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California Regional Water Quality Control Board

San Francisco Bay Region

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Arnold Schwarzenegger
Governor

ORDER NO. R2-2008-0057
NPDES NO. CA0037753

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

Table 1. Discharger Information

Discharger	Sanitary District No.5 of Marin County
Name of Facility	Sanitary District No.5 Wastewater Treatment Plant and wastewater collection system
Facility Address	2001 Paradise Drive
	Tiburon, CA 94920
	Marin County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board (Regional Water Board) have classified this discharge as a major discharge.	

The discharge by the Sanitary District No.5 of Marin County Wastewater Treatment Plant from the discharge point identified below is subject to waste discharge requirements as set forth in this Order.

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	POTW Effluent	37 °, 52', 12" N	122 °, 27', 5" W	Raccoon Strait, Central San Francisco Bay

Table 3. Administrative Information

This Order was adopted by the Regional Water Board on:	July 9, 2008
This Order shall become effective on:	September 1, 2008
This Order shall expire on:	August 31, 2013
CIWQS Regulatory Measure	340891
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	<u>180 days prior to the Order expiration date</u>

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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Attachment G – The following documents are part of this Permit, but are not physically attached due to volume. They are available on the internet at www.waterboards.ca.gov/sanfranciscobay/ <ul style="list-style-type: none">- Self-Monitoring Program, Part A, adopted August 1993- Standard Provisions and Reporting Requirements, August 1993- August 6, 2001 Staff Letter: <i>Requirement for Priority Pollutant Monitoring in Receiving Water and Wastewater Discharges</i>	

I. FACILITY INFORMATION

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

Table 4. Facility Information

Discharger	Sanitary District No. 5 of Marin County
Name of Facility	Sanitary District No. 5 Wastewater Treatment Plant and wastewater collection system
Facility Address	2001 Paradise Drive
	Tiburon, CA 94920
	Marin County
Facility Contact, Title, and Phone	Robert Lynch, District Manager, Phone: 415-435-1501, Fax: 415-435-0221; Email: rlynch@sani5.org
CIWQS Place Number	239497
CIWQS Party ID Number	27783
Mailing Address	P.O. Box 227 Tiburon, CA 94920
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	0.98 million gallons per day (MGD) (dry weather treatment capacity), 2.3 MGD (peak wet weather treatment capacity)

II. FINDINGS

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

A. Background. The Sanitary District Number 5 of Marin County (hereinafter the Discharger) is the owner and operator of the Sanitary District Number 5 Wastewater Treatment Plant (Treatment Plant) and associated wastewater collection system and is currently discharging under Order No. R2-2002-0097 (CIWQS Regulatory Measure number 131222) and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0037753. The Discharger submitted a Report of Waste Discharge, dated May 4, 2007, and applied to renew its NPDES permit to discharge up to 2.3 MGD of treated wastewater from this system.

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 owns and operates the Treatment Plant, which provides secondary treatment of domestic and commercial wastewater collected from the Town of Tiburon, the City of Belvedere, and surrounding, unincorporated areas, serving a current population of approximately 8,400. The Discharger’s collection system consists of 33 miles of gravity sewer line, 5 miles of force main and 22 pump stations within its service area. The Treatment Plant has an average dry weather design treatment capacity of 0.98 MGD and can treat up to 2.3 MGD during wet weather flow periods. A map of the facility and surrounding area is provided in Attachment B.

The treatment processes at the facility include primary sedimentation, biological activated sludge treatment, secondary sedimentation, chlorine disinfection with sodium hypochlorite, and dechlorination with sodium bisulfite. A treatment process schematic diagram is included as Attachment C.

Treated, disinfected, and dechlorinated secondary effluent from the Treatment Plant is combined with treated, disinfected, and dechlorinated effluent from the Sewerage Agency of Southern Marin's wastewater treatment plant. The combined effluent is discharged through a pipe in Central San Francisco Bay to Discharge Point 001 in Raccoon Straits, a water of the State and the United States. Treated wastewater is discharged through a submerged diffuser at latitude 37 deg 52 min 12 sec North and longitude 122 deg 27 min 5 sec West, which is 840 feet offshore at a depth of 84 feet.

During peak wet weather flow events, when influent flow exceeds 2.3 MGD, the capacity of primary treatment is augmented with the use of a third primary sedimentation tank. This third sedimentation tank has a volume of 0.11 million gallons (capacity of 4.4 MGD for 3 hour peak periods), and therefore assures primary treatment capacity of 6.7 MGD during wet weather events. The third primary sedimentation tank is more often used simply as a short term holding tank to retain influent flows greater than 2.3 MGD until they can be routed back to the headworks for full treatment.

After primary treatment, a maximum of 2.3 MGD of primary effluent can be directed to the secondary aeration basins and clarifiers. During significant rain events, when the third sedimentation tank must be used for primary treatment (and not just for short term holding), primary treated effluent flows greater than 2.3 MGD must be routed around secondary treatment and blended with secondary effluent to protect the secondary treatment system. "Blended" wastewater is then chlorinated and dechlorinated prior to discharge. Seventeen incidents of "blending" occurred at the Treatment Plant from 2004 to 2006. These blending events resulted in discharges of 0.007 to 3.2 MGD and an average discharge of 0.85 MGD of blended primary and secondary treated effluent.

Biosolids collected from wastewater treatment processes are thickened, anaerobically digested, and dewatered by a screw press. The Treatment Plant generates an average of 86.2 dry metric tons of biosolids per year, which are disposed of at the Redwood Sanitary Landfill.

- C. Legal Authorities.** This Order is issued pursuant to CWA section 402 and implementing 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 this facility 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 information. The Fact Sheet (Attachment F), which contains background information and rationale for Order

requirements, is hereby incorporated into this Order and constitutes part of the Findings for this Order. Attachments A through E and G 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.** CWA Section 301(b) and NPDES regulations at 40 CFR 122.44 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 and/or Best Professional Judgment (BPJ) pursuant to 40 CFR 125.3. A detailed discussion of development of the technology-based effluent limitations is included in the Fact Sheet.
- G. Water Quality-Based Effluent Limitations (WQBELs).** CWA section 301(b) and NPDES regulations at 40 CFR 122.44(d) require that permits include limitations more stringent than applicable 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; (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 40 CFR 122.44(d)(1)(vi). Under this Order, numeric WQBELs have been established as needed for dry weather discharges from the Treatment Plant.

- H. Water Quality Control Plans.** *The Water Quality Control Plan for the San Francisco Bay Basin* (the 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 (State Water Board), USEPA, and the Office of Administrative Law, as required. 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 exceed 3,000 mg/L and thereby meet an exception to State Water Board Resolution No. 88-63. Therefore, the MUN designation is not applicable to the Central San Francisco Bay. Beneficial uses applicable to Central San Francisco Bay are as follows.

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

Discharge Point	Receiving Water Name	Beneficial Uses
001	Central San Francisco Bay	Industrial Service Supply (IND) Industrial Process Supply (PRO) Navigation (NAV) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Ocean, Commercial and Sport Fishing (COMM) Wildlife Habitat (WILD) Preservation of Rare and Endangered Species (RARE) Fish Migration (MIGR) Fish Spawning (SPWN) Shellfish Harvesting (SHELL) Estuarine Habitat (EST)

Requirements of this Order implement the Basin Plan.

The State Water Board adopted the *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for surface waters. Requirements of this Order implement the Thermal 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. 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.
- 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. 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. [65 Fed. Reg. 24641 (April 27, 2000) (codified at 40 CFR 131.21)]. 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.

- L. Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based limits and Water Quality Based Effluent Limits (WQBELs) for individual pollutants. The technology-based effluent limitations consist of restrictions on oil and grease, pH, total suspended solids (TSS), and biochemical oxygen demand (BOD₅). Derivation of these technology-based limitations is discussed in the Fact Sheet (Attachment F). This Order's technology-based pollutant restrictions implement the minimum applicable federal technology-based requirements. In addition, this Order contains effluent limitations more stringent than the minimum federal technology-based requirements that are necessary to meet water quality standards.

WQBELs have been scientifically 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 scientific procedures for calculating the individual WQBELs for priority pollutants 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 requirements of the CWA.

- M. 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 and requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. As discussed in detail in the Fact Sheet, the permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16.
- N. 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. Some effluent limitations in this Order are less stringent than those in the previous Order. As discussed in the Fact Sheet this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

- O. 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 applicable State and federal law pertaining to threatened and endangered species.
- P. 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 establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.
- Q. 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 in this Order special provisions applicable to the Discharger. A rationale for the special provisions contained in this Order is provided in the attached Fact Sheet.
- R. Provisions and Requirements Implementing State Law.** The provisions/requirements in subsections IV.C., IV.D. and V.B. of this Order (which are not applicable to this permit) are included to implement State law only. These provisions/requirements are not required or authorized under the federal CWA; and consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.
- S. 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.
- T. 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.

IT IS HEREBY ORDERED, that this Order supersedes Order No. R2-2002-0097 except for enforcement purposes, and, in order to meet the provisions contained in Division 7 of the California 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. The average dry weather flow, as measured at Monitoring Station EFF-001 described in the attached MRP (Attachment E), shall not exceed 0.98 MGD. The average dry weather flow shall be determined for compliance with this prohibition over three consecutive dry weather months each year.
- C. Discharge of treated wastewater into Central San Francisco Bay, at any point where it does not receive an initial dilution of at least 74:1 is prohibited.
- D. Discharge from the Discharger's "decommissioned outfall", as shown in Attachment C, is prohibited.
- E. The bypass of untreated or partially treated wastewater and, in particular, undisinfected wastewater to waters of the United States is prohibited, except as provided for in the conditions stated in 40 CFR 122.41(m)(4) and in section A.13 of *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993* (Attachment G).

Blended wastewater is biologically treated wastewater blended with primary treated wastewater that has been diverted around biological treatment units or advanced treatment units. Such discharges are approved (1) when the Discharger's peak wet weather influent flow volumes exceed the capacity of the secondary treatment unit(s) of 2.3 MGD, and (2) the discharge complies with the effluent and receiving water limitations contained in this Order, and (3) the Discharger is in compliance with Provision VI.C.5.c. Furthermore, the Discharger shall operate its facility as designed and in accordance with the Operation & Maintenance Manual developed for the facility. This means that it shall optimize storage and use of equalization units, and shall fully utilize the biological treatment units and advanced treatment units, if applicable. The Discharger shall report incidents of blended effluent discharges in routine monitoring reports, and shall conduct monitoring of this discharge as specified in the attached MRP (**Attachment E**).

- F. Any sanitary sewer overflow that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001

1. Effluent Limitations for Conventional Pollutants – Discharge Point 001

The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001 with compliance measured at Monitoring Location EFF-001-D or EFF-001-S as described in the attached MRP (Attachment E).

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

Table 6. Conventional Effluent Limitations – Discharge Point 001

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

⁽¹⁾ If the Discharger monitors pH continuously, pursuant to 40 CFR 401.17, the Discharger shall be in compliance with the pH limitation specified herein, 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. pH compliance may be demonstrated at Monitoring Location EFF-001-S.

⁽²⁾ This requirement is defined as below the limit of detection of standard test methods, as defined in the latest edition of *Standard Methods for the Examination of Water and Wastewater*. The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, sodium hypochlorite, and sodium bisulfite 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 will conclude that these false positive chlorine residual exceedances are not violations of the Order limit. Chlorine residual compliance may be demonstrated by monitoring at Monitoring Location EFF-001-S.

- 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. **Total Coliform Bacteria:** The discharge shall meet the following limits of bacteriological quality (Compliance with bacteria requirements may be demonstrated at Monitoring Location EFF-001-D):

(1) The moving median value for the Most Probable Number (MPN) of total coliform bacteria in any five consecutive samples shall not exceed a Most Probable Number (MPN) of 240 organisms/100 mL; and

(2) No single sample shall exceed 10,000 MPN/100 mL.

2. Effluent Limitations for Toxic Substances – Discharge Point 001

- a. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001-S.

Table 7. Effluent Limitations for Toxic Pollutants

Parameter	Units	Effluent Limitations ^(1, 3)	
		Average Monthly	Maximum Daily
Copper ⁽²⁾	µg/L	72	98
Selenium	µg/L	3.7	9.0
Cyanide	µg/L	20	45
Dioxin-TEQ ⁽⁴⁾	µg/L	1.4×10^{-8}	2.8×10^{-8}
Bis(2-ethylhexyl)phthalate	µg/L	58	120
Total Ammonia	mg/L N	100	210

- (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) Alternate Effluent Limits for Copper:
- a. 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 (Basin Plan Amendment approved by the Regional Water Board Resolution R2-2007-0042, June 13, 2007, based on the Staff Report “Copper Site-Specific Objective in San Francisco Bay” June 6, 2007). Upon its effective date, the following limitations shall supersede those copper limitations listed in Table 7: AMEL of 54 µg/L and MDEL of 73 µg/L.
- b. 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.
- (3) 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) for compliance determination purposes. In addition, in order to perform reasonable potential analyses for future permit re-issuances, the Discharger shall use methods with MLs lower than the applicable water quality objectives or water quality criteria. A Minimum Level 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.
- (4) These limits become effective on the date indicated in the Compliance Schedule, Table 10, §VI..C.7.

Table 8. Minimum Levels for Pollutants with Effluent Limitations

Parameter	Minimum Level	Units
Copper	0.5	µg/L
Selenium	1	µg/L
Cyanide	5	µg/L
Dioxin-TEQ	½ the USEPA specified MLs for Method 1613	µg/L
Bis(2-ethylhexyl)phthalate	5	µg/L
Total Ammonia ⁽¹⁾	0.2	mg/L as N

(1) Measured as N in total ammonia.

3. Acute Toxicity

- a. Representative samples of the effluent at Monitoring Location EFF-001 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 96-hour flow through bioassays of undiluted 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.

- b. 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 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.

- c. 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.
- d. If the Discharger can demonstrate to the satisfaction of the Executive Officer that toxicity exceeding the levels cited above is caused by ammonia and that the ammonia in the discharge is in compliance with effluent limits, then such toxicity does not constitute a violation of this effluent limitation.

4. Chronic Toxicity

- a. 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 at Monitoring Location EFF-001 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.

- (1) Conduct annual routine monitoring.
- (2) Accelerate monitoring after exceeding a single-sample maximum of 10 chronic toxicity units (TUc), consistent with Table 4-5 of the Basin Plan for dischargers monitoring chronic toxicity annually. Accelerated monitoring shall consist of monthly monitoring.
- (3) Return to routine monitoring if accelerated monitoring does not exceed the “trigger” in (2), above.
- (4) If accelerated monitoring confirms consistent toxicity above the “trigger” in (2), above, initiate toxicity identification evaluation/toxicity reduction evaluation (TIE/TRE) in accordance with a work plan submitted in accordance with Section V.B.3 of the MRP (Attachment E), and that incorporates any and all comments from the Executive Officer.
- (5) Return to routine monitoring after appropriate elements of TRE work plan are implemented and either the toxicity drops below “trigger” levels in (2), above, or, based on the results of the TRE, the Executive Officer authorizes a return to routine monitoring.

b. Test Species and Methods

The Discharger shall conduct routine monitoring with the 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).

B. Interim Effluent Limitations

Not Applicable.

C. Land Discharge Specifications

Not Applicable.

D. 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 Central San Francisco Bay:
 - a. Floating, suspended, or deposited macroscopic particulate matter or foams in concentrations that cause nuisance or adversely affect beneficial uses;
 - b. Suspended sediment, dissolved solids, settleable material that results in bottom deposition, or aquatic growths resulting from biostimulatory substances 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. Concentrations of taste- or odor-producing substances that impart undesirable tastes or odors to fish flesh or other edible products of aquatic organisms, or otherwise adversely affect beneficial uses;
 - e. Visible, floating, suspended, or deposited oil and other products of petroleum origin; and
 - f. Toxic, bioaccumulative, 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 limits 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 three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, 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

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. *Regional Water Board Standard Provisions.* 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 on a separate NPDES permit or WDR that addresses requirements similar to this discharge provides a basis for permit modification.
- e. Or as otherwise authorized by law.

The Discharger may request permit modification based on the above. The Discharger shall include in 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 discharge from Discharge Point 001 at EFF-001-S 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 evaluate on an annual basis 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 data for priority pollutants that is required to perform reasonable potential analyses and to calculate effluent limitations. Data collected 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 limits or other requirements based on Regional Water Board review of these data.

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

c. Optional Mass Offset

If the Discharger can demonstrate that further net reductions of the total mass loadings of 303(d)-listed pollutants 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 may submit to the Regional Water Board for approval a mass offset plan to reduce 303(d)-listed pollutants to the same watershed or drainage basin. The Regional Water Board may modify this Order to allow an approved mass offset program.

3. Best Management Practices and Pollution Minimization

a. Pollution Minimization Program

The Discharger shall continue to improve, in a manner acceptable to the Executive Officer, its existing Pollutant Minimization Program to promote minimization of pollutant loadings to the treatment plant and therefore to the receiving waters.

b. Annual Pollution Prevention Report

The Discharger shall submit an annual report, acceptable to the Executive Officer, no later than February 28 of each calendar year. The Discharger may submit one annual report that documents all pollution prevention activities undertaken to reduce pollutant loadings at both the Tiburon and Paradise Cove wastewater treatment plants (since both plants are owned and operated by the Discharger). 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 analyze its own situation to determine which pollutants are currently a problem and/or which pollutants may be potential future problems. This discussion shall include the reasons why the pollutants were chosen.

- (3) *Identification of sources for the pollutants of concern.* This discussion shall include how the Discharger intends to estimate and identify sources of the pollutants. The Discharger should also identify sources or potential sources not directly within the ability or authority of the Discharger to control, such as pollutants in the potable water supply and air deposition.
- (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 tasks themselves or participate in group, regional, or national tasks that will address its pollutants of concern. The Discharger is strongly encouraged to participate in group, regional, or national tasks that will address its pollutants of concern whenever it is efficient and appropriate to do so. A time line shall be included for the implementation of each task.
- (5) *Outreach to employees.* The Discharger shall inform employees about the pollutants of concern, potential sources, and how they might be able to help reduce the discharge of these pollutants of concern into the treatment facilities. 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 prevention to its service area. Outreach may include participation in existing community events such as county fairs, initiating new community events such as displays and contests during Pollution Prevention Week, conducting school outreach programs, conducting plant tours, and providing public information in newspaper articles or advertisements, radio or television stories or spots, newsletters, utility bill inserts, and web site. Information shall be specific to the 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 shall also include a discussion of the specific criteria used to measure the effectiveness of each of the tasks in items b(3), b(4), b(5), and b(6), above.
- (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.* This Discharger shall utilize 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 in order to more effectively reduce the amount of pollutants to the treatment plant, and subsequently in its effluent.

c. Pollutant Minimization Program for Reportable Priority Pollutants

The Discharger shall develop and conduct a Pollutant Minimization Program (PMP) 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 PMP 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 PMP 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. 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 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 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.

5. Special Provisions for POTW

a. Sludge Management Requirements

- (1) All sludge generated by the Discharger must be disposed of in a municipal solid waste landfill, reused by land application, or disposed of in a sludge-only landfill in accordance with 40 CFR §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 §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) Sludge storage, treatment, and handling 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 into 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 §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 15 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 §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.

b. Utility Analysis and Implementation Schedule for Wet Weather Bypass of Secondary Treatment

180 days prior to the Order expiration date, the Discharger shall complete a Utility Analysis if it seeks to continue to divert peak wet weather flows around its secondary treatment units. The Utility Analysis must satisfy 40 CFR 122.4(m)(4)(i)(A)-(C), and any applicable policy or guidance such as the process set forth in Part 1 of USEPA's Peak Wet Weather Policy's No Feasible Alternatives Analysis Process (available at <http://cfpub.epa.gov/npdes/wetweather.cfm>) once it is finalized. Specifically, the Discharger shall more fully evaluate the extent to which it maximizes its ability to reduce inflow/infiltration (I/I) throughout the entire collection system to the extent feasible, including the use of existing legal authorities and potential improvements in the timing or quality of such efforts.

c. Sanitary Sewer Overflows and Sewer System Management Plan

The Discharger's collection system is part of the facility that is subject to this Order. As such, the Discharger must properly operate and maintain its collection

system (Attachment D, Standard Provisions - Permit Compliance, subsection I.D). The Discharger must report any noncompliance (Attachment D, Standard Provision - Reporting, subsections V.E.1 and V.E.2), and mitigate any discharge from the Discharger's collection system in violation of this Order (Attachment D, Standard Provisions - Permit Compliance, subsection I.C). *The General Waste Discharge Requirements for Collection System Agencies* (Order No. 2006-0003 DWQ) has requirements for operation and maintenance of 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 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 sewage spills. Furthermore, the Discharger shall comply with the schedule for development of sewer system management plans as indicated in the letter issued by the Regional Water Board on July 7, 2005, pursuant to Water Code Section 13267.

6. Corrective Measures to Minimize Blending

The Discharger shall comply with the following tasks and deadlines to minimize blending events.

