

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

STAFF SUMMARY REPORT (John Madigan)
MEETING DATE: September 8, 2010

ITEMS: 6A and 7A

SUBJECT: City of Calistoga, Dunaweal Wastewater Treatment Plant and Collection System, Calistoga, Napa County—Reissuance of NPDES Permit (Item 6A) and Adoption of Cease and Desist Order (Item 7A)

CHRONOLOGY: October 2006—Permit reissued

DISCUSSION: The Revised Tentative Order (Appendix A) for Item 6A would reissue the NPDES permit for the Dunaweal Wastewater Treatment Plant and the City of Calistoga's collection system. The Revised Tentative Cease and Desist Order (Appendix B) for Item 7A addresses immediate compliance problems with new and more stringent effluent limits for dichlorobromomethane and chlorodibromomethane in the Revised Tentative Order.

The City owns and operates the wastewater treatment plant, which has a dry weather design capacity of 0.84 million gallons per day (MGD). The current peak wet weather treatment capacity is 4.0 MGD. After secondary or tertiary treatment, the plant effluent may be discharged to the Napa River from November 1 through June 15. Discharge to the Napa River is prohibited from June 16 through October 31; during this period, effluent is treated to tertiary standards and either distributed for recycled water use, or stored in wastewater ponds for future use. The City typically recycles 100 percent of its effluent when discharge is prohibited, and recycles approximately 25 percent of its effluent during the wet season.

We received comments (Appendix C) from the City on a draft order and draft cease and desist order distributed for review. Appendix D contains our responses to those comments. We resolved all of them, modifying the draft permit as appropriate. The revised orders reflect these modifications. We expect these items to remain uncontested.

**RECOMMEN-
DATION:** Adopt the Revised Tentative Order and Revised Tentative Cease and Desist Order

**CIWQS Place
Number:** 212750 (JHM)

APPENDICES: A. Revised Tentative Order
B. Revised Tentative Cease and Desist Order
C. Comment Letter
D. Response to Comments

APPENDIX A

Revised Tentative Order



Linda S. Adams
Secretary for
Environmental Protection

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



Arnold Schwarzenegger
Governor

REVISED TENTATIVE ORDER NO. R2-2010-XXXX NPDES NO. CA0037966

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

Table 1. Discharger Information

Discharger	City of Calistoga
Name of Facility	Dunaweal Wastewater Treatment Plant and its collection system
Facility Address	1100 Dunaweal Lane
	Calistoga, CA 94515
	Napa County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a minor discharge.	

Discharges by the City of Calistoga from the discharge points identified below are subject to waste discharge requirements as set forth in this Order.

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Tertiary-treated Municipal Wastewater	38° 33' 34" N	122° 33' 28" W	Napa River
002	Secondary-treated Municipal Wastewater	38° 34' 13" N	122° 33' 40" W	Napa River

Table 3. Administrative Information

This Order was adopted by the Regional Water Board on:	<DATE>
This Order shall become effective on:	November 1, 2010
This Order shall expire on:	October 31, 2015
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	180 days prior to the Order expiration date

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

Bruce H. Wolfe, Executive Officer

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I. FACILITY INFORMATION

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

Table 4. Facility Information

Discharger	City of Calistoga
Name of Facility	Dunaweal Wastewater Treatment Plant and its collection system
Facility Address	1100 Dunaweal Lane
	Calistoga, CA 94515
	Napa County
Facility Contact, Title, and Phone	Warren Schenstrom, Water Systems Superintendent, (707) 942-2847
Mailing Address	414 Washington Street, Calistoga, CA 94515
Type of Facility	Publicly Owned Treatment Works
Facility Design Flow	0.84 million gallons per day (MGD) average dry weather design flow 4.0 MGD peak wet weather treatment capacity
Service Areas	City of Calistoga
Service Population	5,300

II. FINDINGS

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

A. Background. The City of Calistoga (hereinafter the Discharger) is currently discharging under Order No. R2-2006-0066 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0037966. The Discharger submitted a Report of Waste Discharge, dated September 1, 2009, and applied for reissuance of its NPDES permit to discharge treated wastewater from the Dunaweal Wastewater Treatment Plant (Plant). The discharge is also covered under Regional Water Board Order No. R2-2007-0077 (NPDES Permit CA0038849), which supersedes all requirements regarding mercury in wastewater discharges in the San Francisco Bay Region. For purposes of this Order, references to the “discharger” or “permittee” in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

B. Facility and Discharge Description.

- 1. Facility Description.** The Discharger owns and operates the Plant, which provides secondary and tertiary-level treatment for domestic, commercial, and some industrial wastewater from the City of Calistoga. The Discharger has a current average dry weather design treatment capacity of 0.84 MGD and can treat peak wet weather flows up to 4.0 MGD. The combined discharge rate from Outfalls 001 and 002 during the 2006 – 2009 discharge seasons was an average daily flow rate of 1.35 MGD with a highest maximum daily effluent flow rate of 3.6 MGD. Attachment B provides a map of the area around the Plant. Attachment C provides a flow schematic of the Plant.
- 2. Treatment Process Description.** Treatment processes consist of headworks, secondary treatment by activated sludge and clarification, tertiary coagulation and filtration, and chlorine

disinfection and dechlorination. When influent flows exceed the capacity of the tertiary filters, secondary effluent is disinfected and dechlorinated prior to discharge. The Discharger's wastewater collection system includes 12.7 miles of major sanitary sewer lines and various pump stations.

3. **Discharge Description.** Treated wastewater is discharged to a non-tidal reach of the Napa River through two outfalls extending from the eastern bank of the river. Tertiary-treated effluent is discharged to a series of four riverside wastewater ponds, with a total pond area of 2.7 acres, prior to discharge to the Napa River at Outfall 001, and secondary-treated effluent is discharged to the Napa River at Outfall 002. If effluent in the riverside wastewater ponds contains detectable chlorine or exceeds the pH limitation, discharge is halted and the effluent is held in the riverside wastewater ponds for further treatment. Effluent may be discharged to the river from November 1 through June 15. During the remainder of the year, wastewater is treated to tertiary standards and distributed for recycled water use, or stored in a 20 million gallon effluent storage pond for future use or disposal.
4. **Biosolids Management.** Sludge is collected in the clarifiers and discharged periodically to a 72,000-gallon sludge holding tank. Sludge is pumped from the sludge holding tank to the sludge drying beds and then trucked off-site for further treatment or disposal according to applicable USEPA regulations.
5. **Storm Water Discharge.** Because the facility design flow is less than 1 MGD, coverage under the State Water Board's statewide NPDES permit for storm water discharges associated with industrial activities (NPDES General Permit No. CAS000001) is not required. All storm water captured within the facility is directed to the headworks for treatment and is therefore regulated by this Order.

C. Legal Authorities. This Order is issued pursuant to Clean Water Act (CWA) Section 402 and implements regulations adopted by the United States Environmental Protection Agency (USEPA) and Chapters 5.5, Division 7 of the California Water Code (CWC) (commencing with Section 13370). It shall serve as an NPDES permit for point source discharges from the Plant to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to CWC Article 4, Chapter 4, Division 7 (commencing with Section 13260).

D. Background and Rationale for Requirements. The Regional Water Board developed the requirements in this Order based on information submitted as part of the application, information submitted through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for the requirements of this Order, is hereby incorporated into this Order and constitutes part of the findings for this Order. Attachments A through E and G are also incorporated into this Order.

E. California Environmental Quality Act (CEQA). Under CWC Section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA.

F. Technology-Based Effluent Limitations. CWA Section 301(b) and NPDES regulations at 40 CFR 122.44 require that permits include conditions meeting applicable technology-based requirements at minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. This Order includes technology-based effluent limitations based on secondary treatment standards for Publically Owned Treatment Works at 40 CFR 133. A detailed

discussion of the technology-based effluent limitations development is included in the Fact Sheet (Attachment F).

G. Water Quality-Based Effluent Limitations. CWA Section 301(b) and NPDES regulations at 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. 40 CFR 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant that has no numeric objective, water quality-based effluent limitations (WQBELs) must be established using (1) USEPA criteria guidance under CWA Section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state’s narrative criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).

H. Water Quality Control Plans. *The Water Quality Control Plan for the San Francisco Bay Basin* (the Basin Plan) is the Regional Water Board’s master water quality control planning document. It designates beneficial uses and water quality objectives (WQOs) for waters of the State, including surface waters and groundwater. It also includes implementation programs to achieve WQOs. The Basin Plan was duly adopted by the Regional Water Board and approved by the State Water Resources Control Board (State Water Board), USEPA, and the Office of Administrative Law (OAL), as required. Requirements of this Order implement the Basin Plan.

Table 5 summarizes the beneficial uses of the Napa River identified by the Basin Plan. With respect to the Napa River, the Basin Plan implements State Water Board Resolution No. 88-63, which establishes State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply (MUN).

Table 5. Basin Plan Beneficial Uses of the Napa River

Discharge Point	Receiving Water Name	Beneficial Uses
001 and 002	Napa River	Agricultural Supply (AGR) Municipal and Domestic Supply (MUN) Cold Freshwater Habitat (COLD) Fish Spawning (SPWN) Warm Freshwater Habitat (WARM) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Navigation (NAV) Fish Migration (MIGR) Preservation of Rare and Endangered Species (RARE)

I. Thermal Plan. The State Water Board adopted a Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California (Thermal Plan) on May 18, 1972 and amended this plan on September 18, 1975. This plan contains temperature objectives for inland surface waters.

- J. National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995, and November 9, 1999. About forty criteria in the NTR apply in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that applied in the State. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority pollutants.
- K. State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria USEPA promulgated for California through the NTR and to the priority pollutant objectives the Regional Water Board established in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria USEPA promulgated through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.
- L. Compliance Schedules and Interim Requirements.** The State Water Board adopted Resolution No. 2008-0025 on April 15, 2008, titled “Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits.” Under limited circumstances, this policy allows the Regional Water Board to grant a compliance schedule based on a discharger’s request and demonstration that it is infeasible to comply immediately with certain effluent limits. This policy became effective on August 27, 2008, superseding the Basin Plan’s compliance schedule policy. This Order does not contain a compliance schedule or any interim effluent limit for any constituent.
- M. Recycled Water Policy.** The State Water Board adopted Resolution No. 2009-0011 (*Policy for Water Quality Control for Recycled Water*) on February 3, 2009. The policy is intended to promote sustainable local water supplies by increasing the acceptance and promoting the use of recycled water. It sets a goal of increasing recycled water use statewide by at least one million acre feet per year over the 2002 level by 2020, and by at least two million acre feet per year by 2030. The policy also requires Regional Water Boards to exercise their authority to the fullest extent possible to encourage recycled water use, and to develop watershed-based salt and nutrient management plans to ensure that groundwater resources are not degraded by recycled water use.
- N. Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards become effective for CWA purposes [65 Fed. Reg. 24641 (April 27, 2000) (codified at 40 CFR 131.21)]. Under the revised regulation (also known as the Alaska Rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.
- O. Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on biochemical oxygen demand (BOD), total suspended solids (TSS), and pH. Derivation of these technology-based limitations is discussed in the Fact Sheet (Attachment F). This Order’s technology-based pollutant restrictions implement the minimum applicable federal

technology-based requirements. In addition, this Order contains effluent limitations more stringent than the minimum federal technology-based requirements as necessary to meet water quality standards.

WQBELs have been derived to implement WQOs that protect beneficial uses. Both the beneficial uses and the WQOs have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR 131.38. The procedures for calculating the individual WQBELs for priority pollutants are based on the SIP, which USEPA approved on May 18, 2000. All beneficial uses and WQOs contained in the Basin Plan were approved under State law and submitted to USEPA prior to May 30, 2000. Any WQOs and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless “applicable water quality standards for the purposes of the CWA” pursuant to 40 CFR 131.21(c)(1). Collectively, this Order’s restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

- P. Antidegradation Policy.** NPDES regulations at 40 CFR 131.12 require that State water quality standards include an antidegradation policy consistent with federal policy. The State Water Board established California’s antidegradation policy through State Water Board Resolution No. 68-16, which incorporates the federal antidegradation policy and requires that existing water quality be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. As discussed in the Fact Sheet, the permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16.
- Q. Anti-Backsliding Requirements.** CWA Sections 402(o)(2) and 303(d)(4) and NPDES regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous Order, with some exceptions where limitations may be relaxed. All effluent limitations in this Order are at least as stringent than those in Order No. R2-2006-0066. As discussed in detail in the Fact Sheet, the permitted discharge is consistent with the anti-backsliding requirements of the CWA and federal regulations.
- R. Monitoring and Reporting.** NPDES regulations at 40 CFR 122.48 require that all NPDES permits specify requirements for recording and reporting monitoring results. CWC Sections 13267 and 13383 authorize the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program provided in Attachment E establishes monitoring and reporting requirements to implement federal and State requirements.
- S. Standard and Special Provisions.** Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in Attachment D. The Discharger must comply with all standard provisions and with those additional conditions applicable under 40 CFR 122.42. The Regional Water Board has also included in this Order special provisions that apply to the Discharger. Rationale for the special provisions contained in this Order is provided in the attached Fact Sheet.

- T. Provisions and Requirements Implementing State Law.** There are no provisions or requirements in this Order that are included to implement State law only.
- U. Notification of Interested Parties.** The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet.
- V. Consideration of Public Comment.** The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the public hearing are provided in the Fact Sheet.

IT IS HEREBY ORDERED, that this Order supersedes Order No. R2-2006-0066, except for enforcement purposes, and in order to meet the provisions in CWC Division 7 (commencing with Section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

- A.** Discharge of treated wastewater at a location or in a manner different from that described in this Order is prohibited.
- B.** Discharge from Outfall 001 to receiving water at any point where the river-to-wastewater flow ratio is less than 10:1 is prohibited. Discharge of wastewater from Outfall 002 to receiving water at any point where the river-to-wastewater flow ratio is less than 50:1 is prohibited. These minimum river-to-wastewater flow ratios must be verified by field measurements at monitoring location RSW-004, or at another point approved in writing by the Executive Officer.
- C.** The bypass of untreated or partially treated wastewater to waters of the United States is prohibited, except as provided for in the conditions stated in Subsections I.G.2 and I.G.4 of Attachment D of this Order.
- D.** The average dry weather flow, measured at Monitoring Locations EFF-001 and EFF-002, as described in the attached Monitoring and Reporting Plan (MRP) (Attachment E), shall not exceed 0.84 MGD, combined. Actual average dry weather flow shall be determined for compliance with this prohibition over three consecutive dry weather months each year.
- E.** Any sanitary sewer overflow that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited.
- F.** Discharge to the Napa River is prohibited during the period from June 16 through October 31 of each year. The Executive Officer may authorize discharge to the Napa River from June 16 through October 31 when the conditions specified in the emergency discharge request procedure contained in Provision VI.C.8 are satisfied.
- G.** The discharge of wastewater with an elevated temperature into a receiving water that supports cold fresh water habitat is prohibited unless it can be demonstrated to the satisfaction of the Regional

Water Board that such an alteration of temperature does not adversely affect the beneficial uses of the receiving water.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations for Conventional and Non-conventional Pollutants–Discharge Points 001 and 002

1. The Discharger shall maintain compliance with the following effluent limitations for Discharge Points 001 and 002, with compliance measured at Monitoring Locations EFF-001 and EFF-002, as described in the attached MRP (Attachment E).

Table 6a. Effluent Limitations – Discharge Point 001

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand (BOD)	mg/L	10	15	---	---	---
Total Suspended Solids (TSS)	mg/L	15	20	---	---	---
Oil and Grease	mg/L	5	---	10	---	---
Turbidity	NTU	--	--	10	--	---
pH ^[1]	s.u.	---	---	---	6.5	8.5
Chlorine, Total Residual	mg/L	---	---	---	---	0.0 ^[2]

Table 6b. Effluent Limitations – Discharge Point 002

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand (BOD)	mg/L	30	45	---	---	---
Total Suspended Solids (TSS)	mg/L	30	45	---	---	---
Oil and Grease	mg/L	10	---	20	---	---
pH ^[1]	s.u.	---	---	---	6.5	8.5
Chlorine, Total Residual	mg/L	---	---	---	---	0.0 ^[2]

Footnotes to Table 6a and Table 6b:

- [1] If the Discharger monitors pH continuously, pursuant to 40 CFR 401.17, the Discharger shall be in compliance with the pH limitation specified herein, provided that both of the following conditions are satisfied: (i) the total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and (ii) no individual excursion from the range of pH values shall exceed 60 minutes.
- [2] The Discharger may elect to use a continuous on-line monitoring system for measuring flows, sodium hypochlorite, and sodium bisulfite dosage (including a safety factor) and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, the Executive Officer will conclude that these chlorine residual exceedances are false positives and are not violations of this Order’s Total Residual Chlorine limit.

2. **BOD and TSS 85 Percent Removal:** At Monitoring Locations EFF-001 and EFF-002, the concentration-based average monthly percent removal of BOD and TSS shall not be less than 85 percent.

3. Total Coliform Bacteria: Treated wastewater shall meet the following limits of bacteriological quality at Monitoring Locations EFF-001 and EFF-002:

- a. The five-day moving median value for the most probable number (MPN) of total coliform bacteria shall not exceed 23 MPN/100mL; and
- b. No single sample shall exceed 240 MPN/100mL.

B. Effluent Limitations for Toxic Pollutants – Discharge Points 001 and 002

The Discharger shall maintain compliance with the following effluent limitations at Discharge Points 001 and 002, with compliance measured for at Monitoring Locations EFF-001 and EFF-002, as described in the attached MRP (Attachment E).

Table 7. Effluent Limitations for Toxic Pollutants

Parameter	Units	Effluent Limitations ^[1]	
		AMEL	MDEL
Antimony	µg/L	25	36
Copper	µg/L	11	20
Cyanide	µg/L	7.3	18
Chlorodibromomethane	µg/L	3.4	6.4
Dichlorobromomethane	µg/L	4.9	9.0
Dioxin-TEQ	µg/L	1.3 x 10 ⁻⁸	2.6 x 10 ⁻⁸

^[1] a. Limitations for toxic pollutants apply to the average concentration of all samples collected during the averaging period (daily = 24-hour period; monthly = calendar month).
 b. All metals limitations are expressed as total recoverable metal.
^[2] Section 2.4.5 of the SIP and Tables A and C of Attachment G indicate the Minimum Level (ML) for compliance determination purposes.

C. Whole Effluent Acute Toxicity

- 1. Representative samples of the effluent at Discharge Point 001 and 002, with compliance measured at Monitoring Location EFF-001 and EFF-002, as described in the attached MRP, shall meet the following limits for acute toxicity. Bioassays shall be conducted in compliance with MRP Section V.A (Attachment E).

The survival of organisms in undiluted combined effluent shall be:

An eleven (11) sample median value of not less than 90 percent survival, and
 An eleven (11) sample 90th percentile value of not less than 70 percent survival.

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

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

90th percentile: A bioassay test showing survival of less than 70 percent represents a violation of this effluent limit if one or more of the past ten or less bioassay tests show less than 70 percent survival.

D. Whole Effluent Chronic Toxicity

1. There shall be no chronic toxicity in the discharge as discharged. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, or any other relevant measure of the health of an organism population or community. Compliance with this limit shall be determined by analyses of indicator organisms and toxicity tests. Compliance shall be measured at EFF-001 and EFF-002, as described in the MRP (Attachment E).

2. The chronic toxicity of the effluent shall be expressed and reported in toxic units (TU_c), where

$$TU_c = 100/NOEL$$

For compliance determination, the No Observed Effect Level (NOEL) shall be assumed to equal the IC₂₅ (estimated concentration of toxicant as percent effluent that would cause a 25 percent reduction in a non-lethal biological measurement such as growth) or EC₂₅ (estimated concentration of toxicant as percent effluent that would cause a 25 percent reduction an adverse effect on a quantal, “all or nothing,” response such as death, immobilization, or serious incapacitation in 25 percent of test organisms). If the IC₂₅ or EC₂₅ cannot be statistically determined, the NOEL shall be equal to the NOEC derived using hypothesis testing.

3. The Discharger shall comply with the following tiered requirements based on results from representative effluent samples at Discharge Point 001 and 002, with compliance measured at EFF-001 and EFF-002 as described in the MRP (Attachment E), meeting test acceptability criteria in MRP Section V.B (Attachment E):

a. Conduct routine monitoring.

b. Conduct accelerated (i.e., monthly) monitoring after exceeding a single-sample maximum of 10 TU_c or greater.

c. Return to routine monitoring if accelerated monitoring does not exceed the “trigger” in (2), above.

d. If accelerated monitoring confirms consistent toxicity in excess of the “trigger” in (2), above, initiate toxicity identification evaluation/toxicity reduction evaluation (TIE/TRE) procedures in accordance with MRP Section V.B.3 (Attachment E).

e. Return to routine monitoring after appropriate elements of TRE workplan are implemented and either the toxicity drops below the “trigger” level in (2), above, or, based on the results of the TRE, the Executive Officer authorizes a return to routine monitoring.

