

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
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FACT SHEET
for

**NPDES PERMIT and WASTE DISCHARGE REQUIREMENTS for
TOWN OF YOUNTVILLE/CALIFORNIA VETERANS HOME
JOINT WASTEWATER RECLAMATION PLANT
YOUNTVILLE, NAPA COUNTY
NPDES Permit No. CA0038121
ORDER NO. R2-2004-0017**

PUBLIC NOTICE:

Written Comments

- Interested persons are invited to submit written comments concerning this draft permit.
- Written comments must be submitted to the Regional Board no later than 5:00 p.m. on **February 23, 2004**.
- Send comments to the Attention of Richard Hiett.

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: **March 17, 2004**, starting at 9:00 am.

Additional Information

- For additional information about this matter, interested persons should contact Regional Board staff member: Mr. Richard Hiett, Phone: (510) 622-2359; email: rh@rb2.swrcb.ca.gov

This Fact Sheet contains information regarding reissuance of waste discharge requirements and National Pollutant Discharge Elimination System (NPDES) permit for the Town of Yountville and California Veteran's Home (Discharger) for discharges from the joint wastewater treatment and reclamation facility. The Fact Sheet describes the factual, legal, and methodological basis for the proposed permit and provides supporting documentation to explain the rationale and assumptions used in deriving the limits.

I. INTRODUCTION

The Discharger applied to the Board for reissuance of waste discharge requirements and a permit to discharge municipal wastewater to waters of the State and the United States under the NPDES. The application and Report of Waste Discharge is dated February 1, 1999.

1. Facility Description

The Discharger operates a municipal wastewater treatment plant (WWTP) that serves the town of Yountville and a Veterans Home operated by the State of California, which respectively have populations of about 2,900 people and 2,100 people (including about 900 staff). The Town contributes about 40% of the flow and waste loading with the remainder contributed by the Veterans

Home. The Plant, located at 7501 Solano Avenue, Yountville, provides secondary treatment of domestic wastewater. Currently, the Discharger treats about 0.422 million gallons per day (mgd) of wastewater, which is below the WWTP's design capacity of 0.62 mgd. The amount of treated effluent discharged to the Napa River depends on effluent reclaimed and the availability of adequate dilution at the discharge point. The U.S. EPA and the Board have classified this Discharger as a minor discharger.

2. Treatment Process Description

The treatment process consists of an aerated grit chamber, comminutors, primary settling basin, primary trickling filter, intermediate settling basin, secondary trickling filter, aerated trickling filter, solids contact reactor, final clarifier, an effluent polishing filter, disinfection with sodium hypochlorite, and dechlorination. In addition to the influent flow equalization pond, the WWTP has a treated effluent holding pond to allow for storage and subsequent discharge or land application. Treated effluent is either discharged to the Napa River or reclaimed through a spray irrigation system.

3. Receiving Water Beneficial Uses

The receiving waters for the subject discharges are the waters of the Napa River, which is tributary to San Pablo Bay. Beneficial uses for the Napa River, as identified in the Basin Plan and based on known uses of the receiving waters near the discharge, are:

- a. Municipal and Domestic Water Supply
- b. Agricultural Water Supply
- c. Navigation
- d. Contact and Non-Contact Water Recreation
- e. Warm and Cold Fresh Water Habitat
- f. Wildlife Habitat
- g. Preservation of Rare and Endangered Species
- h. Fish Migration and Spawning

II. DESCRIPTION OF EFFLUENT

The table below presents the quality of the discharge, as indicated in the Discharger's self-monitoring reports submitted for the period from January 2000 through March 2003 during the discharge season (October 1 through May 15). Average values represent the average of actual detected values only.

Table A. Summary of Discharge Data

Parameter	Average	Range of Reported Values
pH, standard units	--	6.6 – 7.2
Temperature, degrees C	19.2	2.0 – 24.0
Total Coliform Bacteria (MPN/100 mL)		<2 – 13
BOD ₅ , mg/L	9.2	1.2 – 24
Percent Removal, BOD ₅	97.1	91.3 – 99
Chlorine, mg/L	0.0	0.0
TSS, mg/L	10.4	3 – 21
Percent Removal, TSS	97.2	93.1 – 99
Settleable Solids, ml/L	--	<0.1 – 0.0
DO, mg/L	7.0	4 – 9.6

<u>Parameter</u>	<u>Average</u>	<u>Range of Reported Values</u>
Turbidity, NTU	9.3	1.5 – 20
Oil and Grease, mg/L	5.75	<5 – 8
Acute Toxicity, Percent Survival	--	15 ¹ – 100
Antimony, µg/L	--	0.3 ²
Arsenic, µg/L	0.87	<4 – 1.1
Beryllium, µg/L	--	<0.06 ²
Cadmium, µg/L	0.13	<1 – 0.2
Chromium, µg/L	0.6	<5 – 0.8
Chromium (VI), µg/L	--	<0.9 ²
Copper, µg/L	28.7	18 – 55
Lead, µg/L	0.58	<3 – 0.76
Mercury, µg/L	--	<0.008 – 0.018
Nickel, µg/L	3.7	<5 – 4.2
Selenium, µg/L	0.7	<0.3 – 0.7
Silver, µg/L	0.23	<0.5 – 0.3
Thallium, µg/L	0.06 ²	0.06 ²
Zinc, µg/L	89.5	50 – 160
Cyanide, µg/L	11	<3 – 14
Phenols, µg/L	8	3 – 13
Total PAHs, µg/L	--	<0.2 – <5

¹ The test conducted December 2001 indicated 15% survival, which exceeded the effluent limitation. The Discharger re-tested in January 2002 and achieved 95% survival.