Table 9. Requirements to Minimize Blending Events

Task:	Compliance Date
<p>1. <i>Wet weather Improvements.</i> The Discharger shall submit to the Regional Water Board a technical report that describes the studies completed over the two year period 2004-2005 that evaluated the condition of the Tiburon and Belvedere collection systems and analyzed alternatives to reduce wet weather diversions. This will include:</p> <ul style="list-style-type: none"> • Analysis of the condition of all the sewage lines covered by closed circuit video camera. • GPS identification of all structures including pumping stations, trunk lines, collector lines and other parts of the system. • A summary of the geographic information system (GIS) data base used to maintain records and information on the collection system. • The recommendations from the study. 	October 1, 2008

2. <i>Work Plan.</i> The Discharger shall submit a copy of the 10-year, \$3.5 million Sewer Rehabilitation Plan to implement the recommendations proposed in Task 1.	October 1, 2008
3. <i>Implementation.</i> The Discharger shall implement the measures identified in the 10-year, \$3.5 million Sewer Rehabilitation Plan.	In accordance with the Sewer Rehabilitation Plan.
4. <i>Progress Reports.</i> The Discharger shall report on its progress in completing measures specified in the 10-year, \$3.5 million Sewer Rehabilitation Plan together with the impact on reducing blending events.	January 31, 2009 and thereafter annually in the Annual Self - Monitoring Report
5. No Feasible Alternatives Analysis. Complete a utility analysis if the Discharger seeks to continue to bypass peak wet weather flows around its secondary treatment units. The utility analysis must satisfy 40 CFR 122.41(m)(4)(i)(A)-(c) and any applicable policy or guidance such as the process set forth in Part 1 of USEPA's Peak Wet Weather Policy's No Feasible Alternatives Analysis Process (available at: http://cfpub.epa.gov/npdes/wetweather.cfm) once it is finalized.	180 days prior to the Order expiration date.

7. Compliance Schedules

The Discharger shall comply with the following tasks and deadlines to ensure compliance with the final limits.

Table 10. Requirements to Ensure Compliance with Dioxin-TEQ Limits

Task	Deadline
1. Continue semi-annual monitoring for dioxin-TEQ at Monitoring Location EFF- 001-S.	Upon effective date of the Order
2. Report on the status of dioxin-TEQ monitoring and analytical results semi-annually no later than April 15 and October 15 of each calendar year in the March and September self-monitoring reports.	Upon effective date of the Order
3. If dioxin-TEQ monitoring data show that the Discharger is out of compliance, as described in Section 2.4.5, Compliance Determination, of the State Implementation Policy, with the final water quality based effluent limits specified in Effluent Limitations and Discharge Specifications A.2, the Discharger shall identify and implement source control measures to reduce concentrations of dioxin-TEQ to the treatment plant, and therefore to receiving waters.	No later than 12 months after a detection of dioxin-TEQ that is out of compliance with the final effluent limits.
4. The Discharger shall evaluate and report on the effectiveness of its source control measures in reducing concentrations of dioxin-TEQ to its treatment plant. If, following previous measures, monitoring data show that the Discharger remains out of compliance with final limits for dioxin-TEQ, the Discharger shall also identify and implement additional source control	Annually in the Annual Best Management Practices and Pollutant Minimization Report required by Provision VI.C.3.

Task	Deadline
measures to reduce concentrations of this pollutant.	
5. In the event that, following previously implemented source control measures, monitoring data show that the Discharger is out of compliance with final water quality based effluent limits specified in Effluent Limitations and Discharge Specifications A.2 for dioxin-TEQ, the Discharger shall submit a schedule for implementation of additional actions to reduce the concentrations of this pollutants.	January 1, 2012
6. The Discharger shall commence implementation of the identified additional actions in accordance with the schedule submitted in task 5, above.	April 1, 2012
7. Full Compliance with IV. Effluent Limitations and Discharger Specifications A.2 for dioxin-TEQ. (Alternatively, the Discharger may implement a mass offset strategy for dioxin-TEQ in accordance with policies in effect at that time.)	June 1, 2018

8. Other Special Provisions

- a. Cyanide Action Plan** The Discharger shall implement monitoring and surveillance, pretreatment, source control, and pollution prevention for cyanide in accordance with the following tasks and time schedule.

Table 11. Cyanide Action Plan

Task	Compliance Date
<p>1. Review Potential Cyanide Contributors The Discharger shall submit an inventory of potential contributors of cyanide to the treatment plant (e.g., metal plating operations, hazardous waste recycling, etc.). If no contributors of cyanide are identified, Tasks 2 and 3 are not required, unless the Discharger receives a request to discharge detectable levels of cyanide to the sanitary sewer. If so, the Discharger shall notify the Executive Officer and implement Tasks 2 and 3.</p>	With the November 2008 SMR submitted on December 31, 2008.
<p>2. Implement Cyanide Control Program The Discharger shall submit a plan for and begin implementation of a program to minimize cyanide discharges to the sewer system consisting, at a minimum, of the following elements:</p> <ul style="list-style-type: none"> a. Inspect each potential contributor to assess the need to include that contributing source in the control program. b. Inspect contributing sources included in the control program annually. Inspection elements may be based on U.S. EPA guidance, such as Industrial User Inspection and Sampling Manual for POTWs (EPA 831-B-94-01). c. Develop and distribute educational materials to contributing sources and potential contributing sources regarding the need to prevent cyanide discharges. d. Prepare an emergency monitoring and response plan to be implemented if a significant cyanide discharge occurs. e. If ambient monitoring shows cyanide concentrations of 1.0 µg/L or higher in the main body of the Bay, undertake actions to identify and abate cyanide sources responsible for the elevated ambient concentrations. 	With the Annual Pollution Prevention report due each year on February 28, or within 90 days of completing Task 1.
<p>3. Report Status of Cyanide Control Program Submit a report to the Regional Water Board documenting implementation of the cyanide control program.</p>	With Annual Pollution Prevention report due February 28.

b. Copper Action Plan The Discharger shall implement pretreatment, source control, and pollution prevention for copper in accordance with the following tasks and time schedule.

Table 12. Copper Action Plan

Task	Compliance Date
1. Review Potential Copper Sources The Discharger shall submit an inventory of all potential copper sources to the treatment plant.	With the November 2008 SMR submitted on December 31, 2008
2. Implement Copper Control Program The Discharger shall submit a plan for and begin implementation of a program to reduce copper discharges to the sewer system. This plan shall consist of, at a minimum, providing education and outreach to the public (e.g., focusing on proper pool and spa maintenance and plumbers' roles in reducing corrosion).	With the Annual Pollution Prevention report due each year on February 28. (Elements of this task may also be implemented as part of a regional program.)
3. Implement Additional Measures If the three-year rolling mean copper concentration of the receiving water exceeds 2.2 µg/L, evaluate the effluent copper concentration trend, and if it is increasing, develop and implement additional measures to control copper discharges.	Within 90 days of exceedance
4. Report Status of Copper Control Program Submit a report to the Regional Water Board documenting implementation of the copper control program.	With Annual Pollution Prevention report due February 28.

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 A – Definitions, 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:

$$\text{Arithmetic mean} = \mu = \Sigma x / n$$

where: Σx is the sum of the measured ambient water concentrations, and n 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 one 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.

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 included, 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

Attachment A – Definitions

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:

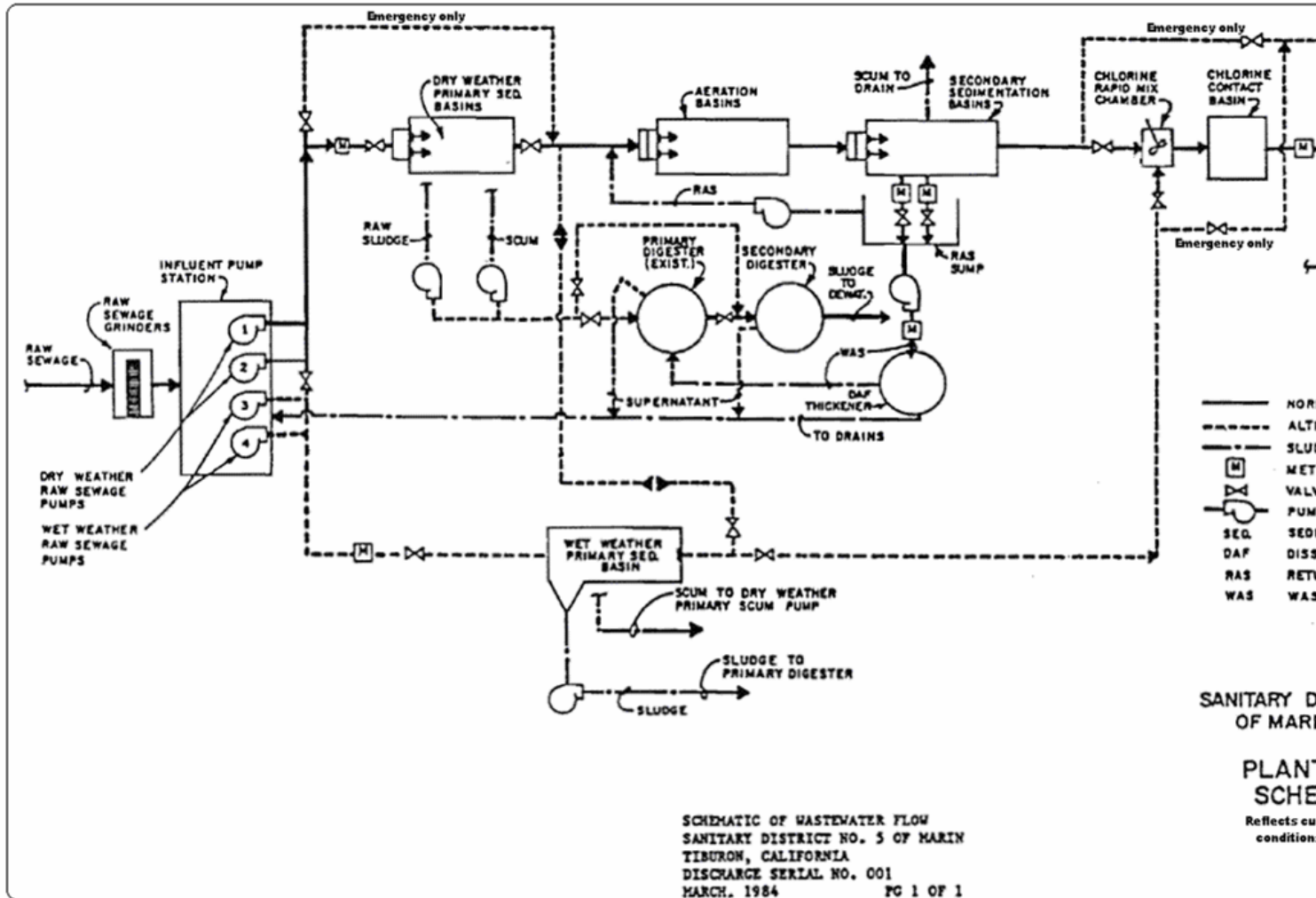
- x is the observed value;
- μ is the arithmetic mean of the observed values; and
- n is the number of samples.

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.)

ATTACHMENT B – FACILITY MAP



ATTACHMENT C – PROCESS FLOW DIAGRAM



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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(c).)

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 C.F.R. § 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 C.F.R. § 122.41(e)).

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 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 C.F.R. § 122.5(c).)

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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(m)(4)(i)):
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(m)(4)(i)(C).)
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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(n)(3)):
 - a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));
 - b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 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 C.F.R. § 122.41(n)(3)(iii)); and
 - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 five 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 C.F.R. § 122.41(j)(2).)
- B. Records of monitoring information shall include:
1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));
 2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
 3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
 4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
 5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
 6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)
- C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):
1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and
 2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.22(b)(2)); and
 - c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 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 C.F.R. § 122.22(c).)
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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(l)(6)(i).)
2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 C.F.R. § 122.41(l)(6)(ii)):

- a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)
- b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 methods 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 limits and to perform reasonable potential analyses. Equivalent methods must be more sensitive than those specified in 40 CFR 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. All Minimum Levels are expressed in µg/L, approximately equal to parts per billion (ppb).

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

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

CTR #	Constituent	Types of Analytical Methods ^[a] Minimum Levels (µg/L)								
		GC	GCMS	Color	GFAA	ICP	ICPMS	SPGFAA	HYDRIDE	CVAF
6	Copper				5	10	0.5	2		
10	Selenium ^[b]				5	10	2	5	1	
14	Cyanide			5						
	Dioxin-TEQ ^[c]									
68	Bis(2-ethylhexyl)phthalate	10	5							
--	Total Ammonia ^[d]									

^[a] Analytical Methods / Laboratory techniques are defined as follows:

- Color = Colorimetric;
- CVAF = Cold Vapor Atomic Fluorescence.
- GC = Gas Chromatography
- GCMS = Gas Chromatography Mass Spectroscopy
- GFAA = Graphite Furnace Atomic Absorption;
- ICP = Inductively Coupled Plasma
- ICPMS = Inductively Coupled Plasma/Mass Spectrometry;
- SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption (i.e. EPA 200.9)

^[b] Hydride or ICPMS (with helium collision cell) are preferable because they are less susceptible to positive interferences.

^[c] The Discharger shall achieve MLs for Dioxin-TEQ equal to ½ the MLs specified in U.S. EPA Method 1613

^[d] Ammonia –N measured by Ammonia Selective Electrode Reference SM 4500- NH₃ F (18th Ed.), MDL 0.2 mg/L N.

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	Monitoring Location Description
Influent	INF-001	At any point in the treatment facility upstream of the primary sedimentation basins at which all waste tributary to the treatment system is present, and preceding any phase of treatment.
Effluent	EFF-001-D	At a point following full treatment (including primary, secondary, and disinfection) where all effluent from the Treatment Plant is present and where adequate contact with the disinfectant is assured (samples will be collected in the chlorine contact tank after full contact time has been achieved).
Effluent	EFF-001-S	At a point following full treatment (including disinfection and dechlorination) where all effluent from the Treatment Plant is present, but prior to combining with discharges from the Sewerage Agency of Southern Marin outfall (samples will be collected at the end of the chlorine contact tank after dechlorination has been conducted).
Overflows and Bypasses	O-1 through O-n	At points in the collection system including manholes, pump stations, or any other location where overflows or bypasses occur.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. The Discharger shall monitor influent to the facility at INF-001 as follows.

Table E-3. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow Rate ⁽¹⁾	MGD	Continuous	Daily
BOD ₅	mg/L	C-24	Weekly
TSS	mg/L	C-24	3/W

- (1) For influent flows, continuous flow monitoring shall be conducted by continuous measurement and reporting monthly of the following parameters:

Daily: Average Daily Flow (MGD)
Maximum Daily Flow (MGD)
Minimum Daily Flow (MGD)
Monthly: Same values as given above, for the calendar month.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location – EFF-001-S

1. The Discharger shall monitor treated effluent from the facility at EFF-001-S as follows:

Table E-4. Effluent Monitoring EFF-001-S

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow Rate ⁽¹⁾	MGD	Continuous	Cont/D
pH	s.u.	Continuous	Cont.
Oil and Grease ⁽²⁾	mg/L	Grab	Q
BOD ₅ ⁽³⁾	mg/L	C-24	W
TSS ⁽³⁾	mg/L	C-24	3/W
Acute Toxicity ⁽⁴⁾	% survival	C-24	M
Chlorine, Total Residual ⁽⁵⁾	mg/L	Continuous	Cont or 2 hr
Total Coliform Bacteria ⁽⁶⁾	MPN/100 mL	Grab	W
Chronic Toxicity ⁽⁷⁾	TUc	C-24	2/5 Y
Dissolved Oxygen	mg/L	Grab	M
Temperature	°C	Grab	M
Ammonia (total as N)	mg/L	Grab	M
Copper	µg/L	C-24	M
Selenium	µg/L	C-24	M
Dioxin-TEQ	µg/L	Grab	2/Y
Cyanide	µg/L	Grab	M
Bis(2-ethylhexyl)phthalate	µg/L	Grab	M
Remaining Priority Pollutants ⁽⁸⁾	µg/L	Grab	Y

- (1) For effluent flows, continuous flow monitoring shall be conducted by continuous measurement of the following parameters:
 - Daily: Average Daily Flow (MGD)
Maximum Daily Flow (MGD)
Minimum Daily Flow (MGD)
 - Monthly: Same values as given above, for the calendar month.
- (2) Each oil and grease sampling event shall consist of a composite sample comprised of three grab samples taken at equal intervals during the sampling date, with each grab sample being collected in a glass container. The grab samples shall be mixed in proportion to the instantaneous flow rates occurring at the time of each grab sample, within the accuracy of plus or minus 5%. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent rinsings as soon as possible after use, and the solvent rinsings shall be added to the composite sample for extraction and analysis.
- (3) The percent removal for BOD₅ and TSS shall be reported for each calendar month. Samples for BOD₅ and TSS shall be collected simultaneously with influent samples.
- (4) Acute bioassay tests shall be performed in accordance with Section V.A of this MRP. The following parameters shall be monitored on the sample stream used for the acute toxicity bioassays, at the start of the test and daily for the duration of the bioassay test, and the results reported: flow rate, water hardness, (determined using the latest version of USEPA Method 130.2.), alkalinity, pH, temperature, dissolved oxygen, and ammonia nitrogen
- (5) Chlorine residual: 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 once every 2 hours. Chlorine residual concentrations shall be monitored and reported for the sampling point following dechlorination (EFF-001-S).
- (6) When replicate analyses are made of a coliform sample, the reported result shall be the arithmetic mean of the replicate analysis sample.
- (7) Critical Life Stage Toxicity Test shall be performed and reported in accordance with the Chronic Toxicity Requirements specified in Sections V.B of the MRP.
- (8) Sampling for all priority pollutants in the SIP is addressed in a letter dated August 6, 2001, from the Regional Water Board Staff: "Requirements for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy" (not attached but available for review or download on the Regional Water Board's website at <http://www.waterboards.ca.gov/sanfranciscobay/>). Some of these samples may be composites.

B. Monitoring Location – EFF-001-D

1. The Discharger shall monitor treated effluent from the facility at EFF-001-D as follows:

Table E-5. Effluent Monitoring EFF-001-D

Parameter	Units	Sample Type	Minimum Sample Frequency
Chlorine Residual ⁽¹⁾	mg/L	Continuous	Cont or 2 hr

- (1) Chlorine residual: 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 once every 2 hours. Chlorine residual concentrations shall be monitored and reported for the sampling point after disinfection (EFF-001-D). Total chlorine dosage (kg/day) shall be recorded on a daily basis.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

The Discharger shall monitor acute and chronic toxicity at EFF-001 as follows.

A. Whole Effluent Acute Toxicity

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 fathead minnow 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. If specific identifiable substances in the discharge can be demonstrated by the Discharger as being rapidly rendered harmless upon discharge to the receiving water, compliance with the acute toxicity limit may be determined after the test samples are adjusted to remove the influence of those substances.
5. 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 Chronic Toxicity

1. Chronic Toxicity Monitoring Requirements
 - a. *Sampling.* The Discharger shall collect 24-hour composite samples of the effluent at the compliance point station specified in a table above, 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.* . The test species shall be *Mysidopsis bahia* unless data suggest that another test species is more sensitive to the discharge.
 - 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-1**. These are "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms," currently third edition (EPA-821-R-02-014), 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 2%, 5%, 10%, 20%, and 40%. The "%" represents percent effluent as discharged. Samples may be

buffered using the biological buffer MOPS (3-(N-Morpholino)propanesulfonic Acid) to control pH drift and ammonia toxicity caused by increasing pH during the test.

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, conductivity, hardness, 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 (1), (3), (5), (6) (IC25 or EC25), (7), and (8).

3. Chronic Toxicity Reduction Evaluation (TRE)

- a. 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. Within 30 days of exceeding the 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. Within 30 days of the date of completion of the accelerated monitoring tests observed to exceed the trigger, the Discharger shall initiate a TRE in accordance with a TRE work plan.
- 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:
 - (1) Tier 1 consists of basic data collection (routine and accelerated monitoring).
 - (2) Tier 2 consists of evaluation of optimization of the treatment process, including operation practices and in-plant process chemicals.
 - (3) Tier 3 consists of a toxicity identification evaluation (TIE).
 - (4) Tier 4 consists of evaluation of options for additional effluent treatment processes.
 - (5) Tier 5 consists of evaluation of options for modifications of in-plant treatment processes.
 - (6) 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.4 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

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 San Francisco Bay 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.

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
H = once each hour (at about hourly intervals)
W = once each week
2/W = Twice each week
4/W = four times each week
M = once each month
Q = once each calendar quarter (at about three month intervals)
1/2h = once every 2 hours
1/Y = once each calendar year
2/Y = twice each calendar year (at about 6 months intervals, once during dry season, once during wet season)

Parameter and Unit Abbreviations

CBOD = Carbonaceous Biochemical 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
kg/d	=	kilograms per day
kg/month	=	kilograms per month
MPN/100 mL	=	Most Probable Number per 100 milliliters

X. MODIFICATIONS TO PART A OF SELF-MONITORING PROGRAM

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

- h. When any type of bypass occurs, except for bypasses that are consistent with Prohibition III.D of this Order, composite samples shall be collected on a daily basis for constituents at all affected discharge points that have effluent limits for the duration of the bypass.

When bypassing occurs from any treatment process (primary, secondary, chlorination, dechlorination, etc.) in the facility that is consistent with Prohibition III.C of this Order during high wet weather inflow, the self-monitoring program shall include the following sampling and analyses in addition to the schedule given in this MRP:

When bypassing occurs from any primary or secondary treatment unit(s), samples of the discharge shall be collected for the duration of the bypass event for TSS analysis in 24-hour composite or less increments, and continuous monitoring of flow and pH, continuous or every two hours grab sampling for chlorine residual, and daily grabs for coliform. Samples in accordance with proper sampling techniques for all other limited pollutant parameters, except coliform, shall be collected and retained for analysis, if necessary. If a daily TSS value exceeds the weekly average effluent limit, analysis of the retained sample shall be conducted for all pollutant constituents that have limits, except toxicity and oil and grease, for the duration of the bypass event. Holding times for these retained samples must be complied with.

Section F.4 shall be modified 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 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 identification of the measurement suspected to be invalid and notification of intent to submit, within 60 days, 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.

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 one 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.

