60, No. 86, 4 May 1995, pages 22229-22237];
6. USEPA's December 10, 1998 National Recommended Water Quality Criteria compilation [Federal Register Vol. 63, No. 237, pp. 68354-68364];
7. USEPA's December 27, 2002 Revision of National Recommended Water Quality Criteria compilation [Federal Register Vol. 67, No. 249, pp. 79091-79095];
8. USEPA's April 11, 1994 Combined Sewer Overflow Control Policy [Federal Register Volume Volume 59, No. 75, pp. 18688-18698]; and
9. Guidance provided with State Water Board Orders remanding permits to the Regional Water Board for further consideration.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: Section 122.44(a) requires that permits include applicable technology-based limitations and standards; and section 122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water.

A. Discharge Prohibitions

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

- 1. Discharge Prohibition III.A. (No E-001 discharge other than that described in this Order):** This prohibition is the same as in the previous Order. This prohibition is based on California Water Code section 13260, which requires filing a Report of Waste Discharge before discharges can occur. Discharges not described in the ROWD, and subsequently in the Order, are prohibited.
- 2. Discharge Prohibition III.B. (No E-001 discharges receiving less than 36:1 dilution):** For dry weather discharge through Discharge Point 001 this prohibition is based on Discharge Prohibition No. 1 from Table 4-1 of the Basin Plan, which prohibits discharges that do not receive a minimum 10:1 initial dilution. Furthermore, this Order allows a 36:1 dilution credit in the calculation of some WQBELs, and these limitations would not be protective of water quality if the discharge did not actually achieve a 36:1 minimum initial dilution. If the Discharger conducts a comprehensive dilution study during the effective life of this permit that indicates a different initial dilution, this Order will be amended to reflect the more accurate initial dilution.

For wet weather discharges through Discharge Point 002, Regional Water Board Order No. 96-116 amended Order No 94-149 allowing for, provided there is compliance with Effluent Limitations B.1.1 and B.1.3 in Order 94-149, wet weather discharge into Islais Creek where a 10:1 dilution is not likely to occur. Order No. 96-116 recognized that the Basin Plan prohibits waste discharges to surface waters where less than 10:1 initial dilution is achieved except for certain situations. These situations include when an inordinate burden would be placed on the discharger and when an equivalent level of environmental protection can be achieved by alternate means. The Order determined that an equivalent level of environmental protection could be achieved by a 25-acre wetland project near Pier 98 and that an exception to the 10:1 discharge prohibition was appropriate. Order No. 96-116 also noted that changes were being made to ensure only secondary treated wastewater was discharged to the Creek and that this discharge from this point only occurs when the deep-water outfall (Discharge Point 001) is at

capacity. In 1998 the Discharger entered a memorandum of understanding with the Port of San Francisco and agreed to contribute to establishing wetlands near Pier 98 and completed its contribution in May 1999. The Discharger currently discharges only full secondary treated combined wastewater and stormwater to Islais Creek during wet weather when the deep water outfall is at capacity.

For CSO discharges that do not receive a 10:1 minimum dilution or discharge into a dead-end slough, Regional Water Board Order No. 89-102 concluded that these CSO discharges meet the requirements for an exception to the Basin Plan prohibition against discharges receiving 10:1 minimum initial dilution or discharging to a dead-end slough.

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.

- 3. Discharge Prohibition III.C. (No wet weather discharges outside of wet weather days):** This prohibition is the same as the previous Order prohibiting discharges from Discharge Points 002 through 006, and CSO discharges from Discharge Points 009 through 043, except during wet weather as defined in Attachment A, Definitions.
- 4. Discharge Prohibition III.D. (No bypasses except under wet weather and in accordance with the conditions at 40 CFR 122.41(m)(4)(i)(A), (B) and (C)):** This prohibition is the same as the previous Order and is based on 40 CFR 122.41(m)(4).
- 5. Discharge Prohibition III.E. (Average dry weather flow not to exceed dry weather design capacity):** This prohibition is based on the historic and tested reliable treatment capacity of the treatment plant. Exceedance of this design, average dry weather flow capacity may result in lowering the reliability of achieving compliance with water quality requirements.
- 6. Discharge Prohibition III.F. (No degradation of harvestable shellfish resulting from dry weather discharges).** This prohibition is the same as in the previous Order and is included to protect shellfish from dry weather discharges from Discharge Point 001.
- 7. Discharge Prohibition III.G. (no sanitary sewer overflows to waters of the United States):** Discharge Prohibition No. 15 from Table 4-1 of the Basin Plan and the Clean Water Act prohibit the discharge of wastewater to surface waters except as authorized under an NPDES permit. POTWs must achieve secondary treatment, at a minimum, and any more stringent limitations that are necessary to achieve water quality standards [33 U.S.C. §1311(b)(1)(B) and (C)]. Thus, a sanitary sewer overflow that results in the discharge of raw sewage, or sewage not receiving secondary treatment, to surface waters is prohibited under the Clean Water Act and the Basin Plan. This prohibition does not apply to combined wastewater and stormwater discharges during wet weather.

B. Technology-Based Effluent Limitations

1. Scope and Authority

- a. **Dry Weather Discharge from the Southeast Plant.** CWA section 301(b)(1)(B) requires USEPA to develop secondary treatment standards for publicly owned wastewater treatment facilities (POTWs) – defined as the level of effluent quality attainable through the application of secondary or equivalent treatment. USEPA promulgated such technology-based effluent guidelines for POTWs at 40 CFR Part 133. These Secondary Treatment regulations include the following minimum requirements.

Table F-11. Secondary Treatment Requirements

Constituent ⁽¹⁾	30-Day Average	7-Day Average
Biochemical Oxygen Demand (5-day @ 20°C) (BOD ₅)	30 mg/L	45 mg/L
Carbonaceous Biochemical Oxygen Demand (5-day @ 20°C) (CBOD ₅) ⁽²⁾	25 mg/L	40 mg/L
Total Suspended Solids (TSS)	30 mg/L	45 mg/L
pH	6.0 – 9.0	

⁽¹⁾ In addition to the numeric effluent limitations for BOD, CBOD₅, and TSS, the 30-day average percent removal shall not be less than 85 percent.

⁽²⁾ At the option of the permitting authority, effluent limitations for CBOD₅ may be substituted for limitations for BOD₅.

- b. **Wet Weather Discharges.** Discharges from combined sewer systems are point sources subject to NPDES permit requirements, including both technology-based and water quality-based requirements of the CWA. However, wet weather discharges from combined sewer systems are not subject to the secondary treatment regulations applicable to publicly owned treatment works [see *Montgomery Environmental Coalition vs. Costle*, 646 F.2d 568 (DC. Cir.1908)].

According to the USEPA Combined Sewer Overflow Control Policy (40 CFR 125.3) all permits for combined sewer systems should require the nine minimum controls as a minimum best available technology economically achievable and best conventional technology (BAT/BCT) established on a best professional judgment (BPJ) basis.

2. Applicable Technology-Based Effluent Limitations

- a. **Dry Weather Discharge from the Southeast Plant.** The Order retains the following technology-based effluent limitations, applicable to the dry weather discharge from the Southeast Plant (Discharge Point 001), from Order No. R2-2002-0073.

Table F-12. Summary of Technology-Based Effluent Limitations – Discharge Point 001

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
BOD ₅	mg/L	30	45	--	--	--
TSS	mg/L	30	45	--	--	--
Oil and Grease	mg/L	10	--	20	--	--
pH	standard units	--	--	--	6.0	9.0
Total Chlorine Residual	mg/L	--	--	--	--	0.0

For this Order, compliance with the percent removals for BOD₅ and TSS in the secondary treatment regulations (the 30-day average percent removal shall not be less than 85 percent) is required.

The limitations established for oil and grease are levels attainable by secondary treatment and are required by the Basin Plan (Table 4-2) for all discharges to inland surface waters and enclosed bays and estuaries of the Region.

The pH limitation is retained from the previous Order and is required by USEPA’s secondary treatment regulations at 40 CFR Part 133 and by the Basin Plan (Table 4-2) for deep water discharges.

The instantaneous maximum limitation for chlorine of 0.0 mg/L is retained by this Order. This limitation is required by the Basin Plan (Table 4-2).

Technology-based effluent limitations for settleable matter are not retained from the previous Order, as the Regional Water Board has determined that compliance with the secondary treatment regulations at 40 CFR Part 133 and with the Basin Plan (Table 4-2) requirements for all discharges to inland surface waters and enclosed bays and estuaries will ensure removal of settleable solids to acceptably low levels – below 0.1 mL/L/hr (30-day average) and 0.2 mL/L/hr (daily maximum).

- b. Wet Weather Discharges.** This Order retains the following technology-based effluent limitations, applicable to the wet weather discharge from the wet weather outfalls (Discharge Points 002 through 006), from Order No. R2-2002-0073.

Table F-13. Summary of Technology-Based Effluent Limitations – Discharge Points 002 through 006

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Chlorine Residual	mg/L	--	--	--	--	0.0

This limitation is required by the Basin Plan (Table 4-2). The USEPA *Combined Sewer Overflow Control Policy* specifically requires the implementation of nine minimum controls that serve as the technology-based requirements for CSOs as indicated in Section VII.C.7.b of this Fact Sheet.

The instantaneous maximum limitation for chlorine of 0.0 mg/L is retained by this Order.

3. Bacteria

The Basin Plan, Table 4-2, establishes effluent limitations for total coliform bacteria for all discharges from sewage treatment facilities to inland surface waters and enclosed bays and estuaries of the Region. Fecal coliform limitations may be substituted for the limitations of the Basin Plan “provided it can be conclusively demonstrated through a program approved by the Regional Water Board that such substitution will not result in unacceptable adverse impacts on the beneficial uses of the receiving water.” This Order carries over the requirement to comply with fecal coliform effluent limitations for discharges from the Southeast Plant (Discharge Point 001) during dry weather and the wet weather discharges (Discharge Points 001 through 006). These are a 30-day moving median fecal coliform effluent limitation of 500 colony forming units (CFU) or most probable number (MPN)/100mL and not more than 10% of the samples in any 30-day period equal or exceed 1,100 CFU or MPN/100 mL. A bacteriological field study of the discharge was conducted between October 1992 and October 1994, and the changes described above added to the Plant’s permit in October 1994. The reasoning for using fecal coliform limits, instead of total coliform, is further described in the article, “NPDES Limits for Bacteria”, *Water Environment & Technology*, Vol 8, August 1996 pp 69-73, James Salerno, Arleen Navarret and Paul Pitt, Department of Public Works, City and County of San Francisco. There are no known shellfish beds that are impacted by the outfalls from the Southeast Plant or North Point Wet Weather Facility.

Enterococci bacteria are more closely associated with gastrointestinal disease than fecal coliform bacteria for water contact. Pursuant to the BEACH Act of 2000, USEPA has promulgated enterococci bacteria criteria for water contact recreation in coastal waters that apply to this discharge. The limit for enterococci bacteria established by this Order (geometric mean not to exceed 35 colonies per 100 milliliters) for discharges from the Southeast Plant (Discharge Point 001) during dry weather is based on water quality criteria established by the USEPA at 40 CFR §131.41 for coastal recreation waters, including coastal estuaries, in California. These water quality criteria became effective on December 16, 2004. [69 Fed Reg. 67218 (November 16, 2004)].

USEPA also established single sample maximum criteria for enterococci bacteria, this Order implements this maximum of 104 colonies per 100 milliliters as an effluent limitation only for wet weather discharges in samples collected at Discharge Points 001 through 006. When these water quality criteria were promulgated, USEPA expected that the single sample maximum values would be used for making beach notification and beach closure decisions. “Other than in the beach notification and closure decision context, the geometric mean is the more relevant value for assuring

that appropriate actions are taken to protect and improve water quality because it is a more reliable measure, being less subject to random variation ...” [69 Fed Reg. 67224 (November 16, 2004)]. However wet weather events are intermittent and of limited duration. The use of a geometric mean would require the collection of multiple samples over a continuous time period, a condition not appropriate for wet weather events.

C. Water Quality-Based Effluent Limitations (WQBELs) for dry weather

1. Scope and Authority

- a. Except for CSOs, NPDES regulations at 40 CFR §122.44(d)(1)(i), require permits to include WQBELs for pollutants (including toxicity) that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard (Reasonable Potential). The process for determining Reasonable Potential and calculating WQBELs, when necessary, is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in the CTR, NTR, Basin Plan, and other State plans and policies.
- b. NPDES regulations and the SIP provide the basis to establish maximum daily effluent limitations (MDELs).
 - 1) NPDES Regulations. NPDES regulations at 40 CFR §122.45(d) state: “For continuous discharges all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall *unless impracticable* be stated as: (1) maximum daily and average monthly discharge limitations for all discharges other than publicly owned treatment works; and (2) average weekly and average discharge limitations for POTWs.”
 - 2) SIP. The SIP (page 8, Section 1.4) requires WQBELs be expressed as MDELs and average monthly effluent limitations (AMELs).
- c. MDELs are used in this Order to protect against acute water quality effects. The MDELs are necessary for preventing fish kills or mortality to aquatic organisms.

2. Applicable Beneficial Uses and Water Quality Criteria (WQC) and Objectives (WQOs)

The WQC and WQOs applicable to the receiving waters for this discharge are from the Basin Plan; the California Toxics Rule (CTR), established by USEPA at 40 CFR 131.38; and the National Toxics Rule (NTR), established by USEPA at 40 CFR 131.36. Some pollutants have WQC/WQOs established by more than one of these three sources.

- a. **Basin Plan.** The Basin Plan specifies numeric WQOs for 10 priority toxic pollutants, as well as narrative WQOs, such as those 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. The narrative toxicity objective states, in part, that “[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 that “[c]ontrollable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered.” Effluent limitations and provisions contained in this Order are designed, based on available information, to implement these objectives.

- b. CTR.** 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 all inland surface waters and enclosed bays and estuaries of the San Francisco Bay Region, although the Basin Plan includes certain numeric objectives that supersede CTR criteria.
- c. NTR.** The NTR establishes numeric aquatic life criteria for selenium, numeric aquatic life and human health criteria for cyanide, and numeric human health criteria for 34 toxic organic pollutants for waters of San Francisco Bay upstream to and including Suisun Bay and the Delta. These criteria apply to Central San Francisco Bay, the receiving water for this discharge.
- d. Technical Support Document for Water Quality-Based Toxics Controls.** Where numeric objectives have not been established or updated in the Basin Plan, NPDES regulations at 40 CFR §122.44(d) require that WQBELs be established based on USEPA criteria, supplemented where necessary by other relevant information, to attain and maintain narrative WQOs to fully protect designated beneficial uses.

To determine the need for and establish WQBELs, when necessary, the Regional Water Board staff has followed the requirements of applicable NPDES regulations, including 40 CFR Parts 122 and 131, as well as guidance and requirements established by the Basin Plan; USEPA’s *Technical Support Document for Water Quality-Based Toxics Control* (the TSD, EPA/505/2-90-001, 1991); and the State Water Resources Control Board’s *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP, 2005).

- e. Basin Plan Receiving Water Salinity Policy.** The Basin Plan (like the CTR and the NTR) states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable WQC. Freshwater criteria shall apply to discharges to waters with salinities equal to or less than 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 water for this discharge, Central and Lower San Francisco Bay, is a marine environment based on salinity data generated through the Regional Monitoring Program (RMP) at the Alameda (BB70) sampling station between 1993 and 2001. In that period, the maximum salinity was 31 ppt, average salinity was 24 ppt, and minimum salinity was 11 ppt. As salinity was greater than 10 ppt in 100 percent of receiving water samples, only the saltwater criteria from the Basin Plan, NTR, and CTR apply to this discharge.