² Only one data point was available.

III. GENERAL RATIONALE AND REGULATORY BASES

Provisions of the Order and methods used by the Regional Board to establish those provisions are requirements of or are derived from many sources, including the following:

- Sections 301 through 305, and 307 of the Federal *Water Pollution Control Act*, and amendments thereto, as applicable;
- The Regional Board's June 21, 1995, *Water Quality Control Plan San Francisco Bay Basin (Region 2)* (the Basin Plan);
- 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 or SIP), as approved by the Office of Administrative Law and the U.S. EPA;
- 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, as codified at 40 CFR 131.38);
- U.S. EPA's National Toxics Rule (the NTR, as codified at 40 CFR 131.36).

- U.S. EPA's *Quality Criteria for Water* [EPA 440/5-86-001, 1986] and subsequent amendments, (the U.S. EPA Gold Book);
- Applicable U.S. EPA regulations from 40 CFR Parts 122 through 135;
- 40 CFR Part 131.36(b) and amended [Federal Register Volume 60, Number 86, 4 May 1995, pages 22229-22237];
- U.S. EPA's December 10, 1998 *National Recommended Water Quality Criteria* compilation [Federal Register Vol. 63, No. 237, pp. 68354-68364];
- U.S. EPA's December 27, 2002 *Revision of National Recommended Water Quality Criteria* compilation [Federal Register Vol. 67, No. 249, pp. 79091-79095];
- Regional Board staff's Best Professional Judgment (BPJ), as defined by the Basin Plan, involves consideration of many factors, including the following:
 - the Basin Plan;
 - U.S. EPA Region 9 February 1994 Guidance For NPDES Permit Issuance;
 - U.S. EPA's March 1991 Technical Support Document for Water Quality-Based Toxics Control (the TSD);
 - U.S. EPA's October 1, 1993 Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria;
 - U.S. EPA's July 1994 Whole Effluent Toxicity (WET) Control Policy;
 - U.S. EPA's August 14, 1995 National Policy Regarding Whole Effluent Toxicity Enforcement;
 - U.S. EPA's April 10, 1996 Clarifications Regarding Flexibility in 40 CFR Part 136 Whole Effluent Toxicity (WET) Test Methods;
 - U.S. EPA Regions 9 & 10's May 31, 1996 Guidance for Implementing Whole Effluent Toxicity Programs Final;
 - U.S. EPA's February 19, 1997 Draft Whole Effluent Toxicity (WET) Implementation Strategy.

IV. SPECIFIC RATIONALE

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

1. Recent Plant Performance

Section 402(o) of the Federal Clean Water Act and 40 CFR § 122.44(l) requires that WQBELs in re-issued permits be at least as stringent as those in the previous permit. The SIP specifies that interim effluent limitations, if required, must be based on current treatment facility performance or on previous permit limitations, whichever is more stringent (unless anti-backsliding requirements are met). In determining what constitutes “recent plant performance,” BPJ, as defined above, was used. Effluent monitoring data collected for the discharge seasons from January 2000 through March 2003 are considered representative of recent plant performance.

2. Impaired Water Bodies on the 303(d) List

On June 6, 2003, the U.S. EPA approved a revised list of impaired water bodies prepared by the State (the 2002 303(d) list) pursuant to provisions of Clean Water Act Section 303(d) 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 pollutants impairing San Pablo Bay are chlordane, DDT, diazinon, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, nickel, PCBs, dioxin-like PCBs, and selenium. Copper, which was previously identified as impairing San Pablo Bay, was not included as an impairing pollutant in the 2002-303(d) list and has been placed on the new Monitoring List. The Napa River is listed as impaired by pathogens, sediment, and nutrients.

The SIP requires final effluent limitations for all 303(d)-listed pollutants to be based on total maximum daily loads (TMDLs) and associated waste load allocations (WLAs). The SIP and U.S. EPA regulations also require that final concentration-based WQBELs be included for all pollutants having reasonable potential to cause or contribute to an exceedance of applicable water quality standards (having reasonable potential or RP). The SIP requires that where the discharger has demonstrated infeasibility to meet the final WQBELs, interim performance-based limitations (IPBLs) or previous permit limitations (whichever is more stringent) be established in the permit, together with a compliance schedule in effect until final effluent limitations are adopted. The SIP also requires the inclusion of appropriate provisions for waste minimization and source control where interim limitations are established.

3. Basis for Prohibitions

- a). Prohibition A.1 (no discharges other than as described in the permit): This prohibition is based on the Basin Plan and previous permit.
- b). Prohibition A.2 (flow limit): This prohibition is based on the reliable treatment capacity of the plant. Exceedance 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).
- c). Prohibition A.3 (minimum 25:1 dilution): The dilution credit granted in this Order follows the policy established in the SIP because the SIP supercedes the Basin Plan on this issue. However, the SIP does not supercede the Basin Plan's prohibition against discharges that do not receive at least 10:1 dilution, or into any nontidal water (Basin Plan Table 4-1, prohibition 1). This Order grants the Discharger a 10:1 dilution credit in calculating WQBELs, provided the discharge shall