XI. OTHER MONITORING REQUIREMENTS

Sludge Monitoring

The Discharger shall continue to analyze sludge on a bi-annual basis prior to disposal for selected priority pollutant metals and organics. Specific requirements for monitoring shall be commensurate with the disposal location, expected to be a landfill during the permit term.

XII. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. 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 submit digital versions of Self-Monitoring Reports (SMRs) electronically. This may be to the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (<http://www.waterboards.ca.gov/ciwqs/index.html>) and, or, another designated Web site. Until such notification is given, the Discharger shall submit paper copy 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 report in the SMR the results for all monitoring specified in this MRP under sections III through XI. The Discharger shall submit monthly and annual SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR. 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-6. 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:

- 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).
- 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. 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 XII.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 Discharger shall submit the original DMR and one copy of the DMR to one of the addresses 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, 15 th Floor Sacramento, CA 95814

3. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self-generated will not be accepted unless they follow the exact same format of EPA Form 3320-1.

D. Other Reports

1. In the first monthly SMR following the respective due dates, the Discharger shall report on the status of meeting the applicable deadline(s), and the results of any special studies, monitoring, and reporting required by section VI. C.2 (Special Studies, Technical Reports, and Additional Monitoring Requirements) of this Order. The Discharger shall include a report of progress towards meeting compliance schedules established by section VI.C.7 of this Order in the annual SMR.

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 IC_{25} or EC_{25} . If the IC_{25} or EC_{25} cannot be statistically determined, the NOEL shall be equal to the NOEC derived using hypothesis testing.
- B. Effective concentration (EC) is a point estimate of the toxicant concentration that would cause an adverse effect on a quantal, "all or nothing," response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Kärber. EC_{25} 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 IC_{25} 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. The discharger has the option of completing the screening phase monitoring on its own or in conjunction with other local dischargers.
- 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.
3. Appropriate controls.
4. Concurrent reference toxicant tests.
5. Dilution series of 2%, 5%, 10%, 20%, and 40%, where “%” is percent effluent as discharged.
- 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</i> , <i>S. franciscanus</i>) (<i>Dendraster excentricus</i>)	Percent fertilization	1 hour	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] Marine/Estuarine	0	1 or 2	3
	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 215021001
Discharger	Sanitary District No. 5 of Marin County
Name of Facility	Sanitary District No. 5 Wastewater Treatment Plant
Facility Address	2001 Paradise Drive
	Tiburon, CA 94920
	Marin County
Facility Contact, Title, Phone	Robert Lynch, District Manager, (415)435-1501 Fax: 415-435-0221; Email: rlynch@sani5.org
CIWQS Place Number	239497
CIWQS Party ID	27783
Authorized Person to Sign and Submit Reports	Robert Lynch
Mailing Address	2001 Paradise Drive Tiburon, CA 94920
Billing Address	Same as Mailing Address
Type of Facility	POTW
Major or Minor Facility	Major
Threat to Water Quality	2
Complexity	A
Pretreatment Program	N.A.
Reclamation Requirements	N.A.
Facility Permitted Flow	0.98 million gallons per day (MGD) average dry weather flow
Facility Design Flow	0.98 MGD (dry weather design flow)
	2.3 MGD (peak wet weather treatment capacity)
Watershed	San Francisco Bay
Receiving Water	Raccoon Strait, Central San Francisco Bay
Receiving Water Type	Marine

- A. Sanitary District No. 5 of Marin County is the owner and operator of a Wastewater Treatment Plant (Treatment Plant), which discharges to Raccoon Strait in Central San Francisco Bay.

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.** The facility discharges treated wastewater into Raccoon Straits and is currently regulated by Order No. R2-2002-0097 (CIWQS Regulatory Measure Number 131222) and NPDES Permit No. CA0037753, that was adopted on December 1, 2002.

The terms and conditions of the current Order have been administratively extended past the Order’s original expiration date of October 31, 2007 and remain in effect until new Waste Discharge Requirements are adopted pursuant to this Order.

- 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 May 4, 2007.

II. FACILITY DESCRIPTION

A. Description of Wastewater Treatment or Controls

The Discharger owns and operates the Treatment Plant, which provides primary and secondary treatment of domestic and commercial wastewater collected from the surrounding towns of Tiburon and Belvedere, including unincorporated areas in the vicinity, serving a population of approximately 8,400. The Treatment Plant has an average daily dry weather design treatment capacity of 0.98 MGD and can treat up to 2.3 MGD during wet weather flow periods.

Wastewater treatment processes at the Treatment Plant include primary sedimentation, biological activated sludge treatment, secondary sedimentation, sodium hypochlorite disinfection, and sodium bisulfite dechlorination. A treatment process schematic diagram is included as Attachment C.

Treated, disinfected, and dechlorinated wastewater is combined with treated, disinfected, and dechlorinated effluent from the Sewerage Agency of Southern Marin, and the combined effluent is discharged through Discharge Point 001 into Raccoon Strait in Central San Francisco Bay, a water of the State and the United States. The effluent is discharged into the Central Bay through a submerged diffuser about 840 feet offshore at a depth of 84 feet below mean lower low water (37 deg, 52 min 12 sec North latitude and 122 deg 27 min 5 sec West longitude).

During peak wet weather flow events, when influent flow exceeds 2.3 MGD, the capacity of primary treatment is augmented with the use of a third primary sedimentation tank. This third sedimentation tank has a volume of 0.11 million gallons (capacity of 4.4 MGD for 3 hour peak periods), and therefore ensures primary treatment capacity of 6.7 MGD during wet weather periods. The third primary sedimentation tank is more often used simply as a short term holding tank to retain influent flows greater than 2.3 MGD until they can be routed back to the headworks for full treatment. After primary treatment, a maximum of 2.3 MGD of primary effluent can be directed to the secondary aeration basins and clarifiers. During significant rain events, when the third sedimentation tank must be used

for primary treatment (and not just for short term holding), primary treated effluent flows greater than 2.3 MGD must be routed around secondary treatment and blended with secondary effluent to protect the secondary treatment system. "Blended" wastewater is then chlorinated and dechlorinated prior to discharge. Seventeen incidents of "blending" occurred at the Treatment Plant from 2004 to 2006. These blending events resulted in discharges of 0.007 to 3.2 million gallons and an average discharge of 0.85 million gallons of blended primary and secondary treated effluent.

All storm water originating within the area of the wastewater treatment plant is directed to the headworks of the treatment plant and treated with the wastewater. Discharges of storm water are therefore regulated by this Order and coverage under the Statewide Industrial Storm Water Permit (NPDES General Permit No. CAS000001) is not required.

B. Discharge Points and Receiving Waters

The discharge point, where combined discharges from the Treatment Plant and the Sewerage Agency of Southern Marin Wastewater Treatment Plant are discharged to San Francisco Bay, and the receiving water for this discharge is shown in Table F-2 below.

Table F-2. Discharge Point Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	POTW Effluent	37 ° , 52 ' , 12 " N	122 ° , 27 ' , 5 " W	Raccoon Strait, Central San Francisco Bay

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

Effluent limitations contained in the previous Order (Order No. R2-2002-0097) for discharges to the Central San Francisco Bay and representative monitoring data from the term of the previous Order are as follows:

Table F-3. Historic Effluent Limitations and Monitoring Data (Order No. R2-2002-0097) for Conventional and Non-Conventional Pollutants

Parameter	(units)	Effluent Limitations			Monitoring Data (From 10/02 to 03/07)		
		Monthly Average	Weekly Average	Daily Maximum	Highest Monthly Average	Highest Weekly Average	Highest Daily Discharge
BOD ₅	mg/L	30	45	---	21	40	58
TSS	mg/L	30	45	---	19	27	78
Oil and Grease	mg/L	10	---	20	5	---	5
pH	standard units	6.0 – 9.0			---	---	6.3 (minimum) 7.5 (maximum)
Settleable Matter	ml/L-hr.	0.1	---	0.2	0.1	---	0.1
Chlorine, Total Residual	mg/L	---	---	0.0 ⁽¹⁾	---	---	0.0
Total Coliform	MPN/ 100 mL	(2)	(2)	(2)	---	---	1600

(<) = Non-Detect (ND)

⁽¹⁾ For Total Residual Chlorine, 0.0 mg/L was established as an instantaneous maximum effluent limitation.

- (2) The moving median for the Most Probable Number of total coliform bacteria in five consecutive samples shall not exceed 240 MPN/100 mL and any single sample shall not exceed 10,000 MPN/100 mL.

Table F-4. Historic Effluent Limitations and Monitoring Data (Order No. R2-2002-0097) for Toxic Pollutants

Parameter	Units	Final Limits		Interim Limits			Monitoring Data Maximum Detected 10/02 – 03/07
		Daily Maximum	Monthly Average	Daily Average	Monthly Average	Mass Emission Limit (kg/mo.)	
Copper	µg/L	-----	-----	37	-----	-----	6.6
Lead	µg/L	80	40	-----	-----	-----	0.32
Nickel	µg/L	65	32	-----	-----	-----	8.9
Selenium	µg/L	-----	-----	50	-----	-----	6
Silver	µg/L	22	11	-----	-----	-----	0.2
Zinc	µg/L	910	410	-----	-----	-----	70
Cyanide	µg/L	-----	-----	25	-----	-----	13
Acute Toxicity	% survival	(1)	(1)	NA	NA	NA	(2)

- (1) An 11-sample median value of not less than 90 percent survival and an 11-sample 90th percentile value of not less than 70 percent survival.
(2) No exceedances of acute toxicity limits were reported during the previous Order term.

D. Compliance Summary

No exceedances of numeric limits were observed during the term of Order R2-2002-0097.

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 Waste Discharge Requirements (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* (the 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 adopted by the Regional Water Board and approved by the State Water Resources Control Board, U.S. EPA, and the Office of Administrative Law, as required.

Requirements of this Order implement the Basin Plan.

2. **Thermal Plan.** The State Water Board adopted a *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains WQOs for coastal and interstate surface waters as well as enclosed bays and estuaries. The Treatment Plant discharges to Central San Francisco Bay, which is defined as an enclosed bay by the Thermal Plan. Requirements of this Order implement the Thermal Plan, which states that for existing discharges to enclosed bays, elevated temperature waste discharges shall comply with limitations necessary to ensure protection of beneficial uses.
3. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, and 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. 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 toxic pollutants, which are applicable to the Central San Francisco Bay.
4. **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.
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 C.F.R. § 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 restriction on BOD₅, TSS, oil and grease, pH and chlorine residual. Restrictions on these pollutants are specified in federal regulations, and in the Basin Plan. The permit's technology-based pollutant restrictions are no more stringent than required by the CWA. WQBELs have been scientifically 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 40 CFR 131.38. The scientific 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. Most 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). The remaining water quality objectives and beneficial uses implemented by this Order [arsenic, cadmium, chromium (VI), copper (freshwater), lead, nickel, silver (1-hour), and zinc] were approved by USEPA on January 5, 2005, and are applicable water quality standards pursuant to 40 CFR 131.21(c)(2). Collectively, this order's restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the CWA and are the applicable water quality standards for purposes of the CWA.
7. **Antidegradation Policy.** NPDES regulations at 40 CFR 131.12 require 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 Board Resolution No. 68-16, and requires:

Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent with the maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies; and

Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) pollution or a nuisance will not occur and (b) the highest water quality consistent with the maximum benefit to the people of the State will be maintained.

With the limited exception presented by final effluent limitations for cyanide (discussed below), the Tentative Order does not authorize an increased rate of discharge or increased volumes or concentrations of waste for discharge from the Treatment Plant. The Regional Water Board, therefore, has determined that the Order is consistent with applicable State and federal antidegradation policies.

The final effluent limitations for cyanide are higher than the interim limitation contained in the previous Order. The final cyanide limitations in this Order are the same as the alternate effluent limitations established by the Order for cyanide, which will become effective if or when site-specific objectives (SSOs) are adopted, are consistent with the antidegradation analysis prepared for the SSOs, which concluded water quality would not be degraded. SSOs account for background conditions and the assimilative capacity of the Bay, and therefore, provide assurance that the receiving water's ability to support and maintain beneficial uses will not be compromised and existing water quality will be maintained. The conclusion that water quality will not be degraded is based, in part, upon implementation of a cyanide action plan, which is included in this Order as a provision in Section VI.C.8.

The final effluent limitations for copper are higher than the interim limitation contained in the previous Order (37 µg/L). The final copper limitations in this Order and the alternate effluent limitations established by the Order for copper, which will become effective if or when site-specific objectives (SSOs) are adopted, are consistent with the antidegradation analysis prepared for the SSOs, which concluded water quality would not be degraded. SSOs account for background conditions and the assimilative capacity of the Bay, and therefore, provide assurance that the receiving water's ability to support and maintain beneficial uses will not be compromised and existing water quality will be maintained. The conclusion that water quality will not be degraded is based, in part, upon implementation of a copper action plan, which is included in this Order as a provision in Section VI.C.8.

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 permit, with some exceptions in which limitations may be relaxed.

The previous Order R2-2002-0097 included final WQBELs for lead, nickel, silver, and zinc; however, because the RPA showed that discharges from the Treatment

Plant no longer demonstrate a reasonable potential to cause or contribute to exceedances of applicable water quality criteria for these pollutants, limitations from the previous permit are not retained. This is consistent with State Water Resources Control Board Order WQ 2001-16.

9. **Monitoring and Reporting Requirements.** 40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. CWC Sections 13267 and 13383 authorize the Regional Water Boards to require technical and monitoring reports. The MRP may be amended by the Executive Officer pursuant to USEPA regulations at 40 CFR 122.62, 122.63, and 124.5.

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

In November 2006, the USEPA approved a revised list of impaired water bodies , 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. This list is hereinafter referred to as the 303(d) list. Central San Francisco Bay is listed as an impaired waterbody for chlordane, DDT, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, PCBs, dioxin-like PCBs, and selenium. The SIP requires final effluent limitations for all 303(d)-listed pollutants to be consistent with total maximum daily loads 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 Central San Francisco Bay within the next ten years. Future review of the 303(d)-list for 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 WQBELs for 303(d)-listed pollutants in this discharge will be based on WLAs contained in the respective TMDLs.

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 the 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 WQOs/WQC. This collective effort may include development of sample concentration techniques for approval by the USEPA. 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 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 RMP or other appropriate funding mechanisms.

E. Other Plans, Policies and Regulations

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

1. The Federal *Water Pollution Control Act*, CWA Sections 301 through 305, and 307, and amendments thereto, as applicable;
2. The State Water Board's March 2, 2000 *Policy for Implementation of Toxics Standards for Inland Surface Water Enclosed Bays, and Estuaries of California*; 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 C.F.R. §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 §§ 122 and 131];
5. 40 CFR §131.36(b) and amendments [Federal Register Volume 60, Number 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]; and
8. 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 NPDES regulations: 40 CFR 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 CFR 122.44(d) requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable

numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs may be established: (1) using USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) on an indicator parameter for the pollutant of concern; or (3) using 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 40 CFR 122.44(d)(1)(vi).

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

A. Discharge Prohibitions

1. **Discharge Prohibitions III.A (No discharge other than that described in this Order):** This prohibition is retained from the previous permit and 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 Report of Waste Discharge, and subsequently in the Order, are prohibited.
2. **Discharge Prohibition III.B. (Average dry weather flow not to exceed dry weather design capacity):** This prohibition is based on the design capacity of the Treatment Plant. Exceedance of the Plant's dry weather flow design capacity of 0.98 MGD may result in lowering the reliability of achieving compliance with water quality requirements. This prohibition is also retained from the previous Order.
3. **Discharge Prohibitions III.C (No discharge receiving less than 74:1 dilution):** This prohibition is the same as in the previous permit and is based on Discharge Prohibition No. 1 from Table 4-1 of the Basin Plan, which prohibits discharges that do not receive a minimum 74:1 initial dilution. Further, this Order allows a 10:1 dilution credit in the calculation of some water quality based effluent limitations, and these limits would not be protective of water quality if the discharge did not actually achieve a 10:1 minimum initial dilution.
4. **Discharge Prohibition III.D. (No bypass except under the conditions at 40 CFR 122.41 (m)(4)(i)(A)(B)-(C):** This prohibition is based on the NPDES regulations expressed at 40 CFR 122.41(m)(4). This prohibition grants bypass of peak wet weather flows above 2.3 MGD that are recombined with secondary treatment flows and discharged at the combined outfall E-001, which meet the conditions established at 40 CFR 122.41(m)(4)(i)(A - C).

Background

During storm events, high volume flows can overwhelm certain parts of the wastewater treatment process and may cause damage or failure of the system. Operators of wastewater treatment plants must manage these high flows to both ensure the continued operation of the treatment process and to prevent backups and overflows of raw wastewater in basements or on city streets. USEPA recognizes that peak wet weather flow diversions around secondary treatment units (blending)

at POTWs serving separate sanitary sewer conveyance systems may be necessary in such circumstances.

In December 2005, USEPA invited public comment on its proposed Peak Wet Weather Policy that interprets 40 CFR 122.41(m) to apply to wet weather diversions that are recombined with flow from the secondary treatment, and provides guidance for NPDES approval by the Regional Water Board. The draft policy requires that blended discharges meet all the requirements of NPDES permits, and it encourages municipalities to invest in maintenance and capital improvements to improve long-term performance of wastewater handling and treatment systems.

Criteria of 40 CFR 122.41(m)(4)(i)(A)-(C)

USEPA's Peak Wet Weather policy states that "If the criteria of 40 CFR 122.41(m)(4)(i)(A)-(C) are met, the Regional Water Board can approve peak wet weather diversions that are recombined with flow from the secondary treatment. The criteria of 40 CFR 122.41(m)(4)(i) (Federal Standard Provisions, Attachment D) are (A) bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; (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; and (C) the Discharger submitted notice to the Regional Water Board as required under Federal Standard Provision – Permit Compliance I.G.5.

On August 15, 2007, the Discharger submitted a No Feasible Alternatives Analysis showing that at this time there are no feasible alternatives to blending under conditions of high wet weather flows. Blending diversions occurred 17 times between January 2004 and June 2007, approximately 5 times per year with an average of 0.85 million gallons being blended in each event. The largest diversion was in January 2006 with 3.2 million gallons diverted over 2 days. During that time period, 6.9 million gallons were treated, and all effluent met permit requirements prior to disposal.

Construction of additional wastewater storage capacity for secondary treatment cannot be considered because adjacent properties are fully developed. The plant is located adjacent to the coastline on the south, and flanked by very steep inclines to the north and east, and a condominium development to the west.

Observations of weather patterns and high inflows indicated that when the ground was saturated, i.e., after previous rain events, rainfall as little as 1 inch could result in excess flow and blending. This did not happen when the soil was dry indicating that high inflows to the treatment plant were caused by inflow and infiltration (I/I). To address the issue, the Discharger performed a two-year study to evaluate the condition of the Tiburon and Belvedere collection system. As a result of this study, which revealed deficiencies in the system the Discharger has embarked on a 10-year, \$3.5 million Sewer Rehabilitation Plan to upgrade the system to reduce I/I. The parts of the system deemed unsatisfactory are being addressed first and the whole program is planned to be fully implemented by 2015. Since the communities are

fully developed with no new development foreseen, the Rehabilitation Plan, when completed, is expected to significantly reduce, if not eliminate, the need for, and frequency of blending events.

The Discharger has satisfied the criteria of 40 CFR 122.41 (m)(4)(i)(A-C). Bypasses are necessary to prevent severe property damage when flows exceed the capacity of the secondary treatment. The Discharger has analyzed alternatives to bypassing and has determined that no feasible alternative exists at this time. The Discharger has submitted notice to the Regional Water Board as required under Federal Standard Provision – Permit Compliance I.G.5.

5. **Discharge Prohibition III. E (No sanitary sewer overflows to waters of the United States).** The Discharge Prohibition No. 5 from Table 4-1 of the Basin Plan and the Clean Water Act prohibit the discharge of wastewater to waters of the United States 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)]. Therefore, a sanitary sewer overflow that results in the discharge of raw sewage, or sewage not meeting secondary treatment requirements, is prohibited under the Clean Water Act and the Basin Plan.

B. Technology-Based Effluent Limitations

1. Scope and Authority

NPDES regulations at 40 CFR 122.44(a) require that permits include 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 133 and/or Best Professional Judgment (BPJ) in accordance with 40 CFR 125.3.

Secondary Treatment Regulations, which are specified in 40 CFR 133 apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of biochemical oxygen demand (BOD₅), total suspended solids (TSS), and pH. The guidelines, summarized in the following table, are applicable to discharges from the Treatment Plant.

Table F-5. Secondary Treatment Requirements

	30-Day Average	7-Day Average
BOD ₅ ⁽¹⁾	30 mg/L	45 mg/L
CBOD ₅ ⁽¹⁾⁽²⁾	25 mg/L	40 mg/L
TSS ⁽¹⁾	30 mg/L	45 mg/L
pH	6.0 – 9.0	

⁽¹⁾ The 30-day average percent removal shall not be less than 85 percent.

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

Further, Table 4-2 of the Basin Plan establishes effluent limitations applicable to municipal wastewater treatment plants for conventional pollutants – BOD₅, TSS, coliform bacteria, pH, chlorine, and oil and grease.

2. Applicable Technology-Based Effluent Limitations

The Order is retaining the following technology based effluent limitations, applicable to Discharge Point 001, from Order No. R2-2002-0097.

Table F-6. Summary of Technology-Based Effluent Limitations

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	s.u.	---	---	---	6.0	9.0
Total Residual Chlorine	mg/L	---	---	---	---	0.0
Total Coliform	MPN/100 mL	240	---	10,000	---	---

The limitations established for oil and grease are levels attainable by secondary treatment and are required by the Basin Plan (Table 4-2) for 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 Regulation at 40 CFR 133 and by the Basin Plan (Table 4-2) for deep water discharges.