- f. **Site-Specific Metals Translators.** Because NPDES regulations at 40 CFR 122.45(c) require effluent limitations for metals to be expressed as total recoverable metal, and applicable water quality criteria for the metals are typically expressed as dissolved metal, factors or translators must be used to convert metals concentrations from dissolved to total recoverable and vice versa. In the CTR, USEPA establishes default translators that are used in NPDES permitting activities; however, site-specific conditions such as water temperature, pH, suspended solids, and organic carbon greatly impact the form of metal (dissolved, filterable, or otherwise) that is present and therefore available in the water to cause toxicity. In general, the dissolved form of the metals is more available and more toxic to aquatic life than the filterable forms. Site-specific translators can be developed to account for site-specific conditions, thereby preventing exceedingly stringent or under protective water quality objectives.

For deep water discharges to Central San Francisco Bay, the Regional Water Board staff use the following translators for copper and nickel, based on recommendations of the Clean Estuary Partnership’s *North of Dumbarton Bridge Copper and Nickel Development and Selection of Final Translators* (2005). In determining the need for and calculating WQBELs for all other metals, the Regional Water Board staff use default translators established by USEPA in the CTR at 40 CFR §131.38 (b)(2), Table 2.

Table F-14. Translators for Copper and Nickel for Deepwater Discharges North of Dumbarton Bridge (Central Bay Regions)

Copper and Nickel Translators for Deepwater Discharges to Central San Francisco Bay	Copper		Nickel	
	AMEL Translator	MDEL Translator	AMEL Translator	MDEL Translator
	0.74	0.88	0.65	0.85

3. Determining the Need for WQBELs

NPDES regulations at 40 CFR 122.44(d)(1)(i) require permits to include WQBELs for all pollutants (non-priority or priority) “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 narrative or numeric criteria within a State water quality standard.” Thus, assessing whether a pollutant has “Reasonable Potential” is the fundamental step in determining whether or not a WQBEL is required. For non-priority pollutants, Regional Water Board staff used available

monitoring data, receiving water's designated uses, and/or previous permit pollutant limitations to determine Reasonable Potential. For priority pollutants, Regional Water Board staff used the methods prescribed in Section 1.3 of the SIP to determine if the discharge from the Southeast Plant demonstrates reasonable potential as described below in sections 3.a – 3.e.

a. Reasonable Potential Analysis

Using the methods prescribed in Section 1.3 of the SIP, Regional Water Board staff analyzed the effluent data to determine if the discharge from the Southeast Plant demonstrates Reasonable Potential. The Reasonable Potential Analysis (RPA) compares the effluent data with numeric and narrative WQOs in the Basin Plan and numeric WQC established by the USEPA in the NTR and CTR. The Basin Plan objectives and CTR criteria are shown in Appendix A of this Fact Sheet.

As specified by the USEPA *Combined Sewer Overflow Policy*, wet weather effluent from Discharge Points 001 through 006 and CSO wastes from Discharge Points 009 through 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 its long term control plan (Wet Weather Operations Plan). Therefore, the following methods of determining reasonable potential do not apply to wet weather effluent wastes and CSOs.

b. Reasonable Potential Methodology

Using the methods and procedures prescribed in Section 1.3 of the SIP, Regional Water Board staff analyzed the effluent and background data and the nature of facility operations to determine if the discharge has reasonable potential to cause or contribute to exceedances of applicable SSOs or WQC. Appendix A of this Fact Sheet shows the stepwise process described in Section 1.3 of the SIP.

1. The first trigger is activated if the maximum effluent concentration (MEC) is greater than the lowest applicable WQO/WQC ($MEC \geq WQO/WQC$), which has been adjusted, if appropriate, for pH, hardness, and translator data. If the MEC is greater than the adjusted WQO, then that pollutant has reasonable potential, and a WQBEL is required.
2. The second trigger is activated if the observed maximum ambient background concentration (B) is greater than the adjusted WQO ($B > WQO/WQC$), and the pollutant is detected in any of the effluent samples ($MEC > ND$).
3. The third trigger is activated if a review of other information determines that a WQBEL is required to protect beneficial uses, even though both MEC and B are less than the WQO/WQC. A limitation may be required under certain circumstances to protect beneficial uses.

c. Effluent Data

The Regional Water Board's August 6, 2001 letter, titled *Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy* (hereinafter referred to as the Regional Water Board's August 6, 2001 Letter - available online; see Standard Language and Other References Available Online, below) to all permittees, formally required the Discharger (pursuant to Section 13267 of the CWC) to initiate or continue to monitor for the priority pollutants using analytical methods that provide the best detection limits reasonably feasible. The Regional Water Board's RPA procedures consider monitoring frequency to determine the body of effluent data (3 or 5 years) to use in an RPA. For analytes that are monitored monthly or more often, 3 years of data are used, and for analytes that are monitored less frequently, 5 years of data are used. For larger dischargers that perform monthly monitoring for toxics, a 3-year dataset more accurately reflects recent treatment performance than a 5-year data set.

Regional Water Board staff analyzed the effluent data and the nature of the Southeast Plant to determine if the discharge has Reasonable Potential. The RPA was based on the effluent monitoring data collected by the Discharger from September 2003 through August 2006 for most inorganic pollutants, and from January 2003 through August 2006 for most organic pollutants. The ammonia data are from January 2005 to September 2007.

d. Ambient Background Data

Ambient background values are used in the RPA and in the calculation of effluent limitations. For the RPA, ambient background concentrations are the observed maximum detected water column concentrations. The SIP states that for calculating WQBELs, ambient background concentrations are either the observed maximum ambient water column concentrations or, for WQC/WQOs intended to protect human health from carcinogenic effects, the arithmetic mean of observed ambient water concentrations. The RMP station at Yerba Buena Island, located in the Central Bay, has been monitored for most of the inorganic (CTR constituent numbers 1–15) and some of the organic (CTR constituent numbers 16–126) toxic pollutants, and these data from the RMP were used as background data in performing the RPA for this Discharger.

Not all the constituents listed in the CTR have been analyzed by the RMP. These data gaps are addressed by the Regional Water Board's August 6, 2001 Letter. The August 6, 2001 Letter formally requires dischargers (pursuant to Section 13267 of the California Water Code) to conduct ambient background monitoring and effluent monitoring for those constituents not currently monitored by the RMP and to provide this technical information to the Regional Water Board.

On May 15, 2003, a group of several San Francisco Bay Region dischargers (known as the Bay Area Clean Water Agencies, or BACWA) submitted a collaborative receiving water study, entitled the *San Francisco Bay Ambient Water Monitoring Interim Report*. This study includes monitoring results from sampling events in 2002 and 2003 for the remaining priority pollutants not

monitored by the RMP. The RPA was conducted and the WQBELs were calculated using RMP data from 1993 through 2003 for inorganics and organics at the Yerba Buena Island RMP station, and additional data from the BACWA *Ambient Water Monitoring: Final CTR Sampling Update Report* for the Yerba Buena Island RMP station.

e. RPA Determination

The MECs, most stringent applicable WQOs/WQC, and background concentrations used in the RPA are presented in the following table, along with the RPA results (Yes or No) for each pollutant analyzed. Reasonable potential was not determined for all pollutants, as there are not applicable WQOs/WQC for all pollutants, and monitoring data was not available for others. RPA results are shown below and in Appendix A of this Fact Sheet. The pollutants that exhibit reasonable potential are copper, lead, mercury, silver, zinc, cyanide, dioxin-TEQ, tetrachloroethylene, bis(2-ethylhexyl)phthalate, and tributyltin.

Table F-15. Summary of Reasonable Potential Determination for the Southeast Plant

CTR #	Priority Pollutants	MEC or Minimum DL ^{[a][b]} (µg/L)	Governing WQO/WQC (µg/L)	Maximum Background or Minimum DL ^{[a][b]} (µg/L)	RPA Results ^[c]
1	Antimony	0.78	4300	1.8	No
2	Arsenic	5.0	36	2.46	No
3	Beryllium	< 0.5	No Criteria	0.215	Ud
4	Cadmium	3.9	9.4	0.13	No
5a	Chromium (III)	5.2	No Criteria	Not Available	Ud
5b	Chromium (VI)	<5.2	50	4.4	No
6	Copper	16	4.2	2.55	Yes
7	Lead	15	8.5	0.80	Yes
8	Mercury (303d listed)	0.026	0.025	0.0086	Yes
9	Nickel	8	13	3.7	No
10	Selenium	1.9	5.0	0.39	No
11	Silver	5.8	2.2	0.052	Yes
12	Thallium	< 0.5	6.3	0.21	No
13	Zinc	176	86	5.1	Yes
14	Cyanide	11	1.0	< 0.4	Yes
15	Asbestos	Not Available	No Criteria	Not Available	Ud
16	2,3,7,8-TCDD (303d listed)	3.46E-07	1.4E-08	Not Available	No
	Dioxin TEQ (303d listed)	4.82E-07	1.4E-08	7.10E-08	Yes
17	Acrolein	< 0.8	780	< 0.5	No
18	Acrylonitrile	< 0.8	0.66	0.03	No
19	Benzene	2	71	< 0.05	No
20	Bromoform	< 0.053	360	< 0.5	No
21	Carbon Tetrachloride	< 0.061	4.4	0.06	No
22	Chlorobenzene	< 0.053	21000	< 0.5	No
23	Chlorodibromomethane	0.35	34	< 0.05	No
24	Chloroethane	< 0.036	No Criteria	< 0.5	Ud
25	2-Chloroethylvinyl ether	< 0.156	No Criteria	< 0.5	Ud
26	Chloroform	10	No Criteria	< 0.5	Ud
27	Dichlorobromomethane	0.94	46	< 0.05	No
28	1,1-Dichloroethane	< 0.135	No Criteria	< 0.05	Ud
29	1,2-Dichloroethane	< 0.067	99	0.04	No
30	1,1-Dichloroethylene	< 0.074	3.2	< 0.5	No
31	1,2-Dichloropropane	< 0.149	39	< 0.05	No

CTR #	Priority Pollutants	MEC or Minimum DL ^{[a][b]} (µg/L)	Governing WQO/WQC (µg/L)	Maximum Background or Minimum DL ^{[a][b]} (µg/L)	RPA Results ^[c]
32	1,3-Dichloropropylene	< 0.162	1700	Not Available	No
33	Ethylbenzene	< 0.099	29000	< 0.5	No
34	Methyl Bromide	0.17	4000	< 0.5	No
35	Methyl Chloride	1.3	No Criteria	< 0.5	Ud
36	Methylene Chloride	8.1	1600	0.5	No
37	1,1,2,2-Tetrachloroethane	< 0.094	11	< 0.05	No
38	Tetrachloroethylene	9.3	8.85	< 0.05	Yes
39	Toluene	2.2	200000	< 0.3	No
40	1,2-Trans-Dichloroethylene	< 0.111	140000	< 0.5	No
41	1,1,1-Trichloroethane	0.38	No Criteria	< 0.5	Ud
42	1,1,2-Trichloroethane	< 0.111	42	< 0.05	No
43	Trichloroethylene	0.80	81	< 0.5	No
44	Vinyl Chloride	1.4	525	< 0.5	No
45	2-Chlorophenol	< 1.05	400	< 1.2	No
46	2,4-Dichlorophenol	< 1.2	790	< 1.3	No
47	2,4-Dimethylphenol	< 1.15	2300	< 1.3	No
48	2-Methyl- 4,6-Dinitrophenol	< 1.08	765	< 1.2	No
49	2,4-Dinitrophenol	< 1.48	14000	< 0.7	No
50	2-Nitrophenol	< 0.41	No Criteria	< 1.3	Ud
51	4-Nitrophenol	< 1.96	No Criteria	< 1.6	Ud
52	3-Methyl 4-Chlorophenol	< 0.73	No Criteria	< 1.1	Ud
53	Pentachlorophenol	< 0.64	7.9	< 1.0	No
54	Phenol	< 0.13	4600000	< 1.3	No
55	2,4,6-Trichlorophenol	< 1.62	6.5	< 1.3	No
56	Acenaphthene	< 0.11	2700	0.0015	No
57	Acenaphthylene	< 0.07	No Criteria	0.00053	Ud
58	Anthracene	< 0.01	110000	0.0005	No
59	Benzidine	< 1.49	0.00054	< 0.0015	No
60	Benzo(a)Anthracene	< 0.02	0.049	0.0053	No
61	Benzo(a)Pyrene	< 0.02	0.049	0.00029	No
62	Benzo(b)Fluoranthene	< 0.02	0.049	0.0046	No
63	Benzo(ghi)Perylene	< 0.02	No Criteria	0.0027	Ud
64	Benzo(k)Fluoranthene	< 0.03	0.049	0.0015	No
65	Bis(2-Chloroethoxy)Methane	< 0.81	No Criteria	< 0.3	Ud
66	Bis(2-Chloroethyl)Ether	< 0.81	1.4	< 0.3	No
67	Bis(2-Chloroisopropyl)Ether	< 0.73	170000	Not Available	No
68	Bis(2-Ethylhexyl)Phthalate	6.8	5.9	< 0.5	Yes
69	4-Bromophenyl Phenyl Ether	< 0.69	No Criteria	< 0.23	Ud
70	Butylbenzyl Phthalate	< 0.26	5200	< 0.52	No
71	2-Chloronaphthalene	< 1	4300	< 0.3	No
72	4-Chlorophenyl Phenyl Ether	< 0.89	No Criteria	< 0.3	Ud
73	Chrysene	< 0.03	0.049	0.0024	No
74	Dibenzo(a,h)Anthracene	< 0.02	0.049	0.00064	No
75	1,2-Dichlorobenzene	0.9	17000	< 0.8	No
76	1,3-Dichlorobenzene	< 0.178	2600	< 0.8	No
77	1,4-Dichlorobenzene	1.2	2600	< 0.8	No
78	3,3 Dichlorobenzidine	< 0.9	0.077	< 0.001	No
79	Diethyl Phthalate	< 0.44	120000	< 0.24	No
80	Dimethyl Phthalate	< 0.45	2900000	< 0.24	No
81	Di-n-Butyl Phthalate	0.91	12000	< 0.5	No
82	2,4-Dinitrotoluene	< 0.58	9.1	< 0.27	No

CTR #	Priority Pollutants	MEC or Minimum DL ^{[a][b]} (µg/L)	Governing WQO/WQC (µg/L)	Maximum Background or Minimum DL ^{[a][b]} (µg/L)	RPA Results ^[c]
83	2,6-Dinitrotoluene	< 0.56	No Criteria	< 0.29	No
84	Di-n-Octyl Phthalate	< 0.56	No Criteria	< 0.38	No
85	1,2-Diphenylhydrazine	< 0.74	0.54	0.0037	No
86	Fluoranthene	< 0.06	370	0.011	No
87	Fluorene	< 0.03	14000	0.00208	No
88	Hexachlorobenzene	< 0.71	0.00077	0.0000202	No
89	Hexachlorobutadiene	< 0.76	50	< 0.3	No
90	Hexachlorocyclopentadiene	< 0.58	17000	< 0.31	No
91	Hexachloroethane	< 0.74	8.9	< 0.2	No
92	Indeno(1,2,3-cd)Pyrene	< 0.03	0.049	0.004	No
93	Isophorone	< 0.75	600	< 0.3	No
94	Naphthalene	< 0.08	No Criteria	0.0023	Ud
95	Nitrobenzene	< 0.71	1900	< 0.25	No
96	N-Nitrosodimethylamine	< 0.1	8.1	< 0.3	No
97	N-Nitrosodi-n-Propylamine	< 0.84	1.4	< 0.001	No
98	N-Nitrosodiphenylamine	< 0.55	16	< 0.001	No
99	Phenanthrene	< 0.03	No Criteria	0.0061	Ud
100	Pyrene	< 0.06	11000	0.0051	No
101	1,2,4-Trichlorobenzene	< 0.91	No Criteria	< 0.3	Ud
102	Aldrin	< 0.002	0.00014	Not Available	No
103	Alpha-BHC	< 0.001	0.013	0.000496	No
104	beta-BHC	< 0.002	0.046	0.000413	No
105	gamma-BHC	< 0.001	0.063	0.0007034	No
106	delta-BHC	< 0.002	No Criteria	0.000042	Ud
107	Chlordane (303d listed)	< 0.003	0.00059	0.00018	No
108	4,4'-DDT (303d listed)	< 0.006	0.00059	0.000066	No
109	4,4'-DDE (linked to DDT)	< 0.004	0.00059	0.000693	No
110	4,4'-DDD	< 0.006	0.00084	0.000313	No
111	Dieldrin (303d listed)	< 0.002	0.00014	0.000264	No
112	Alpha-Endosulfan	< 0.003	0.0087	0.000031	No
113	beta-Endosulfan	< 0.002	0.0087	0.000069	No
114	Endosulfan Sulfate	< 0.006	240	0.0000819	No
115	Endrin	< 0.002	0.0023	0.000036	No
116	Endrin Aldehyde	< 0.007	0.81	Not Available	No
117	Heptachlor	< 0.001	0.00021	0.000019	No
118	Heptachlor Epoxide	< 0.001	0.00011	0.00002458	No
119-125	PCBs sum (303d listed)	< 0.01	0.00017	Not Available	No
126	Toxaphene	< 0.035	0.0002	Not Available	No
	Ammonia	40,000	1,100	220	Yes
	Tributyltin	0.011	0.0074	< 0.001	Yes
	Total PAHs	Not Available	15	0.26	Ud

[a] The Maximum Effluent Concentration (MEC) or maximum background concentration is the actual detected concentration unless there is a "<" sign before it, in which case the value shown is the minimum detection level.