be completely mixed¹, and shall achieve an instream dilution ratio of at least 25:1 river to effluent flows. The SIP provides that dilution credits based on receiving water flows may be granted only for completely mixed discharges (SIP at 1.4.2.1). Incompletely mixed discharges are required to conduct mixing zone studies. The 25:1 instream dilution ratio requirement is necessary to account for uncertainties in stream flow measurements, and the assimilative capacity of the receiving water. The ambient background data were collected at a cleaner location in the Napa River, at a location upstream of this and several other wastewater dischargers to allow these dischargers to collaborate and share monitoring costs. A cleaner background will yield less stringent effluent limits than might be necessary to protect water quality as compared to background data directly upstream of the Discharger. The 25:1 was derived based loosely on a steady state mass balance. The two other dischargers that share this stretch of the Napa River with Yountville are St. Helena and Calistoga. Yountville's permitted discharge flow is roughly the same as the flows of St. Helena and Calistoga combined. As such, about twice the amount of instream dilution ratio is necessary to offset the pollutant addition by St Helena and Calistoga, Hence, a minimum 20:1 is necessary to justify a 10:1 dilution credit, and a higher 25:1 is necessary to account for uncertainty.

Historically, the Discharger has collected flow data downstream from the discharge to determine available dilution. However, the Board believes that a more representative approach for determining the allowable flow at the outfall location is by computing a flow based on the watershed area tributary to the outfall. In particular, the weighted average flow was determined based on the ratio of the watershed areas tributary to the Napa River flows at USGS Station No. 11456000, USGS Station No. 11458000, and the Discharger's outfall, as follows:

$$\frac{A_Y - A_S}{A_N - A_Y} = \frac{Q_Y - Q_S}{Q_N - Q_Y}$$

Where:

- A_Y = Napa River watershed area tributary to the Discharger's outfall (102 square miles);
- A_S = Napa River watershed area tributary to the USGS Station near St. Helena (81.4 square miles);
- A_N = Napa River watershed area tributary to the USGS Station near Napa (218 square miles);
- Q_Y = Napa River flow at the Discharger's outfall;
- Q_S = Napa River flow at the USGS Station near St. Helena; and
- Q_N = Napa River flow at the USGS Station near Napa.

Solving for Q_Y yields the following weighted average flow at the Yountville outfall:

$$Q_Y = 0.73 \times Q_N + 0.27 \times Q_S$$

This weighted average flow will be used to determine whether a 25:1 river to effluent ratio is available, to allow for discharge.

- d). Prohibition A.4 (Bypass or overflow is prohibited). This prohibition is retained from the previous Order and is based on the U.S. EPA prohibition and/or restrictions regarding bypass and overflow

¹ Completely mixed discharge condition means no more than five (5) percent difference, accounting for analytical variability, in the concentration of a pollutant across a transect of the water body at a point within two stream/river widths from the discharge point. SIP, Appendix 1.

contained in 40 CFR 122.41(m). The paragraph allowing blending is consistent with the current draft EPA policy on blending.

- e). Prohibition A.5 (no discharge during dry weather): The Basin Plan contains a prohibition of discharge of any wastewater which has particular constituents of concern to beneficial uses (1) at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1; or (2) into any non-tidal water, dead-end slough, similar confined waters, or immediate tributaries thereof. In issuing the previous permit, the Board determined that the Discharger is exempt from these because the discharge is part of an approved reclamation project, and during wet weather, there is sufficient flow in the river to achieve greater than 10:1 dilution. Consistent with this finding, no discharge is allowed, i.e., complete reclamation/reuse is required, during the dry season. This prohibition is unchanged from the previous permit.

4. Basis for Effluent Limitations

- a) Effluent limits for conventional and non-conventional pollutants.

<u>Constituent</u>	<u>Monthly Units</u>	<u>Weekly Average</u>	<u>Daily Average</u>	<u>Instantaneous Maximum</u>	<u>Maximum</u>
B.1.a. Biochemical Oxygen Demand (BOD)	mg/L	30	45	--	--
B.2.b Total Suspended Solids (TSS)	mg/L	30	45	--	--
B.3.c Oil & Grease	mg/L	10	--	20	--
B.4.d Settleable Matter	ml/1-hr	0.1	--	0.2	--
B.5.d Total Chlorine Residual (1)	mg/L	--	--	--	0.0

Effluent Limitations B.1.a through B.1.e:

These limits are technology-based limits representative of, and intended to ensure, adequate and reliable secondary level wastewater treatment. These limits are based on the Basin Plan (Chapter 4, pg 4-8, and Table 4-2, at pg 4-69). The limits are unchanged from the previous permit, except that 7-day average limits for BOD and TSS have been added to the permit, and daily average limits for BOD and TSS are removed to be consistent with Federal regulations (40 CFR 122.45 (d)(2)). Compliance has been demonstrated by existing plant performance.

- b) Effluent Limitation B.2 (pH, minimum 6.0, maximum 9.0):

This effluent limitation is a technology-based limit and is unchanged from the previous permit. The limitation is based on the Basin Plan (Chapter 4, Table 4-2), which is derived from federal requirements at 40 CFR 133.102. This is a previous permit effluent limitation and compliance has been demonstrated by existing plant performance.

- c) Effluent Limitation B.3 (BOD₅ and TSS monthly average 85 percent removal).

