

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION

1515 CLAY STREET, SUITE 1400

OAKLAND, CA 94612

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

FACT SHEET

for

NPDES PERMIT and WASTE DISCHARGE REQUIREMENTS for

NOVATO SANITARY DISTRICT

NOVATO, MARIN COUNTY

NPDES Permit No. CA0037958

ORDER NO. R2-2004-0093

PUBLIC NOTICE:

Written Comments

- Interested persons are invited to submit written comments concerning this draft permit.
- Comments must be submitted to the Board no later than 5:00 p.m. on October 25, 2004.
- Send comments to the Attention of Ken Katen.

Public Hearing

- The draft permit will be considered for adoption by the Board at a public hearing during the Board's regular monthly meeting at: Elihu Harris State Office Building, 1515 Clay Street, Oakland, CA; 1st floor Auditorium.
- This meeting will be held on: November 17, 2004, starting at 9:00 am.

Additional Information

- For additional information about this matter, interested persons should contact Regional Board staff member: Mr. Ken Katen, Phone: (510) 622-2485; email: kk@rb2.swrcb.ca.gov

This Fact Sheet contains information regarding a reissuance of waste discharge requirements and National Pollutant Discharge Elimination System (NPDES) permit for the Novato Sanitary District for municipal wastewater discharges. The Fact Sheet describes the factual, legal, and methodological basis for the sections addressed in the proposed permit and provides supporting documentation to explain the rationale and assumptions used in deriving the effluent limitations.

I. INTRODUCTION

- A. On November 24, 2003, the Novato Sanitary District (the Discharger), applied to the Board for reissuance of waste discharge requirements and a permit to discharge treated wastewater to waters of the State and the United States under the National Pollutant Discharge Elimination System (NPDES).
- B. The Discharger owns and operates two municipal wastewater treatment facilities (the Novato and Ignacio plants – collectively the WWTPs) with one combined effluent discharge outfall (E-003) to the intertidal mud flats of San Pablo Bay (the receiving water). The treatment facilities collect sanitary waste from a primarily residential service area serving the Novato area, with a current population of about 60,000. The combined outfall a shallow water discharge, and discharge is prohibited from June 1 through August 31, annually (the non-discharge season). During the non-discharge season, the WWTPs' effluent is reclaimed as described in Section III, below.
- C. The discharger presently discharges an average dry weather flow (ADWF) of 5.4 million gallons per day (MGD), from the WWTPs into San Pablo Bay, a water of the State and the United States.
- D. The Discharger's wastewater conveyance system transports wastewater flows from its service area to the WWTP through a series of gravity sewers and interceptors, pump stations, and force mains that are designed to handle peak wet weather flows. The combined conveyance and collection systems include about 200 miles of major trunk sanitary sewer lines, and 35 wastewater pump stations. The discharger has an ongoing program for preventive maintenance and capital improvements for these sewer lines and pump stations in order to ensure adequate capacity and reliability of the collection system.

II. TREATMENT PROCESS DESCRIPTION

- A. The discharger owns and operates two municipal wastewater treatment facilities: the Ignacio plant, also designated E-001 and the Novato plant, also designated E-002.
- B. The Ignacio Treatment Plant (E-001) utilizes primary clarification, biofiltration, secondary clarification, nitrification, gravity filtration and disinfection with chlorine. The treatment processes vary depending on influent flow:

Design Dry Weather Flow (DDWF) Treatment with all unit processes
(2.02 MGD), and wet weather flows
up to 4.04 MGD

- C. The Novato Treatment Plant (E-002) utilizes primary clarification, activated sludge treatment, secondary clarification, nitrification, gravity filtration, and disinfection with chlorine. The treatment processes vary depending on influent flow. During high flow conditions, the Novato plant blends fully secondary treated wastewater with wastewater that has received primary treatment plus some degree of secondary treatment (see below). This blending is automatically controlled by preset weir elevations and other, similar techniques. By January 1, 2005, the Discharger will have installed flow-

sensing devices in the Novato plant so that blending events can be explicitly identified as they occur. The Discharger is also investigating the use of biochemical oxygen demand (BOD) and total suspended solids (TSS) as surrogate indicators to demonstrate that all effluent limits are met during blending events. The Ignacio plant does not currently blend.

DDWF, 4.53 MGD, and wet weather flows up to 9 MGD	Treatment with all unit processes
Wet weather flows between 9 MGD and 16 MGD	Primary treatment plus gravity filtration and disinfection
Wet weather flows above 16 MGD	Gravity filtration plus disinfection

D. During the discharge season, the WWTPs discharge the treated, disinfected, and dechlorinated wastewater (the subject discharge) through one combined effluent outfall (E-003) to the intertidal mud flats of San Pablo Bay, a water of the State and the United States, adjacent to the former Hamilton Air Force Base. The treated wastewater is discharged through a multi-port diffuser about 950 feet offshore at Latitude 122 degrees 29 minutes 24 seconds, Longitude 38 degrees 03 minutes 36 seconds. The discharge diffuser is located in the intertidal zone and is submerged at the +1 foot Mean Lower Low Water (MLLW) tidal elevation and above. At tidal elevations lower than the +1 foot MLLW, the outfall is exposed and the distance from the end of the diffuser to the San Pablo Bay water line ranges from 1000 to 3500 feet, depending on tidal conditions. The quality of the discharge is depicted in Tables 1 and 2, below. Tables 1 and 2 depict only the constituents reported as detected in the monitoring data for the period October 1999 – April 2004.

Table 1. Effluent Discharge Description for Individual Plants (Oct 1999 – April 2004)

Parameter	Novato Plant		Ignacio Plant	
	Median	Maximum	Median	Maximum
Biochemical Oxygen Demand (BOD ₅) (mg/L)	16	28	45.5	87
BOD ₅ Monthly Removal (%)	95.4	99.0 ^[1]	91.7	97.6 ^[1]
Total Suspended Solids (TSS) (mg/L)	3.6	120	22	122
TSS Monthly Removal (%)	97.3	99.6 ^[1]	93.4	98.8 ^[1]
Settleable Solids (ml/l-hr)	0.05	0.8	0.05	0.8
Oil and Grease (mg/L)		8.0		8.0
Residual Chlorine (mg/L)	0.0	2.2	0.0	2.2 ^[2]
pH (s.u.)	7.9	8.5 ^[3]	7.1	10.1 ^[3]
Total coliform (mpn/100 ml)	3001	6000 ^[4]	3001	6000 ^[4]

Footnotes for Table 1.

[1] These values represent the maximum of monthly removal percentages for BOD and TSS.

[2] These values are for the combined effluent from both plants; individual plant effluent is not dechlorinated.

[3] This represents the maximum value for pH.

[4] This represents the maximum of the 5-sample moving median reported values.

Table 2. Effluent Discharge Description for Combined Discharge from Both Plants.

