

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

**ORDER NO. R2-2005-0009
NPDES PERMIT NO. CA0037800**

AMENDING WASTE DISCHARGE REQUIREMENTS FOR:

SONOMA VALLEY COUNTY SANITATION DISTRICT

SONOMA, SONOMA COUNTY

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

1. The Board adopted waste discharge requirements for the Sonoma Valley County Sanitation District (SVCSD) Wastewater Treatment Plant (Order No. R2-2002-0046) (hereinafter called the Discharger) on March 20, 2002, which regulates the discharge of wastewater to the waters of the State and the United States under the National Pollutant Discharge Elimination System (NPDES).

Description of Facility, Discharge, and Treatment Processes

2. The Discharger owns the municipal wastewater treatment plant (the plant) located at 22675 Eighth Street East near the city of Sonoma, Sonoma County. Sonoma County Water Agency is responsible for the operation of the plant. The plant provides secondary level treatment for domestic and light commercial wastewater collected from the City of Sonoma, and unincorporated areas of Glen Ellen, Boyes Hot Springs, and Agua Caliente. The Discharger's service area has a population of approximately 34,500. The location of the facility is included as **Attachment A** of this Order.
3. The plant has an average dry weather flow design capacity of 3.0 million gallons per day (mgd) and can treat up to 8.0 mgd during the wet weather flow period. Flows higher than 8.0 mgd are bypassed to the 35-million-gallon equalization basins. During 2002 through 2004, the plant had an annual average effluent flow of 3.6 mgd and an annual average dry weather flow of 2.6 mgd.
4. The secondary treatment facility consists of flow equalization, pretreatment by screenings washing and grit removal, extended aeration activated sludge treatment, secondary sedimentation, effluent disinfection by chlorination, and dechlorination. The equalization basins provide temporary storage for excess wet weather flows. A Treatment process schematic diagram is included as **Attachment B** of this Order.

Basis of Permit Amendment

5. On January 21, 2004, the Board adopted Resolution No. R2-2004-0003 amending the *Water Quality Control Plan San Francisco Bay Basin (Region 2)* (the Basin Plan) to (1) update the dissolved water quality objectives (WQOs) for metals to be identical to the water quality criteria (WQC) contained in the *Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* (the California Toxics Rule, or the CTR) except for cadmium; (2) to change the Basin Plan definitions of marine, estuarine and freshwater to be consistent with the CTR definitions; (3) to update NPDES implementation provisions to be consistent with the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (the State

Implementation Policy, or SIP); (4) to remove settleable matter effluent limitations for publicly owned treatment works (POTWs), and other editorial changes. Subsequent to approval by the State Water Resources Control Board (SWRCB) and the Office of Administrative Law (OAL) (July 22, 2004, and October 4, 2004, respectively), the U.S. EPA approved the amendment on January 5, 2005.

6. By letters dated September 8, 2004, and February 14, 2005, the Discharger requested the Board to consider amending the zinc water quality-based effluent limitations (WQBELs) contained in the NPDES Permit in Order No. R2-2002-0046. The Discharger requested that new zinc WQBELs be calculated using the updated dissolved WQOs in the Basin Plan.

Scope of Amendment

7. This Order contains the following amendments to the existing permit:
 - a. Recalculation of zinc WQBELs using the zinc WQOs in the Basin Plan
 - b. Removal of settleable matter effluent limitation and sampling requirement to be consistent with the Basin Plan.

Existing Zinc WQBELs

8. The Discharger's NPDES Permit specifies WQBELs for zinc, which are 79.4 µg/L as a maximum daily effluent limitation (MDEL), and 52 µg/L as an average monthly effluent limitation (AMEL). These WQBELs were developed using the 1995 Basin Plan WQOs for zinc, which were 58 µg/L for chronic aquatic life protection and 140 µg/L for acute aquatic life protection.
9. By a Cease and Desist Order (CDO) (Order No. R2-2002-0044) issued concurrent with the NPDES Permit, the Board established zinc interim effluent limitations, 140 µg/L as MDEL, and 92 µg/L as AMEL. These interim limitations are effective until March 31, 2005. These interim limitations were calculated using the CTR salt water WQC and a site-specific translator of 0.63. The CDO also required the Discharger to perform a zinc source identification and reduction study. The study should lead to the reduction of zinc in the effluent so that the Discharger can comply with the final zinc WQBELs.