4. The Discharger shall comply with MRP Section V.B.3, which requires a “Chronic Toxicity Identification and Toxicity Reduction Study” in accordance with the schedule set forth therein.

5. Test Species and Methods

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

V. RECEIVING WATER LIMITATIONS

1. Receiving water limitations are based on Basin Plan WQOs and are a required part of this Order. The discharges shall not cause the following in the Napa River:
 - a. Floating, suspended, or deposited macroscopic particulate matter or foams;
 - b. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;
 - c. Alteration of temperature, turbidity, or apparent color which cause nuisance or adversely affect beneficial uses;
 - d. Visible, floating, suspended, or deposited oil and other products of petroleum origin; or
 - e. Toxic or other deleterious substances to be present in concentrations or quantities that cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or that render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge shall not cause the following limits to be exceeded in waters of the State within one foot of the water surface:
 - a. Dissolved Oxygen 7.0 mg/L, minimum

The median dissolved oxygen concentration for any three consecutive months shall not be less than 80 percent of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.
 - b. Dissolved Sulfides Natural background levels
 - c. pH Within range from 6.5 to 8.5
 - d. Nutrients Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

3. The discharge shall not cause a violation of any particular water quality standard for receiving waters adopted by the Regional or State Water Boards as required by the CWA and regulations

adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to CWA Section 303, or amendments thereto, the Regional Water Board may revise and modify this Order in accordance with such more stringent standards.

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with Federal Standard Provisions included in Attachment D of this Order.
2. The Discharger shall comply with all applicable items of the Regional Standard Provisions, and Monitoring and Reporting Requirements (Supplement to Attachment D) for NPDES Surface Water Discharge Permits (Attachment G), including amendments thereto.

B. Monitoring and Reporting Program (MRP) Requirements

The Discharger shall comply with the MRP (Attachment E) and future revisions thereto including applicable sampling and reporting requirements in the two Standard Provisions listed in Section VI.A, above.

C. Special Provisions

1. Reopener Provisions

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

- a. If present or future investigations demonstrate that the discharges governed by this Order will have, or will cease to have, a reasonable potential to cause or contribute to adverse impacts on water quality or beneficial uses of the receiving waters.
- b. If new or revised WQOs or Total Maximum Daily Loads (TMDLs) come into effect for the San Francisco Bay estuary and contiguous water bodies (whether statewide, regional, or site-specific). In such cases, effluent limitations in this Order will be modified as necessary to reflect updated WQOs and waste load allocations in TMDLs. Adoption of effluent limitations contained in this Order is not intended to restrict future modifications based on legally adopted WQOs or TMDLs, or as otherwise permitted under federal regulations governing NPDES permit modifications.
- c. If translator or other water quality studies provide a basis for determining that a permit condition should be modified.
- d. If an administrative or judicial decision on a separate NPDES permit or WDR addresses requirements similar to this discharge.
- e. Or as otherwise authorized by law.

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

2. Effluent Data Evaluation

The Discharger shall continue to monitor and evaluate the discharge from Discharge Points 001 and 002 for the constituents listed in the Regional Standard Provisions (Attachment G), according to the sampling frequency specified in the MRP (Attachment E). Compliance with this requirement shall be achieved in accordance with the specifications stated in the Regional Standard Provisions.

The Discharger shall evaluate its effluent concentrations annually to determine if concentrations of any constituent have increased over past performance. The Discharger shall investigate the cause of the increase. The investigation may include, but need not be limited to, an increase in the effluent monitoring frequency monitoring of internal process streams, and monitoring of influent sources. This may be satisfied through identification of these constituents as “Pollutants of Concern” in the Discharger’s Pollutant Minimization Program described in Provision VI.C.3 below. The Discharger shall provide a summary of the annual evaluation of data and source investigation activities in the annual self-monitoring report.

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

3. Best Management Practices and Pollutant Minimization Program

a. Pollutant Minimization Program

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

b. Annual Pollution Prevention Report

The Discharger shall submit an annual pollution prevention report, acceptable to the Executive Officer, no later than February 28 of each calendar year. Each annual report shall include at least the following information:

- (1) *A brief description of the treatment plant, treatment plant processes and service area.*
- (2) *A discussion of the current pollutants of concern.* Periodically, the discharger shall analyze which pollutants are currently a problem and which pollutants may be potential future problems. This discussion shall include the reasons for choosing the pollutants.
- (3) *Identification of sources for the pollutants of concern.* This discussion shall include how the Discharger intends to estimate and identify sources of pollutants of concern. The Discharger shall also identify sources or potential sources not directly within the ability or authority of the Discharger to control, such as pollutants in the potable water supply and sources such as air deposition.
- (4) *Identification of tasks to reduce sources of pollutants of concern.* This discussion shall identify and prioritize tasks to address the Discharger’s pollutants of concern. The

Discharger may implement the tasks by themselves or participate in group, regional, or national tasks that will address its pollutants of concern. The Discharger is strongly encouraged to participate in group, regional, or national tasks that will address its pollutants of concern whenever it is efficient and appropriate to do so. A time line shall be included for the implementation of each task.

- (5) *Outreach to employees.* The Discharger shall inform its employees about the pollutants of concern, potential sources, and how they might be able to help reduce the discharge of these pollutants of concern into the treatment facilities. The Discharger may provide a forum for employees to provide input.
- (6) *Continuation of Public Outreach Program.* The Discharger shall prepare a public outreach program to communicate pollution prevention messages to its service area. Outreach may include participation in existing community events, such as county fairs; initiating new community events, such as displays and contests during Pollution Prevention Week; conducting school outreach programs; conducting plant tours; and providing public information in newspaper articles or advertisements, radio or television stories or spots, newsletters, utility bill inserts, or web sites. Information shall be specific to target audiences. The Discharger shall coordinate with other agencies as appropriate.
- (7) *Discussion of criteria used to measure Pollutant Minimization Program and task effectiveness.* The Discharger shall establish criteria to evaluate the effectiveness of its Pollutant Minimization Program. This section shall also discuss the specific criteria used to measure the effectiveness of each of the tasks in Sections VI.C.b(3-6), above.
- (8) *Documentation of efforts and progress.* This discussion shall detail all the Discharger's Pollutant Minimization Program activities during the reporting year.
- (9) *Evaluation of Pollutant Minimization Program and task effectiveness.* This Discharger shall use the criteria established in Section VI.C.3.b.(7), above, to evaluate Pollutant Minimization Program and task effectiveness.
- (10) *Identification of specific tasks and time schedules for future efforts.* Based on the evaluation, the Discharger shall detail how it intends to continue or change its tasks to more effectively reduce the amount of pollutants to the treatment plant, and subsequently in its effluent.

c. Pollutant Minimization Program for Pollutants with Effluent Limitations

The Discharger shall develop and conduct a Pollutant Minimization Program as further described below when there is evidence that a priority pollutant is present in the effluent above an effluent limitation (e.g., sample results reported as Detected but Not Quantified (DNQ) when the effluent limitation is less than the Method Detection Limit (MDL), sample results from analytical methods more sensitive than those required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) and either:

- i. A sample result is reported as DNQ and the effluent limitation is less than the Reporting Level (RL); or
- ii. A sample result is reported as non-detect (ND) and the effluent limitation is less than the MDL, using SIP definitions.

d. Pollutant Minimization Program Submittals for Pollutants with Effluent Limitations

If triggered by the reasons in Section VI.C.3.c. above, the Discharger's Pollutant Minimization Program shall include, but not be limited to, the following actions and submittals acceptable to the Regional Water Board:

- i. Annual review and semi-annual monitoring of potential sources of the reportable priority pollutants, which may include fish tissue monitoring and other bio-uptake sampling, or alternative measures approved by the Executive Officer when it is demonstrated that source monitoring is unlikely to produce useful analytical data;
- ii. Quarterly monitoring for the reportable priority pollutants in the influent to the wastewater treatment system, or alternative measures approved by the Executive Officer when it is demonstrated that influent monitoring is unlikely to produce useful analytical data;
- iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutants in the effluent at or below effluent limitations;
- iv. Implementation of appropriate cost-effective control measures for the reportable priority pollutants, consistent with the control strategy; and
- v. Annual report required by Section VI.C.3.b, above, which shall specifically include the following items:
 1. All Pollutant Minimization Program monitoring results for the previous year;
 2. List of potential sources of the reportable priority pollutants;
 3. Summary of all actions undertaken pursuant to the control strategy; and
 4. Description of actions to be taken in the following year.

4. Construction, Operation and Maintenance Requirements

a. Reliability Status Report

- (1) The Discharger shall develop and maintain a Reliability Status Report for the Discharger's wastewater treatment facilities, which will allow the Regional Water Board to evaluate the reliability of the Discharger's system in preventing inadequately treated wastewater from being discharged into the receiving waters. The Reliability Status Report shall be maintained in usable condition and be available for reference and use by all applicable personnel.

- (2) The Discharger shall regularly review, revise, or update, as necessary, the Reliability Status Report to ensure that the document remains useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and revisions or updates shall be completed as necessary. For any significant changes in treatment facility equipment or operation practices, applicable revisions shall be completed as soon as practicable.
- (3) The Discharger shall provide the Executive Officer, upon request, a summary describing the current status of its Reliability Status Report, including any recommended or planned actions and an estimated time schedule for these actions. The Discharger shall submit, by February 1 each year, a description or summary of review and evaluation procedures and any substantive changes to its Reliability Status Report.

b. Wastewater Pond Operation Requirements

- (1) Wastewater within one foot of the surface of all wastewater ponds shall meet the following limits, in any grab sample:
 - a. Dissolved Oxygen: 2.0 mg/L, minimum.
 - b. Dissolved Sulfide: 0.1 mg/L, maximum.
- (2) A minimum freeboard of at least one (1) foot shall be maintained in existing Riverside Wastewater Pond 1; and a minimum freeboard of at least two (2) feet shall be maintained in existing Riverside Wastewater Pond 2.
- (3) All wastewater ponds shall be protected against erosion, flooding and washout from floods having a predicted frequency of once in 100 years.

5. Sanitary Sewer Overflows and Sewer System Management Plan

The Discharger's collection system is part of the facility subject to this Order. Therefore, the Discharger shall properly operate and maintain its collection system (Attachment D, Federal Standard Provisions - Permit Compliance, subsection I.D). The Discharger shall report any noncompliance (Attachment D, Federal Standard Provisions - Reporting, subsections V.E.1 and V.E.2) and mitigate any discharge from the Discharger's collection system in violation of this Order (Attachment D, Federal Standard Provisions - Permit Compliance, subsection I.C).

The *General Waste Discharge Requirements for Collection System Agencies* (General Collection System WDRs), Order No. 2006-0003 DWQ, has requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. While the Discharger must comply with both the General Collection System WDRs and this Order, the General Collection System WDRs more clearly and specifically stipulate requirements for operation and maintenance, and for reporting and mitigating sanitary sewer overflows.

Implementation of the General Collection System WDRs requirements for proper operation and maintenance and mitigation of spills will satisfy the corresponding federal NPDES requirements specified in Attachment D (as supplemented by Attachment G) of this Order.

Following notification and reporting requirements in the General Collection System WDRs will satisfy NPDES reporting requirements specified in Attachment D (as supplemented by Attachment G) of this Order for sewage spills from the collection system upstream of the Plant boundaries. Attachments D and G of this Order specify reporting requirements for unauthorized discharges from anywhere within the Plant downstream of the Plant boundaries.

6. Emergency Discharge Request Procedure

To obtain approval for an emergency discharge between June 16 through October 31, the Discharger shall submit a written request to the Executive Officer at least 3 business days in advance of the proposed discharge. The discharge request must include the reasons for the discharge (e.g., planned disposal to land is infeasible, wastewater ponds are full, or wastewater ponds are projected to be full before the discharge season starts due to wet season conditions). A water balance calculation and wastewater pond storage conditions shall be included to support the request. The water balance calculation shall be based on the actual wastewater pond depths and the targeted wastewater pond depths from the beginning of the reclamation season to the current month, as well as precipitation, evaporation, reclamation, and/or long-range weather forecast, etc. Other supporting information shall include, but not be limited to, the projected duration of discharge, discharge rate, Napa River flow rates, dilution provided by the receiving water, and plans/dates for correcting problems. The Executive Officer will authorize a specific time frame and additional monitoring and reporting requirements for the discharge. The authorization may be by phone, email, or in writing to the Discharger. The Discharger must receive such authorization before it can commence discharge.

VII. COMPLIANCE DETERMINATION

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

A. General

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

B. Average Daily Effluent Limitation (ADEL)

If the average (or when applicable, the median determined by subsection B above for multiple sample data) of intermittent discharges over a single 24-hour day exceeds the ADEL for a given parameter, this will represent a single violation. If only a single sample is taken during the 24-hour day and the analytical result for that sample exceeds the ADEL, the Discharger will be considered out of compliance for that day. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one day during which no sample (daily discharge) is taken, no compliance determination can be made for that day.

C. Average Monthly Effluent Limitation (AMEL)

If the average (or when applicable, the median determined by subsection B above for multiple sample data) of daily discharges over a calendar month exceeds the AMEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the Discharger will be considered out of compliance for that calendar month. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

D. Average Weekly Effluent Limitation (AWEL)

If the average (or when applicable, the median determined by subsection B above for multiple sample data) of daily discharges over a calendar week exceeds the AWEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that week for that parameter, resulting in 7 days of non-compliance. If only a single sample is taken during the calendar week and the analytical result for that sample exceeds the AWEL, the Discharger will be considered out of compliance for that calendar week. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar week during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar week.

E. Maximum Daily Effluent Limitation (MDEL)

If a daily discharge (or when applicable, determined by subsection B above for multiple sample data of a daily discharge) exceeds the MDEL for a given parameter, the Discharger will be considered out of compliance for that parameter for that 1 day only within the reporting period. For any 1 day during which no sample is taken, no compliance determination can be made for that day.

ATTACHMENT A – DEFINITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Pollution Prevention means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in California Water Code Section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State or Regional Water Board.

Reporting Level (RL) is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix 4 of the SIP in accordance with Section 2.4.2 of the SIP or established in accordance with Section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences.

Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

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

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

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

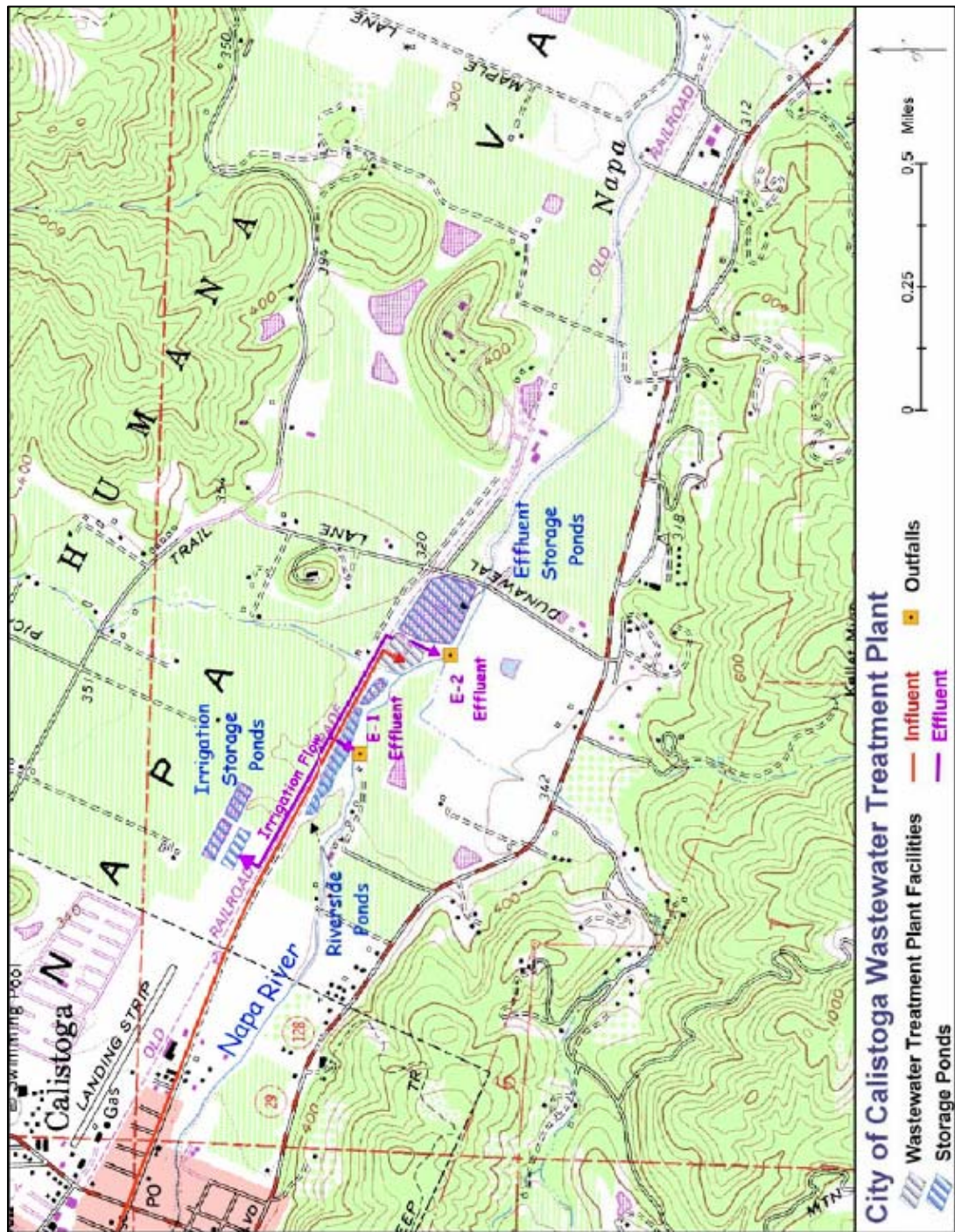
$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:

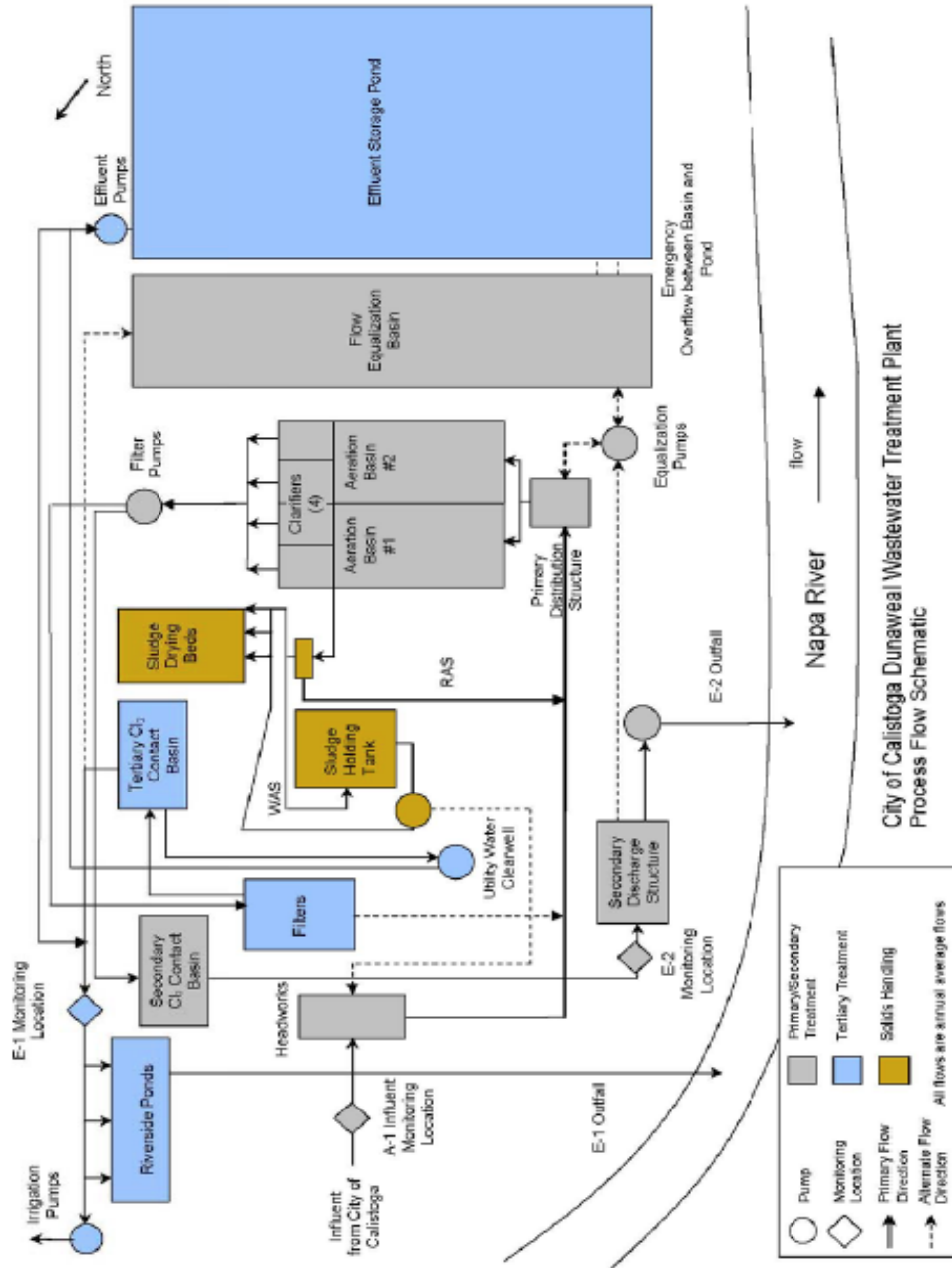
- x is the observed value;
- μ is the arithmetic mean of the observed values; and
- n is the number of samples.