The 85 percent removal efficiency requirements for BOD₅/CBOD and suspended solids are technology-based, standard secondary treatment requirements, and are retained from the previous permit. These requirements are based on Basin Plan requirements (Table 4-2, pg. 4–69), which are derived from U.S. EPA requirements at 40 CFR 133.102. Compliance has been demonstrated by existing plant performance for ordinary flows (dry weather flows and most wet weather flows). During the past few years, the Discharger has consistently met these removal efficiency limits.

d) Effluent Limitation B.4 (Total Coliform Bacteria):

The purpose of this effluent limitation is to ensure adequate disinfection of the discharge in order to protect beneficial uses of the receiving waters. Effluent limits are based on WQOs for bacteriological parameters for receiving water beneficial uses. WQOs are given in terms of parameters, which serve as surrogates for pathogenic organisms. These limits are the same as the previous permit effluent limitations and compliance has been demonstrated by existing plant performance.

e) Effluent Limitation B.5 (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 on aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alternations in population, community ecology, or receiving water biota. These effluent toxicity limits are necessary to ensure that this objective is protected. The whole effluent acute toxicity limits for a three-sample median and single sample maximum are consistent with the previous permit and are based on the Basin Plan (Table 4-4, pg. 4–70). A review of the Discharger’s monitoring data from 2000-2002 indicates that survival rates ranged from 95 to 100 percent, with the exception of one violation of the acute toxicity effluent limitation in December 2001; a result of 15% survival was reported. The Discharger re-tested in January 2002 as required by the previous Order and the test indicated 95% survival.

f) Effluent Limitation B.6 (Whole Effluent Chronic Toxicity):

The chronic toxicity objective/limit is based on the Basin Plan’s narrative toxicity objective on page 3-4.

g) Effluent Limitation B.7 (Toxic Substances):

1. Reasonable Potential Analysis (RPA)

At 40 CFR 122.44(d)(1)(i), the U.S. EPA requires that permits 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 (reasonable potential analysis – RPA) is the fundamental step in determining whether WQBELs are required. The following sections describe the RPA methodology and the RPA results for the pollutants identified in the Basin Plan and the CTR.

- i) *WQOs and WQC*: The RPA uses Basin Plan WQOs, including narrative toxicity objectives in the Basin Plan, and applicable WQC in the CTR/NTR. The Basin Plan WQOs and NTR/CTR WQC are shown in Attachment 2 of this Fact Sheet.
- ii) *Methodology*: The RPA uses the methods and procedures prescribed in Section 1.3 of the SIP. Board staff has analyzed the effluent and background data and the nature of facility operations to determine if the discharge shows reasonable potential with respect to the

governing WQOs or WQC. Attachment 1 of this Fact Sheet shows the step-wise process described in Section 1.3 of the SIP.

- iii) *Effluent and background data:* The RPA was based on effluent monitoring data collected for the period from January 2000 through March 2003 (see Attachment 3 of this Fact Sheet). On March 5, 2003, a group of five dischargers to the Napa River, including the Town of Yountville, submitted the Collaborative Napa River Receiving Water Evaluation. Ambient data collected at a station in Calistoga was used in evaluating background water quality for this Order.
- iv) *RPA determination:* The RPA results are shown below in Table B and Attachment 1 of this Fact Sheet. The pollutants that exhibit RP are copper, mercury, zinc, cyanide, dioxin TCDD, dichlorobromomethane, chlorodibromomethane, and Bis(2-Ethylhexyl)Phthalate.

Table B. Summary of Reasonable Potential Results

# in CTR	Priority Pollutants	Governing WQOs/WQC (ug/L)	MEC or Minimum DL (ug/L) ¹	Maximum Background or Minimum DL (ug/L) ¹	RPA Results ²
1	Antimony	4300	0.3	0.7	No
2	Arsenic	190	1.1	6	No
3	Beryllium	No Criteria	0.05	0.06	Uo
4	Cadmium	1.22	0.2	0.03	No
5a	Chromium (III)	224	1	0.6	No
5b	Chromium (VI)	11	2.6	0.15	No
6	Copper	12.83	55	1.1	Yes
7	Lead	3.59	0.76	0.21	No
8	Mercury (303d listed)	0.025	0.028	0.015	Yes
9	Nickel (303d listed)	56	4.2	4	No
10	Selenium (303d listed)	5	1	0.3	No
11	Silver	4.78	0.3	0.03	No
12	Thallium	6.3	0.06	0.2	No
13	Zinc	58	160	2	Yes
14	Cyanide	5.2	14	0.197	Yes
15	Asbestos	No Criteria	NA	0.19	Uo
16	2,3,7,8 TCDD (303d listed)	1.3E-08	1.4895E-07	6.57E-10	Yes
17	Acrolein	320	1	1	No
18	Acrylonitrile	0.059	1	1	No
19	Benzene	1.2	0.27	0.27	No
20	Bromoform	4.3	0.1	0.1	No
21	Carbon Tetrachloride	0.25	0.42	0.42	No
22	Chlorobenzene	680	0.19	0.19	No
23	Chlorodibromomethane	0.401	0.8	0.18	Yes
24	Chloroethane	No Criteria	0.34	0.34	Uo
25	2-Chloroethylvinyl ether	No Criteria	0.31	0.31	Uo
26	Chloroform	No Criteria	20	0.24	Uo