Parameter	Median	Maximum (ug/L)
Bis (2-Ethylhexyl) Phthalate	3.1	6.6
2,4,6-Trichlorophenol		2.5*
Bromodichloromethane	5.2	18
Chloroform	12.4	34.1
Dibromochloromethane	3.0	5.3
Toluene	0.6	1.2
MTBE	0.7	1.3
Diethyl Phthalate	9.2	0.8
Bromoform	0.3	0.4

*Single detected value for 2,4,6-Trichlorophenol

- E. The U.S. Environmental Protection Agency (U.S. EPA) and the Board have classified this discharge as a major discharge.
- F. Both plants have primary anaerobic digesters for sludge digestion. The Novato plant has a secondary anaerobic digester, followed by storage ponds for thickening. The Ignacio plant's primary anaerobic digester is followed by storage ponds for thickening. The thickened sludge from both plants is applied on a 14.4 acre dedicated land disposal site at the reclamation area. Sludge storage and disposal are subject to regulation by the U.S. EPA pursuant to Title 40, Code of Federal Regulations, Part 503 (40 CFR Part 503)

III. WATER RECLAMATION

- A. When not discharging to San Pablo Bay, the Discharger reclaims its treated wastewater pursuant to the reclamation requirements contained in Board Order No. 92-065. During the non-discharge season, the Discharger collects and holds the WWTPs' effluent in ponds for reclamation. Reclamation is carried out by sprinkler irrigation of 820 acres of Discharger-controlled pasturelands used for beef cattle grazing and irrigated hay production. The Discharger also uses its reclaimed water to maintain a wildlife management pond as required by Board Order No. 92-065. The Discharger is also subject, together with North Marin Water District, to the Board's Order No. 96-011, *General Water Reuse Requirements for Municipal Wastewater Agencies*.
- B. Although the formal discharge prohibition lasts for 3 months annually, the Discharger typically reclaims wastewater and irrigates five or more months per year. The non-discharge season is limited to three months because the combined outfall discharges to San Pablo Bay's intertidal area. The summer prohibition is limited to three months because the subject discharge, to San Pablo Bay's intertidal area, has a minimal impact immediately before and after the dry weather season because some dilution occurs, though less than 10 to 1, year round during most years.
- C. During the wet weather discharge period (November 1 through April 30), treated wastewater from the storage ponds may be discharged directly through the combined outfall, if it meets the requirements of the Discharger's Reclamation Pond Wet Season Discharge Sediment Control and Monitoring Plan. This Plan was approved by the Executive Officer in October 1999 and is adequate to prevent entrainment of pond sediments into the discharge.

- D. The Discharger monitors the quality of water held in the reclamation ponds prior to discharge during the dry weather discharge period (May 1 – 31 and September 1 – October 31, annually).

IV. RECEIVING WATERS

- A. *Beneficial Uses.* Table 2-7 of the Board's June 21, 1995, *Water Quality Control Plan San Francisco Bay Basin (Region 2)* (the Basin Plan), and observation of known uses of the San Pablo Bay (the receiving water) in the vicinity of the subject discharge, have identified the following beneficial uses for San Pablo Bay:

- Commercial and Sport Fishing
- Estuarine Habitat
- Industrial Service Supply
- Fish Migration
- Navigation
- Preservation of Rare and Endangered Species
- Water Contact Recreation
- Non-contact Recreation
- Shell Fish Harvesting
- Fish Spawning
- Wildlife Habitat.

B. Salinity

1. The Basin Plan states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable Water Quality Objectives (WQOs). Freshwater objectives apply to discharges to waters that both lie outside the zone of tidal influence and have salinities lower than 5 parts per thousand (ppt) at least 75 percent of the time. Saltwater objectives shall apply to discharges to waters with salinities greater than 5 ppt at least 75 percent of the time. For discharges to waters with salinities in between the two categories or tidally influenced freshwaters that support estuarine beneficial uses, the objectives shall be the lower of the salt or freshwater objectives, the latter calculated based on ambient hardness, for each substance.
2. The U.S. EPA's May 18, 2000 *Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* (the California Toxics Rule – the CTR) states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable water quality criteria (WQCs). The CTR further states that freshwater criteria apply to discharges to waters with salinities equal to or less than one ppt at least 95 percent of the time. Saltwater criteria apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to water with salinities in between these two categories, or to 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.
3. The receiving waters for the subject discharge are the waters of San Pablo Bay. The Basin Plan specifically identifies San Pablo Bay as estuarine [Basin Plan Table 2-6, pg. 2-21]. Therefore, the applicable WQCs or WQOs are the lower of the marine and freshwater WQOs or WQCs.

C. Hardness

Hardness-dependant WQOs/WQCs were adjusted using a hardness of 138 milligrams per liter (mg/l). This is the only relevant hardness value observed at the RMP San Pablo Bay monitoring station (designated BD 20) during the period from March 4, 1993 through July 17, 2000. Of the 22 total RMP samples collected at that station during that period, 7 samples were analyzed for hardness. Of those 7, 6 had hardness exceeding 400 mg/l. The CTR states [Section F.2.f - Hardness, page 31692], that criteria derivations are most accurate when hardness values are between 25 mg/L and 400 mg/L. Therefore, Board staff eliminated all hardness values above 400 mg/L, which left only the single value of 138 mg/L, observed on January 27, 1997. Since there is only a single applicable value, it was used as the ambient receiving water hardness.

D. Dilution.

1. The subject discharge does not receive an initial dilution of 10:1 at all times because the discharge diffuser is located in the intertidal zone in the San Pablo Bay mud flats, and is submerged when the tides is at the +1 foot Mean Lower Low Water (MLLW) tidal elevation and above. At lower tidal elevations, the outfall is exposed and the distance from the end of the diffuser to the San Pablo Bay water line can range from 1000 to 3500 feet.
2. The Discharger has conducted dilution studies using a dye study and water flow modeling. There are still outstanding technical issues regarding these studies (see Section IV.C.3, below). Therefore, consistent with the requirements of Section 1.3 of the State Water Resources Control Board's March 2, 2000 *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, this Order does not grant dilution credit for the subject discharge.
3. The outstanding technical issues regarding dilution studies include:
 - dye studies may not account for cumulative effects from other discharges.
 - they may not last long enough to fully assess whether a portion of the discharge has a long residence time and is not flushed out of the system, so that some portion – possibly a small part – of the discharge would make up part of the dilution water.
 - Based on the above, the assumption that a dye study measures only the initial dilution with “clean” dilution water may be incorrect because the actual dilution includes both “clean” dilution water and some amount of original discharge that resides in the system.
 - Neither models nor dye studies may have adequately considered the effects of other nearby discharge sources, or the cumulative effect of discharges from other major dischargers to San Francisco Bay system. Although these effects may be accounted for by factoring local background concentration in calculating the limitations, accurate characterization of local background levels is subject to uncertainties resulting from the interaction of tidal flushing and seasonal fresh water outflows described above.
4. The mixing zone is further limited for discharges of persistent pollutants because discharges to San Francisco Bay waters are not completely mixed discharges as defined by the SIP. Thus, the dilution credit should be determined using site-specific information for incompletely mixed discharges. The SIP Section 1.4.2.2 specifies that the Board “significantly limit a mixing zone and dilution credit as necessary... For example, in determining the extent of ... a mixing zone or dilution credit, the Board shall consider the presence of pollutants in the discharge that are ... persistent.” The SIP defines persistent pollutants to be “substances for which degradation or

decomposition in the environment is nonexistent or very slow.” The pollutants at issue here are persistent pollutants (i.e. mercury, 4,4’-DDE, 4,4’-DDD, dieldrin, and heptachlor epoxide). The dilution studies that estimate actual dilution do not address the effects of these persistent pollutants in the Bay environment, such as their long-term effects on sediment concentrations.