The technology based effluent limitations for settleable matter are not retained from Order No. R2-2002-0097, as the Regional Water Board has determined that compliance with the Secondary Treatment Regulation at 40 CFR 133 and with the Basin Plan (Table 4-2) 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).

Effluent limitations for BOD₅ and TSS, including the 85% removal requirement, are required by 40 CFR 133 and Table 4-2 of the Basin Plan and are retained from the previous Order. 40 CFR 122.45(d)(2) specifies that discharge limitations for Publicly Owned Treatment Works shall be stated as average weekly limitations and average monthly limitations, unless impracticable.

Effluent limitations for total coliform bacteria are retained from Order R2-2002-0097. These limitations reflect conventional pollutant limitations, established by Table 4-2 of the Basin Plan, and applicable water quality objectives for water contact recreation, established by Table 3-1 of the Basin Plan, applied as end-of-pipe effluent limitations.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

- a. 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, when necessary, calculating WQBELs is intended to (1) protect the designated beneficial uses of the receiving water specified in the Basin Plan, and (2) achieve applicable WQOs and WQC that are contained in the California Toxics Rule (CTR), National Toxics Rule (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 Part 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 maximum daily and average monthly discharge limitations for all discharges other than publicly owned treatment works.”

(2) SIP. The SIP (page 8, Section 1.4) requires that 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 Objectives

The 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 WQOs established by more than one of these three sources.

- a. **Applicable Beneficial Uses.** Beneficial uses applicable to Central San Francisco Bay are as follows:

Table F-7. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Central San Francisco Bay	Industrial Service Supply (IND) Industrial Process Supply (PRO) Navigation (NAV) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Ocean, Commercial and Sport Fishing (COMM) Wildlife Habitat (WILD) Preservation of Rare and Endangered Species (RARE) Fish Migration (MIGR) Fish Spawning (SPWN) Shellfish Harvesting (SHELL) Estuarine Habitat (EST)

The Basin Plan implements State Water Resources Control Board (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 designation MUN is not applicable to the Central San Francisco Bay.

- b. Basin Plan.** The Basin Plan specifies numeric WQOs for 10 priority toxic pollutants, as well as narrative WQOs for toxicity and bioaccumulation in order to protect beneficial uses. The pollutants for which the Basin Plan specifies numeric objectives are arsenic, cadmium, chromium (VI), copper in freshwater, lead, mercury, nickel, silver, zinc, and cyanide. The narrative toxicity objective states in part “[a]ll waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms.” The bioaccumulation objective states in part “[c]ontrollable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered.” Effluent limitations and provisions contained in this Order are designed, based on available information, to implement these objectives.
- c. 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 Tables 3-3 and 3-4 of the Basin Plan include numeric objectives for certain of these priority toxic pollutants, which supersede criteria of the CTR (except in the South Bay south of the Dumbarton Bridge).
- d. 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 of the NTR are applicable to the Central San Francisco Bay, the receiving water for this Discharger.

- e. 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 Part 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* (the SIP, 2005).

- f. 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 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 discharger, Central San Francisco Bay, is a salt water environment based on salinity data generated through the San Francisco Estuary Institute's Regional Monitoring Program at the Richardson Bay (BC30), Point Isabel (BC41), and Yerba Buena (BC10) sampling stations between 1993 and 2001. In that period, the average salinity at the three sampling stations was 28.7 ppt, and the minimum observed salinity levels at the Richardson Bay, Point Isabel, and Yerba Buena sampling stations were 11.8, 11.6, and 9.9 ppt, respectively. As salinity was greater than 10 ppt in at least 99 percent of receiving water samples, the saltwater criteria from the Basin Plan, NTR, and CTR are applicable to this discharge.

- g. Site-Specific Metals Translators.** Because NPDES regulations at 40CFR 122.45(c) require that effluent limitations for metals be expressed as total recoverable metal, and applicable WQC for 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 in the water and therefore available to cause toxicity. In general, the dissolved form of the metals is more available and more toxic to aquatic

life than filterable forms. Site-specific translators can be developed to account for site-specific conditions, thereby preventing exceedingly stringent or under-protective WQOs.

For deep water discharges to Central San Francisco Bay, Regional Water Board staff used the following translators for copper and nickel, based on recommendations in 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, Regional Board staff used default translators established by USEPA in the CTR at 40 CFR 131.38(b)(2), Table 2.

Table F-8. Translators for Copper and Nickel for Deepwater Discharges North of Dumbarton Bridge (Central San Francisco Bay)

	AMEL Translator	MDEL Translator
Copper	0.74	0.88
Nickel	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 and 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, the receiving water's designated beneficial 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 Treatment 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 Treatment 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.

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 Site-Specific Objectives or WQC. Appendix A of this Fact Sheet shows the stepwise process described in Section 1.3 of the SIP.

The RPA projects a maximum effluent concentration (MEC) for each pollutant based on existing data, while accounting for a limited data set and effluent variability. There are three triggers in determining Reasonable Potential.

- (1) The first trigger is activated if the MEC is greater than or equal to the lowest applicable WQC ($MEC \geq WQC$), which has been adjusted, if appropriate, for pH, hardness, and translator data. If the MEC is greater than or equal to the adjusted WQC, then that pollutant has Reasonable Potential, and a WQBEL is required.
- (2) The second trigger is activated if the observed maximum ambient background concentration (B) is greater than the adjusted WQC ($B > WQC$), 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 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 August 6, 2001 Letter – available online; see Standard Language and Other References Available Online, below) to all permittees, formally required the Discharger (pursuant to California Water Code Section 13267) to initiate or continue monitoring for the priority pollutants using analytical methods that provide the best detection limits reasonably feasible. Regional Water Board staff analyzed these effluent data and the nature of the Treatment Plant to determine if the discharge has Reasonable Potential. The RPA was based on the effluent monitoring data collected by the Discharger from April 2004 through March 2007 for most inorganic pollutants, and from March 2002 through September 2003 for most organic pollutants.

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 criteria 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 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* (2003). This study includes monitoring results from sampling events in 2002 and 2003 for most of 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* (2004) for the Yerba Buena Island RMP station.

e. Reasonable Potential Determination

The MECs, most stringent applicable 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 WQC for all pollutants, and monitoring data were not available for others. The complete RPA is shown in Appendix A of this Fact Sheet. Based on a review of the effluent data collected during the previous permit term, the pollutants that exhibit Reasonable Potential are copper, mercury, selenium, cyanide, bis(2-ethylhexyl)phthalate, ammonia, and dioxin-TEQ. For mercury, however, subsequent to the adoption of the mercury watershed permit, mercury levels do not apply to this permit.

Table F-9. Summary of RPA Results

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	0.7	4300	1.8	No
2	Arsenic	6.4	36	2.81	No
3	Beryllium	<0.06	No Criteria	0.215	Ud
4	Cadmium	0.8	9.4	0.16	No
5a	Chromium (III)	1	No Criteria	Not Available	Ud
5b	Chromium (VI)	<0.9	50	4.4	No
6	Copper	6.6	4.2	2.55	Yes
7	Lead	0.32	8.5	0.80	No
8	Mercury (303d listed)	0.033	0.025	0.0086	Yes
9	Nickel	8.9	13	3.7	No
10	Selenium (303d)	6	5.0	0.39	Yes
11	Silver	0.2	2.2	0.052	No
12	Thallium	0.1	6.3	0.21	No
13	Zinc	70	86	5.1	No
14	Cyanide	13	1.0	< 0.4	Yes
15	Asbestos	Not Available	No Criteria	Not Available	Ud
16	2,3,7,8-TCDD (303d listed)	< 6.4E-07	1.4E-08	8.00E-3	No
	Dioxin TEQ (303d listed)	3.2E-09	1.4E-08	7.10E-08	Yes
17	Acrolein	< 1	780	< 0.5	No
18	Acrylonitrile	< 1	0.66	0.03	No
19	Benzene	< 0.27	71	< 0.05	No
20	Bromoform	18	360	< 0.5	No
21	Carbon Tetrachloride	< 0.42	4.4	0.06	No
22	Chlorobenzene	< 0.19	21000	< 0.5	No
23	Chlorodibromomethane	8.5	34	< 0.05	No
24	Chloroethane	< 0.34	No Criteria	< 0.5	Ud
25	2-Chloroethylvinyl ether	< 0.31	No Criteria	< 0.5	Ud
26	Chloroform	2.7	No Criteria	< 0.5	Ud
27	Dichlorobromomethane	3.9	46	< 0.05	No
28	1,1-Dichloroethane	< 0.28	No Criteria	< 0.05	Ud
29	1,2-Dichloroethane	< 0.18	99	0.04	No
30	1,1-Dichloroethylene	< 0.37	3.2	< 0.5	No
31	1,2-Dichloropropane	< 0.2	39	< 0.05	No
32	1,3-Dichloropropylene	< 0.2	1700	Not Available	No
33	Ethylbenzene	< 0.3	29000	< 0.5	No
34	Methyl Bromide	< 0.42	4000	< 0.5	No
35	Methyl Chloride	< 0.36	No Criteria	< 0.5	Ud
36	Methylene Chloride	4	1600	22	No
37	1,1,2,2-Tetrachloroethane	< 0.3	11	< 0.05	No
38	Tetrachloroethylene	<0.32	8.85	< 0.5	No
39	Toluene	1.6	200000	< 0.3	No
40	1,2-Trans-Dichloroethylene	< 0.3	140000	< 0.5	No
41	1,1,1-Trichloroethane	< 0.35	No Criteria	< 0.5	Ud
42	1,1,2-Trichloroethane	< 0.27	42	< 0.05	No
43	Trichloroethylene	< 0.29	81	< 0.5	No
44	Vinyl Chloride	< 0.34	525	< 0.5	No
45	2-Chlorophenol	< 0.4	400	< 1.2	No
46	2,4-Dichlorophenol	< 0.3	790	< 1.3	No
47	2,4-Dimethylphenol	< 0.3	2300	< 1.3	No
48	2-Methyl- 4,6-Dinitrophenol	< 0.4	765	< 1.2	No
49	2,4-Dinitrophenol	< 0.3	14000	< 0.7	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]
50	2-Nitrophenol	< 0.3	No Criteria	< 1.3	Ud
51	4-Nitrophenol	< 0.2	No Criteria	< 1.6	Ud
52	3-Methyl 4-Chlorophenol	< 0.3	No Criteria	< 1.1	Ud
53	Pentachlorophenol	< 0.4	7.9	< 1.0	No
54	Phenol	< 0.2	4600000	< 1.3	No
55	2,4,6-Trichlorophenol	< 0.2	6.5	< 1.3	No
56	Acenaphthene	< 0.17	2700	0.0019	No
57	Acenaphthylene	< 0.03	No Criteria	0.00053	Ud
58	Anthracene	< 0.16	110000	0.00050	No
59	Benzidine	< 0.3	0.00054	< 0.0015	No
60	Benzo(a)Anthracene	< 0.12	0.049	0.0053	No
61	Benzo(a)Pyrene	< 0.09	0.049	0.0015	No
62	Benzo(b)Fluoranthene	< 0.11	0.049	0.0046	No
63	Benzo(ghi)Perylene	< 0.06	No Criteria	0.0027	Ud
64	Benzo(k)Fluoranthene	< 0.16	0.049	0.0015	No
65	Bis(2-Chloroethoxy)Methane	< 0.3	No Criteria	< 0.3	Ud
66	Bis(2-Chloroethyl)Ether	< 0.3	1.4	< 0.3	No
67	Bis(2-Chloroisopropyl)Ether	< 0.6	170000	Not Available	No
68	Bis(2-Ethylhexyl)Phthalate	7	5.9	0.091	Yes
69	4-Bromophenyl Phenyl Ether	< 0.4	No Criteria	< 0.23	Ud
70	Butylbenzyl Phthalate	< 0.4	5200	0.0056	No
71	2-Chloronaphthalene	< 0.3	4300	< 0.3	No
72	4-Chlorophenyl Phenyl Ether	< 0.4	No Criteria	< 0.3	Ud
73	Chrysene	< 0.14	0.049	0.0024	No
74	Dibenzo(a,h)Anthracene	< 0.04	0.049	0.00064	No
75	1,2-Dichlorobenzene	< 0.12	17000	< 0.8	No
76	1,3-Dichlorobenzene	< 0.16	2600	< 0.8	No
77	1,4-Dichlorobenzene	0.4	2600	< 0.8	No
78	3,3 Dichlorobenzidine	< 0.3	0.077	< 0.001	No
79	Diethyl Phthalate	< 0.4	120000	< 0.24	No
80	Dimethyl Phthalate	< 0.4	2900000	< 0.24	No
81	Di-n-Butyl Phthalate	< 0.4	12000	0.016	No
82	2,4-Dinitrotoluene	< 0.3	9.1	< 0.27	No
83	2,6-Dinitrotoluene	< 0.3	No Criteria	< 0.29	Ud
84	Di-n-Octyl Phthalate	< 0.4	No Criteria	< 0.38	Ud
85	1,2-Diphenylhydrazine	< 0.3	0.54	0.0037	No
86	Fluoranthene	< 0.03	370	0.011	No
87	Fluorene	< 0.02	14000	0.0036	No
88	Hexachlorobenzene	< 0.4	0.00077	0.000022	No
89	Hexachlorobutadiene	< 0.2	50	< 0.3	No
90	Hexachlorocyclopentadiene	< 0.1	17000	< 0.31	No
91	Hexachloroethane	< 0.2	8.9	< 0.2	No
92	Indeno(1,2,3-cd)Pyrene	< 0.04	0.049	0.004	No
93	Isophorone	< 0.3	600	< 0.3	No
94	Naphthalene	< 0.05	No Criteria	0.0026	Ud
95	Nitrobenzene	< 0.3	1900	< 0.25	No
96	N-Nitrosodimethylamine	< 0.4	8.1	< 0.3	No
97	N-Nitrosodi-n-Propylamine	< 0.3	1.4	< 0.001	No
98	N-Nitrosodiphenylamine	< 0.4	16	< 0.001	No
99	Phenanthrene	< 0.03	No Criteria	0.0061	Ud
100	Pyrene	< 0.03	11000	0.019	No
101	1,2,4-Trichlorobenzene	< 0.3	No Criteria	< 0.3	Ud

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]
102	Aldrin	< 0.003	0.00014	1.4E-7	No
103	Alpha-BHC	< 0.002	0.013	0.000496	No
104	beta-BHC	< 0.001	0.046	0.000413	No
105	gamma-BHC	< 0.001	0.063	0.0007034	No
106	delta-BHC	< 0.001	No Criteria	0.000053	Ud
107	Chlordane (303d listed)	< 0.005	0.00059	0.00018	No
108	4,4'-DDT (303d listed)	< 0.001	0.00059	0.00017	No
109	4,4'-DDE (linked to DDT)	< 0.001	0.00059	0.000693	No
110	4,4'-DDD	< 0.001	0.00084	0.000313	No
111	Dieldrin (303d listed)	< 0.002	0.00014	0.000264	No
112	Alpha-Endosulfan	< 0.002	0.0087	0.000031	No
113	beta-Endosulfan	< 0.001	0.0087	0.000069	No
114	Endosulfan Sulfate	< 0.001	240	0.0000819	No
115	Endrin	< 0.002	0.0023	0.000036	No
116	Endrin Aldehyde	< 0.002	0.81	Not Available	No
117	Heptachlor	< 0.003	0.00021	0.000019	No
118	Heptachlor Epoxide	< 0.002	0.00011	0.000094	No
119-125	PCBs sum (303d listed)	< 0.03	0.00017	0.0015	No
126	Toxaphene	< 0.2	0.0002	Not Available	No
	Tributyltin	< 0.0013	0.0074	< 0.002	No
	Total PAHs	< 0.02	15	0.051	No
	Ammonia ^[c]	41000	1190	430	Yes

The Maximum Effluent Concentration (MEC) and maximum background concentration are the actual detected concentrations unless preceded by a "<" sign, in which case the value shown is the minimum detection level (DL).

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

[b] RPA Results = Yes, if MEC > WQC, B > WQC and MEC is detected, or Trigger 3;
= No, if MEC and B are < WQC or all effluent data are undetected;
= Undetermined (Ud), if no criteria have been promulgated or there are insufficient data.

[c] See section IV.C.4.d.7 of this Order for an explanation of the WQC for ammonia.

(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 Dischargers 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 dischargers are required to investigate the source(s) of the increase(s). Remedial measures are required if the increases pose a threat to water quality in the receiving water.

The previous Order R2-2002-0097 included final WQBELs for lead, nickel, silver, and zinc; however, because the RPA showed that discharges from the Treatment Plant no longer demonstrate a reasonable potential to cause or contribute to exceedances of applicable water quality criteria for these pollutants, limitations from the previous permit are not retained. This is consistent with State Water Resources Control Board Order WQ 2001-16.

4. WQBEL Calculations.

a. 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 WQC. The WQBELs were calculated based on appropriate WQC and the appropriate procedures specified in Section 1.4 of the SIP. The WQC used for each pollutant with Reasonable Potential are discussed below.

b. Dilution Credit

The SIP provides the basis for any dilution credit. The submerged diffuser is designed to achieve a minimum initial dilution of 10:1. Based on review of RMP monitoring data for the Bay, there is variability in the receiving water, and the hydrology of the receiving water is, itself, very complex. Therefore, there is uncertainty regarding the representative nature of ambient background data, which is used for determination of effluent limitations. 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 has determined that, except for ammonia and cyanide, a conservative 10:1 dilution credit ($D=9$) for non-bioaccumulative priority pollutants and a zero dilution credit for bioaccumulative pollutants are necessary for protection of beneficial uses. The detailed basis for each are explained below.

- (1) For certain bioaccumulative pollutants dilution credit is not included in calculating the final WQBELs. This determination is based on available data on concentrations of these pollutants in aquatic organisms, sediment, and the water column. For Central San Francisco Bay, the Regional Water Board placed mercury and polychlorinated biphenyls (PCBs) on the 303 (d) list. The USEPA added dioxin and furan compounds, selenium, chlordane, dieldrin, and 4,4'-DDT to the CWA Section 303(d) 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 the 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 furans, and pesticides (e.g., DDT).

For selenium, the denial of dilution credits is based on Bay waterfowl tissue data presented in the California Department of Fish and Game's Selenium Verification Study (1986-1990). These data show elevated levels of selenium in the livers of waterfowl that feed on bottom dwelling organisms such as clams. Additionally, in 1987, the Office of Environmental Health Hazard Assessment issued an advisory for the consumption of two species of diving ducks located in the North Bay, because they were found to have high tissue levels of selenium. This advisory is still in effect.

- (2) 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 should be limited to current levels. The Regional Water Board finds that mass-loading limits are warranted for mercury and selenium for the receiving waters of this discharger. This is to ensure that this discharger does not contribute further to impairment of the narrative objective for bioaccumulation. For mercury, however, subsequent to the adoption of the mercury watershed permit, mercury levels do not apply to this permit.
- (3) For non-bioaccumulative constituents (except for ammonia and cyanide), a conservative allowance of 10:1 dilution for discharges to the Bay has been assigned for protection of beneficial uses. The 10:1 dilution allowance was granted in the previous order and is also based on the Basin Plan's Prohibition Number 1, which prohibits discharges with less than 10:1 dilution. Limiting the dilution credit is based on SIP provisions in Section 1.4.2. The dilution credit is also based on SIP section 1.4.2, which considers the following:
 - (a) A far-field background station is appropriate because the receiving water body is a very complex estuarine system with highly variable and seasonal upstream freshwater inflows and diurnal tidal saltwater inputs. The SIP allows background conditions 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 due to inherent uncertainties in characterizing ambient background conditions in a complex estuarine system on a discharge-by-discharge basis.

The Yerba Buena Island RMP monitoring station, relative to other RMP stations, fits the guidance criteria of the SIP for establishing background conditions. The SIP requires that background water quality data be representative of the ambient receiving water that will mix with the discharge. Regional Water Board staff believe that water quality data from

the Yerba Buena Island RMP monitoring station is representative of the water that will mix with discharges from the Treatment Plant.

- (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. Being heavier and colder than fresh water, ocean salt water enters the Bay on twice day tidal cycles, generally beneath the warmer fresh water which flows seaward during wet seasons. When these waters mix and interact, complex circulation patterns occur due to varying densities of the fresh and ocean waters. The complex patterns occur throughout the estuary but are most prevalent in the San Pablo, Carquinez Straight, and Suisun Bay areas. The locations of this mixing and interaction change, depending on the strength of each tide and rate of delta outflow. Additionally, sediment loads to the Bay from the Central Valley change on a longer term basis, affecting the depth of different parts of the Bay and resulting in alteration of flow patterns and mixing and dilution that is achieved at an outfall.
- (c) The SIP allows limiting a mixing zone and dilution credit for persistent pollutants. Discharges to the Bay are defined by the SIP as incompletely mixed discharges; therefore, dilution credit should be determined using site specific information. Section 1.4.2.2 of the SIP specifies that the Regional Water Board shall "significantly limit a mixing zone and dilution credit as necessary to protect beneficial uses... 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 as "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). Dilution studies that estimate actual dilution do not address the effects of these persistent pollutants in the Bay environment, including long term effects on sediment concentrations.
- (d) Non-persistent pollutants, such as ammonia and cyanide, will degrade and disperse rapidly. Because of this, an actual initial dilution is appropriate in determining WQBELs for ammonia and cyanide.
 - (i) For ammonia, a non-persistent pollutant, a conservative estimated actual initial dilution was used to calculate the effluent limitations. This is justified because ammonia, a non-persistent pollutant, is quickly dispersed and degraded to a non-toxic state, and cumulative toxicity effects are unlikely. The estimated actual initial dilution was calculated using the Cornell Mixing Zone Expert System (CORMIX) software program. The model results were reported in a technical memorandum prepared by Larry Walker Associates for the Discharger

(September 26, 2007). The study estimated actual initial acute and chronic dilution ratios of 83 and 88, respectively, ($D = 82$ and 87) for wet weather flows of 21.5 MGD (maximum daily) and 16.4 MGD (four day average). Flow conditions were based on the combined discharges from Sanitary District No. 5 of Marin County Treatment Plant and the Sewerage of Southern Marin Waste Water Treatment Plant since both agencies use Discharge Point 001 for effluent disposal. The effluent limitations based on the acute criterion were calculated using the acute dilution ratio ($D=82$) and the effluent limitations based on the chronic criterion were calculated using the chronic dilution ratio ($D=87$). Both dilution ratios were determined assuming lower-low water conditions.