# in CTR	Priority Pollutants	Governing WQOs/WQC (ug/L)	MEC or Minimum DL (ug/L) ¹	Maximum Background or Minimum DL (ug/L) ¹	RPA Results ²
27	Dichlorobromomethane	0.56	5.8	0.2	Yes
28	1,1-Dichloroethane	No Criteria	0.28	0.28	Uo
29	1,2-Dichloroethane	0.38	0.18	0.18	No
30	1,1-Dichloroethylene	0.057	0.37	0.37	No
31	1,2-Dichloropropane	0.52	0.2	0.2	No
32	1,3-Dichloropropylene	10	0.47	0.42	No
33	Ethylbenzene	3100	0.3	0.3	No
34	Methyl Bromide	48	0.42	0.42	No
35	Methyl Chloride	No Criteria	0.36	0.36	Uo
36	Methylene Chloride	4.7	0.38	0.38	No
37	1,1,2,2-Tetrachloroethane	0.17	0.3	0.3	No
38	Tetrachloroethylene	0.8	0.32	0.32	No
39	Toluene	6800	0.25	0.25	No
40	1,2-Trans-Dichloroethylene	700	0.3	0.3	No
41	1,1,1-Trichloroethane	No Criteria	0.35	0.3	Uo
42	1,1,2-Trichloroethane	0.6	0.27	0.27	No
43	Trichloroethylene	2.7	0.29	0.29	No
44	Vinyl Chloride	2	0.34	0.34	No
45	2-Chlorophenol	120	0.4	0.4	No
46	2,4-Dichlorophenol	93	0.3	0.3	No
47	2,4-Dimethylphenol	540	0.3	0.3	No
48	2-Methyl- 4,6-Dinitrophenol	13.4	0.4	0.4	No
49	2,4-Dinitrophenol	70	0.3	0.3	No
50	2-Nitrophenol	No Criteria	0.3	0.3	Uo
51	4-Nitrophenol	No Criteria	0.2	0.2	Uo
52	3-Methyl 4-Chlorophenol	No Criteria	0.3	0.3	Uo
53	Pentachlorophenol	0.28	0.4	0.4	No
54	Phenol	21000	0.2	0.2	No
55	2,4,6-Trichlorophenol	2.1	0.2	0.2	No
56	Acenaphthene	1200	0.17	0.17	No
57	Acenaphthylene	No Criteria	0.03	0.03	Uo
58	Anthracene	9600	0.16	0.16	No
59	Benzidine	0.00012	0.3	0.3	No
60	Benzo(a)Anthracene	0.0044	0.12	0.12	No
61	Benzo(a)Pyrene	0.0044	0.09	0.09	No
62	Benzo(b)Fluoranthene	0.0044	0.11	0.11	No
63	Benzo(ghi)Perylene	No Criteria	0.06	0.06	Uo
64	Benzo(k)Fluoranthene	0.0044	0.16	0.16	No
65	Bis(2-Chloroethoxy)Methane	No Criteria	0.3	0.3	Uo
66	Bis(2-Chloroethyl)Ether	0.031	0.3	0.3	No
67	Bis(2-Chloroisopropyl)Ether	1400	0.6	0.6	No

# in CTR	Priority Pollutants	Governing WQOs/WQC (ug/L)	MEC or Minimum DL (ug/L) ¹	Maximum Background or Minimum DL (ug/L) ¹	RPA Results ²
68	Bis(2-Ethylhexyl)Phthalate	1.8	8	0.6	Yes
69	4-Bromophenyl Phenyl Ether	No Criteria	0.4	0.4	Uo
70	Butylbenzyl Phthalate	3000	0.4	0.4	No
71	2-Chloronaphthalene	1700	0.3	0.3	No
72	4-Chlorophenyl Phenyl Ether	No Criteria	0.4	0.4	Uo
73	Chrysene	0.0044	0.14	0.14	No
74	Dibenzo(a,h)Anthracene	0.0044	0.04	0.04	No
75	1,2-Dichlorobenzene	2700	0.52	0.52	No
76	1,3-Dichlorobenzene	400	0.36	0.36	No
77	1,4-Dichlorobenzene	400	0.42	0.42	No
78	3,3 Dichlorobenzidine	0.04	0.3	0.3	No
79	Diethyl Phthalate	23000	0.4	0.4	No
80	Dimethyl Phthalate	313000	0.4	0.4	No
81	Di-n-Butyl Phthalate	2700	0.4	0.4	No
82	2,4-Dinitrotoluene	0.11	0.3	0.3	No
83	2,6-Dinitrotoluene	No Criteria	0.3	0.3	Uo
84	Di-n-Octyl Phthalate	No Criteria	0.4	0.4	Uo
85	1,2-Diphenylhydrazine	0.04	0.3	0.3	No
86	Fluoranthene	300	0.03	0.03	No
87	Fluorene	1300	0.02	0.02	No
88	Hexachlorobenzene	0.00075	0.4	0.4	No
89	Hexachlorobutadiene	0.44	0.2	0.2	No
90	Hexachlorocyclopentadiene	240	0.1	0.1	No
91	Hexachloroethane	1.9	0.2	0.2	No
92	Indeno(1,2,3-cd)Pyrene	0.0044	0.04	0.04	No
93	Isophorone	8.4	0.3	0.3	No
94	Naphthalene	No Criteria	0.05	0.05	Uo
95	Nitrobenzene	17	0.3	0.3	No
96	N-Nitrosodimethylamine	0.00069	0.4	0.4	No
97	N-Nitrosodi-n-Propylamine	0.005	0.3	0.3	No
98	N-Nitrosodiphenylamine	5	0.4	0.4	No
99	Phenanthrene	No Criteria	0.03	0.03	Uo
100	Pyrene	960	0.03	0.03	No
101	1,2,4-Trichlorobenzene	No Criteria	0.3	0.3	Uo
102	Aldrin	0.00013	0.003	0.003	No
103	alpha-BHC	0.0039	0.002	0.002	No
104	beta-BHC	0.014	0.001	0.001	No
105	gamma-BHC	0.019	0.001	0.001	No
106	delta-BHC	No Criteria	0.001	0.001	Uo
107	Chlordane (303d listed)	0.00057	0.005	0.005	No
108	4,4'-DDT (303d listed)	0.00059	0.001	0.001	No