[b] The MEC or maximum background concentration is "Not Available" when there are no monitoring data for the constituent.

[c] RPA Results = Yes, if MEC > WQO/WQC, or B > WQO/WQC and MEC is detected;
 = No, if MEC and B are < WQO/WQC or all effluent data are undetected;
 = Undetermined (Ud), if no criteria have been promulgated or if there are insufficient data.

(1) Constituents with limited data. The Discharger has performed sampling and analysis for the constituents listed in the CTR. This data set was used to perform the RPA. In some cases, Reasonable Potential cannot be determined because effluent data are limited, or ambient background concentrations are

not available. The Discharger will continue to monitor for these constituents in the effluent using analytical methods that provide the best feasible detection limits. When additional data become available, further RPA will be conducted to determine whether to add numeric effluent limitations to this Order or to continue monitoring.

(2) Pollutants with No Reasonable Potential. WQBELs are not included in this Order for constituents that do not demonstrate Reasonable Potential; however, monitoring for those pollutants is still required. If concentrations of these constituents are found to have increased significantly, the Discharger will be required to investigate the source(s) of the increase(s) [Provision VI.C.2.a of this Order]. Remedial measures are required if the increases pose a threat to water quality in the receiving water.

Order No. R2-2002-073 included final WQBELs for nickel, dieldrin, and 4,4-DDE; however, because the reasonable potential analysis showed that discharges from the Southeast Plant no longer demonstrate a reasonable potential to cause or contribute to exceedances of applicable water quality criteria for nickel, dieldrin, and 4,4-DDE, limitations from the previous Order are not retained and new limitations are not included in this Order for these pollutants.

4. Water Quality Based Effluent Limitation (WQBEL) Calculations

a. Applicable WQC/WQOs for Pollutants with Reasonable Potential

WQBELs were developed for the toxic and priority pollutants that were determined to have reasonable potential to cause or contribute to exceedances of the WQOs or WQC. The WQOs or WQC used for each pollutant with Reasonable Potential and the basis for the WQOs/WQC is indicated in the following table.

Table F-16. Summary of Water Quality Criteria or Objectives for Constituents with Reasonable Potential

CTR #	Pollutant	Water Quality Criterion or Objective (µg/L)			Basis
		Aquatic Life Chronic	Aquatic Life Acute	Human Health	
6	Copper	4.2	5.5	--	Basin Plan and CTR saltwater aquatic life
7	Lead	8.5	221	--	Basin Plan and CTR saltwater aquatic life
8	Mercury	0.025	2.1	0.05	Basin Plan saltwater aquatic life and CTR human health
11	Silver	--	2.2	--	CTR saltwater aquatic life
13	Zinc	86	95	--	Basin Plan (fresh water aquatic life)
14	Cyanide	1.0	1.0	220,000	NTR saltwater aquatic life and

CTR #	Pollutant	Water Quality Criterion or Objective (µg/L)			Basis
		Aquatic Life Chronic	Aquatic Life Acute	Human Health	
					human health
	Dioxin TEQ	--	--	1.4 x 10 ⁻⁸	Basin Plan narrative (bioaccumulation)
38	Tetrachloroethylene	--	--	8.85	CTR Human Health
68	Bis (2-ethylhexyl) phthalate	--	--	5.9	CTR Human Health
	Ammonia	1,100	12,000		Basin Plan aquatic life
	Tributyltin	0.0074	0.42	--	Basin Plan narrative (toxicity)

b. Dilution Credit

The SIP provides the basis for any dilution credit. Based on a review of RMP data from local and Central Bay stations, there is variability in the receiving water, and the hydrology of the receiving water is itself very complex. Thus there is uncertainty associated with the representative nature of the appropriate ambient background data for effluent limit calculations. Pursuant to Section 1.4.2.1 of the SIP, “dilution credit may be limited or denied on a pollutant-by-pollutant basis ...”. The Regional Water Board finds that a conservative 10:1 dilution credit for most nonbioaccumulative priority pollutants, and a zero dilution credit for many bioaccumulative priority pollutants are necessary for protection of beneficial uses. The detailed bases for the assignment of dilution credits for the different types of pollutants are explained below.

- (i) For certain bioaccumulative pollutants dilution credits are not included in calculating the final WQBELs. This decision is based on the concentrations of these pollutants in aquatic organisms, sediment, and the water column. The Regional Water Board placed selenium, mercury, and polychlorinated biphenyls (PCBs) on the CWA Section 303(d) list. USEPA added dioxin and furan compounds, chlordane, dieldrin, and 4,4'-DDT to the list. The reasoning for these decisions is based on the following factors that suggest there is no more assimilative capacity in the Bay for these pollutants.

Samples of tissue taken from fish in the San Francisco Bay show the presence of these pollutants at concentrations greater than screening levels (*Contaminant Concentrations in Fish from San Francisco Bay*, May 1997). The Office of Environmental Health and Hazard Assessment (OEHHA) also completed a preliminary review of data in the 1994 San Francisco Bay pilot study, *Contaminated Levels in Fish Tissue from San Francisco Bay*. The results of this study also showed elevated levels of chemical contaminants in fish tissues. In December 1994 OEHHA subsequently issued an interim consumption advisory covering certain fish species in the Bay. This advisory is still in effect for exposure to sport fish that are found to be contaminated with mercury, dioxins, and pesticides (e.g., DDT).

Section 2.1.1 of the SIP states that for bioaccumulative compounds on the 303(d) list, the Regional Water Board should consider whether mass-loading

limits are appropriate. The Regional Water Board finds that mass-loading limits are warranted for mercury in the receiving waters of this Discharger during dry weather. This is to ensure that this Discharger does not contribute further to impairment of the narrative objective for bioaccumulation.

- (ii) For most non-bioaccumulative constituents, a conservative allowance of 10:1 dilution for discharges to the Bay has been assigned for protection of beneficial uses. The basis for using 10:1 is that it was granted in the previous Order. Moreover, this 10:1 dilution ratio also follows Basin Plan Prohibition Number 1 in Table 4-1, which prohibits discharges with less than 10:1 dilution. The dilution credit is also based on SIP provisions, Section 1.4.2, that consider the following:
 - (a) A far-field background station is appropriate because the receiving water body (the Bay) is a very complex estuarine system with highly variable and seasonal upstream freshwater inflows and diurnal tidal saltwater inputs. The SIP allows background to be determined on a discharge-by-discharge or water body-by-water body basis (SIP 1.4.3). Consistent with the SIP, Regional Water Board staff have 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. The Yerba Buena Island Station fits the guidance for ambient background in the SIP compared to other stations in the RMP. The SIP states that background data are applicable if they are “representative of the ambient receiving water column that will mix with the discharge.” Regional Water Board staff believes that water from this station is representative of water that will mix with the discharge from this Discharger. Although this station is located near the Golden Gate, it represents the typical water flushing in and out of the Bay each tidal cycle and represents the receiving water that will mix with the discharge.
 - (b) Because of the complex hydrology of the San Francisco Bay, a mixing zone has not been established. There are uncertainties in accurately determining the mixing zones for each discharge. The models that have been used 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 saltwater from the ocean flushes in twice a day generally under the warmer fresh river waters that flow out annually. When these waters mix and interact, complex circulation patterns occur due to the different densities of these waters. These complex patterns occur throughout the estuary but are most prevalent in the San Pablo, 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 diffuser.

- (c) The SIP allows a limited mixing zone and dilution credit for persistent pollutants. Discharges to the Bay are defined in the SIP as incompletely mixed discharges. Thus, dilution credit should be determined using site-specific information. The SIP at section 1.4.2.2 specifies that the Regional Water 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). 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.
- (iii) For ammonia, a non-persistent pollutant, estimated actual initial dilution levels have been used to calculate the effluent limit. This is justified because ammonia would be quickly dispersed and degraded to a non-toxic state very rapidly. A draft study, *Dilution Model for the San Francisco Southeast Treatment Plant Bay Outfall (Pier 80)* to determine the actual dilution was performed by the Discharger and submitted to the Regional Water Board on October 1, 2007. Dilution factors were calculated using the Visual Plumes (Version 1.0, released in August 2001) UM3 model.

The discharge is pumped to an outfall 810 feet east of Pier 80 through an effluent diffuser submerged 42 to 44 feet below mean lower low water. Pier 80 is immediately north of Islais Creek channel. Using the average discharge flow of 68 MGD, a 1-hour acute dilution factor of 47 was calculated for ammonia and the 1-year chronic dilution factor of 286 was also calculated. A more conservative dilution factor of 36 was calculated assuming a maximum flow of 110 MGD. For determining the water quality based effluent limit (maximum daily and average monthly), the lowest dilution factor of 36 was used.

- (iv) For cyanide, another non-persistent pollutant that quickly disperses and degrades like ammonia, the draft study, *Dilution Model for the San Francisco Southeast Treatment Plant Bay Outfall (Pier 80)* determined a dilution factor of 36 to calculate the water quality based effluent limits.

The background documentation for the proposed cyanide site-specific objectives included an antidegradation analysis, which concluded that certain effluent limitations resulting from implementation of the site-specific objectives (assuming 10:1 dilution) would not degrade water quality. The dilution credit used here results in effluent limits lower than those identified in the site-specific objectives documents for this Discharger; therefore, these cyanide limits also comply with antidegradation policies. Consistent with the site-specific objective conclusion on antidegradation, to further ensure that water quality is not degraded, this Order requires a cyanide action plan similar to that proposed with the site-specific objective.

c. Development of Effluent Limitations for Specific Pollutants

(1) Copper

- i. *Copper WQC.* The salt water acute and chronic criteria from the Basin Plan and the CTR for copper for protection of aquatic life are 5.5 and 4.2 µg/L, respectively. These criteria were determined using site-specific translators of 0.74 (chronic) and 0.88 (acute), as recommended by the Clean Estuary Partnership’s *North of Dumbarton Bridge Copper and Nickel Development and Selection of Final Translators* (2005). Site-specific translators were applied to chronic (3.1 µg/L dissolved metal) and acute (4.8 µg/L dissolved metal) criteria of the Basin Plan and the CTR for protection of salt water aquatic life to calculate the criteria of 4.2 µg/L for chronic protection and 5.5 µg/L for acute protection, which were used to perform the RPA.
- ii. *RPA Results.* This Order establishes effluent limitations for copper, as the maximum observed effluent concentration of 6 µg/L exceeds the applicable water quality criteria for this pollutant, demonstrating reasonable potential by Trigger 1, as defined previously.
- iii. *Copper WQBELs.* WQBELs are calculated based on water quality criteria of the CTR and the Basin Plan. Both sets of criteria are expressed as total recoverable metal, using site-specific translators recommended by the Clean Estuary Partnership’s *North of Dumbarton Bridge Copper and Nickel Development and Selection of Final Translators* (2004), and a water effects ratio (WER) of 2.4, as recommended by the Partnership (2004). The following table shows the effluent limitations for copper calculated according to SIP procedures (using a coefficient of variation of 0.26). The newly calculated limitations are based on a minimum initial dilution of 10 to 1.

Table F-17. Effluent Limitations for Copper

Effluent Limitations for Copper		
	AMEL	MDEL
Based on CTR Criteria	71 µg/L	100 µg/L

- iv. *Immediate Compliance Feasible.* Statistical analysis of effluent data for copper, collected over the period of September 2003 through August 2006, shows that the 95th percentile (12 µg/L) is less than the AMEL (71 µg/L); the 99th percentile (14 µg/L) is less than the MDEL (100 µg/L); and the mean (8.0 µg/L) is less than the long term average of the projected lognormal distribution of the effluent data set after accounting for effluent variability (58 µg/L). The Regional Water Board concludes, therefore, that immediate compliance with final effluent limitations for copper is feasible, and final effluent limitations will become effective upon adoption of the Order.

- v. *Alternate Limitations for Copper.* As described in the Clean Estuary Partnership’s *North of Dumbarton Bridge Copper and Nickel Site-Specific Objective Determination* (December 2004), the Regional Water Board is proposing to develop site-specific criteria for copper in non-ocean, marine waters of the Region. Proposed site-specific objectives for copper are 2.5 and 3.9 µg/L as 4-day and 1-hour average criteria, respectively. If these site-specific objectives for copper are adopted, final effluent limitations, calculated according to Section 1.4 of the SIP, using a WER of 2.4, would be 53 µg/L (AMEL) and 76 µg/L (MDEL). If these site-specific objectives for copper are adopted, the alternate effluent limits will become effective upon the adoption date, so long as the site-specific objectives and their current justification remain unchanged. With these new alternative limits immediate compliance would still be feasible because the maximum concentration in the effluent was 16 µg/L.
- vi. *Anti-backsliding/Antidegradation.* Antibacksliding and antidegradation requirements are satisfied as the previous Order did not include final effluent limitations for copper. See Section III.C.7 of this Fact Sheet for a discussion on how these limits comply with antidegradation policies.

(2) Lead

- i. *Lead WQC.* The salt water acute and chronic criteria from the Basin Plan and the CTR for lead for protection of aquatic life are 221 µg/L and 8.5 µg/L, respectively.
- ii. *RPA Results.* This Order establishes effluent limitations for lead, as the maximum observed effluent concentration of 14.7 µg/L exceeds the applicable chronic criterion for this pollutant, demonstrating reasonable potential by Trigger 1, as defined previously.
- iii. *Lead WQBELs.* The following table compares final effluent limitations for lead from the expiring Order (Order No. R2-2002-073) with limitations calculated according to SIP procedures (using a coefficient of variation of 1.01 and assuming a minimum initial dilution of 10:1).

Table F-18. Effluent Limitations for Lead

Effluent Limitations for Lead		
	AMEL	MDEL
Order No. R2-2002-073	36 µg/L	89 µg/L
Based on CTR Criteria	56 µg/L	140 µg/L

Because limitations of the previous Order were final limitations, and those limitations are more stringent than the newly calculated limits for lead, final effluent limitations for lead from the expiring Order are retained in the Order.

- iv. *Immediate Compliance Feasible.* Effluent data showed the maximum effluent concentration (MEC) of 15 µg/L to be below the limits set in the

previous Order [the AMEL (36 µg/L) and the MDEL (89 µg/L)]. Based on this comparison, the Regional Water Board concludes that the Discharger can comply with the effluent limits for lead.

- v. *Anti-backsliding/Antidegradation.* Antibacksliding and antidegradation requirements are satisfied as final effluent limitations for lead are retained from the previous Order.