- (ii) For cyanide, another non-persistent pollutant that quickly disperses and degrades like ammonia, a dilution ratio of 75:1 (or $D = 74$) was used to calculate the water quality based effluent limits. Since the proposed cyanide site-specific objectives included an antidegradation analysis, which concluded that certain effluent limitations resulting from the implementation of the site-specific objectives (assuming 10:1 dilution) would not degrade water quality, the dilution credit used here is the dilution credit that results in effluent limits no greater than those identified in the site-specific objectives documents for the Discharger. This resultant dilution credit for cyanide is also in compliance with SIP Section 1.4.2.2, which requires that mixing zones be as small as practicable. Additionally, consistent with the site-specific objective, to ensure that water quality is not degraded, this Order requires a cyanide action plan.

c. Calculation of Pollutant Specific WQBELs

1. Copper

- (a) *Copper WQC.* The chronic and acute marine WQC for copper from the Basin Plan are 3.1 and 4.8 micrograms per liter ($\mu\text{g/L}$), respectively, expressed as dissolved metal. Regional Water Board staff converted these WQC to total recoverable metal using the site-specific translators of 0.74 (chronic) and 0.88 (acute), and a Water Effects Ratio (WER) of 1.0, recommended by the CEP's *North of Dumbarton Bridge Copper and Nickel Development and Selection of Final Translators* (2005). The resulting chronic WQC of 4.2 $\mu\text{g/L}$ and acute WQC of 5.5 $\mu\text{g/L}$ were used to perform the RPA.
- (b) *RPA Results.* This Order establishes effluent limitations for copper because the MEC of 6.6 $\mu\text{g/L}$ exceeds the WQC for copper, demonstrating Reasonable Potential by Trigger 1, as previously described.

- (c) *Copper WQBELs*. WQBELs are calculated based on the CTR's WQC and the site-specific WQOs established in the Basin Plan Amendment, Regional Water Board Resolution R2-2007-0042 (June 13, 2007) that was based on the Staff Report "Copper Site-Specific Objective in San Francisco Bay". Both sets of criteria are expressed as total recoverable metal using the site-specific translators and water effects ratio (WER) of 2.4 recommended by the CEP. The following table compares effluent limitations for copper calculated according to SIP procedures (and a coefficient of variation of 0.22) using the two sets of criteria, described above. The limitations take into account the deep water nature of the discharge, and are therefore based on a minimum initial dilution of 10 to 1, in accordance with the Basin Plan.

Table F-10. Effluent Limitations for Copper

Effluent Limitations for Copper		
	AMEL	MDEL
Based on CTR Criteria	72 µg/L	98 µg/L
Based on SSOs	54 µg/L	73 µg/L

- (d) *Immediate Compliance Feasible*. Statistical analysis of effluent data for copper, collected over the period of April 2004 through March 2007, shows that the 95th percentile (6.6 µg/L) is less than the AMEL (72 µg/L); the 99th percentile (7.7 µg/L) is less than the MDEL (98 µg/L); and the mean (4.7 µg/L) is less than the long term average of the projected normal distribution of the effluent data set after accounting for effluent variability (61 µg/L). The Regional Water Board concludes, therefore, that immediate compliance with final effluent limitations for copper is feasible; final effluent limitations will become effective upon adoption of this Order.
- (e) *Alternate Limitations for Copper*. As described in the CEP's *North of Dumbarton Bridge Copper and Nickel Site-Specific Objective Determination* (December 2004), the Regional Water Board has approved site-specific objectives for copper in non-ocean, marine waters of the Region. The proposed SSOs for copper are 2.5 and 3.9 µg/L as four-day and one-hour average (i.e., chronic and acute) criteria, respectively. If these SSOs for copper are adopted, final effluent limitations, calculated according to Section 1.4 of the SIP, using a WER of 2.4, would be an AMEL of 54 µg/L and an MDEL of 73 µg/L (MDEL). If these SSOs for copper are adopted, the alternate effluent limitations will become immediately effective upon the adoption date, so long as the SSOs and their current justification remain unchanged.
- (f) *Anti-backsliding*. Anti-backsliding requirements are satisfied as Order R2-2002-0097 did not include final effluent limitations for copper.

2. Selenium

- (a) *Selenium WQC.* The most stringent applicable WQC for selenium are the NTR acute and chronic saltwater criteria, 20 µg/L and 5.0 µg/L, respectively.
- (b) *RPA Results.* This Order establishes effluent limitations for selenium because the MEC (6.0 µg/L) exceeds the governing criterion of 5.0 µg/L, demonstrating Reasonable Potential by Trigger 1.
- (c) *Selenium WQBELs.* Final WQBELs for selenium have been calculated according to SIP procedures, as an AMEL of 3.7 µg/L and an MDEL of 9.0 µg/L using a CV of 0.91. No dilution credit was granted in these calculations, since selenium is on the 303(d) list and no assimilative capacity exists.
- (d) *Immediate Compliance Infeasible.* The Discharger's Feasibility Study asserts that the facility cannot immediately comply with the final WQBELs for selenium. Statistical analysis of effluent selenium data from November 2003 through October 2006 shows that the 95th percentile (4.9 µg/L) is greater than the AMEL (3.7 µg/L); the 99th percentile (9.1 µg/L) is greater than the MDEL (9.0 µg/L); while the mean (1.6 µg/L) is less than the long term average of the projected lognormal distribution of the data set after accounting for effluent variability (2.0 µg/L). Based on this analysis, the Regional Water Board concurs with the Discharger's assertion of infeasibility to comply with final WQBELs for selenium. In January 2008, EPA Region 9 approved use of cell technology in ICPMS compliance reporting for Clean Water Act purposes. Use of this analytical process for selenium provides the greatest matrix interference removal capability. The Discharger has been analyzing effluent selenium using the helium collision cell process and the results have been approximately 30% of results using EPA Method 200.8 in the normal mode. Removing the known interferences with Method 200.8 (chloride, fluoride, salinity) may eliminate the Discharger's compliance issues with selenium.
- (e) *Need for Cease and Desist Order.* Pursuant to State Water Board Order WQ-2007-0004, compliance schedules are not authorized for effluent limitations based on numeric objectives or criteria that were in effect prior to the SIP. This includes the NTR criteria for selenium. Because it is infeasible for the Discharger to immediately comply with final WQBELs for selenium, the Discharger will likely discharge in violation of this Order. A Cease and Desist Order, therefore, has been proposed concurrently with this Order. The Cease and Desist Order is necessary to ensure that the Discharger achieves compliance. It establishes time schedules for the Discharger to complete necessary analytical investigative, preventative, and remedial actions to address its imminent and threatened violations. If the Discharger can demonstrate compliance with final effluent limits through the implementation of new analytical techniques, e.g., helium

collision cell technology, the additional actions specified in the Cease and Desist Order will not apply.

- (f) *Anti-backsliding*. Anti-backsliding requirements are satisfied because the previous Order did not contain final effluent limitations for selenium.

3. Cyanide

- (a) *Cyanide WQC*. The most stringent applicable WQC 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.
- (b) *RPA Results*. This Order establishes effluent limitations for cyanide because the MEC of 13 µg/L exceeds the governing WQC of 1.0 µg/L, demonstrating Reasonable Potential by Trigger 1.
- (c) *Cyanide WQBELs*. For cyanide, a non-persistent pollutant that quickly disperses and degrades, a dilution factor of 75:1 was used to calculate WQBELs. Final WQBELs, calculated according to SIP procedures and using a CV of 0.8, are an AMEL of 20 µg/L and an MDEL of 45 µg/L.
- (d) *Immediate Compliance Feasible*. Statistical analysis of effluent data for cyanide, collected over the period of April 2004 through March 2007, shows that the 95th percentile (9.8 µg/L) is less than the AMEL (20 µg/L); the 99th percentile (17 µg/L) is less than the MDEL (45 µg/L); and the mean (3.5 µg/L) is less than the long term average of the projected lognormal distribution of the effluent data set after accounting for effluent variability (11 µg/L). Based on this analysis, the Regional Water Board concludes that immediate compliance with final effluent limitations for cyanide is feasible.
- (e) *Site Specific Objective (SSO) for Cyanide*. As described in the Basin Plan Amendment approved by the Regional Water Board, Resolution R2-2006-0086, December 13, 2006, and the Staff Report on Proposed Site – Specific Objectives for Cyanide for San Francisco Bay, December 4, 2006, the proposed site-specific criteria for marine waters are 2.9 µg/L as a four-day average, and 9.4 µg/L as a one-hour average. With these objectives, and the dilution granted for CN, a less stringent WQBEL could be calculated. However, because it is feasible for the Discharger to comply with the final WQBEL calculated using current federal criteria as described in 3(c) above, and because of antidegradation requirements, the Discharger's cyanide limits will be unchanged after the CN SSO becomes effective.
- (g) *Anti-backsliding*. Anti-backsliding requirements are satisfied, as Order R2-2002-0097 did not include final effluent limitations for cyanide.

4. Dioxin-TEQ

- (a) WQC. The Basin Plan narrative WQC 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 bioaccumulation WQC is applicable to these pollutants. Elevated levels of dioxins and furans in fish tissue in San Francisco Bay demonstrate that the narrative bioaccumulation WQC is not being met. USEPA has therefore included the Central San Francisco Bay as impaired by dioxin and furan compounds in the 303 (d) list of receiving waters where water quality objectives are not being met after imposition of applicable technology-based requirements.

The CTR establishes a numeric WQC 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 WQBELs 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. 40 CFR 122.44(d)(1)(vi) allows a State, which has not established water quality criteria for specific pollutants (in this case 2,3,7,8-TCDD congeners), to establish effluent limits using one or more of prescribed options (A), (B) or (C). Option C allows the establishment of effluent limitations on an indicator parameter for the pollutant of concern, in this case, the toxicity equivalent factor, relating the congener to a pollutant with specified numeric limits, is the indicator parameter.

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

- (b) *RPA Results*. This Order establishes effluent limitations for dioxin-TEQ because the maximum ambient background concentration (7.1×10^{-8} µg/L) exceeds the CTR numeric water quality criterion for 2,3,7,8-TCDD (1.4×10^{-8} µg/L), and dioxin-TEQ was detected in the effluent (MEC = 3.2×10^{-9} µg/L), demonstrating Reasonable Potential by Trigger 2, as previously described.
- (c) *WQBELs*. WQBELs for dioxin-TEQ, calculated using SIP procedures as guidance, are an AMEL of 1.4×10^{-8} µg/L and an MDEL of 2.8×10^{-8} µg/L based on a default CV of 0.6. Because dioxin-TEQ is a bioaccumulative pollutant on the 303(d) list, these limitations are calculated without credit for dilution.
- (d) *Immediate Compliance Infeasible*. The MEC for dioxin-TEQ (3.2×10^{-9} µg/L) is lower than the AMEL (1.40×10^{-8} µg/L) and MDEL (2.8×10^{-8} µg/L). As noted in the Discharger's November 2007 Infeasibility Analysis however, this MEC is based on analysis of only two samples collected in March and October 2002 and is the equivalent from one congener (OCDD). Given this minimal data set, there would be considerable uncertainty about the Discharger's ability to comply with any effluent limit and thus no interim limits have been established. Therefore, immediate compliance with effluent limitations for dioxin-TEQ may be infeasible.
- (e) *Anti-backsliding*. Anti-backsliding requirements are satisfied, as Order R2-2007-0097 did not include a limitation for dioxin-TEQ.

5. Bis(2-ethylhexyl)phthalate

- (a) *Bis(2-ethylhexyl)phthalate WQC*. The most stringent applicable water quality criterion is 5.9 µg/L, established by the CTR for the protection of human health, when organisms are consumed from the receiving water.
- (b) *RPA Results*. This Order establishes effluent limitations for bis(2-ethylhexyl)phthalate because the MEC (7.0 µg/L) exceeds the governing WQC (5.9 µg/L), demonstrating Reasonable Potential by Trigger 1.

- (c) *WQBELs*. Final WQBELs for bis(2-ethylhexyl)phthalate, calculated according to SIP procedures, and using a default CV of 0.6, are 58 µg/L and 120 µg/L as the AMEL and MDEL respectively. These limitations take into account the deep nature of the discharge, and therefore, in accordance with the Basin Plan, are based on a minimal initial dilution of 10:1.
- (d) *Immediate Compliance Feasible*. With insufficient data to determine the distribution of the data set or to calculate a mean or standard deviation, feasibility to comply was determined by comparing the MEC (7.0 µg/L) to the AMEL (58 µg/L) and the MDEL (120 µg/L). Based on this comparison, the Regional Water Board has determined it is feasible for the Discharger to immediately comply with the final WQBELs for bis(2-ethylhexyl)phthalate.
- (e) *Anti-backsliding*. Anti-backsliding requirements are satisfied, as the previous Order did not contain final effluent limitations for bis(2-ethylhexyl)phthalate.

6. Ammonia

- (a) *Ammonia WQC*. The Basin Plan contains WQC for un-ionized ammonia of 0.025 milligrams per liter (mg/L) as an 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. The WQOs are translated from un-ionized ammonia concentrations to equivalent total ammonia concentrations (as nitrogen), since (1) sampling and laboratory methods are not available to analyze for un-ionized ammonia; and (2) the fraction of total ammonia that exists in the toxic un-ionized form depends on the pH, salinity and temperature of the receiving water.

To translate the Basin Plan unionized ammonia objective, Regional Water Board staff used pH, salinity and temperature data from March 1993 to August 2001 from the Richardson Bay RMP monitoring station, the nearest monitoring station to the outfall. The following equation was used to determine the fraction of total ammonia in a discharge that would be converted to the toxic un-ionized form in estuarine and marine receiving waters (USEPA, 1989, *Ambient Water Quality Criteria for Ammonia (Saltwater)*—1989, EPA Publication No. 440/5-88-004):

For salinity > 10 ppt: fraction of $\text{NH}_3 = 1/1+10(\text{pK}-\text{pH})$

Where:

$\text{pK} = 9.245 + 0.116 \cdot (\text{I}) + 0.0324 \cdot (298 - \text{T}) + 0.0415 \cdot (\text{P}) / (\text{T} + 273)$

I = the molal ionic strength of saltwater = $19.9273 \cdot (\text{S}) / (1000 - 1.005109 \cdot \text{S})$

S = Salinity (parts per thousand)

T = temperature in degrees Celsius

P = Pressure (one atmosphere)

To convert the Basin Plan's chronic un-ionized ammonia WQO to an equivalent total ammonia concentration, the median un-ionized ammonia fraction at the Richardson Bay monitoring station was used. To convert the Basin Plan's acute un-ionized ammonia WQO to an equivalent total ammonia concentration, the 90th percentile un-ionized ammonia fraction at Richardson Bay was used. Using the 90th percentile and median to express the acute and chronic un-ionized ammonia WQOs as equivalent total ammonia concentrations is consistent with USEPA guidance on translating dissolved metal WQOs to total recoverable metal WQC (USEPA, 1996, *The Metals Translator: Guidance for Calculating a Total Recoverable Limit from a Dissolved Criterion*, EPA Publication Number 823-B-96-007). The equivalent total ammonia acute and chronic WQOs are 4.65 mg/L and 1.19 mg/L, respectively.

- (b) *RPA Results*. The SIP methodology was used to perform the RPA and to calculate effluent limitations. To set limitations for toxic pollutants, the Basin Plan (Section 4.5.5.2) indicates that WQBELs shall be calculated according to the SIP. Section 3.3.20 of the Basin Plan refers to ammonia as a toxic pollutant; therefore, it is consistent with the Basin Plan to use SIP methodology to determine and establish effluent limitations for ammonia. This Order establishes effluent limitations for total ammonia because the MEC of 41 mg/L exceeds the most stringent, applicable WQC (1.19 mg/L) for this pollutant, demonstrating Reasonable Potential by Trigger 1.
- (c) *WQBELs*. The total ammonia WQBELs calculated according to SIP procedures (and a CV of 0.39) are an AMEL of 100 mg/L and an MDEL of 210 mg/L. To calculate total ammonia limits, some statistical adjustments were made because the Basin Plan's chronic WQO for un-ionized ammonia is based on an annual median, while chronic criteria are usually based on a 4-day average; also, the SIP assumes a monthly sampling frequency of 4 days per month to calculate effluent limitations based on chronic criteria. To use SIP methodology to calculate effluent limits for a Basin Plan objective that is based on an annual median, an averaging period of 365 days and a monitoring frequency of 30 days per month (the maximum daily sampling frequency in a month since the averaging period for a chronic criterion is longer than 30 days) were used. These statistical adjustments are supported by USEPA's *Water Quality Criteria; Notice of Availability; 1999 Update of Ambient Water Quality Criteria for Ammonia*, published on December 22, 1999, in the Federal Register.

Following SIP methodology as guidance, Regional Water Board staff used the maximum ambient background total ammonia concentration to calculate effluent limitations based on the acute criterion; and the median background total ammonia concentration to calculate effluent limitations based on the chronic criterion. Because the Basin Plan's chronic un-

ionized ammonia objective is an annual median, the median background concentration is more representative of ambient conditions than a daily maximum.

The WQBELs were calculated using a dilution factor of 88:1 for the chronic criteria and 83:1 for the acute criteria. The most stringent, governing calculated WQBELs are based on the chronic criteria. The determination of the dilution ratios is described in Section IV.C.4.b.(3)(i) of the Fact Sheet.

(d) *Plant Performance and Attainability.* Statistical analysis of effluent data for total ammonia collected over the period of August 2004 through March 2007 shows that the 95th percentile (29.8 mg/L) is less than the AMEL (104 mg/L); the 99th percentile (34.6 mg/L) is less than the MDEL (204 mg/L); and the mean (18.0 mg/L) is less than the long-term average of the projected normal distribution of the effluent data set after accounting for effluent variability (92 mg/L). Based on this analysis, the Regional Water Board concludes that immediate compliance with final effluent limitations for ammonia is feasible.

(e) *Anti-backsliding.* Anti-backsliding requirements are satisfied as Order R2-2002-0097 did not contain effluent limitations for ammonia.

d. Effluent Limit Calculations

The following table shows the WQBEL calculations for copper, mercury, selenium, cyanide, dioxin-TEQ, bis(2-ethylhexyl)phthalate, and ammonia. Subsequent to the adoption of the mercury watershed permit, mercury limits do not apply to this permit.

Table F-11. Effluent Limit Calculations

PRIORITY POLLUTANTS	Copper		Mercury	Selenium	Cyanide		Dioxin TEQ	Bis(2-Ethylhexyl)P htalate	Total Ammonia (acute)	Total Ammonia (chronic)
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L N	ug/L N
	BP SW Aq. Life	Alternate limits using SSOs (December 2004)	BP SW Aq. Life	NTR Criterion for the Bay	NTR Criterion for the Bay	Alternate Limits Using Proposed SSOs	CTR HH	CTR HH	Basin Plan Aq. Life	Basin Plan Aq. Life
Basis and Criteria type										
CTR Criteria - Acute	5.5	-----	-----	-----	1.0	9.4	-----	-----	-----	-----
CTR Criteria - Chronic	4.2	-----	-----	-----	1.0	2.9	-----	-----	-----	-----
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	1	1	1	1
Lowest WQO	4.2		0.025	5.0	1.0	1.0	1.4E-08	5.9	4650	1190
Site Specific Translator - MDEL	0.88	0.88	-----							
Site Specific Translator - AMEL	0.74	0.74	-----							
Dilution Factor (D) (if applicable)	9	9	0	0	74	9	0	9	82	87
No. of samples per month	4	4	4	4	4	4	4	4	4	30
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	Y	Y	Y	N	N	Y	Y
HH criteria analysis required? (Y/N)	N	N	Y	N	Y	Y	Y	Y	N	N
Applicable Acute WQO	13.1	10.64	2.1	20	1	9.4			4650	
Applicable Chronic WQO	10.1	8.11	0.025	5.0	1	2.9				1190
HH criteria	-----	-----	0.051		220000	220000	1.4E-08	5.9	0	
Background (Maximum Conc for Aquatic Life calc)	2.55	2.55	0.0086	0.39	0.4	0.4	7.1E-08	0.091	170	90
Background (Average Conc for Human Health calc)	-----	-----	0.0022		0.4	0.4	5.00E-08	0.091		
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	N	N	Y	Y	N	N	Y	N	N	N
ECA acute	108	83	2.1	20.00	45.4	90.4			372010	No Acute WQO
ECA chronic	78	58	0.025	5.00	45.4	25.4			No Chronic WQO	96890
ECA HH	-----	-----	0.051	-----	16499970	2199996	1.4E-08	58.2		
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	N	N	N	N	Y	Y	N	N
Avg of effluent data points	4.7	4.7	0.0040	1.6	3.5	3.5			18041	18041
Std Dev of effluent data points	1.0	1.0	0.0051	1.4	2.7	2.7			7120	7120
CV calculated	0.22	0.22	1.26	0.91	0.8	0.8	N/A	N/A	0.39	0.39
CV (Selected) - Final	0.22	0.22	1.26	0.91	0.8	0.8	0.60	0.6	0.39	0.39
ECA acute mult99	0.62	0.62	0.17	0.22	0.25	0.25			0.444	
ECA chronic mult99	0.78	0.78	0.31	0.40	0.44	0.44				0.953
LTA acute	66.8	51.6	0.4	4.5	11.4	22.7			165057	
LTA chronic	61	45	0.0077	2.0	20.1	11				92365
minimum of LTAs	61	45	0.0077	2.0	11.41	11			165057	92365
AMEL mult95	1.2	1.2	2.2	1.9	1.7	1.7	1.6	1.6	1.35	1.12
MDEL mult99	1.6	1.6	6.0	4.5	4.0	4.0	3.1	3.1	2.25	2.25
AMEL (aq life)	72	54	0.017	3.7	19.9	19.6			223346	103704
MDEL (aq life)	98	73	0.046	9.0	45.4	44.7			372010	208173
MDEL/AMEL Multiplier	1.36	1.36	2.74	2.42	2.28	2.28	2.01	2.0	1.7	2.01
AMEL (human hith)	-----	-----	0.051	-----	16499970	2199996	1.4E-08	58.181		0
MDEL (human hith)			0.140		37668541	5022473	2.8E-08	116.72209		0
minimum of AMEL for Aq. life vs HH	72.0	54.0	0.017	4	19.9	19.6	1.4E-08	58.181	223346	103704
minimum of MDEL for Aq. Life vs HH	97.9	73.3	0.046	9	45.4	44.7	2.8E-08	116.72209	372010	208173
Current limit in permit (30-day average)	-----	-----	0.087 (interim)	-----	-----	-----	-----	-----	-----	-----
Current limit in permit (daily)	37 (interim)	37 (interim)	-----	50 (interim)	25 (interim)	25 (interim)	-----	-----	-----	-----
Final limit - AMEL	72	54	0.017	3.7	20	20	1.4E-08	58	-----	103704
Final limit - MDEL	98	73	0.046	9.0	45	45	2.8E-08	117	-----	208173
Max Effi Conc (MEC)	6.6	6.6	0.033	6.0	13	13	3.2E-09	7	41000	41000

5. Whole Effluent Acute Toxicity

- a. Representative samples of the effluent at Discharge Point 001 shall meet the following limits for acute toxicity:

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.