Toxicity Reduction Evaluation (TRE) is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemicals responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

ATTACHMENT B – FACILITY MAP



ATTACHMENT C – PROCESS FLOW DIAGRAM



ATTACHMENT D –STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

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

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 C.F.R. § 122.41(c).)

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)
2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c).)

F. Inspection and Entry

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

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

G. Bypass

1. Definitions
 - a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i).)
 - b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. § 122.41(m)(1)(ii).)
2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. § 122.41(m)(2).)
3. Prohibition of bypass. Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));
 - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of

- equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and
- c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)
4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)
 5. Notice
 - a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 C.F.R. § 122.41(m)(3)(i).)
 - b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 C.F.R. § 122.41(m)(3)(ii).)

H. Upset

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

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)
2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):
 - a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));
 - b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));
 - c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and

- d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv).)
3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

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

III. STANDARD PROVISIONS – MONITORING

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

IV. STANDARD PROVISIONS – RECORDS

- A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)
- B. Records of monitoring information shall include:
 1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));

2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
 3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
 4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
 5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
 6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)
- C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):
1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and
 2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

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

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 C.F.R. § 122.41(k).)
2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA). (40 C.F.R. § 122.22(a)(3).)
3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant

manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and

- c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)
4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)
5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.” (40 C.F.R. § 122.22(d).)

C. Monitoring Reports

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

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

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

F. Planned Changes

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

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

process or not reported pursuant to an approved land application plan. (40 C.F.R. § 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

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

H. Other Noncompliance

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

I. Other Information

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

VI. STANDARD PROVISIONS – ENFORCEMENT

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

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

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

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

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

National Pollutant Discharge Elimination System (NPDES) regulations at 40 CFR 122.48 require that all NPDES permits specify monitoring and reporting requirements. California Water Code (CWC) Sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement the federal and State regulations.

I. GENERAL MONITORING PROVISIONS

- A.** The Discharger shall comply with this MRP. The Executive Officer may amend this MRP pursuant to 40 CFR Parts 122.62, 122.63, and 124.5. If any discrepancies exist between the MRP and the Regional Standard Provisions, the MRP prevails.
- B.** The Discharger shall conduct all monitoring in accordance with Attachment D, Section III, as supplemented by Attachment G of this Order. Equivalent test methods must be more sensitive than those specified in 40 CFR 136, must be specified in the permit, and must be approved for use by the Executive Officer, following consultation with the State Water Quality Control Board (State Water Board) Quality Assurance Program.

II. MONITORING LOCATIONS

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

Table E-1. Monitoring Station Locations

Type of Sampling Location	Monitoring Location Name	Monitoring Location Description
Influent	INF-001	At a point in the treatment facility headworks at which all waste tributary to the treatment process system is present and preceding any phase of treatment, formerly M-INF-001.
Effluent	EFF-001	At a point in the effluent from the tertiary treatment facilities prior to the point of discharge, and at which point treatment of the wastewater is complete, and all waste tributary to the effluent discharge outfall is present, formerly M-001.
Effluent	EFF-002	At a point in the effluent from the secondary treatment facilities prior to discharge through the secondary effluent discharge outfall, at which point all waste tributary to the discharge is present, formerly M-002.
Effluent	EFF-003	Discharge to land (including recycling), formerly M-003.
Receiving Water	RSW-001	At a point in the Napa River, located about 1,000 feet upstream from Outfall 001.
Receiving Water	RSW-002	At a point in the Napa River, located about 100 feet upstream from Outfall 001.
Receiving Water	RSW-004	At a point in the Napa River, located about 100 feet downstream from Outfall 001.
Receiving Water	RSW-005	At a point in the Napa River, located about 100 feet downstream from Outfall 002.

Type of Sampling Location	Monitoring Location Name	Monitoring Location Description
Receiving Water	RSW-006	At a point in the Napa River, located about 1,000 feet downstream from Outfall 002.
Receiving Water	RSW-007	At a point in the Napa River, located approximately 1,200 feet downstream from Outfall 002, at the Dunaweal Bridge.
Biosolids	BIO-001	Biosolids monitoring.
Pond Water	PON-001 thru PON-004	Pond Levees: Points located along the perimeter levees of the four riverside wastewater ponds.

III. INFLUENT MONITORING REQUIREMENTS

The Discharger shall monitor influent to the facility at INF-001 as follows. Influent sampling is required year-round.

Table E-2. Influent Monitoring – Monitoring Location INF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow ^[1]	MGD	Cont/D	1/Day
Biochemical Oxygen Demand (BOD)	mg/L	C-24	1/Week
	kg/day	C-24	1/Week
Total Suspended Solids (TSS)	mg/L	C-24	1/Week
	kg/day	C-24	1/Week

Footnotes to Table E-2:

- Units:
 C-24 = 24-hour composite
 Cont/D = continuous / daily
 kg/d = kilograms per day
 MG = million gallons
 MGD = million gallons per day
 °C = degrees Celsius
 mg/L = milligrams per liter

^[1] For influent flows, the following information shall also be reported monthly:

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

IV. EFFLUENT MONITORING REQUIREMENTS

A. The Discharger shall monitor treated effluent according to Table E-3. pH, BOD, and TSS shall be monitored year-round at EFF-001; all other parameters shall be monitored during all months when discharge to the Napa River occurs. The Discharger shall monitor location EFF-001 and EFF-002 when discharging from each location.

Table E-3. Effluent Monitoring – Monitoring Location EFF-001 and EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow ^[1]	MGD	Cont	Cont/D
pH ^[2]	s.u.	Cont.	Cont/D
BOD ₅	mg/L	C-24	1/Week
	kg/day	C-24	1/Week
TSS	mg/L	C-24	1/Week
	kg/day	C-24	1/Week
Total Chlorine Residual ^[3]	mg/L	Cont/2-hour	1/every two hours
Oil and Grease	mg/L	^[4]	1/Month
Total Coliform Bacteria	MPN/100mL	G	3/Week
Temperature	°C	G	1/Day
Turbidity	NTU	G	1/Day
Acute Toxicity ^[5]	% survival	C-24	1/Month
Chronic Toxicity ^[6]	TUc	C-24	1/Year
Dissolved Oxygen	mg/L	G	1/Week
	% Saturation	G	1/Week
Total Dissolved Solids	mg/L	G	1/Month
Antimony	µg/L	^[10]	1/Month
Copper	µg/L	^[10]	1/Month
Cyanide	µg/L	^[10]	1/Month
Chlorodibromomethane	µg/L	^[10]	2/Year
Dichlorobromomethane	µg/L	^[10]	2/Year
Dioxin-TEQ	µg/L	^[10]	1/Year
Total Ammonia	mg/L as N	G	1/Month
Unionized Ammonia ^[7]	mg/L as N	Calculate	1/Month
Total Nitrogen ^[8]	mg/L as N	C-24	1/Month
Total Phosphate	mg/L as P	C-24	1/Month
Standard Observations	--	--	1/Week
Other Metals (Arsenic, Beryllium, Cadmium, Chromium, Lead, Nickel, Selenium, Silver, Zinc and Thallium)	µg/L	^[10]	2/Year
Remaining Priority Pollutants	µg/L	^[10]	1/Permit Term
Ratio – River Flow:Effluent Flow ^[9]	--	Calculate	1/Day

Footnotes to Table E-3:

Units:

- MG = million gallons
- MGD = million gallons per day
- s.u. = standard units
- °C = degrees Celsius
- mg/L = milligrams per liter
- kg/d = kilograms per day
- µg/L = micrograms per liter
- MPN/100 mL = most probable number per 100 milliliters
- NTU = Nephelometric Turbidity Units

Sample Type:

- G = Grab

C-24= 24-hour Composite
Cont= Continuous

[1] Flow Monitoring:

For effluent flows, the following information shall also be reported monthly:

Daily: Total Daily Flow Volume (MG)
Monthly: Monthly Average Flow (MGD)
Monthly: Maximum Daily Flow (MGD)
Monthly: Minimum Daily Flow (MGD)
Monthly: Total Flow Volume (MG)

[2] If pH is monitored continuously; the minimum and maximum pH values for each day shall be reported in monthly Self-Monitoring Reports (SMRs).

[3] Effluent chlorine concentrations shall be monitored continuously at all times when chlorination is used for effluent disinfection. Chlorine residual concentrations shall be monitored and reported for sampling points both before and after dechlorination. The Discharger shall report the maximum residual chlorine concentration observed following dechlorination on a daily basis. Total chlorine dosage (kg/day) shall be recorded on a daily basis. Alternatively, the Discharger may evaluate compliance with this requirement by recording discrete readings from the continuous monitoring every hour on the hour, or by collecting grab samples every hour, for a total of 24 readings or samples per day if the following conditions are met: (a) The Discharger shall retain continuous monitoring readings for at least three years; (b) The Discharger shall acknowledge in writing that the Regional Water Board reserves the right to use all other continuous monitoring data for discretionary enforcement; (c) The Discharger must provide in writing the brand names, model numbers, and serial numbers of the equipment used to continuously monitor dechlorinated final effluent chlorine residual. If the identified equipment is replaced, the Discharger shall provide the Regional Water Board the new equipment's brand name, model number, and serial number in writing within 72 hours of successful equipment startup. The written notification identified in items (a) through (c) shall be in the form of a letter addressed to the Regional Water Board's Executive Officer with a certification statement as listed in the October 19, 2004, Regional Water Board letter re: *Chlorine Compliance Strategy for Dischargers Using Continuous Monitoring Devices*.

[4] Each oil and grease sample shall consist of a composite sample comprised of three grab samples taken at equal intervals of not less than 3.5 hours during the sampling date, with each grab sample being collected in a glass container. The grab samples shall be mixed in proportion to the instantaneous flow rates occurring at the time of each grab sample, within the accuracy of plus or minus 5 percent. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent rinsings as soon as possible after use, and the solvent rinsings shall be added to the composite sample for extraction or analysis.

[5] Acute bioassay tests shall be performed in accordance with MRP Section V.A.

[6] Critical life stage toxicity tests shall be performed and reported in accordance with the Chronic Toxicity Requirements specified in MRP Section V.B. Sampling frequency is specified in Table E-3, except when the Discharger is conducting a *Chronic Toxicity Identification and Toxicity Reduction Study* required by MRP Provision V.B.3, when the sampling frequency shall be that specified for the study.

[7] The Discharger shall calculate the unionized fraction of ammonia using the pH and temperature of the receiving water at the nearest upstream monitoring point at the time of sampling using the following equation:

$$\text{fraction of NH}_3 = 1 / (1 + 10^{(\text{pH} - \text{pK})})$$

where

$$\text{pK} = 0.09018 + 2729.92 / (273 + T)$$

T = temperature °C

[8] Total nitrogen in this MRP refers to Nitrate Nitrogen and Total Organic Nitrogen.

[9] The Discharger shall calculate and report the river-to-effluent flow ratio once per day when discharging to the Napa River. It shall be calculated as the ratio of the instantaneous flow rate of the Napa River measured at RSW-004 at 9am every morning, or another point the Executive Officer approves in writing, to the effluent flow rate during the previous 24 hours (9am to 9am) measured at EFF-001 and EFF-002.

[10] Sampling for all priority pollutants is described in Attachment G.

B. The Discharger shall monitor treated effluent from the facility at EFF-003 during reclamation, as follows.

Table E-4. Effluent Monitoring – Monitoring Location EFF-003

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow ^[1]	MGD	Cont	Cont/D	---

Footnotes to Table E-4:

Units:
 MGD = million gallons per day

- ^[1] Flow Monitoring:
 For effluent flows, the following information shall also be reported monthly:
 Daily: Total Daily Flow Volume (MG)
 Monthly: Monthly Average Flow (MGD)
 Monthly: Maximum Daily Flow (MGD)
 Monthly: Minimum Daily Flow (MGD)
 Monthly: Total Flow Volume (MG)

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

The Discharger shall monitor whole effluent toxicity at the compliance locations (EFF-001 and EFF-002) and frequencies specified in Table E-3, as follows.

A. Whole Effluent Acute Toxicity

1. Compliance with the acute toxicity effluent limitations of this Order shall be evaluated by measuring survival of test organisms exposed to 96-hour static renewal bioassays.
2. Test organisms shall be fathead minnow or rainbow trout unless the Executive Officer specifies otherwise in writing.
3. All bioassays shall be performed according to the most up-to-date protocols in 40 CFR 136, currently *Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms*, 5th Edition.
4. If specific identifiable substances in the discharge can be demonstrated by the Discharger as being rapidly rendered harmless upon discharge to the receiving water, compliance with the acute toxicity limit may be determined after the test samples are adjusted to remove the influence of those substances. Written approval from the Executive Officer must be obtained to authorize such an adjustment.
5. The sample may be taken prior to disinfection. Monitoring of the bioassay water shall include, on a daily basis, the following parameters: pH, dissolved oxygen, ammonia (if toxicity is observed), temperature, hardness, and alkalinity. These results shall be reported. If a violation of acute toxicity requirements occurs, the bioassay test shall be repeated with new fish as soon as practical and shall be repeated until a test fish survival rate of 90 percent or greater is observed. If the control fish survival rate is less than 90 percent, the bioassay test shall be restarted with new fish and shall continue as soon as practical until an acceptable test is completed (i.e., control fish survival rate is 90 percent or greater.)

B. Whole Effluent Chronic Toxicity

1. Chronic Toxicity Monitoring Requirements

- a. *Sampling.* The Discharger shall collect 24-hour composite samples of the effluent at the compliance points specified in Table E-3 for critical life stage toxicity testing as indicated below. For toxicity tests requiring renewals, 24-hour composite samples shall be collected on consecutive days.
- b. *Test Species.* The test species shall be *Ceriodaphnia dubia*. The Executive Officer may change the test species if data suggest that another test species is more sensitive to the discharge.
- c. *Methodology.* Sample collection, handling, and preservation shall be in accordance with USEPA protocols. In addition, bioassays shall be conducted in compliance with the most recently promulgated test methods, as shown in Appendix E-1, and with *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, currently 4th Edition (EPA-821-R-02-013), with exceptions granted by the Executive Officer and the ELAP.
- d. *Dilution Series.* The Discharger shall conduct tests at 5, 10, 25, 50, and 100 percent effluent as discharged. The Discharger may use a buffer only after obtaining written approval from the Executive Officer.
- e. *Conditions for Accelerated Monitoring.* The Discharger shall accelerate monitoring to monthly when the following condition is exceeded:

Single sample maximum value of 10 TUc.

2. Chronic Toxicity Reporting Requirements

- a. *Routine Reporting.* Toxicity test results for the current reporting period shall include, at a minimum, for each test:
 - i. Sample dates
 - ii. Test initiation dates
 - iii. Test species
 - iv. End point values for each dilution (e.g., number of young, growth rate, percent survival)
 - v. NOEC values in percent effluent
 - vi. IC₁₅, IC₂₅, IC₄₀, and IC₅₀ values (or EC₁₅, EC₂₅ ... etc.) in percent effluent
 - vii. TUc values (100/NOEC, 100/IC₂₅, or 100/EC₂₅)
 - viii. Mean percent mortality (\pm s.d.) after 96 hours in 100 percent effluent (if applicable)

- ix. NOEC and LOEC values for reference toxicant tests
 - x. IC₅₀ or EC₅₀ values for reference toxicant tests
 - xi. Available water quality measurements for each test (pH, dissolved oxygen, temperature, conductivity, hardness, salinity, ammonia)
- b. *Compliance Summary.* The results of the chronic toxicity testing shall be provided in the most recent Self Monitoring Report (SMR) and shall include a summary table of the chronic toxicity data from at least eleven of the most recent samples. The information in the table shall include the items listed above under 2.a, item numbers i, iii, v, vi (IC₂₅ or EC₂₅), vii, and viii.
3. Chronic Toxicity Reduction Evaluation (TRE)
- a. The Discharger shall prepare a generic TRE work plan within 90 days of the effective date of this Order. The Discharger shall review and update the work plan as often as needed to ensure that it is current and applicable to the discharge and discharge facilities.
 - b. The Discharger shall submit a specific TRE work plan to the Regional Water Board within 30 days of exceeding an accelerated monitoring trigger. The specific TRE work plan shall be the generic TRE work plan revised as appropriate considering available discharge data.
 - c. The Discharger shall initiate a TRE in accordance with a TRE work plan that addresses any and all comments from the Executive Officer within 30 days of completing an accelerated monitoring test that exceeds either trigger.
 - d. The TRE shall be (1) specific to the discharge, and (2) in accordance with current technical guidance and reference materials, including USEPA guidance materials. The TRE shall be conducted as a tiered evaluation process, as summarized below:
 - (1) Tier 1 consists of basic data collection (routine and accelerated monitoring).
 - (2) Tier 2 consists of evaluating and optimizing the treatment process, including operating practices and use of in-plant process chemicals.
 - (3) Tier 3 consists of a toxicity identification evaluation (TIE).
 - (4) Tier 4 consists of evaluating options for additional effluent treatment processes.
 - (5) Tier 5 consists of evaluating options for modifying in-plant treatment processes.
 - (6) Tier 6 consists of implementation of selected toxicity control measures, follow-up monitoring, and confirmation of implementation success.
 - e. The TRE may be ended at any stage if monitoring finds there is no longer consistent toxicity (i.e., if the results comply with Section IV.D, Whole Effluent Chronic Toxicity, of this Order).

- f. The objective of the TIE shall be to identify the substance or combination of substances causing the observed toxicity. All reasonable efforts using currently available TIE methodologies shall be employed.
- g. As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the sources and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with chronic toxicity evaluation parameters.
- h. Many recommended TRE elements parallel required or recommended source control, pollution prevention, and storm water control programs. A TRE should be coordinated with such programs. To prevent duplication of effort, evidence of compliance with such programs may be used to show compliance with TRE requirements.
- i. The Regional Water Board recognizes that chronic toxicity may be episodic and that the causes and sources of chronic toxicity may not be successfully identified and reduced in all cases. Enforcement will be based, in part, on the Discharger’s actions and efforts to identify, control, and reduce sources of consistent toxicity.

VI. RECLAMATION MONITORING REQUIREMENTS

The Discharger shall perform monitoring at EFF-003 according to the monitoring requirements contained in Regional Water Board Order No. 96-011.

VII. RECEIVING WATER MONITORING REQUIREMENTS

The Discharger shall monitor Napa River at RSW-001 through RSW-007 when there is discharge to the Napa River, as specified in Table E-5. Monitoring for Napa River flow is required only at Monitoring Location RSW-004, unless the Executive Officer approves use of the Dunaweal Bridge Stream Gage at RSW-007. After approval, flow monitoring will be required only at RSW-007.

Table E-5. Receiving Water Monitoring – Monitoring Locations RSW-001 through RSW-007

Parameter	Units	Sample Type	Minimum Sampling Frequency
<i>RSW-007 only (if approved by the Executive Officer)</i>			
Flow	MGD	---	1/Day
<i>RSW-001 through RSW-006 (Sampling at RSW-005 is only required when Outfall 002 is in use.)</i>			
pH ^[1]	s.u.	G	1/Month
Temperature ^[1]	°C	G	1/Month
Turbidity	NTU	G	1/Month
Dissolved Oxygen	mg/L and % saturation	G	1/Month
Total Nitrogen ^[2]	mg/L as N	G	1/Month
Total Phosphate	mg/L as P	G	1/Month
Hardness	mg/L as CaCO ₃	G	1/Month
Conductivity	µmhos	G	1/Month
Salinity or TDS ^[3]	ppt or mg/L	G	1/Month

Parameter	Units	Sample Type	Minimum Sampling Frequency
Chloride	mg/L	G	1/Month
Water Depth	feet	--	1/Month
Standard Observations	---	Observation	1/Week

Footnotes to Table E-5:

Units:

- s.u. = standard units
- °C = degrees Celsius
- mg/L = milligrams per liter

- [1] Samples for pH and temperature shall be taken concurrently with effluent samples for ammonia.
- [2] Total nitrogen refers to nitrate nitrogen and total organic nitrogen.
- [3] The Discharger may choose to sample either total dissolved solids, salinity, or both, and shall sample the same parameters throughout the permit term.

VIII. OTHER MONITORING REQUIREMENTS

A. Biosolids Monitoring

The Discharger shall adhere to sludge monitoring requirements required by 40 CFR 503 and 258, as applicable.

B. Riverside Wastewater Pond Monitoring Requirements

The Discharger shall monitor the riverside wastewater ponds at points located along the ponds’ perimeter levees as follows.