# in CTR	Priority Pollutants	Governing WQOs/WQC (ug/L)	MEC or Minimum DL (ug/L) ¹	Maximum Background or Minimum DL (ug/L) ¹	RPA Results ²
109	4,4'-DDE (linked to DDT)	0.00059	0.001	0.001	No
110	4,4'-DDD	0.00083	0.001	0.001	No
111	Dieldrin (303d listed)	0.00014	0.002	0.002	No
112	alpha-Endosulfan	0.056	0.002	0.002	No
113	beta-Endosulfan	0.056	0.001	0.001	No
114	Endosulfan Sulfate	110	0.001	0.001	No
115	Endrin	0.036	0.002	0.002	No
116	Endrin Aldehyde	0.76	0.002	0.002	No
117	Heptachlor	0.00021	0.003	0.003	No
118	Heptachlor Epoxide	0.0001	0.002	0.002	No
119-125	PCBs sum (2)	0.00017	0.34	0.34	No
126	Toxaphene	0.0002	0.2	0.2	No
	Tributyltin	0.01	0.00144	0.00139	No

- 1) Maximum Effluent Concentration (MEC) or background concentration in bold is the actual detected value, otherwise the values shown is the minimum detection level.
 NA = Not Available (there is no effluent monitoring data for this constituent).
- 2) RP = Yes, if (1) either MEC or Background > WQO/WQC.
 RP = No, if (1) both MEC and background < WQO/WQC or (2) no background and all effluent data non-detect, or no background and MEC < WQO/WQC (per WQ 2001-16 Napa Sanitation District Remand Order)
 RP = Uo (undetermined if no objective promulgated).
- v) *Pollutants with no reasonable potential:* WQBELs are not included in the permit for constituents that do not have reasonable potential to cause or contribute to exceedance of applicable WQOs or WQC. However, monitoring for those pollutants is still required, under the provisions of the August 6, 2001 letter. If concentrations of these constituents are found to have increased significantly, the Discharger will be required to investigate the source(s) of the increase(s). Remedial measures are required if the increases pose a threat to water quality in the receiving water.
- vi) *Permit Reopener:* The permit includes a reopener provision to allow numeric effluent limits to be added for any constituent that in the future exhibits reasonable potential to cause or contribute to exceedance of a WQO or WQC. This determination, based on monitoring results, will be made by the Board.

2. Final WQBELs

The final WQBELs were developed for the toxic and priority pollutants that were determined to have reasonable potential to cause or contribute to exceedances of the WQOs or WQC. Final effluent limitations were calculated based on appropriate WQOs/WQC and the appropriate procedures specified in Section 1.4 of the SIP (See Attachment 2 of this Fact Sheet). For the purpose of the Proposed Order, final WQBELs refer to all non-interim effluent limitations. The WQO or WQC used for each pollutant with reasonable potential is indicated in Table C below as well as in Attachment 1.

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

Pollutant	Chronic WQO/WQC (µg/L)	Acute WQO/WQC (µg/L)	Basis of Lowest WQO/WQC Used in RP Analysis
Copper	12.83	19.39	Basin Plan, fw, hardness=110 mg/L
Mercury	0.025	2.4	Basin Plan, fw
Zinc	58	170	Basin Plan, fw
Cyanide	5.2	22	Basin Plan, fw
TCDD TEQ	1.3x10 ⁻⁸		Basin Plan, narrative
Chlorodibromomethane	0.401		CTR, human health
Dichlorobromomethane	0.56		CTR, human health
Bis(2-Ethylhexyl)Phthalate	1.8		CTR, human health

3. Dilution

The Board believes a conservative 10:1 dilution credit for discharges of non-bioaccumulative pollutants to the Napa River is necessary for protection of beneficial uses. The basis for limiting the dilution credit is based on SIP provisions in Section 1.4.2. The following outlines the basis for derivation of the dilution credit:

- a. The receiving waterbody (Napa River) has highly variable, seasonal freshwater flows.
- b. There has not been a dilution study to fully account for the cumulative effects of other wastewater discharges or withdrawals to the system.
- c. The SIP allows limiting a mixing zone and dilution credit for persistent pollutants (e.g., copper, silver, nickel and lead).

The main justification for using a 10:1 dilution credit is uncertainty in accurately determining ambient background and uncertainty in accurately determining the mixing zone in a complex riverine system with multiple wastewater discharges. To account for uncertainties in stream flow measurements, and the assimilative capacity in the receiving water as discussed above under basis for Prohibition A.3, the 10:1 dilution credit is only granted when a minimum 25:1 instream dilution ratio is achieved. This permit further specifies that the 25:1 dilution ratio shall be demonstrated based on a the weighted average Napa River flow as measured by USGS Station No.11456000 and USGS Station No. 11458000.

4. Assimilative Capacity for Bioaccumulative Pollutants

The permit contains a mass emission limitation for mercury because the Regional Board has determined that there is no additional assimilative capacity for mercury in the Napa River, tributary to the San Pablo Bay. Therefore, no dilution credit was allowed when the WQBELs for mercury were calculated. This determination is consistent with SIP Section 2.1.1 requirements that the Regional Board consider whether additional assimilative capacity exists for 303(d)-listed bioaccumulative pollutants. This determination was based, in part, on the fact that a fish consumption advisory currently exists to protect human health from elevated mercury concentrations in fish taken from San Francisco Bay.