- b. 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 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.

- c. Bioassays shall be conducted in compliance with Section V.A of the Monitoring and Reporting Program (MRP, Attachment E).

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.

- d. If the Discharger can demonstrate to the satisfaction of the Executive Officer that toxicity exceeding the levels cited above is caused by ammonia and that the ammonia in the discharge is in compliance with effluent limitations, then such toxicity does not constitute a violation of this effluent limitation. This is based on the Basin Plan Section 3.3.20) "Un-Ionized Ammonia." If ammonia toxicity is verified in the TIE, the Discharger may utilize an adjustment protocol approved by the Executive Officer for routine bioassay testing.

6. Whole Effluent Chronic Toxicity

- a. 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 at Discharge Point 001 meeting test acceptability criteria and Section V.B of the MRP (Attachment E). Failure to conduct the required toxicity tests or a TRE within 30 days of the trigger can result in the establishment of effluent limitations for chronic toxicity.

(1) Conduct annual routine monitoring.

- (2) Accelerate monitoring after exceeding a single-sample maximum of 10 chronic toxicity units (TUC), consistent with Table 4-5 of the Basin Plan for dischargers monitoring chronic toxicity annually. Accelerated monitoring shall consist of four (4) chronic toxicity tests conducted once every two weeks using the species that exhibited toxicity.
- (3) Return to routine monitoring if accelerated monitoring does not exceed the "trigger" in (2), above.
- (4) If accelerated monitoring confirms consistent toxicity above the "trigger" in (2), above, initiate toxicity identification evaluation/toxicity reduction evaluation (TIE/TRE) in accordance with a workplan submitted in accordance with Section V.B.3 of the MRP (Attachment E), and that incorporates any and all comments from the Executive Officer.
- (5) Return to routine monitoring after appropriate elements of TRE workplan are implemented and either the toxicity drops below "trigger" levels in (2), above, or, based on the results of the TRE, the Executive Officer authorizes a return to routine monitoring.

b. Test Species and Methods

The Discharger shall conduct routine monitoring with the 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).

For the term of this Order, the species *Mysidopsis bahia* has been approved by the Regional Board for chronic toxicity monitoring. The Discharger submitted a request by letter dated April 18, 2005 to utilize the results of screening phase chronic toxicity monitoring conducted by Sausalito-Marín City Sanitary District in lieu of facility specific screening. The Regional Board granted this request, considering the cost of screening phase chronic toxicity monitoring, the similarity of the Treatment Plant to that of Sausalito-Marín City, and that the Sewerage Agency of Southern Marin, with whom the Sanitary District No. 5 shares an outfall, was also permitted to use the chronic toxicity screening results. Chronic Toxicity Screening Phase monitoring must be completed, however, prior to the expiration of this Order. The Screening Phase monitoring for the Discharger may again be completed in conjunction with Sausalito-Marín City and the Sewerage Agency of Southern Marin.

D. Final Effluent Limitations

1. Following is a summary of the technology-based and water quality-based effluent limitations established by this Order for Discharge Point E-001.

a. Conventional and Non-Conventional Pollutants

Table F-12. Summary of Effluent Limitations for Conventional and Non-Conventional Pollutants

Parameter	Units	Effluent Limitations					Basis
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Oil and Grease	mg/L	10	---	20	---	---	(1)
pH	standard units	---	---	---	6.0	9.0	(2)
TSS	mg/L	30	45	---	---	---	(2)
BOD ₅	mg/L	30	45	---	---	---	(2)
Chlorine, Total Residual	mg/L	---	---	---	---	0.0	(1)

(1) Basin Plan

(2) 40 CFR 133 Secondary Treatment Regulation

The Discharger shall also comply with the following effluent limitations.

- (1) **BOD₅ and TSS 85% Percent Removal.** The average monthly percent removal of BOD₅ and TSS shall not be less than 85 percent.
- (2) **Total Coliform Bacteria.** The treated wastewater shall meet the following limits of bacteriological quality:
 - i. The median value based on minimum of five consecutive samples equally spaced over a 30-day period analyzed for total coliform should not exceed 240 MPN/100mL.
 - ii. Any single sample should not exceed 10,000 MPN/ 100 mL.

b. Effluent Limitations for Toxic Pollutants

Table F-13. Summary of Effluent Limitations for Toxic Pollutants

Parameters	Units	Final Effluent Limits		Basis
		AMEL	MDEL	
Copper ⁽¹⁾	µg/L	72	98	Basin Plan, SW Criteria
Selenium	µg/L	3.7	9.0	NTR, SW Criteria
Cyanide ⁽²⁾	µg/L	20	45	NTR, SW Criteria
Dioxin-TEQ	µg/L	1.4 x 10 ⁻⁸	2.8 x 10 ⁻⁸	Basin Plan, Narrative
Bis(2-ethylhexyl)phthalate	µg/L	58	120	CTR, Human Health
Ammonia (total as N)	mg/L	100	210	Basin Plan WQO

⁽¹⁾ Alternate Effluent Limits for Copper:

- a. 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 (Basin Plan Amendment approved by the Regional Water Board Resolution R2-2007-0042, June 13, 2007, based on the Staff Report "Copper Site-Specific Objective in San Francisco Bay" June 6, 2007). Upon its effective date, the following limitations shall supersede those copper limitations listed in Table 7: AMEL of 54 µg/L and MDEL of 73 µg/L.
- b. 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⁾ Alternate Effluent Limits for Cyanide

- a. If a cyanide SSO for the receiving water becomes legally effective, resulting in adjusted saltwater Criterion Continuous Concentration of 2.9 µg/L (Basin Plan Amendment approved by the Regional Water Board Resolution R2-2006-0086, December 13, 2006, based on Staff Report on Proposed Site-Specific Objectives for Cyanide for San Francisco Bay). Upon its effective date, the following limitations shall supersede those cyanide limitations listed in Table 7: AMEL of 20 µg/L and MDEL of 45 µg/L.
- c. 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.

c. 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 ten 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.

2. Anti-Backsliding/Antidegradation.

a. Effluent Limitations Retained from Order No. R2-2002-0097. Limitations for the following parameters are retained and are unchanged from Order No. R2-2002-0097.

- Oil and grease
- pH
- BOD₅ and TSS
- Total residual chlorine
- 85 % removal requirement for BOD₅ and TSS
- Total coliform bacteria

- Acute toxicity

By retaining effluent limitations for these parameters in the tentative Order, these limitations are at least as stringent as those in Order No. R2-2002-0097, meeting applicable anti-backsliding requirements of the Clean Water Act.

- b. New Effluent Limitations.** Final, concentration-based limitations for the following parameters were not contained in Order No. R2-2002-0097 and are established by the tentative Order.

- Copper
- Selenium
- Cyanide
- Dioxin-TEQ
- Bis(2-ethylhexyl)phthalate
- Ammonia

The establishment of effluent limitations for copper, selenium, cyanide, bis(2-ethylhexyl)phthalate, dioxin-TEQ, and ammonia effectively creates more stringent limitations than in the previous Order, therefore meeting applicable anti-backsliding requirements and ensuring that the existing quality of the receiving water will not be degraded (in terms of these parameters) as a result of the tentative Order.

- c. More Stringent Effluent Limitations.** No limitations established by Order No. R2-2002-0097 for are made more stringent by the tentative Order.

- d. Effluent Limitations Not Retained from Order No. R2-2002-0097.** Final limitations for the following parameters are not retained by the tentative Order.

- Settleable matter
- Lead
- Nickel
- Silver
- Zinc

Effluent limitations for settleable matter have not been retained by this Order. For the Treatment Plant, like other facilities achieving secondary or more advanced levels of treatment, the Regional Water Board has determined that compliance with the requirements of 40 CFR 133 and of Table 4-2 of the Basin Plan will also assure 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).

Order No. R2-2002-0097 included final effluent limitations for lead, nickel, silver and zinc; however, because the reasonable potential analysis showed that discharges from the Treatment Plant no longer demonstrate a reasonable potential to cause or contribute to exceedances of applicable water quality

criteria for these pollutants, limitations from the previous permit are not retained, and new limitations are not included in the Order.

E. Interim Effluent Limitations

Not Applicable.

F. Land Discharge Specifications

Not Applicable.

G. Reclamation Specifications

Not Applicable.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

Receiving water limitations are retained from the previous Order and reflect applicable water quality standards from the Basin Plan.

B. Groundwater

Not Applicable.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS (PROVISIONS B)

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.
- 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

Influent monitoring requirements for flow rate, BOD₅ and TSS allows determination of compliance with this Order's 85 percent removal requirement.

B. Effluent Monitoring

The MRP retains most effluent monitoring requirements from the previous permit. Changes in effluent monitoring are summarized as follows.

- Monitoring for settleable matter is no longer required, as the effluent limitation for this parameter has not been retained by the Order.
- This Order requires continuous monitoring of the effluent for pH. This is consistent with determining compliance with the federal technology-based requirements based on Secondary Treatment Standards at 40 CFR Part 133.
- Routine monitoring in effluent is required for copper, mercury, selenium, cyanide, dioxin-TEQ, bis(2-ethylhexyl)phthalate, and total ammonia - those toxic pollutants with effluent limitations established by the order. For mercury, however, subsequent to the adoption of the mercury watershed permit, mercury levels do not apply to this permit. Monitoring for all other priority toxic pollutants must be conducted in accordance with frequency and methods described in the August 6, 2001 Letter – Requirements for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy.

C. Bypasses or Sewer Overflow Monitoring

The MRP retains monitoring requirements to record observations related to bypasses or sewer overflows.

D. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Monthly 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.
2. **Chronic Toxicity.** Chronic whole effluent toxicity testing is required annually in order to demonstrate compliance with the Basin Plan's narrative toxicity objective. The frequency of monitoring is increased for the term of this Order over that of the previous Order, which required chronic toxicity monitoring twice per the five year term of the permit. The increase in monitoring frequency reflects the importance placed by the Regional Water Board on chronic toxicity monitoring as a

measurement of the cumulative effect of toxic pollutants, which, by themselves, may not be at levels of concern.

E. Receiving Water Monitoring

On April 15, 1992, the Regional Water Board adopted Resolution No. 92-043 directing the Executive Officer to implement the Regional Monitoring Program 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 Trace Substances. This Order specifies that 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.

F. Other Monitoring Requirements

- 1. Sludge Monitoring.** The Discharger shall adhere to sludge monitoring requirements required by 40 CFR Part 503.
- 2. Bypass Monitoring.** During any time when bypassing occurs such that all wastewater does not receive full secondary treatment, other than wet weather discharges or bypasses addressed in the Order and self monitoring program, the discharge must be monitored for effluent quality.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions (Provision VI.A)

Standard Provisions, which in accordance with 40 CFR §§122.41 and 122.42, apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachments D and G of this Order.

NPDES regulations at 40 CFR 122.41(a)(1) and (b) through (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 this 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 at 40 CFR 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code 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 Permit. 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. They contain definitions of terms, specify general sampling and analytical protocols, and set 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 contains a sampling program specific for the facility. It defines the sampling stations and frequency, the pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are specified. Monitoring for additional constituents, for which no effluent limitations are established, is also required to provide data for future completion of RPAs for them.

C. Special Provisions (Provision VI.C)

1. Re-opener Provisions

These provisions are based on 40 CFR 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 as 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 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 Central 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 potentially amend this Order accordingly.

3. Best Management Practices and Pollution Minimization Program

This provision is based on Chapter 4 of the Basin Plan and 2.4.5 of the SIP.

4. 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.4 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 §122, and the previous Order. See Section VI.C.4 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 §122, and the previous Order. See Section VI.C.4 of this Order for specific requirements.

5. Special Provisions for Municipal Facilities (POTWs Only)

- a. Sludge Management Practices: This provision is based on the Basin Plan (Chapter 4) and 40 CFR Parts 257 and 503.
- b. Utility Analysis and Implementation Schedule for Wet Weather Bypass of Secondary Treatment: This provision is based on 40 CFR 122.41(m). It requires that the Discharger reevaluate prior to the next permit reissuance that it has explored every feasible alternative to eliminate blending.
- c. Sanitary Sewer Overflows and Sewer System Management Plan: This provision is to explain this Order's requirements as they relate to the Discharger's conveyance system, and to promote consistency with the State Water Resources Control Board adopted Statewide General Waste Discharge Requirements for Sanitary Sewer Overflow (SSO WDRs) and a related Monitoring and Reporting Program (Order No. 2006-0003-DWQ). The bases for these requirements are described elsewhere in this Fact Sheet. See Section VI.C.5.c. of this Order for specific requirements.

6. Corrective Measures to Minimize Blending

This provision is based on NPDES regulations at 40 CFR 122.41(m). Seventeen blending events occurred from January 2004 through June 2007. The average volume of blended effluent during this period was 0.85 million gallons. The Discharger's infeasibility analysis indicates that elimination or reduction of blending is currently infeasible in the short-term. The provision is necessary to ensure the Discharger implements corrective measures to minimize or eliminate blending consistent with 40 CFR 122.41(m).

7. Compliance Schedule for dioxin-TEQ

The compliance schedule and the requirement to submit reports on further measures to reduce concentrations of dioxin-TEQ were issued to ensure compliance with final limits and are based on the Basin Plan Section 4.7.6, and 40 CFR 122.47(a)(3). As previously described, the Discharger submitted an Infeasibility Report, and the Regional Water Board staff confirmed its 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. However, time to allow additional effort is necessary to achieve compliance. Maximum allowable compliance schedules are granted to the Discharger for this pollutant because of the considerable uncertainty in determining effective measures (e.g., pollution prevention, treatment upgrades) that should be implemented to ensure compliance with the final limit. It is appropriate to allow the Discharger sufficient time to first explore analytical and source control measures before requiring it to propose further actions, such as treatment plant upgrades, that are likely to be much more costly. This approach is supported by Basin Plan Section 4.13, which states: "In general, it is often more economical to reduce overall pollutant loadings into the treatment systems than to install complex and expensive technology at the plant."

8. Action Plan for Cyanide

The proposed cyanide site-specific objectives, if approved, will require action plans for source control. Implementation of a similar action plan for cyanide at this time would ensure that any increase in cyanide limits would be consistent with limits expected with the site-specific objectives. Therefore, the antidegradation analysis prepared for the site-specific objectives could also apply to these limits, which would therefore comply with antidegradation policies (i.e., increasing the limits would not degrade the quality of the receiving water).

9. Action Plan for Copper

Since the proposed SSO for copper has associated action plans for source control, this provision requires an action plan to implement source control requirements once the alternate limits become effective.

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 Sanitary District No. 5 of Marin County Wastewater Treatment Plant. 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 was provided through an advertisement in the Marin Independent Journal on February 21 and March 5, 2008.

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to the Executive Officer at the Regional Water Board at the address above on the cover page of this Order, Attention: Derek Whitworth or by email: dwhitworth@waterboards.ca.gov.

To receive a full response from Regional Water Board Staff and to be considered by the Regional Water Board, written comments must have been received at the Regional Water Board offices by 5:00 p.m. on **Monday, March 24, 2008**.

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: July 9, 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., except from noon to 1:00 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 (e-mail at DWhitworth@waterboards.ca.gov).

Attachment to Fact Sheet

Table

- | | |
|----------|---|
| 1 | Criteria |
| 2 | Data Input for Reasonable Potential Analysis |
| 3 | Reasonable Potential Analysis |
| 4 | Water Quality Based Effluent Limits |
| 5 | Feasibility Analysis |

Marin County Sanitary District
Applicable Water Quality Objectives/Criteria

[illegible]

Marin County Sanitary District
Applicable Water Quality Objectives/Criteria

		Lowest (most stringent) Criteria	Most Stringent Criteria			Basin Plan Criteria								CTR Water Quality Criteria (ug/L)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
# in CTR	PRIORITY POLLUTANTS		Human Health Criterion	Lowest Chronic Criterion	Lowest Acute Criterion			Freshwater Table 3-4)				Saltwater (from Table 3-3)				Freshwater		Saltwater		Human Health for consumption of:		Factors for Metals Freshwater Criteria				Conversion Factor (CF)				Site-Specific Translators																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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CTR No.		EFFLUENT DATA					BACKGROUND DATA (B)					7) Review other information in the SIP page 4. If information is unavailable or insufficient: 8) the RWQCB shall establish interim monitoring requirements.
		Effluent Data Available (Y/N)?	Are all data points non-detects (Y/N)?	If all data points ND Enter the min detection limit (MDL) (ug/L)	Enter the pollutant effluent detected max conc (ug/L)	Input Check	B Available (Y/N)?	Are all B non-detects (Y/N)?	If all data points ND Enter the min detection limit (MDL) (ug/L)	Enter the Detected Maximum Background Conc (ug/L)	Input Check	
1	Antimony	Y	N		0.7		Y	N		1.8		No Criteria
2	Arsenic	Y	N		6.4		Y	N		2.81		
3	Beryllium	Y	Y	0.06			Y	N		0.215		
4	Cadmium	Y	N		0.8		Y	N		0.16		
5a	Chromium (III)	Y	N		1.0		N					
5b	Chromium (VI)	Y	Y	0.9			Y	N		4.4		
6	Copper	Y	N		6.6		Y	N		2.55		
7	Lead	Y	N		0.32		Y	N		0.8040		
8	Mercury (303d listed)	Y	N		0.033		Y	N		0.0086		
9	Nickel	Y	N		8.9		Y	N		3.73		
10	Selenium (303d)	Y	N		6		Y	N		0.39		
11	Silver	Y	N		0.2		Y	N		0.052		
12	Thallium	Y	N		0.1		Y	N		0.21		
13	Zinc	Y	N		70		Y	N		5.1		
14	Cyanide	Y	N		13		Y	Y	0.4			
15	Asbestos	N					N					No Criteria
16	2,3,7,8-TCDD (Dioxin) (303d)	Y	Y	6.37E-07			Y	N		8.00E-03		
16-TEQ	Dioxin TEQ (303d)	Y	N		3.20E-09		Y	N		7.10E-08		
17	Acrolein	Y	Y	1.0			Y	Y	0.5			
18	Acrylonitrile	Y	Y	1.0			Y	N		0.03		
19	Benzene	Y	Y	0.27			Y	Y	0.05			
20	Bromoform	Y	N		18		Y	Y	0.5			
21	Carbon Tetrachloride	Y	Y	0.42			Y	N		0.06		
22	Chlorobenzene	Y	Y	0.19			Y	Y	0.5			
23	Chlorodibromomethane	Y	N		8.5		Y	Y	0.05			
24	Chloroethane	Y	Y	0.34			Y	Y	0.5			No Criteria
25	2-Chloroethylvinyl Ether	Y	Y	0.31			Y	Y	0.5			No Criteria
26	Chloroform	Y	N		2.7		Y	Y	0.5			No Criteria
27	Dichlorobromomethane	Y	N		3.9		Y	Y	0.05			
28	1,1-Dichloroethane	Y	Y	0.28			Y	Y	0.05			No Criteria
29	1,2-Dichloroethane	Y	Y	0.18			Y	N		0.04		
30	1,1-Dichloroethylene	Y	Y	0.37			Y	Y	0.5			
31	1,2-Dichloropropane	Y	Y	0.2			Y	Y	0.05			
32	1,3-Dichloropropylene	Y	Y	0.2			N					
33	Ethylbenzene	Y	Y	0.3			Y	Y	0.5			
34	Methyl Bromide	Y	Y	0.42			Y	Y	0.5			
35	Methyl Chloride	Y	Y	0.36			Y	Y	0.5			No Criteria
36	Methylene Chloride	Y	N		4		Y	N		22		
37	1,1,2,2-Tetrachloroethane	Y	Y	0.3			Y	Y	0.05			
38	Tetrachloroethylene	Y	Y	0.32			Y	Y	0.5			
39	Toluene	Y	N		1.6		Y	Y	0.3			
40	1,2-Trans-Dichloroethylene	Y	Y	0.3			Y	Y	0.5			
41	1,1,1-Trichloroethane	Y	Y	0.35			Y	Y	0.5			No Criteria
42	1,1,2-Trichloroethane	Y	Y	0.27			Y	Y	0.05			
43	Trichloroethylene	Y	Y	0.29			Y	Y	0.5			
44	Vinyl Chloride	Y	Y	0.34			Y	Y	0.5			
45	Chlorophenol	Y	Y	0.4			Y	Y	1.2			
46	2,4-Dichlorophenol	Y	Y	0.3			Y	Y	1.3			
47	2,4-Dimethylphenol	Y	Y	0.3			Y	Y	1.3			
48	2-Methyl-4,6-Dinitrophenol	Y	Y	0.4			Y	Y	1.2			
49	2,4-Dinitrophenol	Y	Y	0.3			Y	Y	0.7			
50	2-Nitrophenol	Y	Y	0.3			Y	Y	1.3			No Criteria
51	4-Nitrophenol	Y	Y	0.2			Y	Y	1.6			No Criteria
52	3-Methyl-4-Chlorophenol	Y	Y	0.3			Y	Y	1.1			No Criteria
53	Pentachlorophenol	Y	Y	0.4			Y	Y	1			
54	Phenol	Y	Y	0.2			Y	Y	1.3			
55	2,4,6-Trichlorophenol	Y	Y	0.2			Y	Y	1.3			
56	Acenaphthene	Y	Y	0.17			Y	N		0.0019		
57	Acenaphthylene	Y	Y	0.03			Y	N		0.00053		No Criteria
58	Anthracene	Y	Y	0.16			Y	N		0.000498		
59	Benzidine	Y	Y	0.3			Y	Y	0.0015			
60	Benzo(a)Anthracene	Y	Y	0.12			Y	N		0.0053		
61	Benzo(a)Pyrene	Y	Y	0.09			Y	N		0.00147		
62	Benzo(b)Fluoranthene	Y	Y	0.11			Y	N		0.0046		
63	Benzo(ghi)Perylene	Y	Y	0.06			Y	N		0.0027		No Criteria
64	Benzo(k)Fluoranthene	Y	Y	0.16			Y	N		0.0015		
65	Bis(2-Chloroethoxy)Methane	Y	Y	0.3			Y	Y	0.3			No Criteria
66	Bis(2-Chloroethyl)Ether	Y	Y	0.3			Y	Y	0.3			
67	Bis(2-Chloroisopropyl)Ether	Y	Y	0.6			N					
68	Bis(2-Ethylhexyl)Phthalate	Y	N		7		Y	N		0.091		
69	4-Bromophenyl Phenyl Ether	Y	Y	0.4			Y	Y	0.23			No Criteria
70	Butylbenzyl Phthalate	Y	Y	0.4			Y	N		0.0056		
71	2-Chloronaphthalene	Y	Y	0.3			Y	Y	0.3			
72	4-Chlorophenyl Phenyl Ether	Y	Y	0.4			Y	Y	0.3			No Criteria
73	Chrysene	Y	Y	0.14			Y	N		0.0024		
74	Dibenzo(a,h)Anthracene	Y	Y	0.04			Y	N		0.00064		
75	1,2-Dichlorobenzene	Y	Y	0.12			Y	Y	0.8			
76	1,3-Dichlorobenzene	Y	Y	0.16			Y	Y	0.8			
77	1,4-Dichlorobenzene	Y	N		0.4		Y	Y	0.8			
78	3,3-Dichlorobenzidine	Y	Y	0.3			Y	Y	0.001			
79	Diethyl Phthalate	Y	Y	0.4			Y	Y	0.24			