Table E-6. Riverside Wastewater Pond Monitoring Requirements – Monitoring Locations PON-001 through PON-004

Parameter	Units	Sample Type	Minimum Sampling Frequency
Dissolved Sulfide (only required if dissolved oxygen is < 2.0 mg/L).	mg/L	Grab	2/Year
Dissolved Oxygen	mg/L	Grab	2/Year
Standard Observations	--	Observation	1/Month

C. Rainfall

The Discharger shall record the occurrence and extent of precipitation in inches daily, according to measurements conducted at the Plant rain gage.

IX. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

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

B. Self Monitoring Reports

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

Table E-7. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period
Continuous	Day after permit effective date	All
Hourly	Day after permit effective date	Hourly
Daily	Day after permit effective date	Midnight through 11:59 PM or any 24-hour period that reasonably represents a calendar day for purposes of sampling.
Weekly	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday
Monthly	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	1 st day of calendar month through last day of calendar month
Quarterly	Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31
Semiannually	Closest of January 1 or July 1 following (or on) permit effective date	January 1 through June 30 July 1 through December 31
Annually	January 1 following (or on) permit effective date	January 1 through December 31
Per Discharge Event	Anytime during the discharge event or as soon as possible after aware of the event	At a time when sampling can characterize the discharge event

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

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

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

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

- c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.
 - d. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve.
5. The Discharger shall submit SMRs in accordance with the following requirements:
- a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.
 - b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and discuss the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.
 - c. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Federal Standard Provisions (Attachment D), to the address listed below:

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

C. Discharge Monitoring Reports (DMRs)

1. As described in Section X.B.1 above, at any time during the term of this Order, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of DMRs. Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.
2. Once notified by the State or Regional Water Board, the Discharger shall submit hard copy DMRs. DMRs must be signed and certified as required by the Federal Standard Provisions (Attachment D). The Discharger shall submit the original DMR and one copy of the DMR to one of the addresses listed below:

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

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

D. Other Reports

The Discharger shall report the results of any special studies, monitoring, and reporting required by Section VI.C.2 (Special Studies, Technical Reports, and Additional Monitoring Requirements) of this Order with the first monthly SMR following the respective due date.

APPENDIX E-1

CHRONIC TOXICITY DEFINITION OF TERMS AND SCREENING PHASE REQUIREMENTS

I. Definition of Terms

- A. No observed effect level (NOEL) for compliance determination is equal to IC₂₅ or EC₂₅. If the IC₂₅ or EC₂₅ cannot be statistically determined, the NOEL shall be equal to the NOEC derived using hypothesis testing.
- B. Effective concentration (EC) is a point estimate of the toxicant concentration that would cause an adverse effect on a quantal, “all or nothing,” response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Kärber. EC₂₅ is the concentration of toxicant (in percent effluent) that causes a response in 25 percent of the test organisms.
- C. Inhibition concentration (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a nonlethal, nonquantal biological measurement, such as growth. For example, an IC₂₅ is the estimated concentration of toxicant that would cause a 25 percent reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as USEPA’s Bootstrap Procedure.
- D. No observed effect concentration (NOEC) is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. It is determined using hypothesis testing.

II. Chronic Toxicity Screening Phase Requirements

- A. The Discharger shall perform screening phase monitoring:
 - 1. Subsequent to any significant change in the nature of the effluent discharged through changes in sources or treatment, except those changes resulting from reductions in pollutant concentrations attributable to source control efforts, or
 - 2. Prior to permit reissuance. Screening phase monitoring data shall be included in the NPDES permit application for reissuance. The information shall be as recent as possible, but may be based on screening phase monitoring conducted within 5 years before the permit expiration date.
- B. Design of the screening phase shall, at a minimum, consist of the following elements:
 - 1. Use of test species specified in Appendix E-2, attached, and use of the protocols referenced in those tables, or as approved by the Executive Officer.
 - 2. Two stages:

- a. Stage 1 shall consist of a minimum of one battery of tests conducted concurrently. Selection of the type of test species and minimum number of tests shall be based on Appendix E-2 (attached).
 - b. Stage 2 shall consist of a minimum of two test batteries conducted at a monthly frequency using the three most sensitive species based on the Stage 1 test results and as approved by the Executive Officer.
3. Appropriate controls.
 4. Concurrent reference toxicant tests.
 5. Dilution series with a control and five effluent concentrations (including 100% effluent) and using a dilution factor ≥ 0.5 .
- C. The Discharger shall submit a screening phase proposal acceptable to the Executive Officer. The proposal shall address each of the elements listed above. If within 30 days, the Executive Officer does not comment, the Discharge shall commence with screening phase monitoring.

APPENDIX E-2

SUMMARY OF TOXICITY TEST SPECIES REQUIREMENTS

Table AE-1. Critical Life Stage Toxicity Tests for Estuarine Waters

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

Toxicity Test References:

1. American Society for Testing Materials (ASTM). 1990. Standard Guide for Conducting Static 96-Hour Toxicity Tests with Microalgae. Procedure E 1218-90. ASTM, Philadelphia, PA.
2. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine and Estuarine Organisms. EPA/600/R-95/136. August 1995.
3. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to Marine and Estuarine Organisms. EPA/600/4-90/003. July 1994.

Table AE-2. Critical Life Stage Toxicity Tests for Fresh Waters

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

Toxicity Test Reference:

4. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, fourth Edition Chronic manual (EPA-821-R-02-013, October 2002).

Table AE-3. Toxicity Test Requirements for Stage One Screening Phase

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

1. The freshwater species may be substituted with marine species if:
 - a. The salinity of the effluent is above 1 part per thousand (ppt) greater than 95 percent of the time, or
 - b. The ionic strength (TDS or conductivity) of the effluent at the test concentration used to determine compliance is documented to be toxic to the test species.
2. a. Marine/Estuarine refers to receiving water salinities greater than 1 ppt at least 95 percent of the time during a normal water year.
 - b. Fresh refers to receiving water with salinities less than 1 ppt at least 95 percent of the time during a normal water year.

ATTACHMENT F - FACT SHEET

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ATTACHMENT F – FACT SHEET

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

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

I. PERMIT INFORMATION

The following table summarizes administrative information related to the City of Calistoga Dunaweal Wastewater Treatment Plant (Plant).

Table F-1. Facility Information

WDID	2 283003001
Discharger	City of Calistoga
Name of Facility	Dunaweal Wastewater Treatment Plant and its collection system
Facility Address	1100 Dunaweal Lane
	Calistoga, CA 94515
	Napa County
Facility Contact, Title, Phone	Warren Schenstrom, Water Systems Superintendent, (707) 942-2847
Authorized Person to Sign and Submit Reports	Dan Takasugi, Public Works Director, (707) 942-2828
Mailing Address	414 Washington Street, Calistoga, CA 94515
Billing Address	1232 Washington Street, Calistoga, CA, 94515
Type of Facility	Publicly Owned Treatment Works (POTW)
Major or Minor Facility	Minor
Threat to Water Quality	2
Complexity	B
Pretreatment Program	No
Reclamation Requirements	Regional Water Board Order No. 96-011
Facility Permitted Flow	0.84 million gallons per day (MGD) average dry weather flow
Facility Design Flow	0.84 MGD (average dry weather treatment capacity)
	4.0 MGD (peak wet weather treatment capacity)
Watershed	San Pablo
Receiving Water	Napa River
Receiving Water Type	Freshwater
Service Areas	City of Calistoga
Service Area Population	5,300

- A. City of Calistoga (hereinafter the Discharger) owns and operates the Plant, and its associated collection systems, collectively considered the facility. The facility provides either secondary or tertiary treatment of the wastewater collected from its service areas, and discharges to the Napa River during the discharge season. The Discharger’s wastewater collection system includes 12.7 miles of major sanitary sewer lines and various pump stations.

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

- B. The discharge of treated wastewater from the facility to the Napa River, a water of the United States, is currently regulated by Order No. R2-2006-0066 (National Pollutant Discharge Elimination System [NPDES] Permit No. CA0037966), which was adopted on October 11, 2006, and expired on February 28, 2010.
- C. The Discharger filed a Report of Waste Discharge and submitted an application for reissuance of its waste discharge requirements (WDRs) and NPDES permit dated August 2009. The application was deemed complete, and the previous Order has been administratively extended.

II. FACILITY DESCRIPTION

A. Description of Wastewater Treatment

The Plant provides both secondary or tertiary level treatment for domestic, commercial, and some industrial wastewater from the City of Calistoga. The current service population is approximately 5,300. The Discharger has an average dry weather design treatment capacity of 0.84 MGD and can treat up to 4.0 MGD during wet weather. The average combined discharge flow rate from Outfalls 001 and 002 during the 2006 – 2009 discharge seasons was 1.35 MGD; the maximum daily flow was 3.6 MGD.

The treatment process consists of headworks, secondary treatment by activated sludge and clarification, tertiary treatment by coagulation and filtration, and disinfection. After secondary or tertiary treatment, the effluent may be discharged to the Napa River from November 1 through June 15. During the reclamation season, June 16 through October 31, discharge to the Napa River is prohibited. The effluent is treated to tertiary standards and either distributed for recycled water use, or stored in wastewater ponds for future use. The Discharger typically recycles 100 percent of its effluent when discharge is prohibited (June 16 through October 31), and recycles approximately 25 percent of its effluent during the wet season. The Discharger’s recycling activities are governed by General Water Reuse Requirements in Order No. 96-011, adopted by the Regional Water Board on January 17, 1996.

All of the existing, large landscape irrigators in the area are connected to the Discharger’s recycled water system, and the Discharger actively pursues recycled water connections for any large new developments. Landscape irrigation is the only viable reuse option available to the Discharger. Agricultural users will not accept the Discharger’s recycled water due to its high boron content (typically 3 milligrams per liter [mg/L]). The Discharger does not expect to expand its recycled water program to include agricultural irrigation during the permit term due to high cost estimates for boron reduction.

The Plant includes additional facilities for peak wet weather flows. The headworks screens are designed to handle an influent flow of up to 4 MGD. Under peak flow conditions, an additional inflow of 3 MGD can bypass the screens and be temporarily stored in a 5.6 million gallon (MG) equalization basin. Influent stored in the equalization basin is sent to the aeration basins for secondary treatment when influent flows subside to less than 4 MGD. The equalization basin can be emptied at a rate equal to the available aeration basin capacity, up to a maximum of 1 MGD.

The peak wet weather capacity of the treatment plant combined with the 5.6 MG equalization basin has prevented wet-weather bypass to the Napa River since October 2003, when the current facilities became operational.

The Discharger has a Capital Improvement Plan (CIP), which includes a Sewer Master Plan that commences in 2011. Sewer improvement projects are planned for financial years 2012-13, 2014-15, and 2016-17 at \$120,000 each. Several major sources of infiltration and inflow located during a smoke test in summer of 2009 are currently being addressed, and the Discharger’s 5,000-foot vitrified clay pipe trunk line is scheduled for replacement by 2014; it may be replaced earlier in conjunction with other pending public improvements. The Discharger’s CIP also includes a rebate and cost-sharing program for private lateral replacement.

Sludge is collected in the clarifiers and discharged periodically to maintain an optimal bacteria population. The Return Activated Sludge (RAS) is returned to the primary distribution structure and waste sludge is sent to a 72,000-gallon sludge holding tank. Supernatant from the sludge holding tank is sent to the primary distribution structure. Sludge is thickened and placed in the sludge drying beds. Dried sludge is transported for disposal or reuse in compliance with applicable regulations.

The State Water Board adopted a statewide NPDES permit for storm water discharges associated with industrial activities (NPDES General Permit CAS000001). Because the facility average dry weather design flow is less than 1 MGD, coverage under the statewide industrial storm water NPDES permit is not required. All storm water captured within the facility is directed to the headworks for treatment and is therefore regulated by this Order.

B. Discharge Points and Receiving Waters

The Napa River is located in the Napa River hydrologic area within the San Pablo Watershed. The locations of the discharge points and receiving water are shown in Table F-2 below.

Table F-2. Outfall Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Tertiary-treated Municipal Wastewater	38° 33' 34" N	122° 33' 28" W	Napa River
002	Secondary-treated Municipal Wastewater	38° 34' 13" N	122° 33' 40" W	Napa River

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

Effluent limitations contained in the previous Order (Order No. R2-2006-0066) and representative monitoring data from the term of the previous Order, collected during the discharge season, are as follows:

Table F-3a. Previous Effluent Limitations and Monitoring Data for Conventional and Non-Conventional Pollutants for Discharge Point 001

Parameter	(units)	Effluent Limitations			Monitoring Data (From 10/06 to 04/09)		
		Monthly Average	Weekly Average	Daily Maximum	Highest Monthly Average	Highest Weekly Average	Highest Daily Discharge
BOD ₅	mg/L	10	15	---	<5	---	<5
TSS	mg/L	15	20	---	4.3	---	10
Oil and Grease	mg/L	5	---	10	ND	---	J 4
Turbidity	NTU	--	--	10	--	--	2.4
pH	s.u.	Within 6.5 – 8.5			Minimum – 6.8 Maximum – 8.0		
Chlorine, Total Residual	mg/L	---	---	0.0 ^[1]	---	---	< 0.00 ^[1]
Acute Toxicity	% Survival	<ul style="list-style-type: none"> 3-sample median value not less than 90 percent survival Single-sample value not less than 70 percent survival. 			Minimum 3-sample median: 25% Single sample minimum: 0%		
Total Coliform Bacteria	MPN/100 mL	<ul style="list-style-type: none"> 5-day moving median not greater than 23 MPN/100mL Single sample not greater than 240 MPN/100 mL (verified by a repeat sample within 48 hours). 			Maximum 5-day median: 2 Maximum Single Sample: 14		

Table F-3b. Effluent Limitations and Monitoring Data for Conventional and Non-Conventional Pollutants for Discharge Point 002

Parameter	(units)	Effluent Limitations			Monitoring Data (From 10/06 to 04/09)		
		Monthly Average	Weekly Average	Daily Maximum	Highest Monthly Average	Highest Weekly Average	Highest Daily Discharge
BOD ₅	mg/L	30	45	---	<5	---	<5
TSS	mg/L	30	45	---	9	---	13
Oil and Grease	mg/L	10	---	20	J 1.3	---	J 1.3
pH	s.u.	Within 6.5 – 8.5			Minimum – 6.7 Maximum – 7.8		
Chlorine, Total Residual	mg/L	---	---	0.0 ^[1]	---	---	< 0.00 ^[1]
Acute Toxicity	% Survival	<ul style="list-style-type: none"> 3-sample median value not less than 90 percent survival Single-sample value not less than 70 percent survival. 			Minimum 3-sample median: 95% Single sample minimum: 95%		
Total Coliform Bacteria	MPN/100 mL	<ul style="list-style-type: none"> 5-day moving median not greater than 23 MPN/100mL Single sample not greater than 240 MPN/100 mL (verified by a repeat sample within 48 hours). 			Maximum 5-day median: 2 Maximum Single Sample: 7		

Footnotes to Table F-3a and F-3b:

J = estimated concentration
 mg/L = milligrams per liter
 mL/L-hr = milliliters per liter per hour
 MPN/100 mL = Most Probable Number per 100 milliliters

ND = Non-Detect

NA = Not Applicable

% survival = percent survival

⁽¹⁾ Effluent limitation and monitoring results reported as an instantaneous maximum effluent limitation.

Table F-4. Previous Effluent Limitations and Monitoring Data for Toxic Pollutants

Parameter	Units	Final Limits		Interim Limits		Monitoring Data (From 10/06 to 02/09)
		Daily Maximum	Monthly Average	Daily Maximum	Monthly Average	Highest Daily Concentration
Mercury	µg/L	0.042	0.020	---	--	0.018
Copper	µg/L	--	---	14.7	---	9.2
Cyanide	µg/L	--	--	21.6	---	5.5
Chlorodibromomethane	µg/L	--	--	9.6	---	10
Dichlorobromomethane	µg/L	---	---	23	---	29

Footnotes to Table F-4:

Units:

µg/L = micrograms per liter

D. Compliance Summary

- 1. Compliance with Numeric Effluent Limits.** There were two exceedances of numeric effluent limits observed during the previous Order term. The December 2007 results for chlorodibromomethane (10 µg/L) and dichlorobromomethane (29 µg/L) exceeded the interim effluent limits of 9.6 µg/L and 23 µg/L, respectively. Neither violation was noted in the cover letter of the December 2007 Self Monitoring Report (SMR). Regional Water Board staff sent a staff enforcement letter on May 18, 2010, when the violations were discovered.
- 2. Acute toxicity.** The Discharger's acute toxicity monitoring data show five violations of the acute toxicity effluent limitations at Discharge Point 001 from October 2006 – February 2009. Between February 2008 and April 2009, the single-sample minimum of 70 percent survival was violated three times (results of 0, 25, and 65 percent survival) and the minimum three-sample median requirement of 90 percent was violated twice (results of 25 and 65 percent survival). The Discharger subsequently conducted accelerated monitoring and additional testing, as required by its permit, until the results showed a return to compliance. The effluent acute toxicity was attributed to the type of coagulant being used; bioassay results returned to compliance after the coagulant was changed. Regional Water Board staff sent a staff enforcement letter. There were no violations of the acute toxicity effluent limitations at Discharge Point 002.
- 3. Unauthorized Discharges.** The Discharger violated Prohibition III.A of the previous permit against discharges not described in the permit in three separate incidents. From its collection system, the Discharger reported to have discharged 20,600 gallons of untreated wastewater on January 2, 2006, during a heavy winter storm that caused flooding in the area, and 20 gallons on April 6, 2009, due to plastic debris blockage of the sewer line. Up to 2,400 gallons of tertiary-treated, disinfected effluent overflowed a containment berm from Irrigation Field #2 to a nearby drainage ditch and eventually to the Napa River on June 15, 2009. On September 1, 2009, a recycled water user notified the Discharger of four separate

discharges of approximately 600 gallons of tertiary-treated, disinfected effluent from the recycled water user’s irrigation system to a nearby storm drain and thus to the Napa River during the month of August 2009. The Discharger took appropriate follow-up actions to address the causes of these discharges and prevent future violations.

4. Compliance with Previous Order Provisions. A list of special activities required by the previous Order and the status of those requirements are shown in Table F-5, below.

Table F-5. Compliance with Previous Order Provisions

Provision Number	Requirement	Status of Completion
VII.C.2.c	Diffuser Feasibility Study, Design, and Installation (optional)	Discharger did not choose to install a diffuser, and instead pursued the Mixing Zone/Dilution Credit option.
VII.C.2.d	Mixing Zone and Dilution Credit Determination Study (optional)	Discharger submitted a dilution study on June 30, 2009; tracer / field study verification completed in December 2009. Revised study results submitted in April 2010.
VII.C.2.e	Secondary Discharge Performance and Effluent Limitation Study	Based on the conditions of the provision, analysis and reporting was not triggered.
VII.C.4	Compliance Schedules-Dichlorobromomethane and Chlorodibromomethane	Progress reports and annual reports submitted

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

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

B. California Environmental Quality Act (CEQA)

Under CWC Section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA.

C. State and Federal Regulations, Policies, and Plans

- 1. Water Quality Control Plans.** The *Water Quality Control Plan for the San Francisco Bay Basin* (the Basin Plan) is the Regional Water Board’s master water quality control planning document. It designates beneficial uses and water quality objectives (WQOs) for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve WQOs. The Basin Plan was adopted by the Regional Water Board and approved by the State Water Resources Control Board, USEPA, and the Office of Administrative Law, as required. Requirements of this Order implement the Basin Plan.

Table F-6 summarizes the beneficial uses of the Napa River specifically identified by the Basin Plan. In addition, with respect to the Napa River, the Basin Plan implements State Water Board Resolution No. 88-63, which establishes State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply (MUN).

Table F-6. Basin Plan Beneficial Uses of the Napa River

Discharge Point	Receiving Water Name	Beneficial Uses
001 and 002	Napa River	Agricultural Supply (AGR) Municipal and Domestic Supply (MUN) Cold Freshwater Habitat (COLD) Fish Spawning (SPWN) Warm Freshwater Habitat (WARM) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Navigation (NAV) Fish Migration (MIGR) Preservation of Rare and Endangered Species (RARE)

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, and amended it on May 4, 1995, and November 9, 1999. About 40 criteria in the NTR applied in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and incorporated the previously adopted NTR criteria that were applicable in the State. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority toxic pollutants that apply to the receiving waters for this Discharger.

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

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

5. **Antidegradation Policy.** 40 CFR 131.12 requires that State water quality standards include an antidegradation policy consistent with federal policy. The State Water Board established California's antidegradation policy through State Water Board Resolution 68-16, which incorporates the federal antidegradation policy and requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and Resolution 68-16.
6. **Anti-Backsliding Requirements.** CWA Sections 402(o)(2) and 303(d)(4) and NPDES regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous Order, with some exceptions in which limitations may be relaxed. This Order complies with anti-backsliding requirements.