V. GENERAL RATIONALE AND REGULATORY BASES

Water quality objectives (WQOs), water quality criteria (WQC), effluent limitations, and calculations contained in this Order are based on:

- the Federal *Water Pollution Control Act*, Sections 301 through 305, and 307, and amendments thereto, as applicable (the Clean Water Act – the CWA);
- the Board’s June 21, 1995 *Water Quality Control Plan San Francisco Bay Basin (Region 2)* (the Basin Plan), and amendments thereto, as subsequently approved by the State Water Resources Control Board (the State Board), the Office of Administrative Law (OAL) and the U.S. EPA;
- the State Water Resource Control Board’s (the State Board’s) March 2, 2000 *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (the State Implementation Plan - the SIP), as subsequently approved by the OAL and the U.S. EPA;
- the U.S. EPA’s May 18, 2000 *Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* (the California Toxics Rule – the CTR);
- the U.S. EPA’s National Toxics Rule as promulgated [Federal Register Volume 57, 22 December 1992, page 60848] and subsequently amended (the NTR);
- the U.S. EPA’s *Quality Criteria for Water* [EPA 440/5-86-001, 1986], and subsequent amendments, (the U.S. EPA Gold Book);
- applicable Federal Regulations [40 CFR Parts 122 and 131];
- 40 CFR Part 131.36(b) and amended [Federal Register Volume 60, Number 86, 4 May 1995, pages 22229-22237];
- the U.S. EPA’s December 10, 1998 *National Recommended Water Quality Criteria* compilation [Federal Register Vol. 63, No. 237, pp. 68354-68364];
- the U.S. EPA’s December 27, 2002 *Revision of National Recommended Water Quality Criteria* compilation [Federal Register Vol. 67, No. 249, pp. 79091-79095]; and
- guidance provided with State Board actions remanding permits to the Board for further consideration.

VI. SPECIFIC RATIONALE

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

A. Recent Plant Performance

Section 402(o) of CWA and 40 CFR § 122.44(l) require a re-issued NPDES permit contain water quality-based effluent limitations (**WQBELs**) that are at least as stringent as those in the previous permit. The SIP specifies that interim performance-based effluent limitations, if required, must be based on the more stringent of either current treatment facility performance or previous permit limitations (unless anti-backsliding requirements are met). Board staff exercised BPJ, as defined above, to establish recent plant performance as it applies to the WWTPs. Board staff considered effluent monitoring data collected during the discharge season from October 1999 through April 2004 as representative of recent plant performance.

B. Impaired Water Bodies in 303(d) List

On June 6, 2003, the U.S. EPA approved a revised list of impaired water bodies prepared by the State pursuant to the provision of Section 303(d) of the federal Clean Water Act (the 303(d) list) requiring identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. The 303(d) list includes San Pablo Bay as impaired by chlordane, DDT, diazinon, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, nickel, PCBs, dioxin-like PCBs, and selenium.

The SIP requires that final effluent limitations for all 303(d)-listed pollutants will be based on total maximum daily loads (**TMDLs**) and their associated wasteload allocations (**WLA**). The SIP and federal regulations also require that final concentration limitations be included for all pollutants with reasonable potential. The SIP requires that, where the Discharger has demonstrated infeasibility to meet the final limitations, interim concentration limitations will be established in the permit together with a compliance schedule to remain in effect until final effluent limitations are adopted. The SIP also requires the inclusion of appropriate provisions for waste minimization and source control as a condition for granting a compliance schedule.

C. Basis for Prohibitions

1. Prohibition A.1 (no discharges other than as described in the permit): This prohibition is based on the California Water Code that requires filing of a report of waste discharge before a permit to discharge can be granted.
2. Prohibition A.2 (no bypass or overflow): This prohibition is based on the previous Order and 40 CFR Part 122.41(m)(4).
3. Prohibition A.3 (flow limit): This prohibition is based on the reliable treatment capacity of the plant. Exceedence of the treatment plant's average dry weather flow design capacity may result in lowering the reliability of compliance with water quality requirements, unless the Discharger demonstrates otherwise through an antidegradation study. This prohibition is based on 40 CFR 122.41(l).
4. Prohibition A.4 (dry weather discharge): This prohibition is unchanged from the previous Order. The exception to the shallow water discharge prohibition is based on the Discharger's implementation of an approved reclamation program and, no discharge is allowed between June 1 and August 31, annually, when all treated wastewater is reclaimed.
5. Prohibition A.5 (no discharge of untreated or partially treated sewage, no discharge of disinfection products, such as chlorine): This prohibition is based on the Clean Water Act, which prohibits discharges of wastewater that does not meet secondary treatment standards as specified in 40 CFR 133. Additionally, the Basin Plan prohibits discharge of raw sewage or any waste

failing to meet waste discharge requirements to any waters of the Basin Plan. The Basin Plan contains a toxicity objective stating “All waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental responses to aquatic organisms.” Chlorine is lethal to aquatic life.