5. Compliance Schedules and Infeasibility Analysis

As existing self-monitoring data are insufficient to perform a meaningful statistical analysis to confirm if it is feasible for the Discharger to comply with WQBELs, Board staff compared the MEC to the lowest WQBEL (both in µg/L) to determine if the Discharger can achieve immediate compliance with the final limits (see Table D below).

Table D. Summary of Infeasibility Analysis

<u>Constituent</u>	<u>AMEL</u> µg/L	<u>MDEL</u> µg/L	<u>MEC</u> µg/L	<u>Is MEC > AMEL</u>	<u>Feasible to Comply</u>
Copper		78*	55	No	Yes
Mercury	0.019	0.045	0.028	Yes	No
Zinc	488	833	160	No	Yes
Cyanide	39	88	14	No	Yes
Chlorodibromomethane	2.4	4.8	0.8	No	Yes
Dichlorobromomethane	3.8	7.6	5.8	Yes	No
Bis(2-Ethylhexyl) Phthalate	14	28	8	No	Yes

* This value represents the daily average effluent limitation in the previous permit for copper. It is more stringent than either the AMEL or MDEL calculated according to the SIP methodology.

It is infeasible to immediately comply with the mercury WQBELs calculated according to Section 1.4 of the SIP. Therefore, this permit establishes a compliance schedule of March 31, 2010, for mercury since the final limits are based on the Basin Plan WQOs. The March 31, 2010, compliance schedule exceeds the length of the permit, therefore, these calculated final limits are intended for point of reference for the feasibility demonstration and are only included in the permit findings by reference to the Fact Sheet.

It is infeasible to immediately comply with the dichlorobromomethane WQBELs calculated according to Section 1.4 of the SIP. Since dichlorobromomethane is associated with the chlorination process, the generation of disinfection byproducts (trihalomethanes or THMs) can be controlled by better managing the disinfection process. Therefore, this Order establishes a three-year compliance schedule for dichlorobromomethane from the effective date of this permit as the Discharger will perform source control as required by Provision E.5 of this permit.

During the compliance schedules, interim limits are included based on current treatment facility performance. For mercury, the interim limit is based on the pooled data from treatment plants with similar treatment technology within the area and is more stringent than the previous permit limit. For dichlorobromomethane, the interim limit is the MEC and the previous permit does not include dichlorobromomethane limits. The Board may take appropriate enforcement actions if interim limits and requirements are not met.

The general basis for maximum compliance dates is provided in Attachment 5.

- h) Effluent Limitation B.8 (Mercury Mass Emission Limit and Mass Trigger).

This Order includes an interim mercury mass-based effluent limitation of 0.018 kilograms per month (kg/mo) and a mass trigger of 0.006 kg/mo. The mass limit and mass trigger were calculated using ultra-clean mercury data collected from January 2000 through March 2003 as shown in Attachment 4. If the mass trigger is exceeded, then the actions specified in Provision E.9 are required. The mass limit and trigger will maintain current loadings until a TMDL is established for San Pablo Bay. If the Discharger is found to be contributing to mercury impairment in San Pablo Bay, the final mercury effluent limitations will be based on the Discharger's WLA in the TMDL.

The inclusion of interim performance-based mass limits for bioaccumulative pollutants such as mercury is consistent with the guidance described in section 2.1.1 of the SIP. Because of their bioaccumulative nature, an uncontrolled increase in the total mass loads of these pollutants in the receiving water will have significant adverse impacts on the aquatic ecosystem.

5. Basis for Receiving Water Limitations

- a) Receiving Water Limitations C.1, C.2, and C.3 (conditions to be avoided): These limits are based on the previous permit and the narrative/numerical objectives contained in Chapter 3 of the Basin Plan, page 3-2 – 3-5.
- b) 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.

6. Basis for Sludge Management Practices

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

7. Basis for Self-Monitoring Requirements

The SMP includes monitoring at the outfall for conventional, non-conventional, toxic pollutants, acute toxicity, and chronic toxicity. For most of the conventional and non-conventional pollutants, the monitoring is the same as required by the previous permit, except TSS has been changed to twice weekly and settleable matter sampling frequency is reduced from daily to monthly. For copper, zinc, mercury, and cyanide, which have effluent limitations, quarterly monitoring is required for compliance determination. Annual monitoring is required for dichlorobromomethane and chlorodibromomethane (the Discharger may perform accelerated monitoring for these two constituents during the source control study as required by Provision E.5). Annual monitoring for bis(2-ethylhexyl)phthalate is also required for compliance determination. For dioxins and furans, this permit requires monitoring once during the life of this permit using methods with low detection limits. This Order also contains chronic toxicity monitoring requirements to ensure compliance with chronic toxicity provisions. In lieu of near field discharge specific ambient monitoring, it is acceptable that the Discharger participate in collaborative receiving water monitoring with other dischargers under the provisions of the August 6, 2001 letter. The RMP does not apply here.

8. Basis for Provisions

- a) Provisions E.1. (Permit Compliance and Rescission of Previous Permit): Time of compliance is based on 40 CFR 122. The basis of this permit superceding and rescinding the previous permit is 40 CFR 122.46.