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

CWA Section 303(d) requires identification of specific water bodies that are not expected to meet water quality standards after technology-based effluent limitations on point sources are implemented. The Napa River is listed as impaired by nutrients, pathogens and sediment. San Pablo Bay, to which the Napa River is tributary, is listed as impaired by chlordane, DDT, dieldrin, dioxins and furans, mercury, nickel, PCBs, selenium, and exotic species. The SIP requires final effluent limitations for all 303(d)-listed pollutants to be consistent with total maximum daily loads (TMDLs) and associated waste load allocations (WLAs).

The Regional Water Board adopted a pathogens TMDL for the Napa River on November 13, 2006; a mercury TMDL for San Francisco Bay (including San Pablo Bay) on February 12, 2008; and a sediment TMDL for the Napa River on September 9, 2009. USEPA approved the Napa River pathogens TMDL on November 13, 2006, and the San Francisco Bay mercury TMDL on February 12, 2008.

TMDLs establish WLAs for point sources and load allocations (LAs) for non-point sources and are intended to achieve the water quality standards for the impaired waterbodies. Mercury discharges from the Plant are regulated by Regional Water Board Order No. R2-2007-0077, which implements the mercury TMDL and contains monitoring and reporting requirements. This Order's effluent limitations for total coliform bacteria are consistent with the Napa River pathogen TMDL. This Order's effluent limitations for TSS are consistent with the Napa River sediment TMDL.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point-source dischargers to control their discharges of conventional, non-conventional, and toxic pollutants to waters of the United States. Discharge controls are established by effluent limitations and other NPDES permit requirements. There are two principal bases for effluent limitations in the NPDES regulations: 40 CFR 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 CFR 122.44(d) requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria (WQC), and to protect the receiving water's beneficial

uses. Specific factors affecting the development of this Order's limitations and requirements are discussed below.

A. Discharge Prohibitions

1. **Discharge Prohibition III.A** (Discharge of treated wastewater at a location or in a manner different from that described in this Order is prohibited): This prohibition is based on CWC Section 13260, which requires that a Report of Waste Discharge be filed before a discharge can occur. Discharges not described in the Report of Waste Discharge and thus in this Order are prohibited.
2. **Discharge Prohibition III.B** (Discharge when the river-to-wastewater flow ratio is insufficient is prohibited): This prohibition is intended to ensure that the discharge does not fully use the assimilative capacity of the Napa River in consideration of the other permitted wastewater discharges to this same segment of the river, specifically the City of St. Helena and the Town of Yountville. The detailed calculations underlying the 10:1 ratio for Discharge Point 001 and 50:1 ratio for Discharge Point 002 are included as Attachment F-1 to this Fact Sheet. The calculations are intended to be relatively simple, yet sufficiently protective to ensure that assimilative capacity remains available. They involve the following assumptions:
 - The mass of pollutants flowing downstream through the river equals the masses from each source flowing into the river;
 - Urban runoff flows are about 15 times the combined flows of the treatment plants discharging to the river; and
 - Urban runoff copper loads are about eight times those of the wastewater discharges.

Compliance with Discharge Prohibition III.B ensures, in part, compliance with Basin Plan Table 4-1, Discharge Prohibition 1, which prohibits the discharge of any wastewater with particular characteristics of concern to beneficial uses that does not receive at least a minimum initial dilution of 10:1. The purpose of Discharge Prohibition 1 is to (a) provide an added degree of protection from the continuous effects of waste discharge, (b) provide a buffer against the effects of abnormal discharges caused by temporary plant upsets or malfunctions, (c) minimize public contact with undiluted wastes, and (d) reduce the visual (aesthetic) impacts of waste discharges.

The previous permit required a river-to-wastewater ratio of 10:1 for Discharge Point 001 and, since the secondary effluent from Discharge Point 002 has lower effluent quality than the tertiary effluent from Discharge Point 001, a ratio of 50:1 for Discharge Point 002. This Order retains these river-to-wastewater ratios to minimize the discharge's impact on the receiving water. However, this does not fully address the issue of initial dilution and previous permits did not clearly outline their rationale. Initial dilution for a surface discharge is defined by Basin Plan Section 3.1 as significant mixing produced by the momentum-induced velocity of a discharge. Neither outfall achieves initial dilution of 10:1 or greater as required by Basin Plan Prohibition 1. This fact is made evident in the dilution credit discussion in Fact Sheet Section IV.C.4.b, below, and is addressed by the following justification for a

partial exception for the initial dilution element of Prohibition 1. The minimum river-to-wastewater flow ratios are necessary to ensure compliance with the full intent of Prohibition 1, specifically (b) through (d), above.

The Basin Plan allows for exceptions to Prohibition 1 if there is “an inordinate burden ... relative to beneficial uses protected, and an equivalent level of environmental protection can be achieved by alternate means” In this case, installing diffusers would impose an inordinate burden relative to the beneficial uses protected, and in fact might damage rather than protect beneficial uses. The Discharger estimates that the costs to construct, anchor, and maintain diffusers in a dynamic river bed would be substantial. In addition, consultation with the California Department of Fish and Game raised concerns that a conventional diffuser design would discourage steelhead spawning known to occur in the section of the Napa River where the diffusers would be located. An alternative design could increase diffuser construction and operation costs. Furthermore, constructing a diffuser could have substantial environmental impacts by itself.

Organisms within the mixing zone would be unlikely to experience any acute or chronic toxicity. For most pollutants, the 99th percentile observed during the most recent permit term was less than the most protective water quality objective. Copper and cyanide were exceptions.¹ Nevertheless, the Discharger’s mixing zone study indicates that mixing occurs rapidly, and during worst case conditions, any organisms floating through the mixing zone would have a short residence time (approximately 5 minutes, which is much shorter than the 1-hour averaging period for acute water quality objectives or the 4-day averaging period for chronic water quality objectives) and would therefore be unlikely to experience acute or chronic toxicity. Moreover, the threat to beneficial uses is further minimized because the Order prohibits discharge during most of the year (Prohibition III.C) and allows discharge only when the river-to-wastewater ratio is adequate. The Discharger recycles 100 percent of its effluent when discharge is prohibited (June 16 through October 31), and recycles approximately 25 percent of its effluent during the wet season.

The Discharger provides a level of protection equivalent to installing diffusers by providing tertiary treatment (additional filtration) for the majority of its discharges. This Order contains more stringent effluent limits for BOD, TSS, and turbidity for tertiary-treated wastewater from Discharge Point 001 than those imposed on wastewater treated only to secondary treatment standards. These more stringent effluent limits will ensure that this advanced level of treatment continues. In addition to this advanced treatment, the 10:1 river-to-wastewater flow ratio required at Discharge Point 001 provides additional environmental protection, warranting an exception to Basin Plan Prohibition 1. The Discharger provides equivalent protection for its secondary-treated wastewater by complying with a 50:1 river-to-wastewater flow ratio at Discharge Point 002. The 50:1 river-to-wastewater flow ratio for Discharge Point 002 also encourages maximum wastewater recycling and use of the Plant’s tertiary treatment capacity, and limits secondary-treated discharge to its current level. The Discharger utilizes Discharge Point 002 on a minimal basis in response to peak wet weather events and only when capacity of the filters is exceeded. In fact, Discharge Point 002 was

¹ Antimony, chlorodibromomethane, and dichlorobromomethane are also exceptions, but the objectives for these pollutants are not for aquatic life protection; they are for human health protection from the consumption of fish and water, and for protection of waters suitable or potentially suitable for drinking water supply (antimony). Although the Napa River’s beneficial uses include MUN, there are no known drinking water intakes in the upper Napa River.

used for just 20 days during the 2008/09 discharge season and for only 20 days during the 2009/10 discharge season. The Discharger can operate its facility under this requirement without hardship.

During previous permit terms, the Discharger evaluated the river-to-wastewater flow ratio using an estimated flow rate measured at RSW-004. In 2009, the Discharger worked with the Napa County Resource Conservation District to install a stream gage with telemetry on the Dunaweal Bridge (RSW-007). The sensors became operational in December 2009, and data collected at this point is being used to calibrate the sensor to the staff gage. When calibration is complete, the Discharger will initiate a formal request to the Executive Officer to change the river flow monitoring site to RSW-007.

In addition to providing advanced treatment for most of its discharges and restricting discharges to times when river-to-wastewater flows are sufficient, this Order also requires the Discharger to evaluate the reliability of its treatment system to prevent inadequately treated wastewater from being discharged into the receiving waters. The requirement to maintain a Reliability Status Report (Section VI.C.4.a) protects against the discharge of inadequately treated wastewater and also helps to ensure continued advanced treatment of tertiary discharges. It provides a buffer against the potential effects of any abnormal discharges that could be caused by temporary Plant upsets or malfunctions. Therefore, this discharge satisfies the inordinate burden / equivalent protection exception that the Basin Plan allows for Prohibition 1 because compliance with the requirements in this Order provides an alternate means to ensure an equivalent level of protection in lieu of imposing an inordinate burden on the Discharger.

3. **Discharge Prohibition III.C** (No bypass or overflow of untreated or partially treated wastewaters): This prohibition is based on 40 CFR 122.41(m). See Federal Standard Provisions, Attachment D.
4. **Discharge Prohibition III.D** (Average dry weather flow not to exceed dry weather design capacity): This prohibition is based on the design treatment capacity of the Plant. Exceedance of the Plant's average dry weather flow design capacity of 0.84 MGD may lower its ability to reliably comply with water quality requirements.
5. **Discharge Prohibition III.E** (No sanitary sewer overflows to waters of the United States): Basin Plan Table 4-1, Discharge Prohibition No. 15, and the CWA prohibit the discharge of wastewater to surface waters except as authorized by an NPDES permit. POTWs must at least achieve secondary treatment and meet any more stringent limitations necessary to achieve water quality standards [33 U.S.C. § 1311 (b)(1)(B and C)]. Therefore, a sanitary sewer overflow that results in the discharge of raw sewage, or sewage not meeting secondary treatment requirements, to surface waters is prohibited under the CWA and the Basin Plan.
6. **Discharge Prohibition III.F** (Discharge to Napa River is prohibited from June 16 through October 31 each year): This prohibition is retained from the previous Order and is based on Basin Plan Discharge Prohibition 1, which prohibits the discharge of any wastewater that does not receive at least 10:1 dilution. During the dry season, the Napa River's decreased flow does not provide sufficient dilution; discharge is therefore prohibited, except for emergency discharges approved as required by Section VI.C.6 of this Order and further

discussed in Fact Sheet Section VII.C.6, to protect downstream beneficial uses. (See Discharge Prohibition III.B, above, for rationale for allowing discharge during remainder of year.)

7. **Discharge Prohibition III.G.** (Discharge of elevated temperature waste into a receiving water that supports cold fresh water habitat is prohibited unless it can be demonstrated that such an alteration does not adversely affect the beneficial uses of the receiving water): This requirement is based on Basin Plan Section 3.3.17, Temperature, and the Thermal Plan, and is unchanged from the previous Order.

The Discharger receives thermal discharges from hot springs within its service area, and the discharge therefore has higher temperatures than the receiving water. The Discharger conducted a special study indicating that receiving water temperatures do not increase for a time period or at a magnitude great enough to cause adverse impacts to the beneficial uses of Napa River. These results were reported in a February 27, 2002, letter report, *Results from Calistoga Receiving Water Study*. Differences between temperatures upstream and downstream of the discharge were less than 5°C. The maximum temperatures measured upstream and downstream of the discharge were 14.96 and 17.17°C, respectively, in March – April 2001. This was also the maximum change in temperature upstream to downstream. All temperatures were in an acceptable range for steelhead of 6.7 to 22°C, with most less than 15°C. Healthy cold water fish populations were observed in the vicinity of the discharge.

B. Technology-Based Effluent Limitations

1. Scope and Authority

CWA Section 301(b)(1)(B) requires USEPA to develop secondary treatment standards (the level of effluent quality attainable through application of secondary or equivalent treatment) for POTWs. USEPA promulgated such technology-based effluent guidelines at 40 CFR 133. These secondary treatment regulations include the following minimum requirements for POTWs that apply to Plant discharges.

Table F-7. Secondary Treatment Requirements

Parameter	Units	30-Day Average	7-Day Average
BOD ₅	mg/L	30	45
TSS	mg/L	30	45
BOD and TSS	% Removal	85	--
pH	standard unit	6.0 - 9.0	

This Order retains the effluent limitations for conventional and non-conventional pollutants from the previous Order.

2. BOD₅ and TSS

The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 CFR 133. In addition, CWA Section 301(b) and 40 CFR 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent

limitations necessary to meet applicable water quality standards. 40 CFR 122.45(d) specifies that discharge limitations for POTWs shall be stated as average weekly limitations and average monthly limitations, unless impracticable.

The BOD₅ and TSS effluent limitations, including the 85 percent removal requirement, are technologically feasible for advanced wastewater treatment technologies. For Discharge Point 001, the BOD₅ and TSS limitations reflect the fact that the Napa River is a unique water body, with a limited capacity to assimilate wastewater. The limited assimilative capacity of the Napa River necessitates effluent BOD and TSS limitations that are more restrictive than those required for secondary treatment. This higher level of treatment, in part, justifies an exception to Basin Plan Prohibition 1 based on equivalent protection (see Fact Sheet Section IV.A.2).

For Discharge Point 002, the BOD₅ and TSS effluent limits reflect secondary treatment requirements; the more stringent river-to-wastewater ratio requirement for discharge from Discharge Point 002, discussed in Fact Sheet Section IV.A.2 above, further protects the limited assimilative capacity of the receiving water. The Discharger has consistently met limits on conventional pollutants that are more stringent than the secondary treatment standards.

3. Oil and Grease

The effluent limitations for oil and grease are based on Basin Plan Table 4-2 for shallow water dischargers.

4. pH

The effluent limitations for pH are based on Basin Plan Table 4-2 for shallow water dischargers.

5. Total Chlorine Residual

The effluent limitation for total chlorine residual is based on Basin Plan Table 4-2.

6. Turbidity

The effluent limitation for turbidity at Discharge Point 001 is unchanged from the previous Order and is representative of adequate and reliable tertiary level wastewater treatment. This limitation is a technologically feasible standard for the advanced wastewater treatment technologies in use at the Plant and, in part, justifies an exception to Basin Plan Prohibition 1 based on equivalent protection (see Fact Sheet Section IV.A.2). Self-monitoring data show the Discharger has been able to consistently comply with this turbidity effluent limit.

7. Total Coliform Bacteria

The effluent limitations for total coliform bacteria are based on the alternative total coliform limitations for shallow water dischargers in Basin Plan Table 4-2, and are unchanged from the previous Order. Alternate limitations for total coliform bacteria are used as allowed by footnote e because these limitations will not compromise the beneficial uses of the receiving

water. The total coliform limits are consistent with the Basin Plan amendment the Regional Water Board approved through Resolution No. R2-2010-0066.

C. Water Quality-Based Effluent Limitations (WQBELs)

WQBELs have been derived to implement WQOs that protect beneficial uses. Both the beneficial uses and the WQOs have been approved pursuant to federal law. The procedures for calculating individual WQBELs are based on the SIP and the Basin Plan. Most beneficial uses and WQOs contained in the Basin Plan were approved under State law and submitted to and approved by USEPA prior to May 30, 2000. Any WQOs and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless applicable water quality standards for purposes of the CWA pursuant to 40 CFR 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than the applicable CWA water quality standards.

1. Scope and Authority

- a. 40 CFR 122.44(d)(1)(i) requires permits to include effluent limitations for pollutants (including toxicity) that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an excursion of a water quality standard, including numeric and narrative objectives within a standard. As specified in 40 CFR 122.44(d)(1)(i), permits are required 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." Where reasonable potential has been established for a pollutant, but there is no numeric objective for the pollutant, WQBELs must be established using (1) USEPA criteria guidance under CWA Section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric criterion, such as a proposed state criterion or policy interpreting the state's narrative objective, supplemented with other relevant information, as provided in Section 122.44(d)(1)(vi).

The process for determining Reasonable Potential and calculating WQBELs when necessary is intended to protect the designated beneficial uses of the receiving water as specified in the Basin Plan, and to achieve applicable WQOs.

- b. NPDES regulations and the SIP provide the basis to establish maximum daily effluent limitations (MDELs).
 - (1) **NPDES Regulations.** 40 CFR 122.45(d) states, "For continuous discharges all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall *unless impracticable* be stated as maximum daily and average monthly discharge limitations for all discharges other than publicly owned treatment works."
 - (2) **SIP.** The SIP (page 8, Section 1.4) requires WQBELs to be expressed as MDELs and average monthly effluent limitations (AMELs).

- c. MDELS are used in this Order to protect against acute water quality effects. The MDELS are necessary for preventing fish kills or mortality to aquatic organisms.

2. Applicable Beneficial Uses and Water Quality Objectives

The WQOs applicable to the receiving water for this discharge are from the Basin Plan; the CTR, established by USEPA at 40 CFR 131.38; and the NTR, established by USEPA at 40 CFR 131.36. Some pollutants have WQOs established by more than one of these three sources.

- a. **Basin Plan.** The Basin Plan specifies numeric WQOs for 10 priority toxic pollutants, as well as narrative WQOs for toxicity and bioaccumulation in order to protect beneficial uses. The pollutants for which the Basin Plan specifies numeric objectives are arsenic, cadmium, chromium (VI), copper, lead, mercury, nickel, silver, zinc, and cyanide. The narrative toxicity objective states in part, “All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms.” The bioaccumulation objective states in part, “Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered.” Effluent limitations and provisions contained in this Order are based on available information to implement these objectives.

The receiving water for the City of Calistoga discharge includes a beneficial use category of Municipal and Domestic Supply. Basin Plan Chapter 3 establishes Maximum Contaminant Levels (MCLs) listed in Title 22, Division 4, Chapter 15, of the California Code of Regulations as water quality objectives applicable to receiving waters with the beneficial use designation of Municipal and Domestic Supply.

- b. **CTR.** The CTR specifies numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to all inland surface waters and enclosed bays and estuaries of San Francisco Bay Region, although the Basin Plan includes numeric objectives for certain of these priority toxic pollutants that supersede CTR criteria.
- c. **NTR.** The NTR establishes numeric aquatic life criteria for selenium and numeric human health criteria for 33 toxic organic pollutants for waters of San Francisco Bay upstream to and including Suisun Bay and the Sacramento River-San Joaquin River Delta. These criteria apply to the Napa River, the receiving water for this discharge.
- d. **Basin Plan Receiving Water Salinity Policy.** The Basin Plan (like the CTR and the NTR) states that the salinity characteristic (i.e., freshwater vs. saltwater) of the receiving water is to be considered in determining the applicable WQO. Freshwater objectives apply to discharges to waters with salinities equal to or less than one part per thousand (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 between these two categories, or tidally influenced freshwaters that support estuarine beneficial uses, the criteria are to be the lower of the salt or freshwater criteria (the latter calculated based on ambient hardness) for each substance.

The Napa River is a freshwater river. As confirmed by the “Collaborative Napa River Receiving Water Evaluation,” all the salinity data for the Napa River upstream and downstream of the discharge falls below 1 ppt, indicating a freshwater environment. The RPA and effluent limitations in this Order are therefore based on freshwater WQOs.

- e. **Receiving Water Hardness.** Ambient hardness is used to calculate hardness-dependent freshwater WQOs. A hardness of 65 mg/L as calcium carbonate (CaCO_3) is used for this Order. This is the adjusted geometric mean of 253 hardness data points collected between January 2002 and February 2009.
- f. **Metals Translators.** 40 CFR 122.45(c) requires that effluent limitations for metals be expressed as total recoverable metal. Since applicable WQOs for metals are typically expressed as dissolved metal, factors or translators must be used to convert metals concentrations from dissolved to total recoverable and vice versa. The CTR at 40 CFR 131.38(b)(2), Table 2, includes default translators that are used in NPDES permitting. In determining the need for and calculating WQBELs for all applicable metals, the default translators were used.

3. Determining the Need for WQBELs

Assessing whether a pollutant has “Reasonable Potential” is the fundamental step in determining whether or not a WQBEL is required. Using the methods prescribed in SIP Section 1.3, the effluent data were analyzed to determine if the discharge demonstrates Reasonable Potential. The RPA compares the effluent data with numeric and narrative WQOs in the Basin Plan, the NTR, and the CTR.

- a. **Reasonable Potential Methodology.** The RPA identifies the observed maximum effluent concentration (MEC) for each pollutant based on existing effluent data. The following three triggers determine Reasonable Potential.
 - (1) The first trigger (Trigger 1) is activated if the MEC is greater than or equal to the lowest applicable WQO ($\text{MEC} \geq \text{WQO}$), which has been adjusted, if appropriate, for pH, hardness, and translator data. If the MEC is greater than or equal to the adjusted WQO, then that pollutant has Reasonable Potential, and a WQBEL is required.
 - (2) The second trigger (Trigger 2) is activated if the observed maximum ambient background concentration (B) is greater than the adjusted WQO ($B > \text{WQO}$), and the pollutant is detected in any of the effluent samples ($\text{MEC} > \text{ND}$).
 - (3) The third trigger (Trigger 3) is activated if a review of other information determines that a WQBEL is required to protect beneficial uses, even though both MEC and B are less than the WQO. A limitation may be required under certain circumstances to protect beneficial uses.
- b. **Effluent Data.** This RPA is based on the effluent monitoring data from monitoring locations 001 and 002, collected by the Discharger from January 2005 through April 2009. All data are from discharges during the months of November through May.