(3) Mercury

- i. *Mercury WQC.* The most stringent applicable water quality criteria for mercury are established by the Basin Plan for protection of salt water aquatic life – 2.1 µg/L and 0.025 µg/L, acute and chronic criteria respectively. The CTR also has a human health criterion of 0.051 µg/L.
- ii. *RPA Results.* This Order establishes effluent limitations for mercury, as the maximum observed effluent concentration of 0.026 µg/L exceeds the applicable chronic criterion for this pollutant, demonstrating reasonable potential by Trigger 1, as defined previously.
- iii. *Mercury WQBELs.* Final WQBELs for mercury, calculated according to SIP procedures, with a coefficient of variation of 0.49, are 0.021 µg/L and 0.039 µg/L for the AMEL and MDEL, respectively. Because San Francisco Bay is impaired by mercury bioaccumulation, final effluent limitations are calculated without credit for dilution.
- iv. *Immediate Compliance Feasible.* Statistical analysis of effluent data for mercury, collected over the period of September 2003 through August 2006, shows that the 95th percentile (0.020 µg/L) is less than the AMEL (0.021 µg/L); the 99th percentile (0.023 µg/L) is less than the MDEL (0.039 µg/L); and the mean (0.011 µg/L) is less than the long term average of the projected lognormal distribution of the effluent data set after accounting for effluent variability (0.015 µg/L). Thus it is feasible for the Discharger to comply with the WQBELs.
- v. *Anti-backsliding/Antidegradation.* Antibacksliding and antidegradation requirements are satisfied as the previous Order did not include final effluent limitations for mercury.
- vi. *TMDL and Watershed Permit for Mercury.* On November 1, 2007, the Regional Water Board adopted Order No. R2-2007-0077 (Watershed permit) implementing the San Francisco Bay Mercury total maximum daily load (TMDL) waste load allocations and other provisions. The TMDL has been adopted by both the San Francisco Regional Water Board and the State Water Board. USEPA must approve the TMDL before the watershed permit is legally effective. The Watershed permit will supersede all mercury requirements in this Order, including the effluent limits described above.

(4) Silver

- i. *Silver WQC.* The salt water acute criterion from the Basin Plan and the CTR for silver for protection of aquatic life is 2.2 µg/L.
- ii. *RPA Results.* This Order establishes effluent limitations for silver, as the maximum observed effluent concentration of 5.81 µg/L exceeds the applicable acute criterion for this pollutant, demonstrating reasonable potential by Trigger 1, as defined previously.
- iii. *Silver WQBELs.* The following table compares final effluent limitations for silver from the expiring Order (Order No. R2-2002-073) with limitations calculated according to SIP procedures (using a coefficient of variation of 2.58 and a dilution ratio of 10:1).

Table F-19. Effluent Limitations for Silver

Effluent Limitations for Silver		
	AMEL	MDEL
Order No. R2-2002-073	12 µg/L	22 µg/L
Based on CTR Criteria	7 µg/L	22 µg/L

Because the newly calculated limitations are equal to or more stringent than the final limitations in the previous Order, the newly calculated limits are established by this Order.

- iv. *Immediate Compliance Feasible.* Statistical analysis of effluent data for silver, collected over the period of September 2003 through August 2006, shows that the 95th percentile (0.74 µg/L) is less than the AMEL (7 µg/L); the 99th percentile (1.7 µg/l) is less than the MDEL (22 µg/L); and the mean (0.27 µg/L) is less than the long term average of the projected lognormal distribution of the effluent data set after accounting for effluent variability (2.2 µg/L). The Regional Water Board concludes, therefore, that immediate compliance with final effluent limitations for silver is feasible, and final effluent limitations will become effective upon adoption of the Order.
- v. *Anti-backsliding/Antidegradation.* Antibacksliding and antidegradation requirements are satisfied as the newly calculated limits are equal to or more stringent than those in the previous Order.

(5) Zinc

- i. *Zinc WQC.* The salt water acute and chronic criteria from the Basin Plan and the CTR for zinc for protection of aquatic life are 95 µg/L and 86 µg/L, respectively.
- ii. *RPA Results.* This Order establishes effluent limitations for zinc, as the maximum observed effluent concentration of 76 µg/L exceeds the

applicable chronic criterion for this pollutant, demonstrating reasonable potential by Trigger 1, as defined previously.

- iii. *Zinc WQBELs.* The following table compares final effluent limitations for zinc from the expiring Order (Order No. R2-2002-073) with limitations calculated according to SIP procedures (using a coefficient of variation of 0.51 and a dilution ratio of 10:1).

Table F-20. Effluent Limitations for Zinc

Effluent Limitations for Zinc		
	AMEL	MDEL
Order No. R2-2002-073	490 µg/L	720 µg/L
Based on CTR Criteria	490 µg/L	910 µg/L

Because limitations of the previous Order were final limitations, and those limitations are equal to or more stringent than the newly calculated limits for zinc, final effluent limitations for zinc from the expiring Order are retained in the Order.

- iv. *Immediate Compliance Feasible.* Effluent data showed the maximum effluent concentration (MEC) of 176 µg/L to be below the limits set in the previous Order [the AMEL (490 µg/L) and the MDEL (720 µg/L)]. Based on this comparison, the Regional Water Board concludes that the Discharger can comply with the effluent limits for zinc.
- v. *Anti-backsliding/Antidegradation.* Antibacksliding and antidegradation requirements are satisfied as the final effluent limitations for zinc are retained from the previous Order.

(6) Cyanide

- i. *Cyanide WQC.* The most stringent applicable water quality criteria for cyanide are established by the NTR for protection of aquatic life in San Francisco Bay. The NTR establishes both the saltwater Criterion Maximum Concentration (acute criterion) and the Criterion Chronic Concentration (chronic criterion) at 1.0 µg/L.
- ii. *RPA Results.* This Order establishes effluent limitations for cyanide as the MEC of 11 µg/L exceeds the governing WQC of 1.0 µg/L, demonstrating reasonable potential by Trigger 1, as defined previously.
- iii. *Cyanide WQBELs.* Final WQBELs for cyanide, calculated according to SIP procedures, are 15 µg/L and 31 µg/L, the AMEL and MDEL, respectively. These were calculated using a dilution ratio of 36:1 and a CV of 0.65
- iv. *Immediate Compliance Feasible.* The Discharger can immediately comply with final WQBELs for cyanide. Statistical analysis of effluent data for cyanide, collected over the period of September 2003 through August

2006, show that the 95th percentile (4.4 µg/L) is less than the AMEL (15 µg/L); the 99th percentile (7.9 µg/L) is less than the MDEL (31 µg/L).

- v. **Alternative Limit for Cyanide.** As described in Regional Water Board Resolution R2-2006-0086, site-specific criteria for cyanide, the proposed site-specific criteria for marine waters are 2.9 µg/L as a 4-day average, and 9.4 µg/L as a 1-hour average. Based on these assumptions, final WQBELs for cyanide will be 20 µg/L and 43 µg/L, the AMEL and MDEL, respectively. Since the maximum effluent concentration for cyanide is 11 µg/L, immediate compliance with these limits is feasible.
- vi. *Anti-backsliding/Antidegradation.* Antibacksliding and antidegradation requirements are satisfied, as the previous Order did not include final effluent limitations for cyanide. See Section III.C.7 of this Fact Sheet for a discussion on how these limits comply with antidegradation policies.

(7) Dioxin - TEQ

- i. *WQC.* The Basin Plan narrative WQO for bioaccumulative substances states:

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

Because it is the consensus of the scientific community that dioxins and furans associate with particulates, accumulate in sediments, and bioaccumulate in the fatty tissue of fish and other organisms, the Basin Plan's narrative water quality objective regarding bioaccumulation is applicable to these pollutants. Elevated levels of dioxins and furans in fish tissue in San Francisco Bay demonstrate that the narrative water quality objective is not being met, and therefore, USEPA has included Central San Francisco Bay as impaired by dioxin and furan compounds in the current 303 (d) listing - those receiving waters where water quality objectives are not being met after imposition of applicable technology-based requirements.

The CTR establishes a numeric water quality objective for 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD) of 1.4×10^{-8} µg/L for the protection of human health, when aquatic organisms are consumed. When the CTR was promulgated, USEPA stated its support of the regulation of other dioxin and dioxin-like compounds through the use of toxicity equivalencies (TEQs) in NPDES permits. For California waters, USEPA stated specifically, "if the discharge of dioxin or dioxin-like compounds has reasonable potential to cause or contribute to a violation of a narrative criterion, numeric water quality-based effluent limitations for

dioxin or dioxin-like compounds should be included in NPDES permits and should be expressed using a TEQ scheme” [65 Fed. Reg. 31682, 31695 (2000)]. This procedure, developed by the World Health Organization (WHO) in 1998, uses a set of toxicity equivalency factors (TEFs) to convert the concentration of any congener of dioxin or furan into an equivalent concentration of 2,3,7,8-TCDD. When the CTR was promulgated, USEPA also stated that the Agency will continue to assess the risks posed by dioxin to public health and the water quality criteria for dioxin that it had promulgated.

To determine if the discharge of dioxin or dioxin-like compounds from the Southeast Plant has reasonable potential to cause or contribute to a violation of the Basin Plan’s narrative water quality objective regarding bioaccumulation, Regional Water Board staff has therefore used TEFs to express the measured concentrations of 16 dioxin congeners in effluent and background samples as 2,3,7,8-TCDD. These “equivalent” concentrations are then compared to the numeric criterion, established by the CTR for 2,3,7,8-TCDD of 1.4×10^{-8} µg/L. Although the 1998 WHO scheme includes TEFs for dioxin-like PCBs, dioxin-like PCBs are not included in this Order’s version of the TEF procedure, as these pollutants are included in the analysis of total PCBs, for which the CTR has established a specific water quality standard.

- ii. *RPA Results.* This Order establishes effluent limitations for dioxin-TEQ because the MEC of 4.8×10^{-7} µg/L exceeds the numeric criterion established by the CTR for 2,3,7,8-TCDD of 1.4×10^{-8} µg/L, demonstrating reasonable potential by Trigger 1, as defined previously. The maximum observed ambient background concentration of dioxin-TEQ in the Bay (7.1×10^{-8} µg/L) also exceeds the numeric criterion established by the CTR for 2,3,7,8-TCDD.
- iii. *WQBEL.* The WQBEL for dioxin-TEQ implements the Basin Plan’s narrative bioaccumulation objective. WQBELs are expressed in terms of mass discharge as required by 40CFR122.45(f)(1), derived from concentrations limits using SIP protocols as guidance and this dataset’s coefficient of variation of 2.88. Mass discharge limits for dioxin-TEQ are more appropriate because dioxin-TEQ pollutants are bioaccumulative and bioaccumulation is a long-term process that is little affected by daily concentration fluctuations in the discharge. Because dioxin-TEQ pollutants are bioaccumulative and the Bay is listed as impaired, credit for dilution is not granted when calculating limits.

The design capacity of the plant, 84.5 million gallons per day (MGD), was used to calculate an annual mass limit of 1.6 mg (equivalent to 0.13 mg/month) based on a calculated concentration WQBEL of 1.4×10^{-8} µg/L.

Since the discharge is sporadic throughout the year and dependent on precipitation events, maximum loadings cannot be determined. Only an

average annual discharge can be estimated based on flow rates and calculated allowable loadings.

- iv. *Immediate Compliance Infeasible.* The Discharger's Feasibility Study asserts that the Discharger cannot immediately comply with the WQBEL for dioxin-TEQ. Although analytical method detection limits are higher than calculated effluent limits for dioxin congeners, the effluent data collected over the period of September 2003 through August 2006 show that the concentrations in the effluent exceed the translated water quality objective (1.4×10^{-8} µg/L). Furthermore the Discharger's Dioxins Feasibility Assessment shows, for dry weather discharges, an annual mass loading of 2.5 mg. This converts to an average mass load of 0.21 mg/month that exceeds the limit of 0.13 mg/month. The Regional Water Board concludes, therefore, that immediate compliance with final effluent limitations for dioxin-TEQ is infeasible.
- v. *Anti-backsliding/Antidegradation.* Antibacksliding and antidegradation requirements are satisfied, as the previous Order did not include a final effluent limitation for dioxin-TEQ.

(8) Tetrachloroethylene

- i. *Tetrachloroethylene WQC.* The most stringent applicable water quality criterion for tetrachloroethylene is 8.9 µg/L, established by the CTR for protection of human health, when organisms are consumed from the receiving water.
- ii. *RPA Results.* This Order establishes effluent limitations for tetrachloroethylene because the MEC of 9.3 µg/L exceeds the governing WQC of 8.9 µg/L, demonstrating reasonable potential by Trigger 1, as defined previously.
- iii. *Tetrachloroethylene WQBELs.* Final WQBELs for tetrachloroethylene, calculated according to SIP procedures, and based on a CV of 1.36 and a 10:1 dilution, are 88 µg/L and 250 µg/L for the AMEL and MDEL, respectively.
- iv. *Immediate Compliance Feasible.* Statistical analysis of effluent data for tetrachloroethylene, collected over the period of August 2003 through August 2006, shows that the 95th percentile (6.1 µg/L) is less than the AMEL (88 µg/L) and the 99th percentile (13 µg/L) is less than the MDEL (247 µg/L). The Regional Water Board concludes, therefore, that immediate compliance with final effluent limitations for tetrachloroethylene is feasible, and final effluent limitations will become effective upon adoption of the Order.
- v. *Anti-backsliding/Antidegradation.* Antibacksliding and antidegradation requirements are satisfied, as the previous Order did not establish effluent limitations for tetrachloroethylene.

(9) Bis(2-ethylhexyl)phthalate

- i. *WQC.* The most stringent applicable water quality criterion for bis(2-ethylhexyl)phthalate is 5.9 µg/L, established by the CTR for protection of human health, when organisms are consumed from the receiving water.
- ii. *RPA Results.* This Order establishes effluent limitations for bis(2-ethylhexyl)phthalate because the MEC of 6.8 µg/L exceeds the governing WQC of 5.9 µg/L, demonstrating reasonable potential by Trigger 1, as defined previously.
- iii. *WQBELs.* Final WQBELs for bis(2-ethylhexyl)phthalate, calculated according to SIP procedures, are 55 µg/L and 120 µg/L for the AMEL and MDEL, respectively. These limitations are based on a minimum initial dilution of 10 to 1 and a default CV of 0.60.
- iv. *Immediate Compliance Feasible.* With insufficient effluent data to determine the distribution of the effluent data set or to calculate a mean and standard deviation, feasibility to comply with final effluent limitations is determined by comparing the MEC (6.8 µg/L) to the AMEL (55 µg/L) and the MDEL (110 µg/L). Based on this comparison, the Regional Water Board concludes that the Discharger can comply with final WQBELs for bis(2-ethylhexyl)phthalate.
- v. *Anti-backsliding/Antidegradation.* Anti-backsliding and antidegradation requirements are satisfied, as the previous Order did not establish effluent limitations for bis(2-ethylhexyl)phthalate.

10) Ammonia

- i. *WQC.* The Basin Plan contains WQOs for un-ionized ammonia (ammonia) of 0.025 mg/L as annual median, 0.16 mg/L as a maximum north of the Golden Gate Channel, and 0.4 mg/L as a maximum south of the Golden Gate Channel. This permit assumes a translation of ammonia to total ammonia concentrations as nitrogen because there are no sampling and laboratory analytical methods that will measure only ammonia. Because the fraction of ammonia in total ammonia depends on pH, salinity, and temperature the equivalent total ammonia concentrations that are protective of beneficial uses will vary throughout the Bay. Therefore the Regional Water Board used the closest Regional Monitoring Program (RMP) station to the outfall to determine the percentage of total ammonia in a discharge that will be converted to toxic ammonia in the receiving water.

To convert the chronic ammonia WQO to an equivalent total ammonia concentration, the median ammonia fraction is used. To convert the acute ammonia WQO to an equivalent total ammonia concentration, the 90th percentile ammonia fraction is used.