CTR No.		EFFLUENT DATA					BACKGROUND DATA (B)					7) Review other information in the SIP page 4. If information is unavailable or insufficient: 8) the RWQCB shall establish interim monitoring requirements.
		Effluent Data Available (Y/N)?	Are all data points non-detects (Y/N)?	If all data points ND Enter the min detection limit (MDL) (ug/L)	Enter the pollutant effluent detected max conc (ug/L)	Input Check	B Available (Y/N)?	Are all B non-detects (Y/N)?	If all data points ND Enter the min detection limit (MDL) (ug/L)	Enter the Detected Maximum Background Conc	Input Check	
80	Dimethyl Phthalate	Y	Y	0.4			Y	Y	0.24			
81	Di-n-Butyl Phthalate	Y	Y	0.4			Y	N		0.016		
82	2,4-Dinitrotoluene	Y	Y	0.3			Y	Y	0.27			
83	2,6-Dinitrotoluene	Y	Y	0.3			Y	Y	0.29			No Criteria
84	Di-n-Octyl Phthalate	Y	Y	0.4			Y	Y	0.38			No Criteria
85	1,2-Diphenylhydrazine	Y	Y	0.3			Y	N		0.0037		
86	Fluoranthene	Y	Y	0.03			Y	N		0.011		
87	Fluorene	Y	Y	0.02			Y	N		0.0036		
88	Hexachlorobenzene	Y	Y	0.4			Y	N		0.000022		
89	Hexachlorobutadiene	Y	Y	0.2			Y	Y	0.3			
90	Hexachlorocyclopentadiene	Y	Y	0.1			Y	Y	0.31			
91	Hexachloroethane	Y	Y	0.2			Y	Y	0.2			
92	Indeno(1,2,3-cd) Pyrene	Y	Y	0.04			Y	N		0.004		
93	Isophorone	Y	Y	0.3			Y	Y	0.3			
94	Naphthalene	Y	Y	0.05			Y	N		0.00255		No Criteria
95	Nitrobenzene	Y	Y	0.3			Y	Y	0.25			
96	N-Nitrosodimethylamine	Y	Y	0.4			Y	Y	0.3			
97	N-Nitrosodi-n-Propylamine	Y	Y	0.3			Y	Y	0.001			
98	N-Nitrosodiphenylamine	Y	Y	0.4			Y	Y	0.001			
99	Phenanthrene	Y	Y	0.03			Y	N		0.0061		No Criteria
100	Pyrene	Y	Y	0.03			Y	N		0.0194		
101	1,2,4-Trichlorobenzene	Y	Y	0.3			Y	Y	0.3			No Criteria
102	Aldrin	Y	Y	0.003			Y	N		1.4E-07		
103	alpha-BHC	Y	Y	0.002			Y	N		0.000496		
104	beta-BHC	Y	Y	0.001			Y	N		0.000413		
105	gamma-BHC	Y	Y	0.001			Y	N		0.0007034		
106	delta-BHC	Y	Y	0.001			Y	N		0.000053		No Criteria
107	Chlordane (303d)	Y	Y	0.005			Y	N		0.00018		
108	4,4-DDT (303d)	Y	Y	0.001			Y	N		0.000167		
109	4,4-DDE	Y	Y	0.001			Y	N		0.000693		
110	4,4-DDD	Y	Y	0.001			Y	N		0.000313		
111	Dieldrin (303d)	Y	Y	0.002			Y	N		0.000264		
112	alpha-Endosulfan	Y	Y	0.002			Y	N		0.000031		
113	beta-Endosulfan	Y	Y	0.001			Y	N		0.000069		
114	Endosulfan Sulfate	Y	Y	0.001			Y	N		0.0000819		
115	Endrin	Y	Y	0.002			Y	N		0.00004		
116	Endrin Aldehyde	Y	Y	0.002			N					
117	Heptachlor	Y	Y	0.003			Y	N		0.000019		
118	Heptachlor Epoxide	Y	Y	0.002			Y	N		0.000094		
119-125	PCBs sum (303d)	Y	Y	0.03			Y	N		0.00146		
126	Toxaphene	Y	Y	0.2			N					
	Tributyltin	Y	Y	0.00132			Y	N		0.002		
	Total PAHs	Y	Y	0.02			Y	N		0.05145		
	Total Ammonia	Y	N		41000		Y	N		430		

Notes:
1) Background data used for toxics is from monitoring location BC10 (Yerba Buena Island).

Marin County Sanitary District
Reasonable Potential Analysis Results

Beginning			Step 2	Step 3					Step 4	Step 2	Step 3		Step 4.	Step 5.	Step 6.	Step 7 & 8.		
		C (µg/L)						Maximum Pollutant Concentration (MEC) (ug/L)										
	Constituent name	Lowest (most stringent) Criteria ^(a) (Enter "No Criteria" for no criteria)	Effluent Data Available?	Are all data points non-detects?	Minimum MDL (ug/L) if all data ND.	Enter the pollutant effluent detected max conc (ug/L)	If all data points are ND and MinDL>C, interim monitoring is required	(MEC= deteted max value; if all ND & MDL<C then MEC = MDL)	Y if If MEC >= C, effluent limitation is required; 2. If MEC<C, go to Step 5	Background Data Available?	Are all background data points non-detects?	If all background data points ND Enter the min detection limit (MDL) (ug/L)	Enter the pollutant background detected max conc (ug/L)	If all B is ND, is MDL>C? (If Y, Go To Step 7)	Is B>C?	7) Review other information in the SIP page 4. Y if other information indicates limits are required. If information is unavailable or insufficient: 8) the RWQCB shall establish interim monitoring requirements.	RPA Result	Reason
A	B	C	D	E	F	G	H	I	J	L	M	N	O	P	Q	r	S	T
1	Antimony	4300	Y	N		0.7		0.7	MEC<C, go to Step 5	Y	N		1.8		B<C, Step 7			
2	Arsenic	36	Y	N		6.4		6.4	MEC<C, go to Step 5	Y	N		2.81		B<C, Step 7			
3	Beryllium	No Criteria	Y	Y	0.06		No Criteria	0.06	No Criteria	Y	N		0.215		No Criteria	No Criteria		Uo - No Criteria
4	Cadmium	9.36	Y	N		0.8		0.8	MEC<C, go to Step 5	Y	N		0.16		B<C, Step 7			
5a	Chromium (III)	No Criteria	Y	N		1		1	MEC<C, go to Step 5						No detected value of B, Step 7			
5b	Chromium (VI)	50.4	Y	Y	0.9		MDL<=C, MDL=MEC	0.9	MEC<C, go to Step 5	Y	N		4.4		B<C, Step 7			
6	Copper	4.19	Y	N		6.6		6.6	Y	Y	N		2.55		B<C, Step 7		Y	MEC => C [6.6 ug/l vs 4.2 ug/l]
7	Lead	8.52	Y	N		0.32		0.32	MEC<C, go to Step 5	Y	N		0.804		B<C, Step 7			
8	Mercury (303d listed)	0.025	Y	N		0.033		0.033	Y	Y	N		0.0086		B<C, Step 7		Y	MEC => C [0.033 ug/l vs 0.025 ug/l]
9	Nickel	12.6	Y	N		8.9		8.9	MEC<C, go to Step 5	Y	N		3.73		B<C, Step 7			
10	Selenium (303d)	5.0	Y	N		6		6	Y	Y	N		0.39		B<C, Step 7		Y	MEC => C [6.0 ug/l vs 5.0 ug/l]
11	Silver	2.24	Y	N		0.2		0.2	MEC<C, go to Step 5	Y	N		0.052		B<C, Step 7			
12	Thallium	6.3	Y	N		0.1		0.1	MEC<C, go to Step 5	Y	N		0.21		B<C, Step 7			
13	Zinc	85.6	Y	N		70		70	MEC<C, go to Step 5	Y	N		5.1		B<C, Step 7			
14	Cyanide	1.0	Y	N		13		13	Y	Y	Y	0.4		N	No detected value of B, Step 7		Y	MEC => C [13 ug/l vs 1.0 ug/l]
15	Asbestos	No Criteria	N			0	No Criteria		No Criteria						No Criteria	No Criteria		Uo - No Criteria
16	2,3,7,8-TCDD (Dioxin) (303d)	0.000000014	Y	Y	6.4E-07		MDL > C, Interim Monitor, Go To S			Y	N		0.008		Y			
16-TEQ	Dioxin TEQ (303d)	0.000000014	Y	N		3.2E-09		3.2000E-09	MEC<C, go to Step 5	Y	N		7.10E-08		Y		Y	B > C and detected in Effluent
17	Acrolein	780	Y	Y	1		MDL<=C, MDL=MEC	1	MEC<C, go to Step 5	Y	Y	0.5		N	No detected value of B, Step 7			
18	Acrylonitrile	0.66	Y	Y	1		MDL > C, Interim Monitor, Go To S			Y	N		0.03		B<C, Step 7			Effluent MDL > C, Interim Monitor
19	Benzene	71	Y	Y	0.27		MDL<=C, MDL=MEC	0.27	MEC<C, go to Step 5	Y	Y	0.05		N	No detected value of B, Step 7			
20	Bromoform	360	Y	N		18		18	MEC<C, go to Step 5	Y	Y	0.5		N	No detected value of B, Step 7			
21	Carbon Tetrachloride	4.4	Y	Y	0.42		MDL<=C, MDL=MEC	0.42	MEC<C, go to Step 5	Y	N		0.06		B<C, Step 7			
22	Chlorobenzene	21000	Y	Y	0.19		MDL<=C, MDL=MEC	0.19	MEC<C, go to Step 5	Y	Y	0.5		N	No detected value of B, Step 7			
23	Chlorodibromomethane	34	Y	N		8.5		8.5	MEC<C, go to Step 5	Y	Y	0.05		N	No detected value of B, Step 7			
24	Chloroethane	No Criteria	Y	Y	0.34		No Criteria	0.34	No Criteria	Y	Y	0.5		N	No Criteria	No Criteria		Uo - No Criteria
25	2-Chloroethylvinyl Ether	No Criteria	Y	Y	0.31		No Criteria	0.31	No Criteria	Y	Y	0.5		N	No Criteria	No Criteria		Uo - No Criteria
26	Chloroform	No Criteria	Y	N		2.7	No Criteria	2.7	No Criteria	Y	Y	0.5		N	No Criteria	No Criteria		Uo - No Criteria
27	Dichlorobromomethane	46	Y	N		3.9		3.9	MEC<C, go to Step 5	Y	Y	0.05		N	No detected value of B, Step 7			
28	1,1-Dichloroethane	No Criteria	Y	Y	0.28		No Criteria	0.28	No Criteria	Y	Y	0.05		N	No Criteria	No Criteria		Uo - No Criteria
29	1,2-Dichloroethane	99	Y	Y	0.18		MDL<=C, MDL=MEC	0.18	MEC<C, go to Step 5	Y	N		0.04		B<C, Step 7			
30	1,1-Dichloroethylene	3.2	Y	Y	0.37		MDL<=C, MDL=MEC	0.37	MEC<C, go to Step 5	Y	Y	0.5		N	No detected value of B, Step 7			
31	1,2-Dichloropropane	39	Y	Y	0.2		MDL<=C, MDL=MEC	0.2	MEC<C, go to Step 5	Y	Y	0.05		N	No detected value of B, Step 7			
32	1,3-Dichloropropylene	1700	Y	Y	0.2		MDL<=C, MDL=MEC	0.2	MEC<C, go to Step 5	Y	Y			N	No detected value of B, Step 7			
33	Ethylbenzene	29000	Y	Y	0.3		MDL<=C, MDL=MEC	0.3	MEC<C, go to Step 5	Y	Y	0.5		N	No detected value of B, Step 7			
34	Methyl Bromide	4000	Y	Y	0.42		MDL<=C, MDL=MEC	0.42	MEC<C, go to Step 5	Y	Y	0.5		N	No detected value of B, Step 7			
35	Methyl Chloride	No Criteria	Y	Y	0.36		No Criteria	0.36	No Criteria	Y	Y	0.5		N	No Criteria	No Criteria		Uo - No Criteria
36	Methylene Chloride	1600	Y	N		4		4	MEC<C, go to Step 5	Y	N		22		B<C, Step 7			
37	1,1,2,2-Tetrachloroethane	11	Y	Y	0.3		MDL<=C, MDL=MEC	0.3	MEC<C, go to Step 5	Y	Y	0.05		N	No detected value of B, Step 7			
38	Tetrachloroethylene	8.85	Y	Y	0.32		MDL<=C, MDL=MEC	0.32	MEC<C, go to Step 5	Y	Y	0.5		N	No detected value of B, Step 7			
39	Toluene	200000	Y	N		1.6		1.6	MEC<C, go to Step 5	Y	Y	0.3		N	No detected value of B, Step 7			
40	1,2-Trans-Dichloroethylene	140000	Y	Y	0.3		MDL<=C, MDL=MEC	0.3	MEC<C, go to Step 5	Y	Y	0.5		N	No detected value of B, Step 7			
41	1,1,1-Trichloroethane	No Criteria	Y	Y	0.35		No Criteria	0.35	No Criteria	Y	Y	0.5		N	No Criteria	No Criteria		Uo - No Criteria
42	1,1,2-Trichloroethane	42	Y	Y	0.27		MDL<=C, MDL=MEC	0.27	MEC<C, go to Step 5	Y	Y	0.05		N	No detected value of B, Step 7			
43	Trichloroethylene	81	Y	Y	0.29		MDL<=C, MDL=MEC	0.29	MEC<C, go to Step 5	Y	Y	0.5		N	No detected value of B, Step 7			
44	Vinyl Chloride	525	Y	Y	0.34		MDL<=C, MDL=MEC	0.34	MEC<C, go to Step 5	Y	Y	0.5		N	No detected value of B, Step 7			
45	Chlorophenol	400	Y	Y	0.4		MDL<=C, MDL=MEC	0.4	MEC<C, go to Step 5	Y	Y	1.2		N	No detected value of B, Step 7			
46	2,4-Dichlorophenol	790	Y	Y	0.3		MDL<=C, MDL=MEC	0.3	MEC<C, go to Step 5	Y	Y	1.3		N	No detected value of B, Step 7			
47	2,4-Dimethylphenol	2300	Y	Y	0.3		MDL<=C, MDL=MEC	0.3	MEC<C, go to Step 5	Y	Y	1.3		N	No detected value of B, Step 7			
48	2-Methyl-4,6-Dinitrophenol	765	Y	Y	0.4		MDL<=C, MDL=MEC	0.4	MEC<C, go to Step 5	Y	Y	1.2		N	No detected value of B, Step 7			
49	2,4-Dinitrophenol	14000	Y	Y	0.3		MDL<=C, MDL=MEC	0.3	MEC<C, go to Step 5	Y	Y	0.7		N	No detected value of B, Step 7			
50	2-Nitrophenol	No Criteria	Y	Y	0.3		No Criteria	0.3	No Criteria	Y	Y	1.3		N	No Criteria	No Criteria		Uo - No Criteria
51	4-Nitrophenol	No Criteria	Y	Y	0.2		No Criteria	0.2	No Criteria	Y	Y	1.6		N	No Criteria	No Criteria		Uo - No Criteria
52	3-Methyl-4-Chlorophenol	No Criteria	Y	Y	0.3		No Criteria	0.3	No Criteria	Y	Y	1.1		N	No Criteria	No Criteria		Uo - No Criteria
53	Pentachlorophenol	7.9	Y	Y	0.4		MDL<=C, MDL=MEC	0.4	MEC<C, go to Step 5	Y	Y	1		N	No detected value of B, Step 7			
54	Phenol	460000	Y	Y	0.2		MDL<=C, MDL=MEC	0.2	MEC<C, go to Step 5	Y	Y	1.3		N	No detected value of B, Step 7			
55	2,4,6-Trichlorophenol	6.5	Y	Y	0.2		All ND MDL<=C, MDL=MEC	0.2	MEC<C, go to Step 5	Y	Y	1.3		N	No detected value of B, Step 7			
56	Acenaphthene	2700	Y	Y	0.17		All ND MDL<=C, MDL=MEC	0.17	MEC<C, go to Step 5	Y	N		0.0019		B<C, Step 7			
57	Acenaphthylene	No Criteria	Y	Y	0.03		No Criteria	0.03	No Criteria	Y	N		0.00053		No Criteria	No Criteria		Uo - No Criteria
58	Anthracene	110000	Y	Y	0.16		All ND MDL<=C, MDL=MEC	0.16	MEC<C, go to Step 5	Y	N		0.000498		B<C, Step 7			
59	Benzidine	0.00054	Y	Y	0.3		MDL > C, Go to Step 5			Y	Y	0.0015		Y	No detected value of B, Step 7			
60	Benzo(a)Anthracene	0.049	Y	Y	0.12		MDL > C, Go to Step 5			Y	N		0.0053		B<C, Step 7			
61	Benzo(a)Pyrene	0.049	Y	Y	0.09		MDL > C, Go to Step 5			Y	N		0.00147		B<C, Step 7			
62	Benzo(b)Fluoranthene	0.049	Y	Y	0.11		MDL > C, Go to Step 5			Y	N		0.0046		B<C, Step 7			
63	Benzo(ghi)Perylene	No Criteria	Y	Y	0.06		No Criteria	0.06	No Criteria	Y	N		0.0027		No Criteria	No Criteria		Uo - No Criteria
64	Benzo(k)Fluoranthene	0.049	Y	Y	0.16		MDL > C, Go to Step 5			Y	N		0.0015		B<C, Step 7			
65	Bis(2-Chloroethoxy)Methane	No Criteria	Y	Y	0.3		No Criteria	0.3	No Criteria	Y	Y	0.3		N	No Criteria	No Criteria		Uo - No Criteria
66	Bis(2-Chloroethyl)Ether	1.4	Y	Y	0.3		All ND MDL<=C, MDL=MEC	0.3	MEC<C, go to Step 5	Y	Y	0.3		N	No detected value of B, Step 7			
67	Bis(2-Chloroisopropyl)Ether	170000	Y	Y	0.6		All ND MDL<=C, MDL=MEC	0.6	MEC<C, go to Step 5						No detected value of B, Step 7			
68	Bis(2-Ethylhexyl)Phthalate	5.9	Y	N		7		7	Y	Y	N		0.091		B<C, Step 7		Y	MEC => C [7.0 ug/l vs 5.9 ug/l]
69	4-Bromophenyl Phenyl Ether	No Criteria	Y	Y	0.4		No Criteria	0.4	No Criteria	Y	Y	0.23		N	No Criteria	No Criteria		Uo - No Criteria