- c. Ambient Background Data.** On March 5, 2003, a group of five dischargers to the Napa River, including the City of Calistoga, submitted the “Collaborative Napa River Receiving Water Evaluation,” which provided ambient background data for the non-tidal section of the Napa River upstream of the City of Napa. Water quality data from a monitoring location immediately upstream of the discharge was selected to represent background water quality for the RPA, which used freshwater water quality objectives. These data were supplemented by receiving water data collected by the City of Calistoga, the City of St. Helena, and the Town of Yountville from April 2007 to February 2009. (The Napa Sanitation District and the City of American Canyon were not involved in recent monitoring efforts because their discharges are located in the lower, tidally-influenced section of the Napa River.) The SIP states that, for calculating WQBELs, ambient background concentrations are either the observed maximum ambient water column concentrations or, for objectives intended to protect human health from carcinogenic effects, the arithmetic mean of observed ambient water concentrations. For the RPA, ambient background concentrations are the observed maximum detected water column concentrations.
- d. Reasonable Potential Determination.** The MECs, most stringent applicable WQC, and background concentrations used in the RPA are presented in the Table F-9, below, along with the RPA result (Yes or No) for each pollutant analyzed. Reasonable Potential was not determined for all pollutants because there are not applicable WQOs for all pollutants and monitoring data are unavailable for others. The RPA determined that antimony, copper, cyanide, chlorodibromomethane, and dichlorobromomethane demonstrate reasonable potential by Trigger 1; and dioxin-TEQ demonstrates reasonable potential by Trigger 3.

Table F-8. Reasonable Potential Analysis Summary

CTR #	Priority Pollutants	MEC or Minimum DL ^{[a][b]} (µg/L)	Governing WQC (µg/L)	Maximum Background or Minimum DL ^{[a][b]} (µg/L)	RPA Results ^[c]
1	Antimony	19	6	1.8	Yes
2	Arsenic	22	50	4.3	No
3	Beryllium	< 0.006	4	0.06	No
4	Cadmium	0.09	0.8	< 0.02	No
5a	Chromium (III)	0.5	50	1.8	No
5b	Chromium (VI)	< 0.5	11	< 0.6	No
6	Copper	9.2	6.5	3.1	Yes
7	Lead	0.45	1.8	1.1	No
8	Mercury ^[d]	0.018	0.025	0.036	Yes
9	Nickel	3.1	36	4.1	No
10	Selenium	10.34	5	3	No
11	Silver	0.04	1.9	0.02	No
12	Thallium	0.1	1.7	< 0.01	No
13	Zinc	71	83	12	No
14	Cyanide	9.2	5.2	<0.6	Yes
15	Asbestos (MFL)	< 0.2	7000000	< 0.99	No
16	2,3,7,8-TCDD	< 3.4E-7	1.3E-08	< 3.4 E-07	No
	Dioxin TEQ	1.2E-09	1.3E-08	1.1 E-11	Yes
17	Acrolein	< 0.5	320	<1.2	No
18	Acrylonitrile	< 0.33	0.059	< 0.58	No
19	Benzene	< 0.03	1.0	< 0.1	No

CTR #	Priority Pollutants	MEC or Minimum DL ^{[a][b]} (µg/L)	Governing WQC (µg/L)	Maximum Background or Minimum DL ^{[a][b]} (µg/L)	RPA Results ^[c]
20	Bromoform	0.7	4.3	< 0.09	No
21	Carbon Tetrachloride	0.2	0.25	< 0.06	No
22	Chlorobenzene	< 0.03	70	< 0.1	No
23	Chlorodibromomethane	10	0.41	< 0.08	Yes
24	Chloroethane	< 0.03	No Criteria	< 0.11	Ud
25	2-Chloroethylvinyl ether	< 0.1	No Criteria	< 0.29	Ud
26	Chloroform	56	No Criteria	< 0.09	Ud
27	Dichlorobromomethane	29	0.56	< 0.08	Yes
28	1,1-Dichloroethane	< 0.04	5	< 0.06	No
29	1,2-Dichloroethane	< 0.04	0.38	< 0.09	No
30	1,1-Dichloroethylene	< 0.06	0.057	< 0.07	No
31	1,2-Dichloropropane	< 0.03	0.52	< 0.07	No
32	1,3-Dichloropropylene	< 0.03	0.5	< 0.07	No
33	Ethylbenzene	< 0.04	300	< 0.09	No
34	Methyl Bromide	0.4	48	< 0.06	No
35	Methyl Chloride	1.0	No Criteria	< 0.09	Ud
36	Methylene Chloride	0.37	4.7	< 0.08	No
37	1,1,2,2-Tetrachloroethane	< 0.04	0.17	< 0.07	No
38	Tetrachloroethylene	< 0.04	0.8	< 0.12	No
39	Toluene	0.3	150	< 0.06	No
40	1,2-Trans-Dichloroethylene	< 0.05	10	< 0.09	No
41	1,1,1-Trichloroethane	< 0.05	200	< 0.11	No
42	1,1,2-Trichloroethane	< 0.03	0.6	< 0.06	No
43	Trichloroethylene	< 0.05	2.7	< 0.07	No
44	Vinyl Chloride	< 0.05	0.5	< 0.14	No
45	2-Chlorophenol	< 0.98	120	< 0.8	No
46	2,4-Dichlorophenol	< 0.90	93	< 0.7	No
47	2,4-Dimethylphenol	< 0.87	540	< 0.8	No
48	2-Methyl- 4,6-Dinitrophenol	< 0.91	13.4	< 0.6	No
49	2,4-Dinitrophenol	< 0.83	70	< 0.6	No
50	2-Nitrophenol	< 0.89	No Criteria	< 0.6	Ud
51	4-Nitrophenol	< 0.83	No Criteria	< 0.7	Ud
52	3-Methyl 4-Chlorophenol	< 0.91	No Criteria	< 0.6	Ud
53	Pentachlorophenol	< 1.0	0.28	< 0.6	No
54	Phenol	< 0.69	21000	< 0.6	No
55	2,4,6-Trichlorophenol	< 0.97	2.1	< 0.6	No
56	Acenaphthene	< 0.03	1200	< 0.03	No
57	Acenaphthylene	< 0.02	No Criteria	< 0.02	Ud
58	Anthracene	< 0.03	9600	0.02	No
59	Benzidine	< 1	0.00012	< 5	No
60	Benzo(a)Anthracene	< 0.02	0.0044	< 0.02	No
61	Benzo(a)Pyrene	< 0.02	0.0044	< 0.02	No
62	Benzo(b)Fluoranthene	< 0.02	0.0044	< 0.02	No
63	Benzo(ghi)Perylene	< 0.02	No Criteria	< 0.02	Ud
64	Benzo(k)Fluoranthene	< 0.02	0.0044	< 0.03	No
65	Bis(2-Chloroethoxy)Methane	< 0.8	No Criteria	< 0.7	Ud
66	Bis(2-Chloroethyl)Ether	< 0.7	0.031	< 0.9	No
67	Bis(2-Chloroisopropyl)Ether	< 0.7	1400	< 0.6	No
68	Bis(2-Ethylhexyl)Phthalate	< 0.5	1.8	< 0.6	No
69	4-Bromophenyl Phenyl Ether	< 0.97	No Criteria	< 0.97	Ud
70	Butylbenzyl Phthalate	< 0.98	3000	< 0.7	No
71	2-Chloronaphthalene	< 0.6	1700	< 0.98	No
72	4-Chlorophenyl Phenyl Ether	< 0.99	No Criteria	< 0.99	Ud

CTR #	Priority Pollutants	MEC or Minimum DL ^{[a][b]} (µg/L)	Governing WQC (µg/L)	Maximum Background or Minimum DL ^{[a][b]} (µg/L)	RPA Results ^[c]
73	Chrysene	< 0.02	0.0044	< 0.02	No
74	Dibenzo(a,h)Anthracene	< 0.03	0.0044	< 0.02	No
75	1,2-Dichlorobenzene	< 0.03	600	< 0.11	No
76	1,3-Dichlorobenzene	< 0.03	400	< 0.11	No
77	1,4-Dichlorobenzene	0.2	5	< 0.1	No
78	3,3 Dichlorobenzidine	< 0.6	0.04	< 0.1	No
79	Diethyl Phthalate	<0.86	23000	< 0.6	No
80	Dimethyl Phthalate	< 0.6	313000	< 0.7	No
81	Di-n-Butyl Phthalate	< 0.6	2700	< 0.6	No
82	2,4-Dinitrotoluene	< 0.9	0.11	< 0.6	No
83	2,6-Dinitrotoluene	< 0.5	No Criteria	< 0.6	Ud
84	Di-n-Octyl Phthalate	< 0.7	No Criteria	< 0.7	Ud
85	1,2-Diphenylhydrazine	< 0.9	0.04	< 0.6	No
86	Fluoranthene	<0.03	300	< 0.02	No
87	Fluorene	< 0.03	1300	< 0.02	No
88	Hexachlorobenzene	< 0.8	0.00075	< 0.91	No
89	Hexachlorobutadiene	< 0.8	0.44	< 0.92	No
90	Hexachlorocyclopentadiene	< 0.8	50	< 0.8	No
91	Hexachloroethane	< 0.9	1.9	< 0.94	No
92	Indeno(1,2,3-cd)Pyrene	< 0.02	0.0044	< 0.02	No
93	Isophorone	< 0.5	8.4	< 0.8	No
94	Naphthalene	< 0.02	No Criteria	< 0.02	Ud
95	Nitrobenzene	< 0.7	17	< 0.7	No
96	N-Nitrosodimethylamine	< 0.6	0.00069	< 0.8	No
97	N-Nitrosodi-n-Propylamine	< 0.8	0.005	< 0.6	No
98	N-Nitrosodiphenylamine	< 0.6	5	< 0.6	No
99	Phenanthrene	< 0.02	No Criteria	0.04	Ud
100	Pyrene	< 0.02	960	< 0.02	No
101	1,2,4-Trichlorobenzene	< 0.98	5	< 0.98	No
102	Aldrin	< 0.002	0.00013	< 0.002	No
103	Alpha-BHC	< 0.002	0.0039	< 0.002	No
104	Beta-BHC	< 0.002	0.014	< 0.002	No
105	Gamma-BHC	< 0.002	0.019	< 0.002	No
106	Delta-BHC	< 0.002	No Criteria	< 0.002	Ud
107	Chlordane	< 0.02	0.00057	< 0.02	No
108	4,4'-DDT	< 0.002	0.00059	< 0.003	No
109	4,4'-DDE	< 0.003	0.00059	< 0.003	No
110	4,4'-DDD	< 0.002	0.00083	< 0.003	No
111	Dieldrin	< 0.002	0.00014	< 0.002	No
112	Alpha-Endosulfan	< 0.002	0.056	< 0.003	No
113	beta-Endosulfan	< 0.002	0.056	< 0.003	No
114	Endosulfan Sulfate	< 0.002	110	< 0.002	No
115	Endrin	< 0.002	0.036	< 0.002	No
116	Endrin Aldehyde	< 0.002	0.76	< 0.002	No
117	Heptachlor	< 0.003	0.00021	< 0.003	No
118	Heptachlor Epoxide	< 0.002	0.0001	< 0.002	No
119-125	PCBs sum	< 0.03	0.00017	< 0.002	No
126	Toxaphene	< 0.15	0.0002	< 0.19	No
	Tributyltin	< 0.000485	0.072	< 0.00036	No
	Total PAHs	< 0.02	No Criteria	0.06	Ud
	Total Ammonia (mg/L N)	0.3 ^[e]	1.2 ^[e]	< 0.04	No

Footnotes:

- [a] The MEC and maximum background concentration are the actual detected concentrations unless preceded by a “<” sign, in which case the value shown is the minimum detection level.
- [b] The MEC or maximum background concentration is “Not Available” when there are no monitoring data for the constituent.
- [c] RPA Results = Yes, if MEC > WQC, or if B > WQC and MEC is detected, or Trigger 3;
= No, if MEC and B are < WQC or all effluent data are undetected;
= Undetermined (Ud), if no criteria have been promulgated or there are insufficient data.
- [d] Though reasonable potential was found for mercury, the discharge of mercury from the facility is regulated by Regional Water Board Order No. R2-2007-0077, which implements a mercury TMDL and is unaffected by this Order.
- [e] Calculated as described in the May 25, 2007, memo *Ammonia Regulation in NPDES Permits*.

(1) Constituents with Limited Data. In some cases, Reasonable Potential cannot be determined because effluent data are limited, or ambient background concentrations are unavailable. The Discharger will continue to monitor for these constituents in the effluent using analytical methods that provide the best feasible detection limits. When additional data become available, further RPA will be conducted to determine whether to add numeric effluent limitations.

(2) Pollutants with No Reasonable Potential. WQBELs are not included in this Order for constituents that do not demonstrate Reasonable Potential; however, monitoring for those pollutants is still required.

4. WQBEL Calculations

- a. Pollutants with Reasonable Potential.** WQBELs were developed for the pollutants determined to have reasonable potential to cause or contribute to exceedances of the WQOs. The WQBELs were calculated based on appropriate WQOs and the procedures specified in SIP Section 1.4. The WQOs used for each pollutant with Reasonable Potential are discussed below.
- b. Dilution Credit.** This Order allows dilution credits for certain pollutants. SIP Section 1.4.2.1 requires an evaluation of the receiving water available to provide dilution of the discharge, which is classified as “completely-mixed” or “incompletely-mixed.” A completely-mixed discharge is defined as one where the concentration of a pollutant across a transect of the water body within two river widths downstream of the discharge point does not vary by more than five percent.

Neither of the Plant’s outfalls has a diffuser, and the Discharger’s April 2010 mixing zone study (*City of Calistoga Effluent Mixing Zone / Dilution Credit Study*, Larry Walker Associates, Inc., April 2010) concurs with the Regional Water Board’s finding in the previous Order that the discharge is incompletely-mixed. The mixing zone study consisted of a tracer study conducted on December 21, 2009, and simulation modeling using the USEPA-supported CORMIX mixing zone model.

During the tracer study, the width of the river varied from approximately 6 to 19 feet from Outfall 001 to a point 120 feet downstream. The plume was fully mixed vertically and laterally at a point between 70 and 120 feet downstream from the outfall (dense bank vegetation prevented plume monitoring between these points). Dilution at this point was

approximately equal to 10:1 because the discharge flow rate was limited to 10 percent of the measured Napa River flow rate.

CORMIX was calibrated based on the results of the tracer study. The calibration run found that the near-field dilution of the plume was approximately 3:1 at a downstream distance of approximately 45 feet; the plume was fully mixed vertically and laterally approximately 90 feet downstream from the outfall.

CORMIX was then run for five critical flow conditions for each outfall, with flows from Discharge Points 001 and 002 set to 10:1 and 50:1 river-to-wastewater flow ratios, respectively. The five critical flow scenarios were based on

- (1) maximum daily average flow,
- (2) minimum daily average flow,
- (3) maximum four-day average flow,
- (4) minimum four-day average flow, and
- (5) long-term average flow.

These scenarios correspond to acute water quality objectives (scenarios 1 and 2), chronic water quality objectives (scenarios 3 and 4), and human health water quality objectives (scenario 5). Chronic water quality objectives are the most stringent for copper, and cyanide, while the human health objective is most stringent for antimony, chlorodibromomethane, and dichlorobromomethane. Mixing zone size was evaluated at the point where the plumes were fully vertically and laterally mixed (to achieve 10:1 dilution).

The largest mixing zones based on scenarios 3 and 4 were 410 feet long by 15 feet wide for Discharge Point 001, and 43 feet long by 5 feet wide for Discharge Point 002. The mixing zones based on scenario 5 were 525 feet long by 12 feet wide for Discharge Point 001, and 8 feet long by 7 feet wide for Discharge Point 002. The modeled plumes hugged the shoreline nearest the discharge. Near-field (i.e., momentum-induced) dilution corresponding to these scenarios ranged from approximately 3:1 to 4:1 at distances ranging from approximately 3 to 17 feet downstream of the modeled outfall.

The SIP allows dilution credits for completely-mixed discharges, and incompletely-mixed discharges under certain circumstances. SIP Section 1.4.2.2 allows mixing zones and dilution credits for incompletely-mixed discharges, but the mixing zone must be as small as practicable and it must not:

- Compromise the integrity of the water body;
- Cause acute toxicity conditions to aquatic life passing through the mixing zone;
- Restrict the passage of aquatic life;
- Adversely impact biologically sensitive or critical habitats, including, but not limited to, habitats of species listed under federal or State endangered species laws;
- Produce undesirable or nuisance aquatic life;
- Result in floating debris, oil, or scum;
- Produce objectionable color, odor, taste, or turbidity;

- Cause objectionable bottom deposits;
- Cause nuisance;
- Dominate the receiving water body or overlap a mixing zone from different outfall; or
- Be located at or near any drinking water intake.

The Discharger's April 2010 study found that the modeled mixing zones discussed above (extending as far as 525 feet long or 15 feet wide) would comply with all the above conditions. On a pollutant-by-pollutant basis, the smallest practicable mixing zone can be no larger than those evaluated in the study. Since these mixing zones meet the SIP criteria listed above, smaller mixing zones also meet these criteria.

For each pollutant, the smallest practicable mixing zone is the mixing zone that results in the smallest dilution credit, not to exceed 10:1 which is the upper bound for the model results. The dilution credit was determined based on the smallest credit resulting in WQBELs with which the Discharger could comply. The dilution credits were set so that the 95th percentile of the historic effluent data was less than the resulting AMEL; the 99th percentile was less than the resulting MDEL; and the mean was less than the resulting long term average of the projected distribution. This Order allows dilution credits of D=1 for cyanide, D=2 for copper, and D=4 for antimony, corresponding to estimated maximum dilution zone sizes of approximately 12 feet by 1.1 feet, 11 feet by 1.9 feet, and 79 feet by 1.9 feet, respectively. Regional Water Board staff estimated these mixing zone sizes based on CORMIX output the Discharger provided. The maximum dilution credit of D=9 was used for chlorodibromomethane and dichlorobromomethane; however, the Discharger cannot comply with these effluent limits. The mixing zone study does not justify a larger mixing zone and greater dilution credit.

No dilution credit was granted for dioxin-TEQ because it is bioaccumulative and the receiving water flows into San Francisco Bay, which is listed as impaired by dioxins and furans.

c. Calculation of Pollutant-Specific WQBELs

(1) Antimony

- (a) Antimony WQO.** The most stringent WQO for antimony is the Title 22 primary MCL for drinking water of 6.0 micrograms per liter ($\mu\text{g/L}$).
- (b) RPA Results.** This Order establishes effluent limitations for antimony because the MEC of 19 $\mu\text{g/L}$ exceeds the governing WQO for antimony, demonstrating Reasonable Potential by Trigger 1.
- (c) Antimony WQBELs.** Effluent limitations for antimony, calculated according to SIP procedures with a CV of 0.27, are an AMEL of 25 $\mu\text{g/L}$ and an MDEL of 36 $\mu\text{g/L}$.
- (d) Immediate Compliance Feasible.** Statistical analysis of antimony effluent data collected from January 2005 through April 2009, shows that it is feasible for the

Discharger to comply with the effluent limits. The 95th percentile of the data set (20 µg/L) is less than the AMEL (25 µg/L) and the 99th percentile (24 µg/L) is less than the MDEL (36 µg/L).

- (e) **Anti-backsliding.** Anti-backsliding requirements are satisfied because the previous Order did not include effluent limitations for antimony.

(2) Copper

- (a) **Copper WQO.** The most stringent WQOs for copper are the Basin Plan's chronic and acute freshwater aquatic life criteria of 6.5 and 9.3 µg/L, respectively, expressed as total metal and based on a hardness of 65 mg/L as CaCO₃.
- (b) **RPA Results.** This Order establishes effluent limitations for copper because the MEC of 9.2 µg/L exceeds the governing WQO for copper, demonstrating Reasonable Potential by Trigger 1.
- (c) **Copper WQBELs.** Effluent limitations for copper, calculated according to SIP procedures with a CV of 0.49, are an AMEL of 11 µg/L and an MDEL of 20 µg/L.
- (d) **Immediate Compliance Feasible.** Statistical analysis of copper effluent data collected from January 2005 through April 2009 shows that it is feasible for the Discharger to comply with the effluent limits. The 95th percentile (9.0 µg/L) is less than the AMEL (11 µg/L); the 99th percentile (13 µg/L) is less than the MDEL (20 µg/L); and the mean (4.6 µg/L) is greater than the long term average of the projected lognormal distribution of the effluent data set after accounting for effluent variability (7.7 µg/L).
- (e) **Anti-backsliding.** Anti-backsliding requirements are satisfied because the previous Order did not include final effluent limitations for copper.