Development of New Zinc WQBELs

10. *Zinc WQOs.* The most stringent WQOs for zinc are freshwater WQOs from the Basin Plan, which are 75 µg/L for chronic protection and 83 µg/L for acute protection, as dissolved metal, based on a hardness value of 67 mg/L as CaCO₃. Using the site-specific translator for zinc, which is 0.63 for converting both dissolved acute and chronic WQOs to total recoverable WQOs, the converted WQOs for zinc are 120 µg/L for chronic protection and 130 µg/L for acute protection, as total recoverable metal.
11. *Zinc Site-Specific Translator.* The Discharger conducted a site-specific translator study in 2000. In 2000, data was collected in March and April at four monitoring stations. The site-specific translator, 0.63, used in calculating zinc WQOs (as described in a.) is a representative value based on this limited data set. The Board requires the Discharger to verify this site-specific zinc translator by collecting more receiving water data during the wet season from November to February, months excluded from the Discharger's 2000 translator study.

12. *Zinc WQBELs*. The WQBELs for zinc are calculated to be 91 µg/L as AMEL, and 130 µg/L as MDEL, based on an effluent zinc coefficient of variation of 0.262. **Attachment C** shows the detailed calculation of the WQBELs.
13. *Plant Performance and Attainability*. During January 2002 through December 2004, the Discharger's effluent zinc concentrations ranged from 24 µg/L to 87 µg/L (161 samples). All samples are below the AMEL. A statistical analysis of the effluent data shows that the Discharger can comply with the effluent limitations for zinc.

Zinc Pollution Prevention and Source Control Efforts

14. Beginning in late 2000, the Discharger started a zinc source identification and reduction study (the study). The study's activities included monitoring for zinc in the collection system and potable water system, and initiating an outreach program targeting automotive facilities. The Discharger routinely performs zinc monitoring of industrial users and conducts on-site inspections. Through these monitoring efforts, the Discharger has successfully required one of the car washing facilities to upgrade their pretreatment equipment. Since the installation of the upgraded equipment, the wastewater discharge from this facility has demonstrated lower zinc contribution to the collection system. The Discharger will continue these efforts as part of its pollution prevention and pollution minimization program.

Anti-backsliding and Anti-degradation

15. The relaxation of zinc WQBELs is consistent with the anti-backsliding and anti-degradation requirements.
 - a. *Anti-backsliding*. Section 402 (o) allows relaxation of WQBELs if the requirements of Section 303(d)(4) are met. Section 303(d)(4) states for attainment waters, WQBELs may be relaxed as long as the relaxation complies with antidegradation requirements. The receiving water body, Schell Sough, a tributary of San Pablo Bay, is in attainment for zinc.
 - b. *Antidegradation*. The zinc WQBELs are consistent with current plant performance. Furthermore, the zinc WQBELs are based on updated zinc WQOs in the Basin Plan, and these zinc WQOs are protective of water quality.

California CWA, CEQA and Public Notice of Action

16. The reopening and subsequent amendment of Order No. R2-2002-0046, is allowed by Section 13263(e) of the Porter Cologne Water Quality Control Act, 1998, which states:

"Upon application by any affected person, or on its own motion, the regional board may review and revise requirements. All requirements shall be reviewed periodically."
17. *California Environmental Quality Act Compliance*. This amendment of waste discharge requirements is exempt from the environmental impact analysis provisions of the California Environmental Quality Act (CEQA) (Public Resources Code, Section 21000 et seq.). (Water Code Section 13389; California Code of Regulations, Title 14, Section 15263.)
18. The Discharger and interested agencies and persons have been notified of the Board's intent to amend the requirements for the existing discharge and have been provided an opportunity to submit their

written views and recommendations.

19. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that Order No. R2-2002-0046 is amended as described in the following items and effective upon adoption by the Board. To distinguish the original language contained in Order No. R2-2002-0046, from this Order, all the amendments are highlighted by underline for additions and ~~strike through~~ for deletions.