At Alameda, the closest Regional Monitoring Program station for receiving water, the observed maximum total ammonia concentration (as N) that includes both ammonia and the ammonium ion is 0.22 mg/L. The observed median concentration at this station was 0.11 mg/L. The WQO for ammonia has been calculated at 1.10 mg/L for chronic toxic effects and 11.55 mg/L for acute toxic effects.

- ii. *RPA Results.* This Order establishes effluent limitations for ammonia because the MEC of 40 mg/L exceeds the governing WQC of 1.1 mg/L, demonstrating reasonable potential by Trigger 1, as defined previously.
- iii. *WQBELs.* WQBELs for ammonia, calculated according to SIP procedures, are 190 mg/L and 290 mg/L, the AMEL and MDEL, respectively. These limitations are based on a dilution ratios of 51:1 (acute) and 231:1 (chronic) and a CV of 6.6.
- iv. *Immediate Compliance Feasible.* Statistical analysis of effluent data for ammonia collected over the period of January 2005 through September 2007, show that the 95th percentile (36.4 mg/L) is less than the AMEL (190 mg/L); the 99th percentile (38.6 mg/L) is less than the MDEL (290 mg/L). The Regional Water Board concludes, therefore, that immediate compliance with final effluent limitations for ammonia is feasible.
- v. *Anti-backsliding/Antidegradation.* Anti-backsliding and antidegradation requirements are satisfied, as the previous Order did not establish effluent limitations for ammonia.

(11) Tributyltin

- i. *WQC.* The Basin Plan contains a narrative WQO for toxicity: "All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms." This narrative WQO applies to tributyltin because it is a highly toxic biocide that is a problem in the aquatic environment. USEPA has developed water quality criteria (for freshwater and saltwater) for tributyltin through its authority under Section 304(a) of the Clean Water Act [*Ambient Aquatic Life Water Quality Criteria for Tributyltin (TBT) – Final EPA-822-031 December 2003*]. The Regional Water Board used these criteria to translate the narrative objective for purposes of completing the RPA and calculating numeric limits. The narrative toxicity objective is thereby expressed as 0.0074 µg/L for chronic toxic effects and 0.042 µg/L for acute toxic effects.
- ii. *RPA Results.* This Order establishes effluent limitations for tributyltin because the MEC of 0.011 µg/L exceeds the WQC of 0.0074 µg/L, demonstrating reasonable potential by Trigger 1, as defined previously.

- iii. *WQBELs*. Final WQBELs for tributyltin, calculated according to SIP procedures, are 0.032 µg/L and 0.065 µg/L for the AMEL and MDEL, respectively. These limitations are based on a minimum initial dilution of 10 to 1 and a default CV of 0.60.
- iv. *Immediate Compliance Feasible*. With insufficient effluent data to determine the distribution of the effluent data set or to calculate a mean and standard deviation, feasibility to comply with final effluent limitations is determined by comparing the MEC (0.011 µg/L) to the AMEL (0.053 µg/L) and the MDEL (0.11 µg/L). Based on this comparison, the Regional Water Board concludes that the the Discharger can comply with final WQBELs for tributyltin.
- v. *Anti-backsliding/Antidegradation*. Anti-backsliding and antidegradation requirements are satisfied, as the previous Order did not establish final effluent limitations for tributyltin.

e. Final Effluent Limitation Calculations

The following table summarizes the WQBELs calculated for each toxic and priority pollutant determined to have reasonable potential to cause or contribute to exceedances of the WQOs or WQC.

Table F-21. Effluent Limit Calculations

PRIORITY POLLUTANTS Units	Copper		Lead	Mercury	Silver	Zinc
	µg/L		µg/L	µg/L	µg/L	µg/L
Basis and Criteria type	BP & CTR SW Aquatic Life	Alternate limits using SSO)	BP & CTR SW Aquatic Life	BP SW Aq Life	CTR SW Aquatic Life	CTR SW Aq Life
CTR Criteria -Acute	5.5	----	221	2.1	2.2	95
CTR Criteria -Chronic	4.2	----	8.5	0.025	----	86
SSO Criteria -Acute (December 2004) (Diss.)		3.9				
SSO Criteria -Chronic (December 2004) (Diss.)		2.5				
Water Effects ratio (WER)	2.4	2.4	1	1	1	1
Lowest WQO	4.2		8.5	0.025	2.2	86
Site Specific Translator - MDEL	0.88	0.88				
Site Specific Translator - AMEL	0.74	0.74				
Dilution Factor (D) (if applicable)	9	9	9	0	9	9
No. of samples per month	4	4	4	4	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	Y	Y	Y
HH criteria analysis required? (Y/N)	N	N	N	Y	N	N
Applicable Acute WQO	13.09	10.64	221	2.1	2.2	95.1
Applicable Chronic WQO	10.05	8.11	8.52	0.025		85.6
HH criteria	----	----	----	0.05	----	----
Background (Maximum Conc for Aquatic Life calc)	2.55	2.55	0.80	0.0086	0.052	5.1
Background (Average Conc for Human Health calc)	----	----	----	0.0022	----	----
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	N	N	N	Y	N	N
ECA acute	108.0	83.4	2201	2.1	21.9	905.5
ECA chronic	77.6	58.1	77.9	0.025	No Chr. WQO	810.34
ECA HH				0.05		
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	N	N	N	N
Avg of effluent data points	7.96	7.96	1.96	0.011	0.27	37
Std Dev of effluent data points	2.05	2.05	1.99	0.0054	0.69	19
CV calculated	0.26	0.26	1.01	0.49	2.58	0.51
CV (Selected) - Final	0.26	0.26	1.01	0.49	2.58	0.51
ECA acute mult99	0.57	0.57	0.202	0.376	0.10	0.366
ECA chronic mult99	0.75	0.75	0.369	0.585	0.16	0.575
LTA acute	61.80	47.75	444.247	0.790	2	331.314
LTA chronic	58.04	43.48	28.78	0.015		465.67
minimum of LTAs	58.04	43.48	28.78	0.015	2.19	331
AMEL mult95	1.2	1.2	2.0	1.5	3.1	1.5
MDEL mult99	1.8	1.8	5.0	2.7	10	2.7
AMEL (aq life)	71	53	56	0.02	6.8	490
MDEL(aq life)	100	76	140	0.04	22	910
MDEL/AMEL Multiplier	1.43	1.43	2.53	1.83	3.20	1.86
AMEL (human hlth)				0.051		
MDEL (human hlth)				0.094		
minimum of AMEL for Aq. life vs HH	71	53	56	0.021	7	490
minimum of MDEL for Aq. Life vs HH	100	76	143	0.039	22	910
Current limit in permit (30-day average)	-----	-----	36	0.087 (interim)	12	490
Current limit in permit (daily maximum)	37 (interim)	37 (interim)	89	-----	22	720
Final limit - AMEL	71	53	36	0.021	7	490
Final limit - MDEL	100	76	89	0.039	22	720
Max Eff Conc (MEC)	16	16	15	0.026	5.8	180

Table F-21. Effluent Limit Calculations (Continued)

PRIORITY POLLUTANTS Units	Cyanide µg/L		Dioxin TEQ µg/L	Tetrachloro ethylene µg/l	Bis(2- Ethylhexyl) Phthalate µg/l	Tributyltin µg/l
	NTR Criterion for the Bay	Alternate Limits Using Proposed SSOs	CTR HH	CTR HH	CTR HH	BP SW Aq Life
Basis and Criteria type						
CTR Criteria -Acute	1.0	9.4	----	----	----	0.42
CTR Criteria -Chronic	1.0	2.9	----	----	----	0.0074
SSO Criteria -Acute (December 2004) (Diss.)						
SSO Criteria -Chronic (December 2004) (Diss.)						
Water Effects ratio (WER)	1	1	1	1	1	1
Lowest WQO	1.0	1.0	1.4E-08	8.9	5.9	0.007
Site Specific Translator - MDEL						
Site Specific Translator - AMEL						
Dilution Factor (D) (if applicable)	50	9	0	9	9	9
No. of samples per month	4	4	4	4	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y	N	N	N	Y
HH criteria analysis required? (Y/N)	Y	Y	Y	Y	Y	N
Applicable Acute WQO	1	9.4				0.42
Applicable Chronic WQO	1	2.9				0.007
HH criteria	220,000	220,000	1.40E-08	8.85	5.9	
Background (Maximum Conc for Aquatic Life calc)	0.4	0.4	7.10E-08	0.05	0.5	0.001
Background (Average Conc for Human Health calc)	0.4	0.4	5.00E-08	0.05	0.5	
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	N	N	Y	N	N	N
ECA acute	31	90.4				4.19
ECA chronic	31	25.4				0.065
ECA HH	1.1E+07	2.2E+6	1.40E-08	88.05	54.5	
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	N	N	N	Y
Avg of effluent data points	2.43	2.43	3.9E-08	1.8	2.15	
Std Dev of effluent data points	1.57	1.57	1.1E-07	2.4	1.66	
CV calculated	0.65	0.65	2.88	1.36	0.77	N/A
CV (Selected) - Final	0.65	0.65	2.88	1.36	0.77	0.60
ECA acute mult99	0.30	0.30				0.321
ECA chronic mult99	0.50	0.50				0.527
LTA acute	9.33	27.20				1.346
LTA chronic	15.64	12.81				0.03428
minimum of LTAs	9.33	13				0.03428
AMEL mult95	1.60	1.60	3.3	2.3	1.7	1.6
MDEL mult99	3.3	3.3	10.6	6.4	3.9	3.1
AMEL (aq life)	14.91	20				0.05
MDEL(aq life)	31	43				0.11
MDEL/AMEL Multiplier	2.1	2.1	3.2	2.8	2.3	2.0
AMEL (human hlth)	1.1E+07	2.2E6	1.4E-08	88	55	
MDEL (human hlth)	2.3E+07	4.6E6	4.5E-08	250	120	
minimum of AMEL for Aq. life vs HH	15	20	1.4E-08	88	54.5	0.053
minimum of MDEL for Aq. Life vs HH	31	43	4.5E-08	250	120	0.11
Current limit in permit (30-day average)	----	----	----	----	----	----
Current limit in permit (daily maximum)	----	----	----	----	----	----
Final limit - AMEL	15	20	1.4E-08	88	55	0.05
Final limit - MDEL	31	43	4.5E-08	250	120	0.11
Max Eff Conc (MEC)	11	11	4.8E-07	9.3	6.8	0.011

Table F-21. Effluent Limit Calculations (Continued)

PRIORITY POLLUTANTS	Total Ammonia, acute mg/L	Total Ammonia, chronic mg/L
Units		
Basis and Criteria type	BP SW Aq Life	BP SW Aq Life
CTR Criteria -Acute	11.55	
CTR Criteria -Chronic		1.10
SSO Criteria -Acute (December 2004) (Diss.)		
SSO Criteria -Chronic (December 2004) (Diss.)		
Water Effects ratio (WER)	1	1
Lowest WQO	11.55	1.10
Site Specific Translator - MDEL		
Site Specific Translator - AMEL		
Dilution Factor (D) (if applicable)	50	230
No. of samples per month	4	30
Aquatic life criteria analysis required? (Y/N)	Y	Y
HH criteria analysis required? (Y/N)	N	N
Applicable Acute WQO	11.55	
Applicable Chronic WQO		1.10
HH criteria		
Background (Maximum Conc for Aquatic Life calc)	0.22	0.11
Background (Average Conc for Human Health calc)		
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	N	N
ECA acute	578	
ECA chronic		229
ECA HH		
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	Y	Y
Avg of effluent data points	29	29
Std Dev of effluent data points	6.9	6.9
CV calculated	0.23	0.23
CV (Selected) - Final	0.23	0.23
ECA acute mult99	0.61	
ECA chronic mult99		0.77
LTA acute	350	
LTA chronic		176
minimum of LTAs	350	176
AMEL mult95	1.2	1.07
MDEL mult99	1.65	1.65
AMEL (aq life)	420	188
MDEL(aq life)	578	290
MDEL/AMEL Multiplier	1.38	1.54
AMEL (human hlth)		
MDEL (human hlth)		
minimum of AMEL for Aq. life vs HH	420	190
minimum of MDEL for Aq. Life vs HH	58	290
Current limit in permit (30-day average)	--	--
Current limit in permit (daily maximum)	--	--
Final limit - AMEL	420	190
Final limit - MDEL	580	290
Max Effl Conc (MEC)	40	40

5. Chlorine

The instantaneous maximum limitation for chlorine of 0.0 mg/L is being retained by this Order. This limitation is required by the Basin Plan (Table 4-2).

6. Whole Effluent Acute Toxicity

- a. *Permit Requirements.* This Order includes effluent limits for discharge during dry weather from the Southeast Plant for whole-effluent acute toxicity that are unchanged from the previous Order and are based on the Basin Plan Section 4.5.5. All bioassays shall be performed according to the USEPA approved method in 40 CFR Part 136, currently “Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 5th Edition.” The Discharger is required to use the 5th Edition method for compliance determination upon the effective date of this Order. The previous Order required the Discharger to use the “Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 3rd Edition” from permit adoption until June 30, 2003 using 3-spined sticklebacks. From July 1, 2003 to permit expiration, the Discharger was required to use the “Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 4rd Edition” using fathead minnows or rainbow trout.
- b. *Compliance History.* The Discharger’s acute toxicity monitoring data from 2003 – 2006 show that there were no exceedances of the effluent limitations during the permit term, with fish survival rates ranging between 75 to 100%.
- c. *Ammonia Toxicity.* If acute toxicity is observed in the future and the Discharger believes that it is due to ammonia toxicity, this has to be shown through a Toxicity Identification Evaluation (TIE) acceptable to the Executive Officer. If the Discharger demonstrates to the satisfaction of the Executive Officer that exceedance of the acute toxicity limits is caused by ammonia and that the discharge is in compliance with the ammonia effluent limits, then such toxicity does not constitute a violation of this effluent limit. If ammonia toxicity is verified in the TIE, the Discharger may utilize an adjustment protocol approved by the Executive Officer for the routine bioassay testing.

7. Whole Effluent Chronic Toxicity

- a. *Permit Requirements.* This Order includes requirements for chronic toxicity monitoring for discharge during dry weather from the Southeast Plant based on Section 4.5.5 of the Basin Plan, and in accordance with USEPA and State Water Board Task Force guidance. This Order 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) as necessary. The Order requirements for chronic toxicity are also consistent with the CTR and SIP requirements.

- b. *Chronic Toxicity Triggers.* This Order includes chronic toxicity triggers of 10 chronic toxicity units (TUC¹) for a three-sample median and 20 TUC for single sample maximum, consistent with Table 4-5 of the Basin Plan for dischargers monitoring chronic toxicity quarterly.
- c. *Monitoring History.* The Discharger’s chronic toxicity monitoring data show that there were no exceedances of the trigger between 2003 and 2006.
- d. *Screening Phase Study.* The Discharger is required to conduct a chronic toxicity screening study as described in Appendix E-1 to the Monitoring and Reporting Program (Attachment E).
- e. *Permit Re-opener.* The Regional Water Board will consider amending this Order to include numeric toxicity limits if the Discharger fails to aggressively implement all reasonable control measures included in its approved TRE workplan, following detection of consistent significant non-artifactual toxicity.

D. Final Effluent Limitations

1. Following is a summary of the technology-based effluent limitations established by this Order for dry weather discharges from the Southeast Plant (Discharge Point 001).

Table F-22. Summary of Technology-Based Effluent Limitations - Discharge Point 001 (Dry Weather)

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand (5-day @ 20 Deg. C) (BOD ₅)	mg/L	30	45	--	--	--
Total Suspended Solids (TSS)	mg/L	30	45	--	--	--
Oil and Grease	mg/L	10	--	20	--	--
pH	standard units	--	--	--	6.0	9.0
Chlorine, Total Residual	mg/L	--	--	--	--	0.0

The Discharger shall also comply with the following effluent limitations.