(3) Cyanide

- (a) **Cyanide WQO.** The most stringent applicable WQOs for cyanide are the Basin Plan's chronic and acute criteria for protection of fresh water aquatic life of 22 µg/L and 5.2 µg/L, respectively.
- (b) **RPA Results.** This Order establishes effluent limitations for cyanide because the MEC of 9.2 µg/L exceeds the chronic WQO for this pollutant, demonstrating Reasonable Potential by Trigger 1.
- (c) **Cyanide WQBELs.** Effluent limitations for cyanide, calculated according to SIP procedures with a CV of 0.90, are an AMEL of 7.3 µg/L and an MDEL of 18 µg/L.
- (d) **Immediate Compliance Feasible.** Statistical analysis of cyanide effluent data collected from January 2005 through April 2009 shows that it is feasible for the Discharger to comply with the effluent limits. The 95th percentile of the data set

(6.1 µg/L) is less than the AMEL (7.3 µg/L); the 99th percentile (7.8 µg/L) is less than the MDEL (18 µg/L); and the mean (2.3 µg/L) is less than the long term average of the projected normal distribution of the effluent data set after accounting for effluent variability (4.0 µg/L).

- (e) **Anti-backsliding.** Anti-backsliding requirements are satisfied because the previous Order did not include final effluent limitations for cyanide.

(4) **Dioxin-TEQ**

- (a) **Bioaccumulation WQO.** The Basin Plan narrative WQO for bioaccumulative substances states:

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

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

The CTR establishes a numeric WQO for 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD) of 1.3×10^{-8} µg/L for the protection of human health, when water and aquatic organisms are consumed. When the CTR was promulgated, USEPA stated its support of the regulation of other dioxin and dioxin-like compounds through the use of toxicity equivalencies (TEQs) in NPDES permits. For California waters, USEPA stated specifically, "if the discharge of dioxin or dioxin-like compounds has reasonable potential to cause or contribute to a violation of a narrative criterion, numeric WQBELs for dioxin or dioxin-like compounds should be included in NPDES permits and should be expressed using a TEQ scheme" [65 Fed. Reg. 31682, 31695 (2000)].

This Order uses a TEQ scheme based on a set of toxicity equivalency factors (TEFs) the World Health Organization (WHO) developed in 1998, and a set of bioaccumulation equivalency factors (BEFs) USEPA developed for the Great Lakes region (40 CFR132, Appendix F), to convert the concentration of any congener of dioxin or furan into an equivalent concentration of 2,3,7,8-TCDD. The CTR criterion is used as a criterion for dioxin-TEQ because dioxin-TEQ represents a toxicity weighted concentration equivalent to 2,3,7,8-TCDD, thus translating the narrative bioaccumulation objective into a numeric criterion appropriate for the RPA.

To determine if the discharge of dioxin or dioxin-like compounds from the facility has reasonable potential to cause or contribute to a violation of the Basin Plan's narrative bioaccumulation WQO, TEFs and BEFs were used to express the measured concentrations of 16 dioxin congeners in effluent and background samples as equivalent to 2,3,7,8-TCDD. These "equivalent" concentrations were summed and then compared to the CTR numeric criterion for 2,3,7,8-TCDD (1.3×10^{-8} µg/L). Although the 1998 WHO scheme includes TEFs for dioxin-like PCBs, they are not included in this Order's TEQ scheme. The CTR has established a specific water quality standard for PCBs, and dioxin-like PCBs are included in the analysis of total PCBs.

- (b) **RPA Results.** Dioxin-TEQ has been detected in both the effluent and receiving water. Dioxin-TEQ discharged at low concentrations may cause or contribute to an exceedance of the Basin Plan's narrative objective for bioaccumulation. Therefore, this Order establishes effluent limitations for dioxin-TEQ based on Trigger 3.
- (c) **Dioxin-TEQ WQBELs.** Effluent limitations for dioxin-TEQ, calculated using SIP procedures with a default CV of 0.60, are an AMEL of 1.3×10^{-8} µg/L and an MDEL of 2.6×10^{-8} µg/L.
- (d) **Immediate Compliance Feasible.** It is feasible for the Discharger to comply with the WQBELs for dioxin-TEQ because the observed maximum effluent concentration of dioxin congeners expressed as "equivalent" 2,3,7,8-TCDD (1.2×10^{-9} µg/L) is lower than both the AMEL and the MDEL.
- (e) **Anti-backsliding.** Anti-backsliding requirements are satisfied because the previous Order did not include effluent limitations for dioxin-TEQ.

(5) Chlorodibromomethane

- (a) **Chlorodibromomethane WQO.** The most stringent applicable WQO for chlorodibromomethane is the CTR criterion for protection of human health of 0.41 µg/L.
- (b) **RPA Results.** This Order establishes effluent limitations for chlorodibromomethane because the MEC (10 µg/L) exceeds the applicable WQO for this pollutant, demonstrating Reasonable Potential by Trigger 1.
- (c) **Chlorodibromomethane WQBELs.** Effluent limitations for chlorodibromomethane, calculated according to SIP procedures with a CV of 0.54, are an AMEL of 3.4 µg/L and an MDEL of 6.4 µg/L.
- (d) **Immediate Compliance Infeasible.** Statistical analysis of chlorodibromomethane effluent data collected from January 2005 through April 2009 shows that it is infeasible for the Discharger to comply with the effluent limits. The 95th percentile of the data set (9.1 µg/L) is greater than the AMEL (3.4 µg/L), and the 99th percentile (11 µg/L) is greater than the MDEL (6.4 µg/L).

- (e) **Anti-backsliding.** Anti-backsliding requirements are satisfied because the previous Order did not contain final effluent limitations for chlorodibromomethane.
- (f) **Need for Cease and Desist Order.** The Discharger will likely discharge in violation of this Order because it is infeasible to comply with final effluent limits for chlorodibromomethane. A Cease and Desist Order will therefore be presented to the Regional Water Board for consideration concurrently with this Order. It will provide a time schedule for the Discharger to complete investigative, preventative, and remedial actions to address its imminent and threatened violations.

(6) Dichlorobromomethane

- (a) **Dichlorobromomethane WQO.** The most stringent applicable WQO for dichlorobromomethane is the CTR criterion for protection of human health of 0.56 µg/L.
 - (b) **RPA Results.** This Order establishes effluent limitations for dichlorobromomethane because the MEC (29 µg/L) exceeds the applicable WQO for this pollutant, demonstrating Reasonable Potential by Trigger 1.
 - (c) **Dichlorobromomethane WQBELs.** Effluent limitations for dichlorobromomethane, calculated according to SIP procedures with a CV of 0.50, are an AMEL of 4.9 µg/L and an MDEL of 9.0 µg/L.
 - (d) **Immediate Compliance Infeasible.** Statistical analysis of dichlorobromomethane effluent data collected from January 2005 through April 2009 shows that it is infeasible for the Discharger to comply with the effluent limits. The 95th percentile of the data set (26 µg/L) is greater than the AMEL (4.9 µg/L), and the 99th percentile (31 µg/L) is greater than the MDEL (9.0 µg/L).
 - (e) **Anti-backsliding.** Anti-backsliding requirements are satisfied because the previous Order did not contain final effluent limitations for dichlorobromomethane.
 - (f) **Need for Cease and Desist Order.** The Discharger will likely discharge in violation of this Order because it is infeasible to comply with final effluent limits for dichlorobromomethane. A Cease and Desist Order will therefore be presented to the Regional Water Board for consideration concurrently with this Order. It will provide a time schedule for the Discharger to complete investigative, preventative, and remedial actions to address its imminent and threatened violations.
- d. Effluent Limit Calculations.** The following table shows the WQBEL calculations for antimony, copper, cyanide, dioxin-TEQ, chlorodibromomethane, and dichlorobromomethane.

Table F-9. Effluent Limit Calculations

PRIORITY POLLUTANTS	Antimony	Copper	Cyanide	Dioxin-TEQ	Chlorodibromo methane	Dichlorobromo methane
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Basis and Criteria type	Title 22 Primary MCL	BP & CTR FW Aquatic Life	BP & CTR FW Aquatic Life	BP Narrative	CTR Human Health	CTR Human Health
Criteria -Acute	-----	9.3	22	-----	-----	-----
Criteria -Chronic	-----	6.5	5.2	-----	-----	-----
SSO Criteria -Acute	-----	-----	-----	-----	-----	-----
SSO Criteria -Chronic	-----	-----	-----	-----	-----	-----
Water Effects ratio (WER)	1	1	1	1	1	1
Lowest WQO	6	6.5	5.2	1.3E-08	0.410	0.56
Site Specific Translator - MDEL	-----	-----	-----	-----	-----	-----
Site Specific Translator - AMEL	-----	-----	-----	-----	-----	-----
Dilution Factor (D) (if applicable)	4	2	1	0	9	9
No. of samples per month	4	4	4	4	4	4
Aquatic life criteria analysis required? (Y/N)	N	Y	Y	N	N	N
HH criteria analysis required? (Y/N)	Y	Y	Y	Y	Y	Y
Applicable Acute WQO	-----	9.3	22	-----	-----	-----
Applicable Chronic WQO	-----	6.5	5.2	-----	-----	-----
HH criteria	6	1300	700	1.3E-08	0.410	0.56
Background (Maximum Conc for Aquatic Life calc)	1.8	3.1	0.6	1.1E-11	0.08	0.08
Background (Average Conc for Human Health calc)	1.37	1.6	0.6	1.1E-11	0.08	0.08
Is the pollutant on the 303d list (Y/N)?	N	N	N	Y	N	N
ECA acute		21.8	43			
ECA chronic		13.2	10			
ECA HH	24.52	3896.86	1399	1.30E-08	3.38	4.88
Number of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	N	Y	N	N
Avg of effluent data points	13	4.7	2.3		4.8	13
Std Dev of effluent data points	3.6	2.3	2.0		2.6	6.6
CV calculated	0.27	0.49	0.90	N/A	0.54	0.50
CV (Selected) - Final	0.27	0.49	0.90	0.6	0.54	0.50
ECA acute mult99		0.38	0.22			
ECA chronic mult99		0.59	0.40			
LTA acute		8.2	9.7			
LTA chronic		7.7	4.0			
minimum of LTAs		7.7	4.0			
AMEL mult95	1.2	1.4	1.8	1.6	1.5	1.5
MDEL mult99	1.8	2.7	4.5	3.1	2.8	2.7
AMEL (aq life)		11.2	7.3			
MDEL(aq life)		20.5	17.6			
MDEL/AMEL Multiplier	1.45	1.83	2.41	2.01	1.91	1.85
AMEL (human hlth)	25	3897	1399	1.3E-08	3	5
MDEL (human hlth)	36	7149	3376	2.6E-08	6	9
minimum of AMEL for Aq. life vs HH	24.5	11.2	7	1.3E-08	3.4	4.9
minimum of MDEL for Aq. Life vs HH	35.6	20.5	18	2.6E-08	6.4	9.0
Current limit in permit (30-day average)	-----	-----	-----	-----	-----	-----
Current limit in permit (daily)	-----	14.7 (Interim)	21.6 (Interim)	-----	9.6 (Interim)	23 (Interim)
Final limit - AMEL	25	11	7.3	1.3E-08	3.4	4.9
Final limit - MDEL	36	20	18	2.6E-08	6.4	9.0
Max Effl Conc (MEC)	19	9.2	9.2	1.2E-09	10	29

5. Whole Effluent Acute Toxicity

This Order includes effluent limitations for whole effluent acute toxicity based on Basin Plan Table 4-3. The new limits are different than those in the previous Order to reflect monthly acute toxicity testing. Compliance evaluation is to be based on 96-hour static-renewal

bioassays. All bioassays are to be performed according to the USEPA-approved method in 40 CFR Part 136, currently *Methods for Measuring the Acute Toxicity of Effluents and Receiving Water, 5th Edition*.

6. Whole Effluent Chronic Toxicity

- a. **Permit Requirements.** This Order contains a narrative effluent limitation for chronic toxicity based on the Basin Plan's narrative objective. This Order also includes requirements for chronic toxicity monitoring to ensure attainment of the Basin Plan narrative toxicity objective and a "trigger" that requires accelerated monitoring when exceeded. The Discharger is required to implement a chronic toxicity evaluation (TRE) in some circumstances. These permit requirements are consistent with Basin Plan and SIP requirements.
- b. **Chronic Toxicity Trigger.** This Order retains a chronic toxicity trigger of a single-sample maximum of 10 chronic toxicity units (TUc) from the previous Order. Shallow-water dischargers discharging year-round and monitoring chronic toxicity annually typically receive a trigger of a single-sample maximum of >1 TUc; however, the Discharger is an intermittent and seasonal discharger that may not discharge unless the ratio of river flow to effluent flow is at least 10:1. The trigger of 10 TUc appears adequate because none of the Discharger's chronic toxicity results from 2005 – 2008 exceeded a no observed effects concentration (NOEC) of 100 percent effluent.

D. Anti-backsliding and Antidegradation

1. **Effluent Limitations Retained from the previous Order.** Limitations for the following parameters are retained from the previous Order.

BOD₅ and TSS
85% removal requirement for BOD and TSS
pH
Turbidity
Oil and grease
Total residual chlorine

Retaining effluent limitations for these parameters ensures that they are at least as stringent as those in the previous Order, meeting applicable anti-backsliding requirements. Retaining these effluent limitations also ensures that existing receiving water quality will not be degraded in terms of these parameters as a result of this Order.

2. **Revised Effluent Limitations.** The previous Order did not contain final, concentration-based limitations for the following parameters.

Antimony
Copper
Cyanide
Chlorodibromomethane
Dichlorobromomethane
Dioxin-TEQ

The effluent limitations in this Order for copper, cyanide, chlorodibromomethane, and dichlorobromomethane replace previous interim limits, which were less stringent. The establishment of new effluent limitations for antimony and dioxin-TEQ effectively creates limitations more stringent than those in the previous Order. The more stringent limits meet applicable anti-backsliding requirements and ensure that the existing quality of the receiving water will not be degraded in terms of these parameters.

- 3. Effluent Limitations Not Retained from the Previous Order.** Final limitations for mercury are not retained. Mercury discharges are now regulated by Regional Water Board Order No. R2-2007-0077, which became effective March 1, 2008. Order No. R2-2007-0077 implements the San Francisco Bay Mercury TMDL and establishes mercury wasteload allocations for municipal wastewater discharges to ensure that applicable water quality standards for mercury in San Francisco Bay are attained.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

Receiving water limitations are based on the Basin Plan's numeric and narrative objectives for surface water.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

The principal purposes of a monitoring program are to:

Document compliance with WDRs established by the Regional Water Board,

Facilitate self-policing in the prevention and abatement of pollution arising from waste discharge,

Develop or assist in the development of limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards, and

Prepare water and wastewater quality inventories.

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

A. Influent Monitoring

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

B. Effluent Monitoring

The MRP retains most effluent monitoring requirements from the previous Order. Changes in effluent monitoring at EFF-001 are summarized as follows.

- Monthly monitoring for mercury is no longer required because the discharge of mercury is now regulated by Regional Water Board Order No. R2-2007-0077.
- Routine effluent monitoring for antimony and dioxin-TEQ (pollutants for which this Order establishes effluent limitations) is established by this Order.

C. Whole Effluent Toxicity Testing Requirements

This Order retains monthly acute toxicity monitoring with either rainbow trout or fathead minnow, and annual chronic toxicity monitoring with *Ceriodaphnia dubia*, at both outfalls. When the acute toxicity effluent limitations are exceeded, the Discharger is to accelerate monitoring and investigate the causes of the acute toxicity in accordance with Attachment G, Section III.A.3.b(3). When the chronic toxicity trigger is exceeded, the Discharger is to accelerate monitoring to monthly.

D. Other Monitoring Requirements

1. Biosolids monitoring is required pursuant to 40 CFR 503 and 258, as applicable.
2. Wastewater pond monitoring requirements are retained from the previous Order to ensure that effluent stored in the wastewater ponds meets the Basin Plan's water quality objectives for floating and suspended materials, discoloration and turbidity, and odor that causes nuisance or adversely affects beneficial uses.
3. Monitoring of precipitation as it occurs is retained from the previous Order to ensure that sufficient wastewater pond freeboard exists to prevent overflow, in accordance with Basin Plan Section 4.9.3, Surface Impoundment Overflow Protection.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which in accordance with 40 CFR 122.41 and 122.42 apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachment D of this Order. 40 CFR 122.41(a)(1) and (b) through (n) establish conditions that apply to all state-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. 40 CFR 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. The Regional Standard Provisions (Attachment G) supplement the Federal Standard Provisions. In accordance with 40 CFR 123.25, this Order omits federal conditions that address enforcement authority specified in 40 CFR 122.41(j)(5) and (k)(2) because the CWC enforcement authority is more stringent. In lieu of these conditions, this Order incorporates by reference CWC Section 13387(e).

B. Monitoring and Reporting Requirements

The Discharger is required to monitor the permitted discharges in order to evaluate compliance with permit conditions. Monitoring requirements are contained in the MRP (Attachment E) and the Regional Standard Provisions (Attachment G). This provision requires compliance with these documents and is based on 40 CFR 122.63 and CWC Section 13267.

C. Special Provisions

1. Reopener Provisions

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

2. Effluent Data Evaluation

If concentrations of monitored constituents increase significantly, the Discharger is required to investigate the source of the increases and establish remedial measures if the increases result in reasonable potential to cause or contribute to an excursion above the applicable WQO/WQC. This provision is based on the Basin Plan and the SIP.

3. Best Management Practices and Pollution Minimization Program

This provision is based on Basin Plan Section 4.13.2 and SIP Section 2.4.5.

4. Construction, Operation, and Maintenance Specifications

a Reliability Status Report

This provision is required to ensure that the Discharger qualifies for an exception to Basin Plan Discharge Prohibition 1. Discharge Prohibition 1 is further discussed in Fact Sheet Section IV.A.2.

b Wastewater Pond Operation Requirements

This provision is retained from the previous Order to ensure that effluent stored in the wastewater ponds does not cause odors (dissolved oxygen and dissolved sulfides); to ensure that the wastewater ponds are in sufficient condition to prevent flooding, erosion, and washout; and to ensure that sufficient wastewater pond freeboard exists to prevent overflow, consistent with Basin Plan Section 4.9.3.

5. Sanitary Sewer Overflows and Sewer System Management Plan

This provision is to explain the Order's requirements as they relate to the Discharger's collection system, and to promote consistency with the State Water Board's Statewide General Waste Discharge Requirements for Sanitary Sewer Overflow and related Monitoring and Reporting Program (Order No. 2006-0003-DWQ).

The General Order requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans and report all sanitary sewer overflows, among other requirements and prohibitions. Furthermore, the General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. Inasmuch that the Discharger's collection system is part of the system that is subject to this Order, certain standard provisions apply as specified in Section VI.C.5, Sanitary Sewer Overflows and Sewer System Management Plan. The Discharger must comply with both the General Order and this Order. The Discharger and public agencies that are discharging wastewater into the facility were required to enroll under the General Order by December 1, 2006. The Discharger enrolled under the General Order, reports sanitary sewer overflows, and has developed and certified its Sewer System Management Plan.

The State Water Board amended the General Order on February 20, 2008, in Order No. WQ 2008-0002-EXEC, to strengthen the notification and reporting requirements for sanitary sewer overflows. The Regional Water Board issued a 13267 letter on May 1, 2008, requiring dischargers to comply with the new notification requirements. The Regional Standard Provisions (Attachment G) contain the same notification and reporting requirements for spills from wastewater treatment facilities.

6. Emergency Discharge Request Procedure

This provision is retained from the previous Order to ensure compliance with the discharge prohibition in Section III.F of this Order.

VIII. PUBLIC PARTICIPATION

The San Francisco Bay Regional Water Board is considering the issuance of WDRs that will serve as an NPDES permit for the Plant. As a step in the WDR adoption process, the Regional Water Board has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided an opportunity to submit written comments and recommendations. Notification was provided through the **Napa Valley Register**.

B. Written Comments

Staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to the Executive Officer at the Regional Water Board at the address above on the cover page of this Order. Submittals should be directed to the attention of John Madigan.

To be fully responded to by staff and considered by the Regional Water Board, written comments should be received at the Regional Water Board offices by 5:00 p.m. on **July 12, 2010**.

C. Public Hearing

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

Date: **September 8, 2010**
Time: 9:00 am
Location: Elihu Harris State Office Building
1515 Clay Street, 1st Floor Auditorium
Oakland, CA 94612

Contact: John Madigan, (510) 622-2405, email JMadigan@waterboards.ca.gov

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

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

D. Waste Discharge Requirements Petitions

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

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

E. Information and Copying

The Report of Waste Discharge, related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., except from noon to 1:00 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling 510-622-2300.