1. Remove settleable matter effluent limitations in B.1, listed in Table 3:

Table 3. Conventional Pollutant Effluent Limitations

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

2. Revise zinc effluent limitations listed in Table 4:

Table 4. Toxic Substance Effluent Limitations

Constituent	Daily Maximum	Monthly Average	Interim Daily Maximum	Interim Monthly Average	Units	Notes
a. Copper				18.0	µg/L	(1), (6)
b. Mercury			1.0	0.087	µg/L	(1), (2)
c. Zinc	79.4 130	52 91	*	*	µg/L	(1), (7)
d. Cyanide				10.1	µg/L	(1), (3), (5)
e. Tributyltin				0.013	µg/L	(1), (5)
f. Chrysene	0.098	0.049			µg/L	(1), (4)
g. Dieldrin	0.00028	0.00014			µg/L	(1), (4)
h. 4,4-DDE	0.00118	0.00059			µg/L	(1), (4)

3. Add a site-specific translator study provision as Provision 22, which reads as follows:

22. Site-Specific Translator Study

The Discharger shall verify the site-specific translator study performed in 2000. The purpose of this study is to collect more receiving water data to augment the 2000 data. This study shall, at a minimum, include an analysis of copper and zinc.

Tasks	Compliance Date
a. Develop a sampling and analysis plan (SAP), acceptable to the Executive Officer. The SAP shall, at a minimum, describe the data collection, data analysis, and time schedule for implementation.	Within 3 months after permit adoption.
b. Commence work in accordance with the SAP and time schedule submitted pursuant to Task a.	Within 3 months after approval of SAP by the Executive Officer, and sampling shall be initiated no later December 1, 2005.
c. Submit a final report, acceptable to the Executive Officer. In the final report, the Discharger shall, at a minimum, summarize the data collected, perform data analysis consistent with current U. S. EPA Metals Translator Guidance, and recommend site-specific translators.	Six months after the data collection is completed but no later than September 1, 2006 (180 days prior to permit expiration).

4. Remove Settleable Matter sampling requirement from Self-Monitoring Program Part B, Table 1, Schedule For Sampling, Measurements, and Analysis.

Sampling Station	A-1	E-001		E-001-D		L	O	P	C	
Type of Sample:	C-24	G	C-24	Co	G	C-24	Ob	Ob	Ob	G
Parameter (units) [notes]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[2]
Settleable Matter (ml/L-hr)		M								

Order Effective Date, Expiration and Reapplication

20. This Order shall become effective on April 21, 2005, provided the U.S. EPA Regional Administrator has no objection. If the U.S. EPA Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

This Order expires with the expiration of the NPDES Permit specified in Order No. R2-2002-0046.

In accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code, the Discharger must file a report of waste discharge no later than 180 days before the expiration date of this Order as application for reissue of this Permit and waste discharge requirements.

I, Bruce H. Wolfe, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on April 20, 2005.


 BRUCE H. WOLFE
 Executive Officer

Attachments:

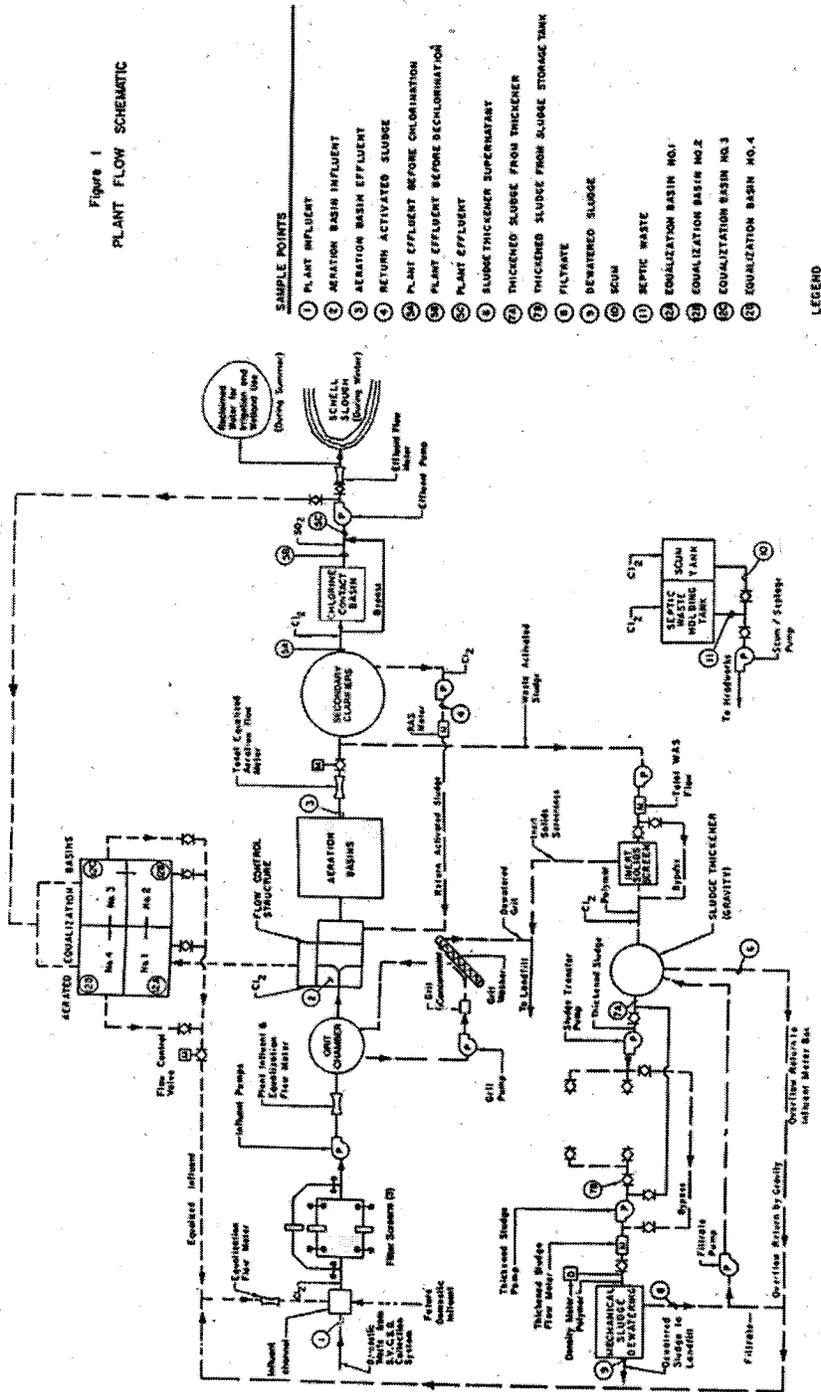
- Attachment A:** Facility Location Map
- Attachment B:** Treatment Process Schematic
- Attachment C:** Zinc WQBELs Calculation

Attachment A

Facility Location Map

Attachment A: Treatment Process Description

Figure 1
PLANT FLOW SCHEMATIC



SAMPLE POINTS

- 1 PLANT INFLUENT
- 2 AERATION BASIN INFLUENT
- 3 AERATION BASIN EFFLUENT
- 4 RETURN ACTIVATED SLUDGE
- 5 PLANT EFFLUENT BEFORE CHLORINATION
- 6 PLANT EFFLUENT BEFORE DECHLORINATION
- 7 PLANT EFFLUENT
- 8 SLUDGE THICKENER SUPERNATANT
- 9 THICKENED SLUDGE FROM THICKENER
- 10 THICKENED SLUDGE FROM SLUDGE STORAGE TANK
- 11 FILTRATE
- 12 DEWATERED SLUDGE
- 13 SCUM
- 14 SEPTIC WASTE
- 15 EQUALIZATION BASIN NO.1
- 16 EQUALIZATION BASIN NO.2
- 17 EQUALIZATION BASIN NO.3
- 18 EQUALIZATION BASIN NO.4