D. Basis for Effluent Limitations

1. Effluent Limitations B.1: These technology-based and other limitations are representative of, and are intended to ensure, adequate and reliable secondary level wastewater treatment. During wet weather (November 1 - April 30 annually) the discharge is subject to the requirements for secondary plants that are at least as stringent as the Basin Plan requirements [Basin Plan Chapter 4, pg 4-8, and Table 4-2, at pg 4-69] and described by the U.S. EPA at 40 CFR 133.102. This Order requires that the discharge meet more stringent technology-based limits during dry weather (May 1 - 31 and September 1 - October 31 annually) to protect the beneficial uses of the receiving water from threats or impacts caused by the discharge. These more stringent dry weather technology based limits are needed because during the drier, warmer months, the receiving water is subject to greater oxygen demand from increased phytoplankton activity, there are reduced dissolved oxygen levels due to elevated temperature, and there is reduced flushing of San Pablo Bay from freshwater inflows (from local creeks or the Sacramento-San Joaquin Delta). Compliance at the Novato plant has been demonstrated by existing plant performance. The Ignacio plant has been unable to attain compliance with the more stringent technology-based dry weather limits, and is under a compliance schedule to attain them, and IPBLs until they can be achieved.
2. Effluent Limitation B.2 (pH): This effluent limitation is unchanged from the previous permit. The limitation is based on the Basin Plan [Basin Plan Chapter 4, Table 4-2], which is derived in turn from federal requirements [40 CFR 133.102]. Compliance has been demonstrated by existing plant performance.
3. Effluent Limitation B.3 (bacteriological). The previous Order included total coliform limitations. The U.S. EPA’s May, 2002 draft implementation guidance for bacteriological water quality criteria recommended either enterococcus or *E. coli*, or both together, as superior to total or fecal coliform as bacteriological indicators for human health pathogenic risk. This recommendation was based on the fact that there are multiple sources of coliform bacteria, including humans, and research results showing that many of these forms are unrelated to human pathogens or risk potential. A growing number of studies (including the Santa Monica Bay study [R. Haile, et al. *The health effects of swimming in ocean water contaminated by storm drain runoff*. *Epidemiology* 10(4): 355-363 (1999).]) have indicated that enterococcus and/or *E. coli* counts correlate more significantly than coliform counts with human health problems than coliform counts, and serve as a more accurate indicator of human health risk potential from water contact. Therefore, this Permit contains alternate enterococcus bacteriological limits. Enterococcus compliance may be demonstrated using any analytical method approved by the Executive Officer.
4. Effluent Limitation B.4 (chlorine residual): This effluent limit is unchanged from the previous NPDES permit. The limitation is based on the Basin Plan [Table 4-2, Pg. 4-69]. Compliance has generally been demonstrated by existing plant performance
5. Effluent Limitation B.5 (BOD and TSS monthly average 85 percent removal): These are standard secondary treatment requirements and permit effluent limitations based on Basin Plan requirements [Table 4-2, pg. 4-69], derived in turn from federal requirements [40 CFR 133.102; definition in 133.101]. These limitations are different from the previous NPDES permit in that

they are based on concentration as the unit of measure, rather than weight. This change is implemented to make this requirement consistent with 40 CFR 133.101 and 133.102. Compliance has been demonstrated by existing plant performance.

6. Effluent Limitation B.6 (ammonia): The monthly effluent limitation is unchanged from the existing NPDES permit, and compliance has been demonstrated by existing plant performance. The annual average ammonia effluent limitation is discontinued because the Board feels that the monthly effluent limitation is adequately protective.
7. Effluent Limitation B.7 (Whole Effluent Acute Toxicity): The Basin Plan specifies a narrative objective for toxicity, requiring that all waters shall be maintained free of toxic substances in concentrations that are lethal to, or produce other detrimental response in, aquatic organisms. Detrimental responses include, but are not limited to: decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alternations in population, community ecology, or receiving water biota. These effluent toxicity limitations are necessary to ensure that this objective is protected. The whole effluent acute toxicity limitations for an eleven-sample median and an eleven-sample 90th percentile value are consistent with the previous Order and are based on the Basin Plan [Table 4-4, pg. 4-70]. This Order requires acute toxicity testing to be carried out consistent with the requirements of the U.S. EPA's "Methods for Measuring The Acute Toxicity of Effluents and Receiving Water To Freshwater and Marine Organisms." The most current requirements are the 5th Edition (EPA-821-R-02-012), and the Discharger shall implement succeeding editions as soon as practicable after their adoption by U.S. EPA.
8. Effluent Limitation B.8 (Whole Effluent Chronic Toxicity): The chronic toxicity objective/limitation is based on the Basin Plan's narrative toxicity objective on page 3-4.
9. Effluent Limitation B.9 (Toxic Substances):
 - a. Reasonable Potential Analysis (RPA)

The CFR [40 CFR 122.44(d)(1)(i)] requires NPDES permits to include WQBELs for all pollutants "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard" (have reasonable potential). Thus, assessing whether a pollutant has reasonable potential is the fundamental step in determining whether or not a WQBEL is required. The following sections describe the process and results of an RPA of the WWTPs' effluent for the pollutants identified in the Basin Plan and the CTR.

- i) *WQOs and WQCs*: The RPA uses Basin Plan WQOs, including narrative toxicity objectives in the Basin Plan, and applicable WQCs in the CTR and NTR. The Basin Plan objectives and CTR/NTR criteria are shown in Attachment A of this Fact Sheet. Pursuant to SIP Section 1.3, the RPA did not include dilution for any pollutants, as discussed in Section IV.C, above.
 - ii) *Methodology* : The RPA uses the methods and procedures prescribed in SIP Section 1.3. 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 exceedences of applicable WQOs or WQCs. Attachment C of this Fact Sheet shows the step-wise process described in Section 1.3 of the SIP.
- b. *Effluent and background data*: The RPA is based on effluent data collected by the Discharger from October 1999 through April 2004 for metals and certain organic priority pollutants (see

Attachment B of this Fact Sheet), and on receiving water ambient background data at RMP Station BD20 (the San Pablo Bay RMP station) from 1990 through 2000 as the most representative currently available background data. However, a data gap remains as to the ambient background conditions for the discharge into the intertidal mudflats of San Pablo Bay. San Pablo Bay station RMP data were used for this permit reissuance because this is the best available information representing ambient background condition for this discharge. The Discharger's outfall is located in the mudflats along the western edge of San Pablo Bay; and the San Pablo Bay RMP station is located in the center of San Pablo Bay. Therefore, there is significant distance from the discharge outfall to the RMP Station. For future permit reissuance, the Board may require better characterization of ambient background conditions near the outfall if such data are needed.

- c. *Site Specific Translators* This Order employs site-specific translators for the nickel and copper WQCs used in the RPA. The translators are derived from data presented in the Discharger's July 23, 2004, *Novato Sanitary District Copper and Nickel Translator Calculation* (the translator study), incorporated here by reference. The translator study compiled dissolved and total metal data from four monitoring stations in San Pablo Bay. The four monitoring stations used provide adequate geographic and temporal coverage for the portions of San Pablo Bay adjacent to the discharge. The study calculated translators using methods provided in U.S. EPA guidance, including direct calculation ($\text{translator} = (\text{dissolved fraction})/(\text{total metal})$), and performing a regression analysis of any correlation between translator values and Total Suspended Solids (TSS) in the receiving water. The regression analysis demonstrated an acceptable correlation between TSS and translator values for copper, but not for nickel. Therefore, for consistency, the directly computed translators were used for both copper and nickel. The RPA used site-specific translators for copper (0.73 acute, 0.39 chronic) and nickel (0.65 acute, 0.27 chronic).
- d. *RPA Triggers*: Three triggers apply in determining reasonable potential:
- 1) The first trigger is activated if the MEC is greater than the lowest applicable WQO ($\text{MEC} \geq \text{WQO}$), which has been adjusted for pH and translator data, if appropriate. If the MEC is greater than the adjusted WQO, then that pollutant has reasonable potential, and a WQBEL is required.
 - 2) The second trigger is activated if the observed maximum ambient background concentration (B) is greater than the adjusted WQO ($B > \text{WQO}$), and either:
 - a) the MEC is less than the adjusted WQO ($\text{MEC} < \text{WQO}$), or
 - b) the pollutant was not detected in any of the effluent samples and all of the detection levels are greater than or equal to the adjusted WQO.If B is greater than the adjusted WQO, then a WQBEL is required.
 - 3) The third trigger is activated under certain circumstances if a review of other information determines that a WQBEL is required to protect beneficial uses, even if both MEC and B are less than the WQO.
- e. *RPA determination*: The RPA indicated that there is reasonable potential for: copper, lead, mercury, nickel, cyanide, TCDD TEQ, 4,4'-DDE, 4,4'-DDD, dieldrin, and heptachlor epoxide, as depicted in Table 2, below. A complete RPA results table is included in Attachment C of this Fact Sheet.