- **BOD₅ and TSS 85% Percent Removal:** The average monthly percent removal of BOD₅ and TSS shall not be less than 85 percent.
- **Fecal Coliform Bacteria:** The treated wastewater shall meet the following limits of bacteriological quality.
 - The 30-day moving median value for fecal coliform density in final effluent samples shall not exceed 500 CFU or MPN/100 mL; and

¹ 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 limits for chronic toxicity.

- No more than 10% of the samples in any 30-day period equal or exceed 1,100 CFU or MPN/100 mL.
 - **Enterococci Bacteria:** The monthly geometric mean enterococci bacteria density shall not exceed 35 MPN/100 mL.
2. Following is a summary of the water quality-based effluent limitations established by this Order for Discharge Point 001 during dry weather.

Table F-23. Effluent Limitations - Toxic Pollutants – Discharge Point 001 (Dry Weather)

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Copper ^[1]	µg/L	71	--	100	--	--
Lead	µg/L	36	--	89	--	--
Mercury ^{[2] [3][4]}	µg/L	0.021	--	0.039	--	--
Silver	µg/L	7	--	22	--	--
Zinc	µg/L	490	--	720	--	--
Cyanide ^[5]	µg/L	15	--	31	--	--
Dioxin – TEQ ^[6]	mg/year	^[7]	--	⁽⁷⁾	--	--
Tetrachloroethylene	µg/L	84	--	240	--	--
Bis(2-ethylhexyl)phthalate	µg/L	55	--	110	--	--
Ammonia	mg/L	190	--	290	--	--
Tributyltin	µg/L	0.032	--	0.065	--	--

^[1] If a copper SSO for the receiving water becomes legally effective, resulting in adjusted saltwater Criterion Continuous Concentration of 2.5 µg/L and Criterion Maximum Concentration (CMC) of 3.9 µg/L as documented in the *North of Dumbarton Bridge Copper and Nickel Site-Specific Objective (SSO) Derivation (Clean Estuary Partnership December 2004)*, upon its effective date, the following limitations shall supersede those copper limitations listed in Table 7. AMEL of 53 µg/L, and MDEL of 76 µg/L. If a different copper SSO for the receiving water is adopted, the alternate WQBELs based on the SSO will be determined after the SSO effective date.

^[2] The Order also includes a mercury mass emission limit of 0.13 kg/month.

^[3] Alternate Effluent Limitations for Mercury
 a. If a mercury Total Maximum Daily Load (TMDL) for San Francisco Bay becomes legally effective, resulting in the issuance of wasteload allocations, upon its effective date, implementation of the mercury TMDL through the Mercury Watershed Permit shall supersede those mercury limitations listed here.
 b. If a different mercury water quality objective and TMDL is adopted, the alternate WLA based on the TMDL and WQO will be determined after the water quality objective and TMDL effective date.

^[4] Alternate Effluent Limitations for Mercury, If a mercury watershed permit becomes effective that includes effluent limitations that implement a San Francisco Bay Mercury TMDL, that permit shall supersede these mercury limitations.

^[5] If a cyanide SSO for the receiving water becomes legally effective, resulting in adjusted saltwater Criterion Continuous Concentration of 2.9 µg/L (based on the Basin Plan Amendment, approved by the Regional Water Board, Resolution R2-2006-0086), upon its effective date, the following limitations shall supersede those cyanide limitations listed in Table 7. AMEL of 20 µg/L, and MDEL of 43 µg/L. If a different cyanide SSO for the receiving water is adopted, the alternate WQBELs based on the SSO will be determined after the SSO effective date.

^[6] The limit for this pollutant becomes effective according to the compliance schedule described in VI.C.4 of the Order. The final limitation for dioxin-TEQ shall become effective June 30, 2012. Compliance with the dioxin-TEQ effluent limitation may be demonstrated by implementation of a dioxin-TEQ mass offset program. Such a program must be approved at a hearing of the Regional Water Board through a Board Order amending this Order.

^[7] The dioxin-TEQ limit is 1.6 mg/year. Compliance to be based on the product of the average concentration in samples collected and the annual dry weather flow.

- **Acute Toxicity.** The Discharger shall comply with the following limitations for whole effluent, acute toxicity.

11 sample median: A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit, if five or more of the past 10 or less bioassay tests show less than 90 percent survival.

90th percentile: 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 less bioassay tests show less than 70 percent survival.

- **Chronic Toxicity.** Basin Plan’s narrative toxicity objective.

3. Following is a summary of the technology-based effluent limitations established by this Order for wet weather discharges from Discharge Point Nos. 001 (wet weather) and 002 through 006.

Table F-24. Summary of Technology-Based Effluent Limitations - Discharge Points 001 (Wet Weather) and 002 through 006

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Chlorine, Total Residual	mg/L	--	--	--	--	0.0

The Discharger shall also comply with the following effluent limitations.

- **Fecal Coliform Bacteria:** The treated wastewater shall meet the following limits of bacteriological quality.
 - The 30-day moving median value for fecal coliform density in final effluent samples shall not exceed 500 CFU or MPN/100 mL; and
 - No more than 10% of the samples equal or exceed 1,100 CFU or MPN /100 mL.
- **Enterococci Bacteria:** In samples of treated wastewater the enterococci bacteria density shall not exceed 104 MPN/100 mL.

E. Compliance Schedules

- The SIP and the Basin Plan authorize compliance schedules in a permit if an existing Discharger cannot immediately comply with a new and more stringent effluent limitation. Compliance schedules for limitations derived from CTR or the NTR WQC are based on Section 2.2 of the SIP, and compliance schedules for limitations derived from Basin Plan WQOs and the NTR are based on the Basin Plan. Both the SIP and the Basin Plan require the Discharger to demonstrate the

infeasibility of achieving immediate compliance with the new limitation to qualify for a compliance schedule.

The SIP and Basin Plan require the following documentation to be submitted to the Regional Water Board to support a finding of infeasibility:

- Descriptions of diligent efforts the Discharger has made to quantify pollutant levels in the discharge, sources of the pollutant in the waste stream, and the results of those efforts.
 - Descriptions of source control and/or pollutant minimization efforts currently under way or completed.
 - A proposed schedule for additional or future source control measures, pollutant minimization, or waste treatment.
 - A demonstration that the proposed schedule is as short as practicable.
- b. The Basin Plan provides for a 10-year compliance schedule to implement measures to comply with new standards as of the effective date of those standards. This provision applies to the objectives adopted in the 2004 Basin Plan Amendment. Additionally, the provision authorizes compliance schedules for new interpretations of other existing standards if the new interpretation results in more stringent limitations.
- c. As previously described, the Discharger submitted a Dioxins Feasibility Assessment, and the Regional Water Board staff concurred with the general assertions. Based on this, a compliance schedule is appropriate for dioxin-TEQ because the Discharger has made good faith and reasonable efforts towards characterizing the sources and considering what actions would be necessary to mitigate these sources. Time, to allow additional efforts to achieve compliance, is necessary.
- d. Maximum compliance schedules are reasonable and as soon as possible for dioxin-TEQ because of the considerable uncertainty in determining effective measures that should be implemented to ensure compliance with final limits. In the Regional Water Board's view, it is appropriate to allow the Discharger sufficient time to first explore source control and then plan and implement other options such as a mass offset program or treatment plant modifications. Treatment plant modifications would likely be the most costly option to adopt. This phased approach is supported by the Basin Plan (section 4.13), which states, "In general, it is often more economical to reduce overall pollutant loading into treatment systems than to install complex and expensive technology at the plant."
- e. The previous Order provided a compliance schedule for compliance with the final dioxin-TEQ effluent limitations, and required compliance with the effluent limitations by June 30, 2012. This Order will carry-over the June 30, 2012 compliance date for compliance with the dioxin-TEQ effluent limitations.

F. Land Discharge Specifications

Not Applicable

G. Reclamation Specifications

Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

Receiving water limitations V.A.1 and V.A.2. (conditions to be avoided) are retained from the previous Order but edited to more closely reflect water quality objectives for the physical, chemical, and biological characteristics of receiving waters established in Chapter 3 of the Basin Plan.

B. Groundwater

Not Applicable

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

The principal purposes of a monitoring program by a discharger are to:

- Document compliance with waste discharge requirements and prohibitions established by the Regional Water Board,
- Facilitate self-policing by the discharger in the prevention and abatement of pollution arising from waste discharge,
- Develop or assist in the development of limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards, and to
- Prepare water and wastewater quality inventories.

The MRP is a standard requirement in almost all NPDES permits issued by the Regional Water Board, including this Order. It contains definitions of terms, specifies general sampling and analytical protocols, and sets out requirements for reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and Regional Water Board's policies. The MRP also defines the sampling stations and frequency, the pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are specified. Monitoring for additional constituents, for which no effluent limitations are established, is also required to provide data for future completion of RPAs for them.

A. Influent Monitoring

1. Southeast Plant

Influent monitoring requirements (sample type and monitoring frequency) are unchanged and are retained from the previous Order. Periodic monitoring for BOD₅ (once per week) and TSS (five times per week) in the influent, and continuous monitoring of the influent flow, allows determination of compliance with this Order's 85 percent removal requirement at the Southeast Plant.

The Order retains the influent monitoring location, but revises the naming convention to be consistent with recent State Water Board guidelines (Monitoring Location A-001 is renamed INF-001).

2. North Point Wet Weather Facility

Influent monitoring requirements (sample type and monitoring frequency) are essentially retained from the previous Order, including continuous monitoring of the influent flow (as indicated in Attachment E, Monitoring and Reporting Program).

The Order retains the influent monitoring location, but revises the naming convention to be consistent with recent State Water Board guidelines (Monitoring Location A-002 is renamed INF-002).

B. Effluent Monitoring

1. Southeast Plant

The previous Order established four effluent monitoring locations; two, E-001 and E-001-D, for discharges through Discharge Point 001 during dry and wet weather; and two, E-002 and E-002-D, for discharges during wet weather through Discharge Point 002 (Islais Creek).

- E-001 represented effluent from the Southeast Plant after chlorination but prior to the point of discharge into Lower San Francisco Bay. This location was used under both dry and wet weather discharge conditions. The Order retains the effluent monitoring location, but revises the naming convention to be consistent with recent State Water Board guidelines (Monitoring Location E-001 is renamed EFF-001A for discharges during dry weather and EFF-001B for discharges during wet weather).
- E-001-D represented any point in the disinfection facilities where adequate contact with the disinfectant is assured. The Order retains the effluent monitoring location, but revises the naming convention to be consistent with recent State Water Board guidelines (Monitoring Location E-001-D is renamed EFF-001D).
- E-002 represented effluent from the Southeast Plant after chlorination but prior to the point of discharge into Islais Creek. This location is used only under wet weather discharge conditions. The Order retains the effluent monitoring location, but revises the naming convention to be consistent with recent State Water Board guidelines (Monitoring Location E-002 is renamed EFF-002).
- E-002-D represented any point in the disinfection facilities where adequate contact with the disinfectant is assured. This location is used only under wet weather discharge conditions. The Order retains the effluent monitoring location, but revises the naming convention to be consistent with recent State Water Board guidelines (Monitoring Location E-002-D is renamed EFF-002D).

The previous Order required effluent monitoring for all constituents except chlorine residual and fecal coliform at location EFF-001A; monitoring for residual chlorine and fecal coliform were required at monitoring location EFF-001D.

This Order adds monitoring for enterococci at the same location and frequency as monitoring for fecal coliform. In addition the Order adds monitoring for tetrachlorethylene and ammonia. Sampling for 4,4-DDE and dieldrin are no longer required as these pollutants were not present in the effluent at concentrations with a reasonable potential to cause or contribute to exceedances of applicable water quality objectives. Sampling frequencies and locations and analytical methods are specified in Attachment E to the Order, Monitoring and Reporting Program.

2. North Point Wet Weather Facility

The previous Order established effluent monitoring during wet weather for discharges from the North Point Wet Weather Facility through Discharge Point Nos. 003 through 006 into the Central San Francisco Bay. The specific monitoring locations that are included in this Order are described below:

- Monitoring Location EFF-003 representing any point in the facility system between the points of discharge to Pier 33 (Discharge Points 003 and 004) and to Pier 35 (Discharge Points 005 and 006) and the point at which all waste tributary to these outfalls is present.

The MRP essentially retains effluent monitoring frequency (as indicated in Attachment E, Monitoring and Reporting Program) and sample type requirements from the previous Order for Monitoring Location EFF-003.

C. Whole Effluent Toxicity Testing Requirements

1. Acute Toxicity. Monthly 96-hour bioassay testing is required at Discharge Point 001 (Monitoring Location EFF-001A) during dry weather to demonstrate compliance with the effluent limitation for acute toxicity. This requirement is carried over from the previous Order.
2. Acute Toxicity. Monthly 96-hour static bioassay testing during wet weather is required at Discharge Points 002 through 006 (Monitoring Locations EFF-001B, EFF-002 and EFF-003) to monitor wet weather effluent acute toxicity. This requirement is carried over from the previous Order.
3. Chronic Toxicity. Chronic whole effluent toxicity testing is required twice annually from Monitoring Location EFF-001A to demonstrate compliance with the Basin Plan's narrative toxicity objective. This requirement is carried over from the previous Order.

D. Receiving Water Monitoring

1. Shoreline Stations

The previous Order established shoreline monitoring stations at the following locations:

- S-202.4 - Crissy Field (east of Lagoon)
- S-202.5 - Crissy Field west-beach
- S-210.1 - Aquatic Park
- S-211 - Aquatic Park Beach East End
- S-300.1 - Candlestick Point SRA (Sunnydale Cove Beach)
- S-301.1 - Candlestick Point SRA (Windsurfer Circle)
- S-301.2 - Candlestick Point SRA (Jack Rabbit Beach)

The MRP retains shoreline monitoring frequency (weekly) and sample type requirements from the previous Order for the shoreline monitoring locations for fecal coliform and enterococci. Alternatively, the Discharger may measure *E. coli* in lieu

of monitoring for fecal coliform monitoring in accordance with USEPA Beach Monitoring Program protocol. Shoreline station 202.2 is replaced with new shoreline station 202.5 at the west end of Crissy Field Beach (“Baby Beach”) where water contact recreation is common.

2. Regional Monitoring Program

On April 15, 1992, the Regional Water 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, Regional Water 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 responded to this request by participating in a collaborative effort, through the San Francisco Estuary Institute. This effort has come to be known as the San Francisco Bay Regional Monitoring Program for Water Quality. 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.

E. Other Monitoring Requirements

1. Bypasses or Sanitary Sewer Overflow Monitoring

The MRP includes monitoring requirements for selected parameters and to record observations related to dry weather treatment plant bypasses. The MRP also includes tracking requirements for sanitary sewer overflows as indicated in the State Water Board WDR for Sanitary Sewer Systems.

2. Sludge Monitoring

The Discharger is required to adhere to sludge monitoring requirements required by 40 CFR Part 503.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions (Provision VI.A)

Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR §122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR §122.42, are provided in Attachment D. The Discharger must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR §122.42.

40 CFR §§122.41(a)(1) and (b) - (n) establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. 40 CFR §123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 CFR §123.25, this Order omits federal conditions that address enforcement authority specified in 40 CFR §§122.41 (j)(5) and (k)(2), because the enforcement authority under the California Water

Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Monitoring and Reporting Requirements (Provision VI.B)

The Discharger is required to conduct monitoring of the permitted discharges in order to evaluate compliance with permit conditions. Monitoring requirements are contained in the MRP (**Attachment E**), Standard Provisions and SMP, Part A (**Attachment G**) of the Order. This provision requires compliance with these documents and is based on 40 CFR §122.63. The Standard Provisions and SMP, Part A, are standard requirements in almost all NPDES permits issued by the Regional Water Board, including this Order.