Marin County Sanitary District
Reasonable Potential Analysis Results

Beginning			Step 2	Step 3					Step 4	Step 2	Step 3		Step 4.	Step 5.	Step 6.	Step 7 & 8.		
		C (µg/L)						Maximum Pollutant Concentration (MEC) (ug/L)	MEC vs. C						B vs. C	7) Review other information in the SIP page 4. Y if other information indicates limits are required. If information is unavailable or insufficient: 8) the RWQCB shall establish interim monitoring requirements.		
	Constituent name	Lowest (most stringent) Criteria ^(a) (Enter "No Criteria" for no criteria)	Effluent Data Available?	Are all data points non-detects?	Minimum MDL (ug/L) if all data ND.	Enter the pollutant effluent detected max conc (ug/L)	If all data points are ND and MinDL>C, interim monitoring is required	(MEC= deteted max value; if all ND & MDL<C then MEC = MDL)	Y if If MEC >= C, effluent limitation is required; 2. If MEC<C, go to Step 5	Background Data Available?	Are all background data points non-detects?	If all background data points ND Enter the min detection limit (MDL) (ug/L)	Enter the pollutant background detected max conc (ug/L)	If all B is ND, is MDL>C? (If Y, Go To Step 7)	Is B>C?		RPA Result	Reason
70	Butylbenzyl Phthalate	5200	Y	Y	0.4		All ND MDL<=C, MDL=MEC	0.4	MEC<C, go to Step 5	Y	N		0.0056		B<C, Step 7			
71	2-Chloronaphthalene	4300	Y	Y	0.3		All ND MDL<=C, MDL=MEC	0.3	MEC<C, go to Step 5	Y	Y	0.3		N	No detected value of B, Step 7			
72	4-Chlorophenyl Phenyl Ether	No Criteria	Y	Y	0.4		No Criteria	0.4	No Criteria	Y	Y	0.3		N	No Criteria	No Criteria		Uo - No Criteria
73	Chrysene	0.049	Y	Y	0.14		MDL > C, Go to Step 5			Y	N		0.0024		B<C, Step 7			
74	Dibenzo(a,h)Anthracene	0.049	Y	Y	0.04		MDL > C, Go to Step 5	0.04	MEC<C, go to Step 5	Y	N		0.00064		B<C, Step 7			
75	1,2-Dichlorobenzene	17000	Y	Y	0.12		All ND MDL<=C, MDL=MEC	0.12	MEC<C, go to Step 5	Y	Y	0.8		N	No detected value of B, Step 7			
76	1,3-Dichlorobenzene	2600	Y	Y	0.16		All ND MDL<=C, MDL=MEC	0.16	MEC<C, go to Step 5	Y	Y	0.8		N	No detected value of B, Step 7			
77	1,4-Dichlorobenzene	2600	Y	N		0.4		0.4	MEC<C, go to Step 5	Y	Y	0.8		N	No detected value of B, Step 7			
78	3,3-Dichlorobenzidine	0.077	Y	Y	0.3		MDL > C, Go to Step 5			Y	Y	0.001		N	No detected value of B, Step 7			
79	Diethyl Phthalate	120000	Y	Y	0.4		All ND MDL<=C, MDL=MEC	0.4	MEC<C, go to Step 5	Y	Y	0.24		N	No detected value of B, Step 7			
80	Dimethyl Phthalate	2900000	Y	Y	0.4		All ND MDL<=C, MDL=MEC	0.4	MEC<C, go to Step 5	Y	Y	0.24		N	No detected value of B, Step 7			
81	Di-n-Butyl Phthalate	12000	Y	Y	0.4		All ND MDL<=C, MDL=MEC	0.4	MEC<C, go to Step 5	Y	N		0.016		B<C, Step 7			
82	2,4-Dinitrotoluene	9.1	Y	Y	0.3		All ND MDL<=C, MDL=MEC	0.3	MEC<C, go to Step 5	Y	Y	0.27		N	No detected value of B, Step 7			
83	2,6-Dinitrotoluene	No Criteria	Y	Y	0.3		No Criteria	0.3	No Criteria	Y	Y	0.29		N	No Criteria	No Criteria		Uo - No Criteria
84	Di-n-Octyl Phthalate	No Criteria	Y	Y	0.4		No Criteria	0.4	No Criteria	Y	Y	0.38		N	No Criteria	No Criteria		Uo - No Criteria
85	1,2-Diphenylhydrazine	0.54	Y	Y	0.3		All ND MDL<=C, MDL=MEC	0.3	MEC<C, go to Step 5	Y	N		0.0037		B<C, Step 7			
86	Fluoranthene	370	Y	Y	0.03		All ND MDL<=C, MDL=MEC	0.03	MEC<C, go to Step 5	Y	N		0.011		B<C, Step 7			
87	Fluorene	14000	Y	Y	0.02		All ND MDL<=C, MDL=MEC	0.02	MEC<C, go to Step 5	Y	N		0.0036		B<C, Step 7			
88	Hexachlorobenzene	0.00077	Y	Y	0.4		MDL > C, Go to Step 5			Y	N		0.000022		B<C, Step 7			
89	Hexachlorobutadiene	50	Y	Y	0.2		All ND MDL<=C, MDL=MEC	0.2	MEC<C, go to Step 5	Y	Y	0.3		N	No detected value of B, Step 7			
90	Hexachlorocyclopentadiene	17000	Y	Y	0.1		All ND MDL<=C, MDL=MEC	0.1	MEC<C, go to Step 5	Y	Y	0.31		N	No detected value of B, Step 7			
91	Hexachloroethane	8.9	Y	Y	0.2		All ND MDL<=C, MDL=MEC	0.2	MEC<C, go to Step 5	Y	Y	0.2		N	No detected value of B, Step 7			
92	Indeno(1,2,3-cd) Pyrene	0.049	Y	Y	0.04		MDL > C, Go to Step 5	0.04	MEC<C, go to Step 5	Y	N		0.004		B<C, Step 7			
93	Isophorone	600	Y	Y	0.3		All ND MDL<=C, MDL=MEC	0.3	MEC<C, go to Step 5	Y	Y	0.3		N	No detected value of B, Step 7			
94	Naphthalene	No Criteria	Y	Y	0.05		No Criteria	0.05	No Criteria	Y	N		0.00255		No Criteria	No Criteria		Uo - No Criteria
95	Nitrobenzene	1900	Y	Y	0.3		All ND MDL<=C, MDL=MEC	0.3	MEC<C, go to Step 5	Y	Y	0.25		N	No detected value of B, Step 7			
96	N-Nitrosodimethylamine	8.1	Y	Y	0.4		All ND MDL<=C, MDL=MEC	0.4	MEC<C, go to Step 5	Y	Y	0.3		N	No detected value of B, Step 7			
97	N-Nitrosodi-n-Propylamine	1.4	Y	Y	0.3		All ND MDL<=C, MDL=MEC	0.3	MEC<C, go to Step 5	Y	Y	0.001		N	No detected value of B, Step 7			
98	N-Nitrosodiphenylamine	16	Y	Y	0.4		All ND MDL<=C, MDL=MEC	0.4	MEC<C, go to Step 5	Y	Y	0.001		N	No detected value of B, Step 7			
99	Phenanthrene	No Criteria	Y	Y	0.03		No Criteria	0.03	No Criteria	Y	N		0.0061		No Criteria	No Criteria		Uo - No Criteria
100	Pyrene	11000	Y	Y	0.03		All ND MDL<=C, MDL=MEC	0.03	MEC<C, go to Step 5	Y	N		0.0194		B<C, Step 7			
101	1,2,4-Trichlorobenzene	No Criteria	Y	Y	0.3		No Criteria	0.3	No Criteria	Y	Y	0.3		N	No Criteria	No Criteria		Uo - No Criteria
102	Aldrin	0.00014	Y	Y	0.003		MDL > C, Go to Step 5			Y	N		0.00000014		B<C, Step 7			
103	alpha-BHC	0.013	Y	Y	0.002		All ND MDL<=C, MDL=MEC	0.002	MEC<C, go to Step 5	Y	N		0.000496		B<C, Step 7			
104	beta-BHC	0.046	Y	Y	0.001		All ND MDL<=C, MDL=MEC	0.001	MEC<C, go to Step 5	Y	N		0.000413		B<C, Step 7			
105	gamma-BHC	0.063	Y	Y	0.001		All ND MDL<=C, MDL=MEC	0.001	MEC<C, go to Step 5	Y	N		0.0007034		B<C, Step 7			
106	delta-BHC	No Criteria	Y	Y	0.001		No Criteria	0.001	No Criteria	Y	N		0.000053		No Criteria	No Criteria		Uo - No Criteria
107	Chlordane (303d)	0.00059	Y	Y	0.005		MDL > C, Go to Step 5			Y	N		0.00018		B<C, Step 7			
108	4,4-DDT (303d)	0.00059	Y	Y	0.001		MDL > C, Go to Step 5			Y	N		0.000167		B<C, Step 7			
109	4,4-DDE	0.00059	Y	Y	0.001		MDL > C, Go to Step 5			Y	N		0.000693					
110	4,4-DDD	0.00084	Y	Y	0.001		MDL > C, Go to Step 5			Y	N		0.000313		B<C, Step 7			
111	Dieldrin (303d)	0.00014	Y	Y	0.002		MDL > C, Go to Step 5			Y	N		0.000264					
112	alpha-Endosulfan	0.0087	Y	Y	0.002		All ND MDL<=C, MDL=MEC	0.002	MEC<C, go to Step 5	Y	N		0.000031		B<C, Step 7			
113	beta-Endosulfan	0.0087	Y	Y	0.001		All ND MDL<=C, MDL=MEC	0.001	MEC<C, go to Step 5	Y	N		0.000069		B<C, Step 7			
114	Endosulfan Sulfate	240	Y	Y	0.001		All ND MDL<=C, MDL=MEC	0.001	MEC<C, go to Step 5	Y	N		0.0000819		B<C, Step 7			
115	Endrin	0.0023	Y	Y	0.002		All ND MDL<=C, MDL=MEC	0.002	MEC<C, go to Step 5	Y	N		0.00004		B<C, Step 7			
116	Endrin Aldehyde	0.81	Y	Y	0.002		All ND MDL<=C, MDL=MEC	0.002	MEC<C, go to Step 5						No detected value of B, Step 7			
117	Heptachlor	0.00021	Y	Y	0.003		MDL > C, Go to Step 5			Y	N		0.000019		B<C, Step 7			
118	Heptachlor Epoxide	0.00011	Y	Y	0.002		MDL > C, Go to Step 5			Y	N		0.000094		B<C, Step 7			
119-125	PCBs sum (303d)	0.00017	Y	Y	0.03		MDL > C, Go to Step 5			Y	N		0.00146		Y			
126	Toxaphene	0.0002	Y	Y	0.2		MDL > C, Go to Step 5								No detected value of B, Step 7			
	Tributyltin	0.0074	Y	Y	0.00132		All ND MDL<=C, MDL=MEC	0.00132	MEC<C, go to Step 5	Y	N		0.002		B<C, Step 7			
	Total PAHs	15	Y	Y	0.02		All ND MDL<=C, MDL=MEC	0.02	MEC<C, go to Step 5	Y	N		0.05145		B<C, Step 7			
	Total Ammonia (ug/L N)	1190	Y	N		41000		41000	Y	Y	N		430		B<C, Step 7		Y	MEC => C [41000 ug/l vs 1190 ug/l]
	a. The most stringent of salt and fresh water criteria were selected for this analysis.																	
	b. Acronyms in the "Final Result" column:			Ud: Cannot determine reasonable potential due to the absence of data, or because Minimum DL is greater than water quality objective or CTR criteria														
			Uo: No criteria available															
			IM: Interim monitoring is required															

**Marin County Sanitary District
WQBEL Calculations**

PRIORITY POLLUTANTS	Copper		Selenium	Cyanide		Dioxin TEQ	Bis(2-Ethylhexyl)Phthalate	Total Ammonia (acute)	Total Ammonia (chronic)
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L N	ug/L N
Basis and Criteria type	BP SW Aq. Life	Alternate limits using SSOs	NTR Criterion for the Bay	NTR Criterion for the Bay	Alternate Limits Using Prop SSOs	CTR HH	CTR HH	Basin Plan Aq. Life	Basin Plan Aq. Life
CTR Criteria -Acute	5.5	-----	-----	1.0	9.4	-----	-----	-----	-----
CTR Criteria -Chronic	4.2	-----	-----	1.0	2.9	-----	-----	-----	-----
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	1	1	1
Lowest WQO	4.2		5.0	1.0	1.0	1.4E-08	5.9	4650	1190
Site Specific Translator - MDEL	0.88	0.88							
Site Specific Translator - AMEL	0.74	0.74							
Dilution Factor (D) (if applicable)	9	9	0	74	9	0	9	82	87
No. of samples per month	4	4	4	4	4	4	4	4	30
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	Y	Y	N	N	Y	Y
HH criteria analysis required? (Y/N)	N	N	N	Y	Y	Y	Y	N	N
Applicable Acute WQO	13.1	10.64	20	1	9.4			4650	
Applicable Chronic WQO	10.1	8.11	5.0	1	2.9				1190
HH criteria	-----	-----	-----	220000	220000	1.4E-08	5.9	0	
Background (Maximum Conc for Aquatic Life calc)	2.55	2.55	0.39	0.4	0.4	7.1E-08	0.091	170	90
Background (Average Conc for Human Health calc)	-----	-----	-----	0.4	0.4	5.00E-08	0.091		
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	N	N	Y	N	N	Y	N	N	N
ECA acute	108	83	20.00	45.4	90.4			372010	No Acute WQO
ECA chronic	78	58	5.00	45.4	25.4			372010	Chronic WQO
ECA HH	-----	-----	-----	16499970	2199996	1.4E-08	58.2		
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	N	N	N	Y	Y	N	N
Avg of effluent data points	4.7	4.7	1.6	3.5	3.5			18041	18041
Std Dev of effluent data points	1.0	1.0	1.4	2.7	2.7			7120	7120
CV calculated	0.22	0.22	0.91	0.8	0.8	N/A	N/A	0.39	0.39
CV (Selected) - Final	0.22	0.22	0.91	0.8	0.8	0.60	0.6	0.39	0.39
ECA acute mult99	0.62	0.62	0.22	0.25	0.25			0.444	
ECA chronic mult99	0.78	0.78	0.40	0.44	0.44				0.953
LTA acute	66.8	51.6	4.5	11.4	22.7			165057	
LTA chronic	61	45	2.0	20.1	11				92365
minimum of LTAs	61	45	2.0	11.41	11			165057	92365
AMEL mult95	1.2	1.2	1.9	1.7	1.7	1.6	1.6	1.35	1.12
MDEL mult99	1.6	1.6	4.5	4.0	4.0	3.1	3.1	2.25	2.25
AMEL (aq life)	72	54	3.7	19.9	19.6			223346	103704
MDEL(aq life)	98	73	9.0	45.4	44.7			372010	208173
MDEL/AMEL Multiplier	1.36	1.36	2.42	2.28	2.28	2.01	2.0	1.7	2.01
AMEL (human hlth)	-----	-----	-----	16499970	2199996	1.4E-08	58.181		0
MDEL (human hlth)				37668541	5022473	2.8E-08	116.72209		0
minimum of AMEL for Aq. life vs HH	72.0	54.0	4	19.9	19.6	1.4E-08	58.181	223346	103704
minimum of MDEL for Aq. Life vs HH	97.9	73.3	9	45.4	44.7	2.8E-08	116.72209	372010	208173
Current limit in permit (30-day average)	-----	-----	-----	-----	-----	-----	-----	-----	-----
Current limit in permit (daily)	37 (interim)	37 (interim)	50 (interim)	25 (interim)	25 (interim)	-----	-----	-----	-----
Final limit - AMEL	72	54	3.7	20	20	1.4E-08	58	-----	103704
Final limit - MDEL	98	73	9.0	45	45	2.8E-08	117	-----	208173
Max Effl Conc (MEC)	6.6	6.6	6.0	13	13	3.2E-09	7	41000	41000

Marin County Sanitary District
Feasibility Analysis

CTR No.	Analyte	Number of Samples	Number of NDs	Percent ND	Lowest Criteria (ug/L)	MEC (ug/L)	Background Maximum Concentration (ug/L)	Reason	Best Fit Distribution	Sample Mean	Sample Standard Deviation	95 th vs AMEL	99 th vs MDEL	Mean vs LTA	Feasible to Comply?	Previous Limit (ug/L)	Performance Based Interim Limit (PBEL), If Necessary (ug/L) (3)	Selected (most stringent) Interim Limit (5)
6	Copper	36	0	0%	4.2	6.6	2.55	MEC => C [6.6 ug/l vs 4.2 ug/l]	Lognormal	1.5	0.22	6.6 < 72	7.7 < 98	4.7 < 61	Yes	37 (Interim Daily Average)	-----	-----
10	Selenium	36	6	17%	5.0	6.0	0.39	MEC => C [6.0 ug/l vs 5.0 ug/l]	Lognormal	0.12	0.90	4.9 > 3.7	9.1 > 9.0	1.6 < 2.0	No	50 (Interim Daily Average)	17 (4)	17 (4)
14	Cyanide	36	6	17%	1.0	13	ND (0.4)	MEC => C [13 ug/l vs 1.0 ug/l]	Lognormal	0.98	0.79	9.8 < 19.9	17 < 45.4	3.5 < 11.4	Yes	25 (Interim Daily Average)	29 (6)	25 (6)
16-TEQ	Dioxin TEQ	2	0	0%	1.4E-08	3.2E-09	7.1E-08	B > C and detected in Effluent	(2)	(2)	(2)	(1)	(1)	(1)	Yes (7)	-----	-----	-----
68	Bis(2-Ethylhexyl)Phthalate	4	0	0%	5.9	7.0	0.091	MEC => C [7.0 ug/l vs 5.9 ug/l]	(2)	(2)	(2)	(1)	(1)	(1)	Yes (8)	-----	-----	-----
	Total Ammonia	186	0	0%	1190	41000	90	MEC => C [41000 ug/l vs 1190 ug/l]	Normal	18041	7120	29754 < 103704	34603 < 208173	18041 < 92365	Yes	-----	39402	39402

Notes:

Effluent data for this RPA is from April 2004 to March 2007 for most inorganic pollutants, and from March 2002 to September 2003 for most organic pollutants. For this RPA, background data for toxics was from the Yerba Buena Island RMP station (BC10) from March 1993 to August 2003.

Qualified Data Handling - “J” or “DNQ” qualified data are used at the estimated value for determining MEC and for calculating mean and standard deviation. The mean and standard deviation are then used to calculate the coefficient of variation and 95th,

All values in ug/L.

When results for an analyte are found to be log-normally distributed, the sample mean and standard deviation are expressed using transformed (natural log conversion) data. The 95th, 99th, and PBEL values have been converted back into real concentrations.

ND= Not detected in background data. Number in parentheses is detection limit.

- (1) No comparison possible. Not enough data.
- (2) Not enough data to determine distribution or to calculate mean and standard deviation.
- (3) If there is sufficient data, the PBEL is calculated as the 99.87th percentile performance level (i.e., the 99.87 percentile of observed effluent concentrations), otherwise the Interim Limit is set equal to the MEC.
- (4) Interim limit and compliance schedules are not allowed for selenium. Pursuant to State Water Board Order WQ2007-004, compliance schedules are not authorized for numeric objectives or criteria that were in effect prior to the SIP. This includes the NTR objectives for selenium. Because it is infeasible for the Discharger to immediately comply with the final WQBELs for selenium, the Discharger will discharge in violation of this Order. Therefore a cease and desist order will be adopted concurrently with this Order. The Cease and Desist Order will establish time schedules for the Discharger to complete necessary investigative, preventative, and remedial actions to comply with final effluent limitations.
- (5) As required by the SIP, interim effluent limitations are based on current treatment facility performance or on existing permit limitations, whichever is more stringent.
- (6) Interim limit and compliance schedules are not allowed for cyanide. Pursuant to State Water Board Order WQ2007-004, compliance schedules are not authorized for numeric objectives or criteria that were in effect prior to the SIP. This includes the NTR objectives for cyanide. Because it is infeasible for the Discharger to immediately comply with the final WQBELs for cyanide, the Discharger will discharge in violation of this Order. Therefore a cease and desist order will be adopted concurrently with this Order. The Cease and Desist Order will establish time schedules for the Discharger to complete necessary investigative, preventative, and remedial actions to comply with final effluent limitations.
- (7) Since there is insufficient data to calculate a 95th or 99th percentile concentration, feasibility to comply is determined by comparing the MEC (3.2E-09 ug/L) to the AMEL (1.4E-08 ug/L) and MDEL (2.8E-08 ug/L). Comparison shows that it is feasible for the Discharger to immediately comply with final effluent limitations.
- (8) Since there is insufficient data to calculate a 95th or 99th percentile concentration, feasibility to comply is determined by comparing the MEC (7.0 ug/L) to the AMEL (58 ug/L) and MDEL (117 ug/L). Comparison shows that it is feasible for the Discharger to immediately comply with final effluent limitations.