f. Summary of Reasonable Potential Results

CTR #	Constituent name	Governing Criterion, µg/l	RPA Trigger	Reason
6	Copper	6.58	1	MEC => C [16.340 ug/l vs 6.575 ug/l]
7	Lead	4.79	2	B > C [6.460 ug/l vs 4.794ug/l]
8	Mercury (303d listed)	0.03	1	MEC => C [0.046 ug/l vs 0.025 ug/l]
9	Nickel	26.30	2	B > C [30.000 ug/l vs 26.296ug/l]
14	Cyanide	1.00	1	MEC => C [7.317 ug/l vs 1.000 ug/l]
16	2,3,7,8 TCDD (303d listed)	0.00	3	RP by Trigger III and Staff BPJ
109	4,4'-DDE (linked to DDT)	0.00	2	B > C [0.001159 ug/l vs 0.000590ug/l]
110	4,4'-DDD	0.00	2	B > C [0.001159 ug/l vs 0.000840ug/l]
111	dieldrin (303d listed)	0.00	2	B > C [0.000237 ug/l vs 0.000140ug/l]
118	heptachlor epoxide	0.00	2	B > C [0.000121 ug/l vs 0.000110ug/l]

g. *Constituents with limited data:* Reasonable potential could not be determined for some organic priority pollutants due to the lack of data. The Board’s August 6, 2001 Letter to all permittees required the Discharger to initiate or continue to monitor for those pollutants in this category, using analytical methods that provide the best detection limits reasonably feasible. Table 6 of the SMP, requires two additional monitoring events for these pollutants before the Discharger applies for reissuance of this NPDES permit, and Board staff will reassess those pollutants RP at that time.

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

i. Mass Emission Limitations for Mercury

The Order contains a mass emission limitation for mercury because the Board has determined that there is no additional assimilative capacity for mercury in the San Francisco Bay system. This determination is consistent with SIP Section 2.1.1 requirements that the Board consider whether additional assimilative capacity exists for 303(d)-listed bioaccumulative pollutants. This determination also considered the fact that a fish consumption advisory currently exists to protect human health from elevated mercury concentrations in fish taken from San Francisco Bay. The mass trigger is calculated using the ultra-clean data collected from May 1999 through November 2003 as it reflects the WWTPs’ performance. The mass trigger is a reflection of (1) better mercury effluent data (sampling and analytical techniques have improved); and (2) better flow data (43 months of actual effluent discharged to receiving water).

j. Final Water Quality-Based Effluent Limitations

Final WQBELs were developed for the toxic and priority pollutants that were determined to have reasonable potential. In this document, “final WQBELs” means final effluent limitations that were calculated based on appropriate WQOs or WQCs using the appropriate procedures specified in SIP Section 1.4 (See Attachment D of this Fact Sheet). For the purpose of the Proposed Order, final WQBELs refer to all non-interim effluent limitations. The governing WQOs or WQCs used for each pollutant with reasonable potential are depicted in Table 3, above. The determination of governing WQOs or WQCs is detailed in Attachment 1 of this Fact Sheet.

k. Comparison to Previous Permit Limitations

The effluent limitations contained in the existing NPDES permit for silver and zinc have been discontinued because the current RPA indicated they do not have reasonable potential, and therefore, no final WQBELs are required. Their discontinuation is exempt from antibacksliding and antidegradation, to the extent they would be applicable, because the current RPA constitutes new information that was not available when the existing NPDES permit was adopted, and the receiving water is in attainment for silver and zinc. The interim performance based effluent limit (IPBL) for copper contained in this NPDES permit is more stringent than the interim limit contained in the existing NPDES permit. For mercury, the concentration-based IPBL and mass emission limits are based on the previous NPDES permit, as amended. The mercury mass trigger was recalculated based on recent plant performance data, as depicted in Attachment 5. The IPBL for cyanide is higher than that contained in the existing NPDES permit because new information (i.e., results of collaborative cyanide studies) has become available since the existing NPDES permit was adopted. The existing NPDES permit did not include effluent limitations for 4,4'-DDE, 4,4'-DDD, dieldrin or heptachlor epoxide, and they are included in this Order because the RPA indicated they have reasonable potential due to ambient background levels in the receiving water.

l. Feasibility of Complying With Final Limitations for Lead and Nickel

Board staff conducted a statistical analysis of lead and nickel data for wet weather discharge of combined effluent to evaluate the feasibility of attaining immediate compliance with the final WQBELs. The statistical analysis computed the median, 95th percentile, and 99.87th percentile values of the data, as depicted in Attachments 6 and 7. The statistical analysis shows that the median, 95th percentile, and 99.87th percentile values are all below the MDELs for both lead and nickel. This indicates that immediate compliance with those final WQBELs is feasible.

m. Interim Limitations

- i) Pursuant to the SIP, this Order establishes numeric IPBLs for copper, cyanide, mercury, 4,4'-DDE, dieldrin, and heptachlor epoxide. Both the SIP and the Basin Plan require dischargers to demonstrate the infeasibility of achieving immediate compliance with new limits to qualify for a compliance schedule. On July 27, 2004, the Discharger submitted its Feasibility Study (the feasibility study), asserting infeasibility to immediately comply with the final WQBELs for copper, mercury, cyanide, 4,4'-DDE, 4,4'-DDD, dieldrin and heptachlor epoxide. Board staff have analyzed the Discharger's data for copper, mercury, and cyanide and confirmed the assertion of infeasibility for those pollutants. For 4,4'-DDE, 4,4'-DDD, dieldrin and heptachlor epoxide, current analytical technologies do not permit detection of those compounds, if present, at levels low enough to determine compliance with the final WQBELs, and the assertion of infeasibility is confirmed for those pollutants. Interim effluent limitations were derived for these constituents.
- ii) Justification for including these IPBLs is based partly on the Discharger's source control and pollution minimization efforts in the past and continuation of those efforts in the present and future. The interim effluent concentration limitations for copper and cyanide are based on recent plant performance. The interim monitoring requirement for dioxin TEQ is based on the previous permit daily average effluent limitations. The concentration-based mercury IPBL is based on the 2001 Board staff report *Statistical Analysis of Pooled Data from Regionwide UltraClean Mercury Sampling for Municipal Dischargers*. The mass-based IPBL is continued from the existing NPDES permit, and the mass-based mercury triggers are recomputed from

recent plant performance, and are consistent with anticipated WLAs for the mercury TMDL. The interim limitations for 4,4'-DDE, 4,4'-DDD, dieldrin, and heptachlor epoxide are based on their respective MLs as set out in the SIP [pages 4-1 through 4-5]. The interim limitations are also discussed in more detail below.

n. Feasibility Evaluation

- i) Board staff reviewed the feasibility study's assertions that it is infeasible to immediately comply with the WQBELs calculated according to SIP Section 1.4 for copper, mercury, cyanide, 4,4'-DDE, dieldrin, and heptachlor epoxide.
- ii) Board staff statistically analyzed recent WWTP copper and mercury performance data to validate the assertion of infeasibility for them, as depicted in Table 4, below. Based on that statistical analysis, the Board concurs with the Infeasibility study's assertion of infeasibility regarding copper and mercury. Therefore, pursuant to SIP requirements, this Order continues the existing compliance schedules for copper and mercury and establishes interim numeric limitations and interim requirements to control these metals, based on the specific bases described below.