C. Special Provisions (Provision VI.C)

1. Re-opener Provisions

These provisions are based on 40 CFR Part 123 and allow future modification of this Order and its effluent limitations as necessary in response to updated WQOs that may be established in the future.

2. Special Studies and Additional Monitoring Requirements

- a. Effluent Characterization Study. This Order does not include effluent limitations for the selected constituents addressed in the August 6, 2001 Letter that do not demonstrate reasonable potential, but this provision requires the Discharger to continue monitoring for these pollutants using methods described in the August 6, 2001 Letter and as specified in the MRP 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 reasonable potential to cause or contribute to an excursion above the applicable WQO/WQC. This provision is based on the Basin Plan and the SIP.
- b. Ambient Background Receiving Water Study. This provision is based on the Basin Plan, the SIP, and the August 6, 2001 Letter for priority pollutant monitoring. As indicated in the Order, this requirement may be met by participating in the collaborative BACWA study.
- c. Optional Mass Offset Plan. This option is provided to encourage the Discharger to further implement aggressive reduction of mass loads to Lower San Francisco Bay. If the Discharger wishes to pursue a mass offset program, a mass offset plan for reducing 303(d) listed pollutants to the same receiving water body needs to be submitted for Regional Water Board approval. The Regional Water Board will consider any proposed mass offset plan and may amend this Order accordingly.

To a great extent, dioxin-TEQ enters the combined sewer system as stormwater or runoff flows over impervious surfaces where dioxin-TEQ exists as a result of air deposition. The influx of dioxin-TEQ to the sewer system can be mitigated by reducing the amount of stormwater that flows over impervious surfaces before

entering the combined sewer system. An offset can be achieved by using stormwater controls such as stormwater cisterns, living roofs, rain gardens, grassy swales, planter boxes, and pervious pavement. In cases of new construction this can be implemented through programs known as Low Impact Development (LID). To qualify for a mass offset, such stormwater controls will likely need to be above and beyond those required by the Nine Minimum Controls described in the Provision VI.C.7.b of this Order.

3. Best Management Practices and Pollution Minimization Program

This provision is based on Chapter 4 of the Basin Plan and Sections 2.2.1 and 2.4.5 of the SIP. This Order requires continued implementation of the Discharger's Pollution Minimization and Prevention Program.

4. Requirement to Ensure Compliance Schedules with Final Limits

This provision is based on the Basin Plan Section 4.7.6 (Compliance Schedules) and 40 CFR §122.47(a)(3). For dioxin-TEQ maximum allowable compliance schedules are granted to the Discharger because of the considerable uncertainty in determining an effective measure such as pollution prevention and stormwater management controls that should be implemented to ensure compliance with final limits. It is appropriate to allow the Discharger sufficient time to first explore source control measures before requiring it to propose further actions that are likely to be much more costly. This approach is supported by the Basin Plan Section 4.13 (Pretreatment and Pollution Prevention) which states: "In general, it is often more economical to reduce overall pollutant loading into treatment systems than to install complex and expensive technology at the plant." Finally, for dioxin-TEQ, because of the ubiquitous nature of the sources of this pollutant, the provision also allows the Discharger to address compliance with calculated WQBELs through other strategies such as mass offset.

5. Construction, Operation, and Maintenance Specifications

- a. Wastewater Facilities, Review and Evaluation, Status Reports: This provision is based on the previous Order and the Basin Plan. See Section VI.C.5.a of this Order for specific requirements.
- b. Operations and Maintenance Manual, Review and Status Reports: This provision is based on the Basin Plan, the requirements of 40 CFR Part 122, and the previous Order. See Section VI.C.5.b of this Order for specific requirements.
- c. Contingency Plan, Review and Status Reports: This provision is based on the Basin Plan, the requirements of 40 CFR Part 122, and the previous Order. See Section VI.C.5.c of this Order for specific requirements.

6. Special Provisions for Municipal Facilities (POTWs Only)

- a. Pretreatment Program Requirements: This provision requires the Discharger to implement and enforce its approved pretreatment program in accordance with Federal pretreatment regulations (40 CFR Part 403).
- b. Sludge Management Practices Requirements: This provision is based on the Basin Plan (Chapter IV) and 40 CFR Parts 257 and 503.
- c. Sanitary Sewer Overflows and Sewer System Management Plan: The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ (General Order) on May 2, 2006. The General Order requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), among other requirements and prohibitions. Furthermore, the General Order contains requirements for operation and maintenance of sanitary sewer collection systems and for reporting and mitigating sanitary sewer overflows.

The Discharger's collection system is predominantly a combined sewer system that is not subject to the State Water Board Sanitary Sewer General WDR. Portions of the collection system are, however, separate, i.e., they are sanitary sewer systems, and these portions are subject to the General Order.

7. CSO Controls

The USEPA *Combined Sewer Overflow Control Policy* (59 FR 18688) regulates the operation of combined sewer systems. The Regional Water 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 requirements to implement the combined sewer system (CSS) control program in accordance with the USEPA *Combined Sewer Overflow Control Policy* are contained in this section.

- a. **CSS Operation and Maintenance Plan.** The previous Order required that the Discharger submit an Operations Plan for the CSS and then modify it as necessary during the life of the permit. This Order requires the plan be updated and submitted to the Regional Water Board for approval.
- b. **Nine Minimum Controls.** In the previous Order, the Discharger was required to comply with the Nine Minimum Controls required in the USEPA *Combined Sewer Overflow Control Policy*. The Nine Minimum Controls constitute the technology based minimum controls applicable to combined sewer flows. These are, in summary:

1. Proper operation and regular maintenance programs for the sewer system and the CSOs
2. Maximum use of the collection system for storage
3. Review and modification of pretreatment requirements to ensure CSO impacts are minimized
4. Maximization of flow to the publicly owned treatment works for treatment
5. Prohibition of CSOs during dry weather
6. Control of solid and floatable materials in CSOs
7. Pollution prevention
8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts
9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls

The previous Order required implementation of these controls through wet weather effluent performance criteria; this Order continues to require the wet weather performance criteria.

- Under the requirement to notify the public of overflows, the Discharger is required to update the June 19, 2006, Bayside Recreational Use Study of the bayside beaches and water use areas (Candlestick Point Recreation Area, Islais Creek and Mission Bay). This updated study will continue to provide the Regional Water Board with information necessary to assess the potential impact of CSOs on the public.
- Under the requirement to monitor to effectively characterize overflow impacts and the efficacy of CSO controls, the Discharger is required to expand on monitoring and characterization efforts initiated under the previous Order as reported by the Discharger in the June 19, 2006, Bayside Study to Effectively Characterize Overflow Impacts and the Efficacy of CSO Controls. The report submitted by the Discharger focused on the discharge of TSS as a means to evaluate the effectiveness of the wet weather treatment facilities (as compared to the treatment efficiency experienced in the primary sedimentation basins at the Southeast Plant). The results of this study showed comparable removals indicating adequate treatment for solids was occurring. However, the characterization of the potential impacts of CSOs was limited to evaluating the relationship between TSS levels and metals concentrations.

Evaluation of the data submitted by the Discharger as part of this study indicates relatively high concentrations of most metals and ammonia in each CSO monitored when compared to Basin Plan and CTR water quality

objectives. Although under the presumption approach to controlling CSOs, it is assumed that the capture and treatment of combined sewage to reduce the frequency of CSOs will be sufficient to achieve water quality objectives, the evaluation performed by the Discharger does not provide the Regional Water Board with adequate data and information to evaluate the overall effect of CSOs on the Bay. The evaluation also does not provide the Regional Water Board with data to assess the potential impacts from the wet weather discharges that occur through Discharge Point Nos. 001 through 006. Therefore this Order requires expansion of the previous monitoring study plan to incorporate the following additional requirements:

- Monitoring of wet weather discharges from select Discharge Points 009 through 043. Representative discharge points are 010, 029, and 033. Additional or other Discharge Points may be monitored depending on the discharge frequency and feasibility of sample collection.
- Expansion of the list of pollutants of concern to be monitored to include all CTR criteria appropriate for the protection of marine aquatic life.
- Develop an assessment of the environmental benefits provided by the existing stormwater treatment controls.

- c. **Long-Term Control Plan.** In conformance with the USEPA *Combined Sewer Overflow Control 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 Discharger's program exceeds the specifications of the USEPA *Combined Sewer Overflow Control Policy* Presumption Approach. The Discharger captures and provides treatment to 100% of the combined sewer flows rather than the 85% identified in option ii in the USEPA *Combined Sewer Overflow Control Policy*. As defined in the USEPA *Combined Sewer Overflow Control Policy*, the Discharger has no remaining untreated overflow events; the overflows that occur in San Francisco receive treatment (within the storage/transport) consisting of removal of floatables and settleable solids. The provisions in this Order require continued implementation of the long-term plan such that pollutant removal is maximized. This section specifies performance criteria for operating the CSS as was required in the previous Order.

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, the San Francisco Bay Regional Water Board, is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the City and County of San Francisco, San Francisco Public Utilities Commission, Southeast Water Pollution Control Plant, North Point Wet Weather Facility, and Bayside Wet Weather Facilities. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification of the Board hearing will be provided through a legal notice in The Recorder, San Francisco.

B. Written Comments

The staff determinations are tentative. Interested persons were invited to submit written comments concerning these tentative WDRs. Comments were to be submitted either in person or by mail or email to the Executive Officer or to Derek Whitworth at the Regional Water Board at the address on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Water Board, written comments were to be received at the Regional Water Board offices by 5:00 p.m. on December 19, 2007.

C. Public Hearing

The Regional Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: Wednesday, January 30, 2008
Time: 9:00 a.m.
Location: Elihu Harris State Office Building
1515 Clay Street, 1st Floor Auditorium
Oakland, CA 94612

Contact: Derek Whitworth, 510-622-2349, email DWhitworth@waterboards.ca.gov

Interested persons are invited to attend. At the public hearing, the Regional Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our Web address is <http://www.waterboards.ca.gov/sanfranciscobay> where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

E. Information and Copying

The Report of Waste Discharge (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling 510-622-2300.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Derek Whitworth at 510-622-2349, or email dwhitworth@waterboards.ca.gov .

FACT SHEET APPENDIX A

RPA CALCULATIONS – SOUTH EAST WATER QUALITY CONTROL PLANT

Table 1	Criteria (Table 1 in RPA spreadsheet)
Table 2	Data Input for RPA (Table 2 in RPA spreadsheet)
Table 3	Reasonable Potential Analysis Results (Table 8 in RPA spreadsheet)
Table 4	Water Quality Based Effluent Limits (Table 9 in RPA spreadsheet)
Table 5	Feasibility Evaluation (Table 10 in RPA spreadsheet)

ATTACHMENT G – REGIONAL WATER BOARD ATTACHMENTS

The following documents are part of this Order but are not physically attached due to volume. They are available on the Internet at:

<http://www.waterboards.ca.gov/sanfranciscobay/Download.htm>

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

ATTACHMENT H - PRETREATMENT REQUIREMENTS

Pretreatment Program Provisions

1. The Discharger shall implement all pretreatment requirements contained in 40 CFR 403, as amended. The Discharger shall be subject to enforcement actions, penalties, and fines as provided in the Clean Water Act (33 USC 135 et seq.), as amended. The Discharger shall implement and enforce their respective Approved Pretreatment Programs or modified Pretreatment Programs as directed by the Board's Executive Officer or the U.S. Environmental Protection Agency (USEPA). The USEPA and/or the State may initiate enforcement action against an industrial user for noncompliance with applicable standards and requirements as provided in the Clean Water Act.
2. The Discharger shall enforce the requirements promulgated under Sections 307(b), 307(c), 307(d) and 402(b) of the Clean Water Act. The Discharger shall cause industrial users subject to Federal Categorical Standards to achieve compliance no later than the date specified in those requirements or, in the case of a new industrial user, upon commencement of the discharge.
3. The Discharger shall perform the pretreatment functions as required in 40 CFR Part 403 and amendments or modifications thereto including, but not limited to:
 - a. Implement the necessary legal authorities to fully implement the pretreatment regulations as provided in 40 CFR 403.8(f)(1);
 - b. Implement the programmatic functions as provided in 40 CFR 403.8(f)(2);
 - c. Publish an annual list of industrial users in significant noncompliance as provided per 40 CFR 403.8(f)(2)(vii);
 - d. Provide for the requisite funding and personnel to implement the pretreatment program as provided in 40 CFR 403.8(f)(3); and
 - e. Enforce the national pretreatment standards for prohibited discharges and categorical standards as provided in 40 CFR 403.5 and 403.6, respectively.
4. The Discharger shall submit annually a report to the USEPA Region 9, the State Board and the Regional Water Board describing the Discharger's respective pretreatment program activities over the previous twelve months. In the event that the Discharger is not in compliance with any conditions or requirements of this permit, the Discharger shall also include the reasons for noncompliance and a plan and schedule for achieving compliance. The report shall contain, but is not limited to, the information specified in Appendix A entitled, "Requirements for Pretreatment Annual Reports," which is made a part of this Order. The annual report is due on the last day of February each year.
5. The Discharger shall submit semiannual pretreatment reports to the USEPA Region 9, the State Board and the Board describing the status of their respective significant industrial users (SIUs). The report shall contain, but not is limited to, the information specified in

Appendix B entitled, "Requirements for Semiannual Pretreatment Reports," which is made part of this Order. The semi annual reports are due July 31st (for the period January through June) and January 31st (for the period July through December) of each year. The Executive Officer may exempt a Discharger from the semiannual reporting requirements on a case-by-case basis subject to State Board and USEPA's comment and approval.

6. The Discharger may combine the annual pretreatment report with the semiannual pretreatment report (for the July through December reporting period). The combined report shall contain all of the information requested in Appendices A and B and will be due on January 31st of each year.
7. The Discharger shall conduct the monitoring of its treatment plant's influent, effluent, and sludge as described in Appendix C entitled, "Requirements for Influent, Effluent and Sludge Monitoring," which is made part of this Order. The results of the sampling and analysis, along with a discussion of any trends, shall be submitted in the semiannual reports. A tabulation of the data shall be included in the annual pretreatment report. The Executive Officer may require more or less frequent monitoring on a case-by-case basis.

APPENDIX A. REQUIREMENTS FOR PRETREATMENT ANNUAL REPORTS

The Pretreatment Annual Report is due each year on the last day of February. [If the annual report is combined with the semiannual report (for the July through December period) the submittal deadline is January 31st of each year.] The purpose of the Annual Report is 1) to describe the status of the Publicly Owned Treatment Works (POTW) pretreatment program and 2) to report on the effectiveness of the program, as determined by comparing the results of the preceding year's program implementation. The report shall contain at a minimum, but is not limited to, the following information:

1. Cover Sheet

The cover sheet must contain the name(s) and National Pollutant Discharge Elimination System (NPDES) permit number(s) of those POTW's that are part of the Pretreatment Program. Additionally, the cover sheet must include: the name, address and telephone number of a pretreatment contact person; the period covered in the report; a statement of truthfulness; and the dated signature of a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for overall operation of the POTW (40 CFR 403.12(j)).

2. Introduction

The Introduction shall include any pertinent background information related to the City/District/Agency, the POTW and/or the Industrial base of the area. Also, this section shall include an update on the status of any Pretreatment Compliance Inspection (PCI) tasks, Pretreatment Performance Evaluation tasks, Pretreatment Compliance Audit (PCA) tasks, Cleanup and Abatement Order (CAO) tasks, or other pretreatment-related enforcement actions required by the Regional Water Board or the USEPA. A more specific discussion shall be included in the section entitled, "Program Changes."

3. Definitions

This section shall contain a list of key terms and their definitions that the POTW uses to describe or characterize elements of its pretreatment program.