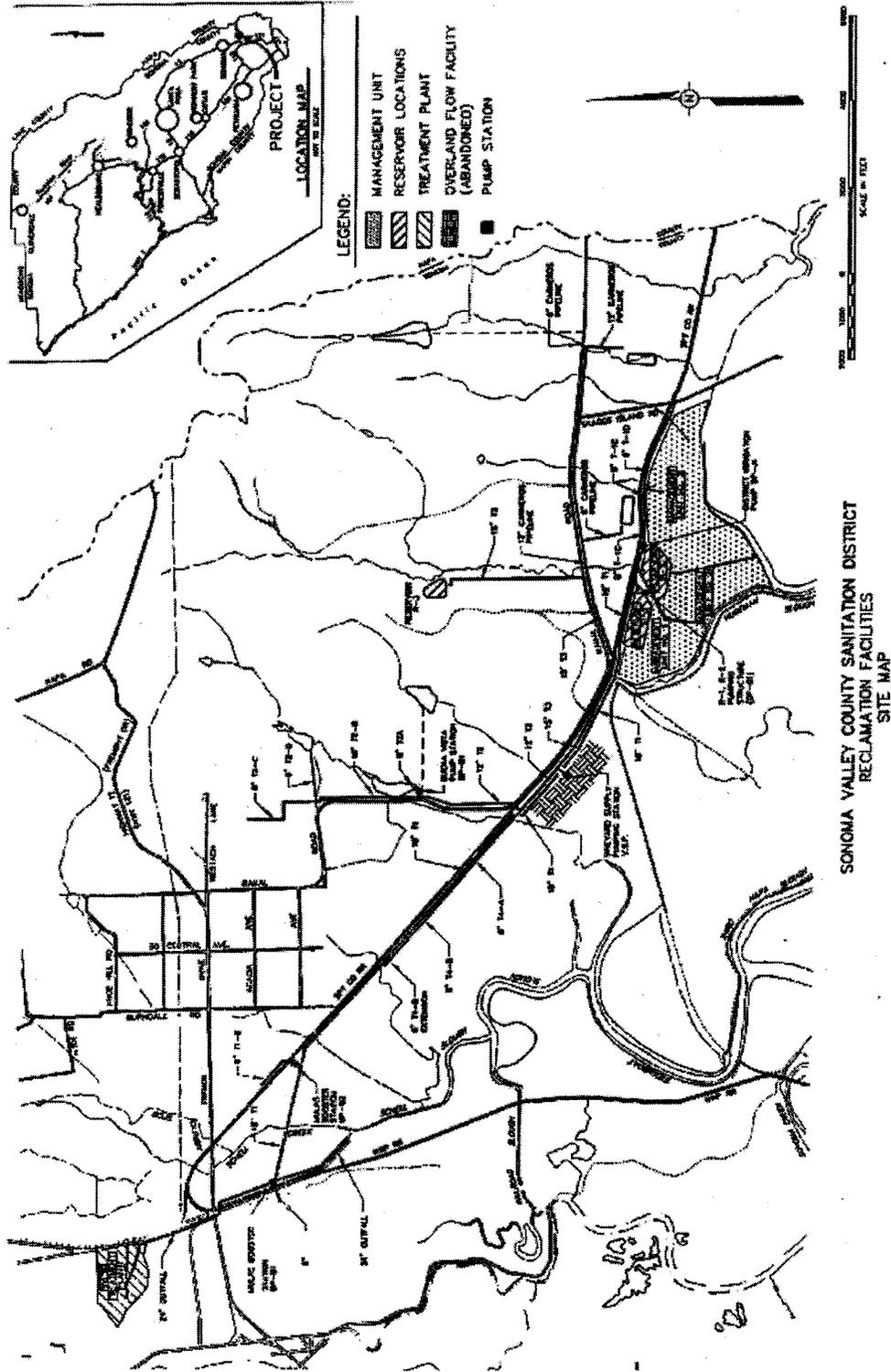
LEGEND

- MAIN PLANT FLOW
- - - - - EQUALIZED FLOW
- SECONDARY FLOW (SLUDGE, OVERFLOW, FILTRATE, ETC.)

Attachment B

Treatment Process Schematic

Attachment B: Reclamation Facilities



Attachment C

**Zinc Water Quality-Based
Effluent Limitations Calculation**

SVCSD Permit Amendment
Attachment C: WQBELs Calculation for Zinc

PRIORITY POLLUTANTS	Zinc
Units	ug/L
Basis and Criteria type	BP, fw
Lowest WQO	120
Translators	
Dilution Factor (D) (if applicable)	0
No. of samples per month	4
Aquatic life criteria analysis required? (Y/N)	Y
HH criteria analysis required? (Y/N)	N
Applicable Acute WQO	130
Applicable Chronic WQO	120
HH criteria	
Background (max conc for Aq Life calc)	59.1
Background (avg conc for HH calc)	
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	N
ECA acute	130
ECA chronic	120
ECA HH	
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N
Avg of effluent data points	57.8
Std Dev of effluent data points	15.1
CV calculated	0.262
CV (Selected) - Final	0.262
ECA acute mult99	0.57
ECA chronic mult99	0.74
LTA acute	73.85
LTA chronic	89.38
minimum of LTAs	73.85
AMEL mult95	1.23
MDEL mult99	1.76
AMEL (aq life)	91
MDEL(aq life)	130
MDEL/AMEL Multiplier	1.43
AMEL (human hlth)	
MDEL (human hlth)	
minimum of AMEL for Aq. life vs HH	91
minimum of MDEL for Aq. Life vs HH	130
MEC	87