Table 3. Results of feasibility analysis for copper and mercury.

Constituent	AMEL, µg/L	95 th Percentile, µg/L	MDEL, µg/L	99 th Percentile, µg/L	Immediate Compliance Feasible? (Y/N)
Copper	4.4	18.7	6.4	15.6	No
Mercury*	0.021	0.036	0.039	0.048	No

- iii) This Order establishes an interim performance-based mercury mass limit in addition to the interim mercury concentration limits, to maintain the discharge's current mass loadings of mercury, a 303(d)-listed bioaccumulative pollutant, into San Pablo Bay. This interim performance-based mass limitation is based on the existing NPDES permit.
- iv) Specific bases for these interim limits are described in the findings for each pollutant and in Section m., below. The Board may take appropriate enforcement actions if interim limits and requirements are not met.
- v) This Order requires continued monitoring for cyanide and selected semivolatiles as a condition of establishing the interim numeric interim limits and compliance schedules for them.

o. Further Discussion and Rationales of Interim Effluent Limitations

- i) Copper: This Order contains a copper IPBL because the Discharger has demonstrated and the Board verified that it is infeasible for the WWTPs to meet the final effluent limitations calculated according to the SIP, 6.4 µg/L maximum daily effluent limit (MDEL) and 4.4 µg/L average monthly effluent limit (AMEL). The SIP requires the interim numeric effluent limitation for the pollutant be based on either current treatment facility performance, or on the previous Order's limitation, whichever is more stringent. Board staff's statistical analysis indicates the 99.87th percentile value of the WWTPs' recent copper effluent data is 19 µg/L,

which is lower than the 22 µg/L IPBL developed for the current NPDES Permit. Therefore, this Order establishes the copper IPBL as 19 g/L. To comply with the SIP, this Order establishes the IPBL at 19 µg/L as a daily maximum.

- ii) Mercury: This Order contains a mercury IPBL because the Discharger has demonstrated and the Board verified that it is infeasible for the WWTPs to meet the final effluent limitations calculated according to the SIP, 0.039 µg/L MDEL and 0.021 µg/L AMEL. The SIP requires the interim numeric effluent limitation for the pollutant be based on either current treatment facility performance, or on the previous Order's limitation, whichever is more stringent. The SIP requires the interim numeric effluent limitation for the pollutant be based on either current treatment facility performance, or on the previous Order's limitation, whichever is more stringent. The performance-based effluent limitations, 0.023 µg/L for advanced secondary treatment plants and 0.087 µg/L for secondary treatment plants, were calculated statistically using ultra-clean mercury concentration data (*Staff Report: Statistical Analysis of Pooled Data from Region-wide Ultra-clean Sampling, 2000*). The Discharger operates secondary treatment plants, so the appropriate concentration-based mercury IPBL is 0.087 µg/L. This is the same concentration-based IPBL contained in the existing NPDES permit.

This Order continues the previous NPDES permit's interim mass-based mercury effluent limitation of 0.655 kilograms per year (kg/yr), and establishes a newly-calculated interim mass-based mercury trigger value of 0.020 kilograms per month (kg/mo). The trigger value is based on a statistical analysis of recent plant performance. Specifically, the running 12-month mass loading averages for the WWTPs were calculated for the period October 1999 through April 2004, and the 99.87th percentile value of the running 12-month average mass loadings was calculated, as shown in Attachment 5 of this Fact Sheet. This value is the interim mass-based mercury trigger. The Board has determined that this mass-based trigger approach is appropriate for the following reasons:

- a. recent monitoring data show very low levels of mercury in the discharge, well below the applicable WQC,
- b. the interim concentration-based limitation will ensure that mercury levels remain low in the discharge,
- c. the Discharger will continue to identify and, to the extent feasible, address mercury sources under its pollution prevention program,
- d. the interim mass limitation based on the design flow will preclude any significant increases in mass loadings from the WWTP.

Overall, the Discharger already has minimized mercury influent loadings to the treatment plant and provided for a high level of mercury removal in the treatment process. The Board anticipates that it is unlikely that the TMDL will require additional reductions in mercury loadings beyond current treatment levels.

- iv) Cyanide: An interim effluent limitation is given for cyanide since the Discharger has demonstrated and the Board verified that it is infeasible for the WWTPs to meet the final effluent limitations calculated according to the SIP (AMEL and MDEL of 1.0) or the current SIP minimum level of 5.0 µg/l. The final WQBEL may be recalculated based on a cyanide SSO. Since the Discharger cannot comply with the cyanide WQBELs or ML, this Order establishes an IPBL for cyanide, based on the 99.87th percentile value of recent performance

data. Statistical analysis of recent cyanide effluent data indicates a 99.87th percentile value of 9.2 µg/L. This Order establishes the 9.2 µg/L cyanide IPBL, even though it is higher than the previous NPDES Permit's 5µg/L limit, because antibacksliding does not apply for the following reasons:

- 1) The proposed final WQBEL set forth in the findings is more stringent than the WQBEL specified in the previous permit,
 - 2) As set forth in the State Board Order WQ 2001-06, antibacksliding does not apply to the interim limitations in a compliance schedule and the proposed interim *performance-based* limit is not "comparable" to the prior *water quality*-based limit of the previous permit, and
 - 3) Even if antibacksliding and antidegradation policies apply to interim limitations under CWA 402(o)(2)(c), a less stringent limitation is necessary because of factors over which the Discharger has no control – specifically, the fact that cyanide appears to be byproduct of the required effluent disinfection.
- iii) 4,4'-DDE, 4,4'-DDD, dieldrin and Heptachlor: Interim effluent limitations are given for these pollutants because it is infeasible for the Discharger to demonstrate, or the Board to determine, immediate compliance with the final WQBELs (4,4'-DDE: MDEL -0.00059 µg/L, AMEL - 0.00029 µg/L; 4,4'- DDD: MDEL - 0.00169, AMEL - 0.00084; dieldrin: MDEL – 0.00029 µg/L, AMEL – 0.00014 µg/L; and heptachlor Epoxide: MDEL - 0.00022 µg/L and AMEL – 0.00011 µg/L.) newly calculated in accordance with the SIP. This is because all effluent samples are non-detect and the detection limits are far above the WQBELs. Since the Discharger cannot immediately demonstrate compliance with the final limits, the interim limitations are set at current performance, which is the levels at which the Discharger can demonstrate compliance, the current method limits (MLs) as delineated in the SIP: 4,4'-DDE- 0.05 µg/L, 4,4'-DDD – 0.0g µg/L, dieldrin - 0.01 µg/L and heptachlor epoxide - 0.01 µg/L. These IPBLs are taken as daily maximums. Because the previous NPDES permit did not contain limits for 4,4'-DDE, 4,4'-DDD, dieldrin and heptachlor, antibacksliding does not apply to these interim limits.
- v) Dioxins and Furans: The Discharger has demonstrated, and the Board verified, that it is infeasible for the Discharger to achieve immediate compliance with the final WQBELs for dioxin and furan compounds (AMEL of 0.014 pg/L and MDEL of 0.028 pg/L) newly calculated in accordance with the SIP. However, this Order does not contain interim limits for dioxins and furans because the current method detection limits are far above the final effluent limits. Although the SIP does not contain minimum levels for dioxins and furan compounds, Section 2.4.3 (1.) of the SIP requires the Board to establish an ML in the discharger's permit if the SIP's Appendix 4 does not contain an ML for the pollutant under. Therefore, this Order requires the Discharger to investigate the feasibility and reliability of increasing sample volumes to lower the detection limits for dioxin and furan compounds.
- p. Attainability of Interim Limitations
- i) Copper: During the period October 1999 through April 2004, the WWTPs' effluent MEC for copper was 16.34 µg/L. Since all effluent copper values were below the 19 µg/L IPBL, it is feasible for the WWTPs to comply with the IPBL.
 - ii) Mercury: During the period May 1999 through April 2004, the Discharger's combined effluent mercury concentrations ranged from 0.008 µg/L to 0.101 µg/L and averaged 0.021

µg/L. Although the mercury MEC exceeds the IPBL, Board staff's evaluation of the subject discharge data indicate that the concentration-based IPBL is attainable. During that same time period, the 12-month moving average mercury mass emissions ranged from 0.16 kg/yr (0.013 kg/mo) to 0.23 kg/yr (0.019 kg/mo). Based on these results, the annual average mass loading limit and trigger values should be attainable by the WWTPs.

- iv) Cyanide - During the period November 1998 through December 2002, the MEC for cyanide was 7.3 µg/L. Board staff's evaluation of the subject discharge data indicates that it is feasible for the WWTP to comply with the 9.2 µg/L IPBL.
- v) 4,4'-DDE, 4,4'-DDD, dieldrin and heptachlor epoxide - None of these compounds were detected in samples collected from the WWTPs' effluent in the period October 1999 – April 2004. The lowest detection limits for those samples were all below the relevant MLs, indicating the Discharger can comply with the IPBLs.

F. Basis for Receiving Water Limitations

1. Receiving water limitations C.1, C.2, and C.3 (conditions to be avoided): These limitations are based on the narrative/numerical objectives contained in Chapter 3 of the Basin Plan, pages 3-2 – 3-5.
2. Receiving water limitation C.4 (compliance with State Law): This requirement is in the previous permit, requires compliance with Federal and State law, and is self-explanatory.
3. Receiving water limitation C.5 (treatment plant operation): This requirement is in the previous permit, requires compliance with Federal and State law, and is self-explanatory.

G. Basis for Sludge Management Practices

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

H. Basis for Self-Monitoring Requirements

The SMP includes monitoring at individual plants' discharge points for conventional pollutants and at the combined outfall for non-conventional and toxic pollutants, and acute and chronic toxicity. The monitoring frequency for TSS is maintained at three (3) times per week since the Board believes that daily performance monitoring is appropriate for major POTWs. The Basin Plan Amendment adopted by the Board on January 21, 2004, (the Amendment) removed the settleable matter effluent limitations for secondary sewage treatment plants because it was not an appropriate indicator of sewage treatment plants' performance. Although the Amendment does not become effective until it is approved by the Office of Administrative Law, this Order does not impose settleable matter limits, based on the same rationale as the Amendment's removal of them. Should this change not be approved by the Office of Administrative Law, the Board will amend this Order to reinstate the settleable matter limits, as appropriate. This Order requires monthly monitoring for copper, mercury and cyanide to demonstrate compliance with the IPBLs. This Order requires monthly monitoring for lead and nickel to demonstrate compliance with final effluent limitations. Additionally, this Order requires twice yearly monitoring for 4,4'-DDE, 4,4'-DDD, dieldrin, heptachlor epoxide and dioxins and furan compounds to determine compliance with effluent limitations since these pollutants have little data with either limited or no detected values in the effluent during the period October 1999 through April 2004. Moreover, the Discharger shall collect twice yearly monitoring for all the 2,3,7,8-TCDD congeners, as further explained under the heading **Basis for the Lower Detection Limit Study for Dioxin TEQ**.

I. Basis for Provisions

- i) Provision E.1 (Permit Compliance and Rescission of Previous Permit): Time of compliance is based on 40 CFR 122. The basis of this Order superceding and rescinding the previous permit Order is 40 CFR 122.46.
- ii) Provision E.2 (Regional Copper Study and Schedule): This provision, based on BPJ, requires the Discharger to continue its participation in the regional discharger-funded effort to develop site-specific saltwater aquatic life-based WQOs for copper in San Francisco Bay north of the Dumbarton Bridge.
- iii) Provision E.3 (Cyanide Compliance Schedule and Cyanide SSO Study): This provision, based on BPJ, requires the Discharger to characterize background ambient cyanide concentrations and to participate in an on-going group effort to develop an SSO for cyanide.
- iv) Provision E.4 (Pollution Prevention and Pretreatment Program): This provision is based on the Basin Plan, pages 4-25 – 4-28, and the SIP, Section 2.1.
- v) Provision E.5 (Pretreatment Program): This provision is based on 40 CFR Part 403.
- vi) Provision E.6 (Whole Effluent Acute Toxicity): This provision establishes conditions by which compliance with permit effluent limitations for acute toxicity will be demonstrated. Under this Order, the Discharger is required to use 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
- vi) Provision E.7 (Whole Effluent Chronic Toxicity): This provision establishes conditions and protocols by which compliance with the Basin Plan narrative WQO for toxicity will be demonstrated. Conditions include required monitoring and evaluation of the effluent for chronic toxicity and numerical values for chronic toxicity evaluation to be used as 'triggers' for initiating accelerated monitoring and toxicity reduction evaluation(s). This provision also requires the Discharger to conduct a screening phase monitoring requirement and implement toxicity identification and reduction evaluations when there is consistent chronic toxicity in the discharge. New testing species and/or test methodology may be available before the next permit renewal. Characteristics, and thus toxicity, of the process wastewater may also have been changed during the life of the permit. This screening phase monitoring is important to help determine which test species is most sensitive to the toxicity of the effluent for future compliance monitoring. The proposed conditions in the draft permit for chronic toxicity are based on the Basin Plan narrative WQO for toxicity, Basin Plan effluent limitations for chronic toxicity (Basin Plan, Chapter 4), the U.S. EPA and SWRCB Task Force guidance, applicable federal regulations [40 CFR 122.44(d)(1)(v)], and BPJ.
- vii) Provision E.8 (Whole Effluent Chronic Toxicity): This provision establishes conditions and protocols by which compliance with the Basin Plan narrative WQO for toxicity will be demonstrated. Conditions include required monitoring and evaluation of the effluent for chronic toxicity and numerical values for chronic toxicity evaluation to be used as 'triggers' for initiating accelerated monitoring and toxicity reduction evaluation(s). This provision also requires the Discharger to conduct a screening phase monitoring requirement and implement toxicity identification and reduction evaluations when there is consistent chronic toxicity in the discharge. New testing species and/or test methodology may be available before the next permit renewal. Characteristics, and thus toxicity, of the process wastewater may also have been