4. Discussion of Upset, Interference and Pass Through

This section shall include a discussion of Upset, Interference or Pass Through incidents, if any, at the POTW(s) that the Discharger knows of or suspects were caused by industrial discharges. Each incident shall be described, at a minimum, consisting of the following information:

- a. a description of what occurred;
- b. a description of what was done to identify the source;
- c. the name and address of the industrial user (IU) responsible;
- d. the reason(s) why the incident occurred;

- e. a description of the corrective actions taken; and
- f. an examination of the local and federal discharge limits and requirements for the purposes of determining whether any additional limits or changes to existing requirements may be necessary to prevent other Upset, Interference or Pass Through incidents.

5. Influent, Effluent and Sludge Monitoring Results

This section shall provide a summary of the analytical results from the “Influent, Effluent and Sludge Monitoring” as specified in Appendix C. The results should be reported in a summary matrix that lists monthly influent and effluent metal results for the reporting year.

A graphical representation of the influent and effluent metal monitoring data for the past five years shall also be provided with a discussion of any trends.

6. Inspection and Sampling Program

This section shall contain at a minimum, but is not limited to, the following information:

- a. Inspections: the number of inspections performed for each type of IU; the criteria for determining the frequency of inspections; the inspection format procedures;
- b. Sampling Events: the number of sampling events performed for each type of IU; the criteria for determining the frequency of sampling; the chain of custody procedures.

7. Enforcement Procedures

This section shall provide information as to when the approved Enforcement Response Plan (ERP) had been formally adopted or last revised. In addition, the date the finalized ERP was submitted to the Regional Water Board shall also be given.

8. Federal Categories

This section shall contain a list of all of the federal categories that apply to the POTW. The specific category shall be listed including the subpart and 40 CFR section that applies. The maximum and average limits for each category shall be provided. This list shall indicate the number of Categorical Industrial Users (CIUs) per category and the CIUs that are being regulated pursuant to the category. The information and data used to determine the limits for those CIUs for which a combined waste stream formula is applied shall also be provided.

9. Local Standards

This section shall include a table presenting the local limits.

10. Updated List of Regulated SIUs

This section shall contain a complete and updated list of the Discharger’s Significant Industrial Users (SIUs), including their names, addresses, and the reason why the SIU is

classified as “Significant.” The list shall include all deletions and additions keyed to the list as submitted in the previous annual report. All deletions shall be briefly explained.

11. Compliance Activities

- a. Inspection and Sampling Summary: This section shall contain a summary of all the inspections and sampling activities conducted by the Discharger over the past year to gather information and data regarding the SIUs. The summary shall include:
 - (1) The number of inspections and sampling events conducted for each SIU;
 - (2) the quarters in which these activities were conducted; and
 - (3) the compliance status of each SIU, delineated by quarter, and characterized using all applicable descriptions as given below:
 - (a) in consistent compliance;
 - (b) in inconsistent compliance;
 - (c) in significant noncompliance;
 - (d) on a compliance schedule to achieve compliance (include the date final compliance is required);
 - (e) not in compliance and not on a compliance schedule;
 - (f) compliance status unknown, and why not.
- b. Enforcement Summary. This section shall contain a summary of the compliance and enforcement activities during the past year. The summary shall include the names of all the SIUs affected by the following actions:
 - (1) Warning letters or notices of violations regarding SIUs’ apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard limit or requirement.
 - (2) Administrative Orders regarding the SIUs’ apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.
 - (3) Civil actions regarding the SIUs’ apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.
 - (4) Criminal actions regarding the SIUs’ apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or

requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

(5) Assessment of monetary penalties. Identify the amount of penalty in each case and reason for assessing the penalty.

(6) Order to restrict/suspend discharge to the POTW.

(7) Order to disconnect the discharge from entering the POTW.

12. Baseline Monitoring Report Update

This section shall provide a list of CIUs that have been added to the pretreatment program since the last annual report. This list of new CIUs shall summarize the status of the respective Baseline Monitoring Reports (BMR). The BMR must contain all of the information specified in 40 CFR 403.12(b). For each of the new CIUs, the summary shall indicate when the BMR was due; when the CIU was notified by the POTW of this requirement; when the CIU submitted the report; and/or when the report is due.

13. Pretreatment Program Changes

This section shall contain a description of any significant changes in the Pretreatment Program during the past year including, but not limited to: legal authority, local limits, monitoring/inspection program and frequency, enforcement protocol, program's administrative structure, staffing level, resource requirements and funding mechanism. If the manager of the pretreatment program changes, a revised organizational chart shall be included. If any element(s) of the program is in the process of being modified, this intention shall also be indicated.

14. Pretreatment Program Budget

This section shall present the budget spent on the Pretreatment Program. The budget, either by the calendar or fiscal year, shall show the amounts spent on personnel, equipment, chemical analyses and any other appropriate categories. A brief discussion of the source(s) of funding shall be provided.

15. Public Participation Summary

This section shall include a copy of the public notice as required in 40 CFR 403.8(f)(2)(vii). If a notice was not published, the reason shall be stated.

16. Sludge Storage and Disposal Practice

This section shall have a description of how the treated sludge is stored and ultimately disposed. The sludge storage area, if one is used, shall be described in detail. Its location, a description of the containment features and the sludge handling procedures shall be included.

17. PCS Data Entry Form

The annual report shall include the PCS Data Entry Form. This form shall summarize the enforcement actions taken against SIUs in the past year. This form shall include the following information: the POTW name, NPDES Permit number, period covered by the report, the number of SIUs in significant noncompliance (SNC) that are on a pretreatment compliance schedule, the number of notices of violation and administrative orders issued against SIUs, the number of civil and criminal judicial actions against SIUs, the number of SIUs that have been published as a result of being in SNC, and the number of SIUs from which penalties have been collected.

18. Other Subjects

Other information related to the Pretreatment Program that does not fit into one of the above categories should be included in this section.

Signed copies of the reports shall be submitted to the Regional Administrator at USEPA, the State Water Resources Control Board at the following addresses:

Regional Administrator
United States Environmental Protection Agency
Region 9, Mail Code: WTR-7
Clean Water Act Compliance Office
Water Division
75 Hawthorne Street
San Francisco, CA 94105

Pretreatment Program Manager
Regulatory Unit
State Water Resources Control Board
Division of Water Quality
1001 I Street
Sacramento, CA 95814

Pretreatment Coordinator
NPDES Permits Division
SF Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

APPENDIX B. REQUIREMENTS FOR SEMIANNUAL PRETREATMENT REPORTS

The semiannual pretreatment reports are due on July 31st (for pretreatment program activities conducted from January through June) and January 31st (for pretreatment activities conducted from July through December) of each year, unless an exception has been granted by the Board's Executive Officer. The semiannual reports shall contain, at a minimum, but is not limited to, the following information:

1. Influent, Effluent and Sludge Monitoring

The influent, effluent and sludge monitoring results shall be included in the report. The analytical laboratory report shall also be included, with the QA/QC data validation provided upon request. A description of the sampling procedures and a discussion of the results shall be given. (Please see appendix C for specific detailed requirements.) The contributing source(s) of the parameters that exceed NPDES limits shall be investigated and discussed. In addition, a brief discussion of the contributing source(s) of all organic compounds identified shall be provided.

The Discharger has the option to submit all monitoring results via an electronic reporting format approved by the Executive Officer. The procedures for submitting the data will be similar to the electronic submittal of the NPDES self-monitoring reports as outlined in the December 17, 1999 Regional Water Board letter, Official Implementation of Electronic Reporting System (SRS). The Discharger shall contact the Regional Water Board's ERS Project Manager for specific details in submitting the monitoring data.

2. Industrial User Compliance Status

This section shall contain a list of all Significant Industrial Users (SIUs) that were not in consistent compliance with all pretreatment standards/limits or requirements for the reporting period. The compliance status for the previous reporting period shall also be included. Once the SIU has determined to be out of compliance, the SIU shall be included in the report until consistent compliance has been achieved. A brief description detailing the actions that the SIU undertook to come back into compliance shall be provided.

For each SIU on the list, the following information shall be provided.

- a. Indicate if the SIU is subject to Federal categorical standards; if so, specify the category including the subpart that applies.
- b. For SIUs subject to Federal Categorical Standards, indicate if the violation is of a categorical or local standard.
- c. Indicate the compliance status of the SIU for the two quarters of the reporting period.
- d. For violations/noncompliance occurring in the reporting period, provide (1) the date(s) of violation(s); (2) the parameters and corresponding concentrations exceeding the limits and the discharge limits for these parameters and (3) a brief summary of the noncompliant event(s) and the steps that are being taken to achieve compliance.

3. POTW's Compliance with Pretreatment Program Requirements

This section shall contain a discussion of the Discharger's compliance status with the Pretreatment Program Requirements as indicated in the latest Pretreatment Compliance Audit (PCA) Report, Pretreatment Compliance Inspection (PCI) Report or Pretreatment Performance Evaluation (PPE) Report. It shall contain a summary of the following information:

- a. Date of latest PCA, PCI or PPE and report.
- b. Date of the Discharger's response.
- c. List of unresolved issues.
- d. Plan and schedule for resolving the remaining issues.

The reports shall be signed by a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for the overall operation of the Publicly Owned Treatment Works (POTW) (40 CFR 403.12(j)). Signed copies of the reports shall be submitted to the Regional Administrator at USEPA, the State Water Resources Control Board and the Regional Water Board at the following addresses:

Regional Administrator
United States Environmental Protection Agency
Region 9, Mail Code: WTR-7
Clean Water Act Compliance Office
Water Division
75 Hawthorne Street
San Francisco, CA 94105

Pretreatment Program Manager
Regulatory Unit
State Water Resources Control Board
Division of Water Quality
1001 I Street
Sacramento, CA 95814

Pretreatment Coordinator
NPDES Permits Division
SF Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

APPENDIX C. REQUIREMENTS FOR INFLUENT, EFFLUENT, AND SLUDGE MONITORING

The Discharger shall conduct sampling of their respective treatment plant's influent, effluent and sludge at the frequency as shown in the Monitoring and Reporting Program (Attachment E).

The monitoring and reporting requirements of the POTW's Pretreatment Program are in addition to those specified in the individual POTW's NPDES permit. Any subsequent modifications of the NPDES requirements shall be adhered to and shall not affect the requirements described in this Appendix unless written notice from the Regional Water Board is received. When sampling periods coincide, one set of test results, reported separately, may be used for those parameters that are required to be monitored in both the Discharger's NPDES permit and Pretreatment Program. Monitoring reports required by this Order shall be sent to the Pretreatment Coordinator.

1. Influent and Effluent Monitoring

The Discharger shall monitor for the parameters using the required test methods listed in the Monitoring and Reporting Program (Attachment E). Any test method substitutions must have received prior written Regional Water Board approval. In addition, unless instructed otherwise in writing, the Discharger shall continue to monitor for those parameters at the frequency stated in the Monitoring and Reporting Program (Attachment E). Influent and effluent sampling locations shall be the same as those sites specified Table E-2 in the Monitoring and Reporting Program (Attachment E).

The influent and effluent sampled should be taken during the same 24-hour period. All samples must be representative of daily operations. A grab sample shall be used for volatile organic compounds, cyanide and phenol. In addition, any samples for oil and grease, polychlorinated biphenyls, dioxins/furans, and polynuclear aromatic hydrocarbon shall be grab samples. For all other pollutants, 24-hour composite samples must be obtained through flow-proportioned composite sampling. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto. For effluent monitoring, the reporting limits for the individual parameters shall be at or below the minimum levels (MLs) as stated in the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (2005) [also known as the State Implementation Policy (SIP)]; any revisions to the MLs shall be adhered to. If a parameter does not have a stated minimum level, then the Discharger shall conduct the analysis using the lowest commercially available and reasonably achievable detection levels.

The following standardized report format should be used for submittal of the influent and effluent monitoring report. A similar structured format may be used but will be subject to Regional Water Board approval. The monitoring reports shall be submitted with the Semiannual Report.

- a. **Sampling Procedures.** This section shall include a brief discussion of the sample locations, collection times, how the sample was collected (i.e., direct collection using vials or bottles, or other types of collection using devices such as automatic samplers, buckets,

or beakers), types of containers used, storage procedures and holding times. Include descriptions of prechlorination and chlorination/dechlorination practices during the sampling periods.

- b. Method of Sampling Dechlorination. A brief description of the sample dechlorination method prior to analysis shall be provided.
- c. Sample Compositing. The manner in which samples are composited shall be described. If the compositing procedure is different from the test method specifications, a reason for the variation shall be provided.
- d. Data Validation. All quality assurance/quality control (QA/QC) methods to be used shall be discussed and summarized. These methods include, but are not limited to, spike samples, split samples, blanks and standards. Ways in which the QA/QC data will be used to qualify the analytical test results shall be identified. A certification statement shall be submitted with this discussion stating that the laboratory QA/QC validation data has been reviewed and has met the laboratory acceptance criteria. The QA/QC validation data shall be submitted to the Regional Water Board upon request.
- e. A tabulation of the test results shall be provided.
- f. Discussion of Results. The report shall include a complete discussion of the test results. If any pollutants are detected in sufficient concentration to upset, interfere or pass through plant operations, the type of pollutant(s) and potential source(s) shall be noted, along with a plan of action to control, eliminate, and/or monitor the pollutant(s). Any apparent generation and/or destruction of pollutants attributable to chlorination/dechlorination sampling and analysis practices shall be noted.

2. Sludge Monitoring

Sludge should be sampled in the same 24-hour period during which the influent and effluent are sampled except as noted in (c) below. The same parameters required for influent and effluent analysis shall be included in the sludge analysis. The sludge analyzed shall be a composite sample of the sludge for final disposal consisting of:

- a. Sludge lagoons. 20 grab samples collected at representative equidistant intervals (grid pattern) and composited as a single grab, or
- b. Dried stockpile. 20 grab samples collected at various representative locations and depths and composited as a single grab, or
- c. Dewatered sludge. Daily composite of 4 representative grab samples each day for 5 days taken at equal intervals during the daily operating shift taken from a) the dewatering units or b) from each truckload, and shall be combined into a single 5-day composite.

The USEPA manual, *POTW Sludge Sampling and Analysis Guidance Document*, August 1989, containing detailed sampling protocols specific to sludge is recommended as a guidance for sampling procedures. *The USEPA manual Analytical Methods of the National Sewage Sludge Survey*, September 1990, containing detailed analytical protocols specific to sludge, is recommended as guidance for analytical methods.

In determining if the sludge is a hazardous waste, the Dischargers shall adhere to Article 2, "Criteria for Identifying the Characteristics of Hazardous Waste," and Article 3, "Characteristics of Hazardous Waste," of Title 22, California Code of Regulations, Section 66261.10 to 66261.24 and all amendments thereto.

Sludge monitoring reports shall be submitted with the appropriate Semiannual Report. The following standardized report format should be used for submittal of the report. A similarly structured form may be used but will be subject to Regional Water Board approval.

- a. Sampling procedures. Include sample locations, collection procedures, types of containers used, storage/refrigeration methods, compositing techniques and holding times. Enclose a map of sample locations if sludge lagoons or stockpiled sludge is sampled.
- b. Data Validation. All quality assurance/quality control (QA/QC) methods to be used shall be discussed and summarized. These methods include, but are not limited to, spike samples, split samples, blanks and standards. Ways in which the QA/QC data will be used to qualify the analytical test results shall be identified. A certification statement shall be submitted with this discussion stating that the laboratory QA/QC validation data has been reviewed and has met the laboratory acceptance criteria. The QA/QC validation data shall be submitted to the Regional Water Board upon request.
- c. Test Results. Tabulate the test results and include the percent solids.
- d. Discussion of Results. The report shall include a complete discussion of test results. If the detected pollutant(s) is reasonably deemed to have an adverse effect on sludge disposal, a plan of action to control, eliminate, and/or monitor the pollutant(s) and the known potential source(s) shall be included. Any apparent generation and/or destruction of pollutants attributable to chlorination/dechlorination sampling and analysis practices shall be noted.

The Discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants that the permittee believes may be causing or contributing to Interference, Pass Through, or adversely impacting sludge quality.