- b) Provision E.2. (Effluent Monitoring): This provision, which requires the Discharger to conduct effluent water monitoring as provided for in the August 6, 2001 letter, is based on the Basin Plan and the SIP.
- c) Provision E.3 (Receiving Water Monitoring): This provision, which requires the Discharger to continue to conduct receiving water monitoring, is based on the Basin Plan and the SIP.
- d) Provision E.4 (Storm Water Pollution Prevention Plan (SWPPP)): This provision has been included because a recent inspection showed that not all storm water from the plant area was being directed to the treatment system. It requires the Discharger to demonstrate compliance with State requirements that govern storm water discharges associated with industrial activity. The Discharger is required to develop and implement a SWPPP.
- e) Provision E.5 (Chlorodibromomethane and Dichlorobromomethane Source Control and Compliance Schedule): This provision is required as the Discharger cannot currently comply with final WQBELs for dichlorobromomethane. SIP 2.2.1 requires the establishment of interim requirements and dates for their achievement in the permit. Since chlorodibromomethane and dichlorobromomethane are both associated with chlorination process, the source control study should address both pollutants and other disinfection byproducts.
- f) Provision E.6 (Optional Bacteriological Assessment Study): This provision the Discharger may, at its option, conduct a bacteriological assessment study, acceptable to the Executive Officer. The study will evaluate impacts of the Discharger's effluent on the receiving waters (including worst case conditions). The Basin Plan allows alternate bacteria limitations provided that the Discharger conclusively demonstrates "through a program approved by the Regional Board that such substitution will not result in unacceptable adverse impacts on the beneficial uses of the receiving waters". If the study demonstrates that the exceedances of the total coliform limits are solely due to the study, and that there is compliance in the receiving water with the bacteriological objectives specified in the Basin Plan, the Board may consider establishing alternate bacteria limitations.
- g) Provision E.7 (Installation of Diffuser on Discharge Outfall) The Discharger is required to install a diffuser in order to achieve complete mixing in the Napa River.
- h) Provision E.8. (Pollutant Minimization Program): This provision is based on the Basin Plan, page 4-25 – 4-28, and the SIP, Section 2.1, Compliance Schedules.
- i) Provision E.9. (Mercury Mass Loading Reduction): This provision will help to ensure no increases in mercury mass loadings until a TMDL and WLA are established. The Board's determination of the need to maintain mass loadings at current levels for this bioaccumulative pollutant is based on Section 2.1.1 of the SIP.
- j) Provision E.10. (Optional Mass Offset): This option is provided to encourage the Discharger to further implement aggressive reduction of mass loads to Napa River and San Pablo Bay.
- k) Provision E.11. (Wastewater Facilities, Review and Evaluation, Status Reports): This Provision is based on the previous permit and Basin Plan.
- l) Provision E.12. (Operations and Maintenance Manual): These provisions are based on the Basin Plan, requirements of 40 CFR 122 and the previous permit.

m) Provision E.13. (Contingency Plan Update): The Contingency Plan provision is based on the requirements stipulated in Board Resolution No. 74-10 and the previous permit.

n) Provision E.14. (Annual Status Reports): This provision is based on the Basin Plan, the requirements of 40 CFR 122, and the previous Order.

o) Provision E.15. (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.

p) Provision E.16. (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.

q) Provision E.17. (Standard Provisions and Reporting Requirements): The purpose of this provision is to 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.

r) Provision E.18. (Change in Control or Ownership): This provision is based on 40 CFR 122.61.

s) Provision E.19. (Permit Reopener): This provision is based on 40 CFR 123.

t) Provision E.20. (NPDES Permit /U.S. EPA concurrence): This provision is based on 40 CFR 123 and California's Memorandum of Agreement with U.S. E./P.A..

u) Provision E.21. (Permit Expiration and Reapplication): This provision is based on 40 CFR 122.46(a).

VI. SELF-MONITORING PROGRAM REQUIREMENTS

General Basis

Part A of the monitoring program is a standard requirement in almost all NPDES permits issued by the Board. Most of the requirements are also existing requirements for the discharger. Part A contains definitions, specifies general sampling and analytical protocols, and specifies reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and Board policy. Part B of the monitoring program is specific for the discharger. It defines the stations, constituents, and frequency of monitoring, and additional reporting requirements. The constituents required to be monitored include all parameters for which permit limits are specified. This is to allow determination of compliance with each of the limited constituents in accordance with 40 CFR 122.44(i).

VII. WRITTEN COMMENTS

- Interested persons are invited to submit written comments concerning this draft permit.
- Comments should be submitted to the Board no later than 5:00 P.M. on February 23, 2004.
- Comments received after this date may not receive full consideration in the formulation of final determinations of permit conditions.
- Comments should be submitted to the Board at the address given on the first page of this fact sheet, and addressed to the attention of: Mr. Richard Hiatt

VIII. PUBLIC HEARING

- The draft permit will be considered for adoption by the Board at a public hearing during the Board's regular monthly meeting to be held on: March 17, 2004, starting at 9:00 a.m.
- This meeting will be held at:

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

IX. 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.

X. ADDITIONAL INFORMATION

For additional information about this matter, interested persons should contact the following Regional Board staff member: Mr. Richard Hiatt, Phone number: (510) 622-2359, or by email at rh@rb2.swrcb.ca.gov.

XI. ATTACHMENTS

Attachment 1: RPA Results for Priority Pollutants

Attachment 2: Calculation of Final WQBELs

Attachment 3: Effluent Monitoring Data (January 2000 through March 2003)

Attachment 4: Calculation of Mercury Mass Limit and Mass Trigger