changed during the life of the permit. This screening phase monitoring is important to help determine which test species is most sensitive to the toxicity of the effluent for future compliance monitoring. The proposed conditions in the draft permit for chronic toxicity are based on the Basin Plan narrative WQO for toxicity, Basin Plan effluent limitations for chronic toxicity (Basin Plan, Chapter 4), the U.S. EPA and SWRCB Task Force guidance, applicable federal regulations [40 CFR 122.44(d)(1)(v)], and BPJ.

- viii) Provision E.8 (Advanced Mercury Source Reduction Project): This provision, requires the Discharger to implement an Advanced Mercury Source Control Program throughout its service area that will within the first three years of the program increase the collection of fluorescent light tubes 5%. This provision is based on Section 2.1.1 of the SIP.
- ix) Provision E.9. (Bacteriological Studies): Consistent with the Basin Plan and U.S. EPA guidance, this provision requires the Discharger to conduct a confirmation study to demonstrate that the enterococcus limitations included in the Order are protective of all of the designated uses of the receiving waters, and must verify the “light contact” recreational use scenario upon which the limitations are based.
- x) Provision E.10 (Reclamation Pond Operation): The provision implements the sampling requirements in the Discharger’s Reclamation Pond Wet Season Discharge Sediment Control Monitoring Plan.
- xi) Provision E.11. (Compliance Schedule for Conventional Effluent Limitations at Ignacio Plant): The Ignacio Plant is currently unable to attain the technology-based effluent limitations for BOD and TSS for discharge during the dry-weather season (May, September, and October annually). The Discharger has committed to upgrade or replace the Ignacio Plant so that the more stringent dry weather technology-based effluent limitations will be attained. This Order continues the previous NPDES permit’s compliance schedule, until March 31, 2008.
- xii) Provision E.12. (303(d)-listed Pollutants Site-Specific Objective and TMDL Status Review): Consistent with the SIP, the Discharger shall participate in the development of TMDLs and SSOs for mercury, selenium, 4,4’-DDE, dieldrin, dioxin, and PCBs. By January 31 of each year, the Discharger shall submit an update to the Board to document progress made on source control and pollutant minimization measures and development of TMDL or SSO. Regional Board staff shall review the status of TMDL development. This Order may be reopened in the future to reflect any changes required by TMDL development.
- xiii) Provision E.13. (Optional mass Offset): This option is provided to encourage the Discharger to further implement aggressive reduction of mass loads to San Pablo Bay.
- xiv) Provision E.14 (Sanitary Sewer Management Plan): This provision requires the Discharger to actively participate in the BACWA and Water Board collaborative effort to address SSOs. The effort is consistent with Board Resolution No: R2-2003-0095.
- xv) Provision E.15 (Blending Monitoring Study). This provision is based on BPJ. It requires the Discharger to evaluate TSS as an indicator of compliance with effluent limitations during blending events. Furthermore, the provision requires the Discharger to recommend an appropriate TSS trigger value. The TSS trigger value will be used to require additional monitoring (Table 2 and Table 3 of the SMP) during blending events.

- xvi) Provision E.16 (Implementation and Enforcement of Prohibition A.5): The provision is based on 40 CFR 122.41(n) regarding treatment plant upset and affirmative defense.
- xvii) Provision E.17. (Wastewater Facilities, Review and Evaluation, Status Reports): This provision is based on the previous Order and the Basin Plan.
- xviii) Provision E.18. (Operations and Maintenance Manual and Reliability Report), and E.19 (Contingency Plan Update): These provisions are based on the Basin Plan, the requirements of 40 CFR 122, and the previous permit.
- xix) Provision E.20. (Self-Monitoring Program): 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 Self Monitoring Program (SMP) of the Permit. This provision requires compliance with the SMP, and is based on 40 CFR 122.44(i), 122.62, 122.63 and 124.5. The SMP is a standard requirement in almost all NPDES permits issued by the Board, including this Order. It contains definitions of terms, specifies general sampling and analytical protocols, and sets out requirements for reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and Board's policies. The SMP also contains a sampling program specific for the facility. It defines the sampling stations and frequency, the pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are specified. Monitoring for additional constituents, for which no effluent limitations are established, is also required to provide data for future completion of RPAs for them.
- xx) Provision E.21 (Standard Provisions and Reporting Requirements): The purpose of this provision is require compliance with the standard provisions and reporting requirements given in this Board's document titled *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993* (the Standard Provisions), or any amendments thereafter. That document is incorporated in the permit as an attachment to it. Where provisions or reporting requirements specified in the permit are different from equivalent or related provisions or reporting requirements given in the Standard Provisions, the permit specifications shall apply. The standard provisions and reporting requirements given in the above document are based on various state and federal regulations with specific references cited therein.
- xxi) Provisions E.22 (Change in Control or Ownership): This provision is based on 40 CFR 122.61.
- xxii) Provision E.23 (Permit Reopener): This provision is based on 40 CFR 123.
- xxiii) Provision E.24 (NPDES Permit /the U.S. EPA concurrence): This provision is based on 40 CFR 123.
- xxiv) Provisions E.25 (Permit Expiration and Reapplication): This provision is based on 40 CFR 122.46(a).

IV. WASTE DISCHARGE REQUIREMENT APPEALS

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

V. ATTACHMENTS

- Attachment 1. RPA Results for Priority Pollutants
- Attachment 2. Data Used For Reasonable Potential Analysis
- Attachment 3. Results of Reasonable Potential Analysis
- Attachment 4. Calculation of Final WQBELs
- Attachment 5. Mercury Mass Limit Calculations

Attachment 1.

Determination of Governing WQOs and WQCs

Attachment 2
Data Used For Reasonable Potential Analysis

Attachment 3
Results of Reasonable Potential Analysis

Attachment 4
Calculation of Final WQBELs

Attachment 5
Mercury Mass Limit Calculations

Attachment 6
Lead Compliance Feasibility Analysis

Attachment 7
Nickel Compliance Feasibility Analysis