F. Register of Interested Persons

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

G. Additional Information

Requests for additional information or questions regarding this order should be directed to John Madigan at 510-622-2405 (e-mail at JMadigan@waterboards.ca.gov)

**APPENDIX F-1
 RIVER-TO-WASTEWATER RATIO CALCULATIONS**

The flow balance for the Napa River can be express as in Equation 1.

$$Q_{ru} + Q_c + Q_{sh} + Q_y + Q_{urban} + Q_{trib} = Q_{rd}$$

where:

- Q_{ru} = Upstream River Flow
- Q_c = Calistoga Effluent Flow
- Q_{sh} = Saint Helena Effluent Flow
- Q_y = Yountville Effluent Flow
- Q_{urban} = Urban Runoff Flow
- Q_{trib} = Tributary Flow
- Q_{rd} = Downstream River Flow

Conservatively assuming that Q_{trib} is negligible during the early part of the discharge season, this equation yields:

Equation 1: $Q_{ru} + Q_c + Q_{sh} + Q_y + Q_{urban} = Q_{rd}$

Conservatively using the 2007/2008 wet weather influent data to estimate the flows of each facility.

- $Q_c = 154$ Mgal/year
- $Q_{sh} = 106$ Mgal/year = $0.69 * Q_c$
- $Q_y = 104$ Mgal/year = $0.67 * Q_c$
- $Q_c + Q_{sh} + Q_y = 364$ Mgal/year

Q_{urban} can be estimated through this equation: ¹

$$Q_{urban} = C_{mun} * I * A_{mun} + C_{ind} * I * A_{ind}$$

Where:

- I = rainfall = 30 inches / year
- C_{mun} = municipal runoff fraction = 0.2
- C_{ind} = industrial runoff fraction = 1.0
- A_{mun} = municipal area = 25,667 acres
- A_{ind} = industrial area = 1,447 acres

$$Q_{urban} = \left[0.2 \left(\frac{30 \text{ in}}{\text{year}} \right) (25667 \text{ acres}) + 1.0 \left(\frac{30 \text{ in}}{\text{year}} \right) (1447 \text{ acres}) \right] \times \left[\frac{1.008 \text{ ft}^3 / \text{sec}}{\text{acre} - \text{in} / \text{hr}} \right] \times \left[\frac{3600 \text{ sec}}{\text{hr}} \right] \times \left[\frac{7.4805 \text{ gal}}{\text{ft}^3} \right]$$

$$Q_{urban} = 5,359 \text{ Mgal/year}$$

¹ Table 7b of January 16, 2007, staff report for the Napa River Sediment Total Maximum Daily Loads.

Therefore, Q_{urban} is about 15 times the combined flow of the treatment plants.

$$\frac{Q_{urban}}{Q_c + Q_{sh} + Q_y} = \frac{5359 \text{ Mgal/year}}{364 \text{ Mgal/year}} = 14.7 \approx 15$$

$$Q_{Urban} = 15*(Q_c + Q_{sh} + Q_y)$$

Substituting this ratio into Equation 1:

$$Q_{ru} + 16*(Q_c + Q_{sh} + Q_y) = Q_{rd}$$

Solving for Q_{ru} :

$$Q_{ru} = Q_{rd} - 16*(Q_c + Q_{sh} + Q_y) =$$

Because the ambient background and effluent data suggest that assimilative capacity may be most limited with respect to copper, the mass balance calculations are based on copper concentrations.

The mass balance can be expressed as follows:

Equation 2 : $Q_{ru} * C_b + Q_c * C_c + Q_{sh} * C_{sh} + Q_y * C_y + Q_{urban} * C_{urban} = Q_{rd} * C_o$

where:

- C_b = Upstream Background River Copper Concentration
- C_c = Calistoga Effluent Copper Concentration
- C_{sh} = Saint Helena Effluent Copper Concentration
- C_y = Yountville Effluent Copper Concentration
- C_{urban} = Urban Runoff Copper Concentration
- C_{trib} = Tributary Copper Concentration
- C_o = Downstream River Copper Water Quality Objective Concentration

Assuming that urban and non-urban runoff copper loads are about eight times those of the wastewater treatment plants².

$$Q_{urban} * C_{urban} = 8*(Q_c * C_c + Q_{sh} * C_{sh} + Q_y * C_y)$$

Combining the above equations:

$$Q_{ru} * C_b + 9*(Q_c * C_c + Q_{sh} * C_{sh} + Q_y * C_y) = Q_{rd} * C_o$$

The following effluent copper concentrations are base on the 95th percentiles of the effluent data for each wastewater treatment facility (using combined data from both of Calistoga’s outfalls), and the downstream copper water quality objective is based on the lowest measured downstream hardness of 103 mg/L. The background copper concentration in the Napa River reflects upstream measurements.

² June 6, 2007, staff report for Copper Site Specific Objectives

$$\begin{aligned}C_c &= 9.0 \text{ } \mu\text{g/L} \\C_{sh} &= 9.8 \text{ } \mu\text{g/L} \\C_y &= 28 \text{ } \mu\text{g/L} \\C_o &= 9.6 \text{ } \mu\text{g/L} \\C_b &= 3.2 \text{ } \mu\text{g/L}\end{aligned}$$

Substituting these values into Equation 2:

$$[Q_{rd} - 16*(Q_c + 0.69*Q_c + 0.67*Q_c)]*3.2 + 9*(Q_c*9.0 + 0.69*Q_c*9.8 + 0.67*Q_c*28) = Q_{rd}*9.6$$

Solving this equation for the ratio of the downstream flow to the Calistoga plant flow yields a river-to-wastewater ratio of approximately 30:1:

$$\frac{Q_{rd}}{Q_c} \cong \frac{30}{1}$$

Using United States Geological Service (USGS) flow records for the Napa River at historical station USGS 11455900 at Calistoga, and station USGS 11458000 near Napa, the annual mean flow at Napa (209.4 cubic feet per second [cfs] from 1960 to 2008) is approximately 6.4 times that at Calistoga (32.5 cfs from 1976 to 1983). Applying this factor, the equivalent flow-to-discharge ratio at Calistoga would be approximately 4.7:1. However,

- (1) the mass balance contains simplifying assumptions and uncertainty in estimates of flow and copper loading;
- (2) a river-to-wastewater ratio of at least 10:1 is required to comply with the intent of the Basin Plan's Prohibition 1 against discharges receiving less than 10:1 initial dilution;
- (3) the Discharger's mixing zone study, upon which dilution credits for copper and other pollutants are based, was conducted based on a river-to-wastewater ratio of 10:1; dilution credit cannot be granted for a discharge at a lower river-to-wastewater ratio because that scenario has not been evaluated; and
- (4) secondary-treated wastewater discharged from Discharge Point 002 is of lower quality than the tertiary-treated wastewater discharged from Discharge Point 001.

Therefore, the existing river-to-wastewater ratios of 10:1 for tertiary-treated wastewater and 50:1 for secondary-treated wastewater will be retained to ensure the Napa River's water quality will not be degraded as a result of the combined discharges of Calistoga, St. Helena, and Yountville, and that its beneficial uses will be protected. The 50:1 river-to-wastewater flow ratio for discharge of secondary-treated wastewater is retained also to encourage maximum wastewater recycling and use of the Plant's tertiary treatment capacity, and to limit secondary discharge to its current level. The Discharger can operate its facility under this requirement without hardship.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ATTACHMENT G
REGIONAL STANDARD PROVISIONS, AND MONITORING
AND REPORTING REQUIREMENTS
(SUPPLEMENT TO ATTACHMENT D)

For

NPDES WASTEWATER DISCHARGE PERMITS

March 2010

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

**REGIONAL STANDARD PROVISIONS, AND MONITORING AND
REPORTING REQUIREMENTS
(SUPPLEMENT TO ATTACHMENT D)**

FOR

NPDES WASTEWATER DISCHARGE PERMITS

APPLICABILITY

This document applies to dischargers covered by a National Pollutant Discharge Elimination System (NPDES) permit. This document does not apply to Municipal Separate Storm Sewer System (MS4) NPDES permits.

The purpose of this document is to supplement the requirements of Attachment D, Standard Provisions. The requirements in this supplemental document are designed to ensure permit compliance through preventative planning, monitoring, recordkeeping, and reporting. In addition, this document requires proper characterization of issues as they arise, and timely and full responses to problems encountered. To provide clarity on which sections of Attachment D this document supplements, this document is arranged in the same format as Attachment D.

I. STANDARD PROVISIONS - PERMIT COMPLIANCE

A. Duty to Comply

Not Supplemented

B. Need to Halt or Reduce Activity Not a Defense

Not Supplemented

C. Duty to Mitigate

This supplements I.C. of Standard Provisions (Attachment D)

1. Contingency Plan

The Discharger shall maintain a Contingency Plan as originally required by Regional Water Board Resolution 74-10 and as prudent in accordance with current municipal facility emergency planning. The Contingency Plan shall describe procedures to ensure that existing facilities remain in, or are rapidly returned to, operation in the event of a process failure or emergency incident, such as employee strike, strike by suppliers of chemicals or maintenance services, power outage, vandalism, earthquake, or fire. The Discharger may combine the Contingency Plan and Spill Prevention Plan into one document. Discharge in violation of the permit where the Discharger has failed to develop and implement a Contingency Plan as

described below will be the basis for considering the discharge a willful and negligent violation of the permit pursuant to California Water Code Section 13387. The Contingency Plan shall, at a minimum, contain the provisions of a. through g. below.

- a. Provision of personnel for continued operation and maintenance of sewerage facilities during employee strikes or strikes against contractors providing services.
- b. Maintenance of adequate chemicals or other supplies and spare parts necessary for continued operations of sewerage facilities.
- c. Provisions of emergency standby power.
- d. Protection against vandalism.
- e. Expeditious action to repair failures of, or damage to, equipment and sewer lines.
- f. Report of spills and discharges of untreated or inadequately treated wastes, including measures taken to clean up the effects of such discharges.
- g. Programs for maintenance, replacement, and surveillance of physical condition of equipment, facilities, and sewer lines.

2. Spill Prevention Plan

The Discharger shall maintain a Spill Prevention Plan to prevent accidental discharges and minimize the effects of such events. The Spill Prevention Plan shall:

- a. Identify the possible sources of accidental discharge, untreated or partially treated waste bypass, and polluted drainage;
- b. Evaluate the effectiveness of present facilities and procedures, and state when they became operational; and
- c. Predict the effectiveness of the proposed facilities and procedures, and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

This Regional Water Board, after review of the Contingency and Spill Prevention Plans or their updated revisions, may establish conditions it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions may be incorporated as part of the permit upon notice to the Discharger.

D. Proper Operation & Maintenance

This supplements I.D of Standard Provisions (Attachment D)

1. Operation and Maintenance (O&M) Manual

The Discharger shall maintain an O&M Manual to provide the plant and regulatory personnel with a source of information describing all equipment, recommended operational strategies, process control monitoring, and maintenance activities. To remain a useful and relevant

document, the O&M Manual shall be kept updated to reflect significant changes in treatment facility equipment and operational practices. The O&M Manual shall be maintained in usable condition and be available for reference and use by all relevant personnel and Regional Water Board staff.

2. Wastewater Facilities Status Report

The Discharger shall regularly review, revise, or update, as necessary, its Wastewater Facilities Status Report. This report shall document how the Discharger operates and maintains its wastewater collection, treatment, and disposal facilities to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary to provide adequate and reliable transport, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the Discharger's service responsibilities.

3. Proper Supervision and Operation of Publicly Owned Treatment Works (POTWs)

POTWs shall be supervised and operated by persons possessing certificates of appropriate grade pursuant to Division 4, Chapter 14, Title 23 of the California Code of Regulations.

E. Property Rights

Not Supplemented

F. Inspection and Entry

Not Supplemented

G. Bypass

Not Supplemented

H. Upset

Not Supplemented

I. Other

This section is an addition to Standard Provisions (Attachment D)

1. Neither the treatment nor the discharge of pollutants shall create pollution, contamination, or nuisance as defined by California Water Code Section 13050.
2. Collection, treatment, storage, and disposal systems shall be operated in a manner that precludes public contact with wastewater, except in cases where excluding the public is infeasible, such as private property. If public contact with wastewater could reasonably occur on public property, warning signs shall be posted.
3. If the Discharger submits a timely and complete Report of Waste Discharge for permit reissuance, this permit continues in force and effect until a new permit is issued or the Regional Water Board rescinds the permit.

J. Storm Water

This section is an addition to Standard Provisions (Attachment D)

These provisions apply to facilities that do not direct all storm water flows from the facility to the wastewater treatment plant headworks.

1. Storm Water Pollution Prevention Plan (SWPP Plan)

The SWPP Plan shall be designed in accordance with good engineering practices and shall address the following objectives:

- a. To identify pollutant sources that may affect the quality of storm water discharges; and
- b. To identify, assign, and implement control measures and management practices to reduce pollutants in storm water discharges.

The SWPP Plan may be combined with the existing Spill Prevention Plan as required in accordance with Section C.2. The SWPP Plan shall be retained on-site and made available upon request of a representative of the Regional Water Board.

2. Source Identification

The SWPP Plan shall provide a description of potential sources that may be expected to add significant quantities of pollutants to storm water discharges, or may result in non-storm water discharges from the facility. The SWPP Plan shall include, at a minimum, the following items:

- a. A topographical map (or other acceptable map if a topographical map is unavailable), extending one-quarter mile beyond the property boundaries of the facility, showing the wastewater treatment facility process areas, surface water bodies (including springs and wells), and discharge points where the facility's storm water discharges to a municipal storm drain system or other points of discharge to waters of the State. The requirements of this paragraph may be included in the site map required under the following paragraph if appropriate.
- b. A site map showing the following:
 - (1) Storm water conveyance, drainage, and discharge structures;
 - (2) An outline of the storm water drainage areas for each storm water discharge point;
 - (3) Paved areas and buildings;
 - (4) Areas of actual or potential pollutant contact with storm water or release to storm water, including but not limited to outdoor storage and process areas; material loading, unloading, and access areas; and waste treatment, storage, and disposal areas;
 - (5) Location of existing storm water structural control measures (i.e., berms, coverings, etc.);

- (6) Surface water locations, including springs and wetlands; and
- (7) Vehicle service areas.
- c. A narrative description of the following:
 - (1) Wastewater treatment process activity areas;
 - (2) Materials, equipment, and vehicle management practices employed to minimize contact of significant materials of concern with storm water discharges;
 - (3) Material storage, loading, unloading, and access areas;
 - (4) Existing structural and non-structural control measures (if any) to reduce pollutants in storm water discharges; and
 - (5) Methods of on-site storage and disposal of significant materials.
- d. A list of pollutants that have a reasonable potential to be present in storm water discharges in significant quantities.

3. Storm Water Management Controls

The SWPP Plan shall describe the storm water management controls appropriate for the facility and a time schedule for fully implementing such controls. The appropriateness and priorities of controls in the SWPP Plan shall reflect identified potential sources of pollutants. The description of storm water management controls to be implemented shall include, as appropriate:

- a. Storm water pollution prevention personnel

Identify specific individuals (and job titles) that are responsible for developing, implementing, and reviewing the SWPP Plan.

- b. Good housekeeping

Good housekeeping requires the maintenance of clean, orderly facility areas that discharge storm water. Material handling areas shall be inspected and cleaned to reduce the potential for pollutants to enter the storm drain conveyance system.

- c. Spill prevention and response

Identify areas where significant materials can spill into or otherwise enter storm water conveyance systems and their accompanying drainage points. Specific material handling procedures, storage requirements, and cleanup equipment and procedures shall be identified, as appropriate. The necessary equipment to implement a cleanup shall be available, and personnel shall be trained in proper response, containment, and cleanup of spills. Internal reporting procedures for spills of significant materials shall be established.

d. Source control

Source controls include, for example, elimination or reduction of the use of toxic pollutants, covering of pollutant source areas, sweeping of paved areas, containment of potential pollutants, labeling of all storm drain inlets with “No Dumping” signs, isolation or separation of industrial and non-industrial pollutant sources so that runoff from these areas does not mix, etc.

e. Storm water management practices

Storm water management practices are practices other than those that control the sources of pollutants. Such practices include treatment or conveyance structures, such as drop inlets, channels, retention and detention basins, treatment vaults, infiltration galleries, filters, oil/water separators, etc. Based on assessment of the potential of various sources to contribute pollutants to storm water discharges in significant quantities, additional storm water management practices to remove pollutants from storm water discharges shall be implemented and design criteria shall be described.

f. Sediment and erosion control

Measures to minimize erosion around the storm water drainage and discharge points, such as riprap, revegetation, slope stabilization, etc., shall be described.

g. Employee training

Employee training programs shall inform all personnel responsible for implementing the SWPP Plan. Training shall address spill response, good housekeeping, and material management practices. New employee and refresher training schedules shall be identified.

h. Inspections

All inspections shall be done by trained personnel. Material handling areas shall be inspected for evidence of, or the potential for, pollutants entering storm water discharges. A tracking or follow up procedure shall be used to ensure appropriate response has been taken in response to an inspection. Inspections and maintenance activities shall be documented and recorded. Inspection records shall be retained for five years.

i. Records

A tracking and follow-up procedure shall be described to ensure that adequate response and corrective actions have been taken in response to inspections.

4. Annual Verification of SWPP Plan

An annual facility inspection shall be conducted to verify that all elements of the SWPP Plan are accurate and up-to-date. The results of this review shall be reported in the Annual Report to the Regional Water Board described in Section V.C.f.

K. Biosolids Management

This section is an addition to Standard Provisions (Attachment D)

Biosolids must meet the following requirements prior to land application. The Discharger must either demonstrate compliance or, if it sends the biosolids to another party for further treatment or distribution, must give the recipient the information necessary to ensure compliance.

1. Exceptional quality biosolids meet the pollutant concentration limits in Table III of 40 CFR Part 503.13, Class A pathogen limits, and one of the vector attraction reduction requirements in 503.33(b)(1)-(b)(8). Such biosolids do not have to be tracked further for compliance with general requirements (503.12) and management practices (503.14).
2. Biosolids used for agricultural land, forest, or reclamation shall meet the pollutant limits in Table I (ceiling concentrations) and Table II or Table III (cumulative loadings or pollutant concentration limits) of 503.13. They shall also meet the general requirements (503.12) and management practices (503.14) (if not exceptional quality biosolids) for Class A or Class B pathogen levels with associated access restrictions (503.32) and one of the 10 vector attraction reduction requirements in 503.33(b)(1)-(b)(10).
3. Biosolids used for lawn or home gardens must meet exceptional quality biosolids limits.
4. Biosolids sold or given away in a bag or other container must meet the pollutant limits in either Table III or Table IV (pollutant concentration limits or annual pollutant loading rate limits) of 503.13. If Table IV is used, a label or information sheet must be attached to the biosolids packing that explains Table IV (see 503.14). The biosolids must also meet the Class A pathogen limits and one of the vector attraction reduction requirements in 503.33(b)(1)-(b)(8).

II. STANDARD PROVISIONS – PERMIT ACTION

Not Supplemented

III. STANDARD PROVISIONS – MONITORING

A. Sampling and Analyses

This section is a supplement to III.A and III.B of Standard Provisions (Attachment D)

1. Use of Certified Laboratories

Water and waste analyses shall be performed by a laboratory certified for these analyses in accordance with California Water Code Section 13176.

2. Use of Appropriate Minimum Levels

Table C lists the suggested analytical methods for the 126 priority pollutants and other toxic pollutants that should be used, unless a particular method or minimum level (ML) is required in the MRP.

For priority pollutant monitoring, when there is more than one ML value for a given substance, the Discharger may select any one of the analytical methods cited in Table C for compliance determination, or any other method described in 40 CFR part 136 or approved by USEPA (such as the 1600 series) if authorized by the Regional Water Board. However, the ML must be below the effluent limitation and water quality objective. If no ML value is

below the effluent limitation and water quality objective, then the method must achieve an ML no greater than the lowest ML value indicated in Table C. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

3. Frequency of Monitoring

The minimum schedule of sampling analysis is specified in the MRP portion of the permit.

a. Timing of Sample Collection

- (1) The Discharger shall collect samples of influent on varying days selected at random and shall not include any plant recirculation or other sidestream wastes, unless otherwise stipulated by the MRP.
- (2) The Discharger shall collect samples of effluent on days coincident with influent sampling unless otherwise stipulated by the MRP or the Executive Officer. The Executive Officer may approve an alternative sampling plan if it is demonstrated to be representative of plant discharge flow and in compliance with all other permit requirements.
- (3) The Discharger shall collect grab samples of effluent during periods of day-time maximum peak effluent flows (or peak flows through secondary treatment units for facilities that recycle effluent flows).
- (4) Effluent sampling for conventional pollutants shall occur on at least one day of any multiple-day bioassay test the MRP requires. During the course of the test, on at least one day, the Discharger shall collect and retain samples of the discharge. In the event a bioassay test does not comply with permit limits, the Discharger shall analyze these retained samples for pollutants that could be toxic to aquatic life and for which it has effluent limits.
 - (a) The Discharger shall perform bioassay tests on final effluent samples; when chlorine is used for disinfection, bioassay tests shall be performed on effluent after chlorination-dechlorination; and
 - (b) The Discharger shall analyze for total ammonia nitrogen and calculate the amount of un-ionized ammonia whenever test results fail to meet the percent survival specified in the permit.

b. Conditions Triggering Accelerated Monitoring

- (1) If the results from two consecutive samples of a constituent monitored in a 30-day period exceed the monthly average limit for any parameter (or if the required sampling frequency is once per month and the monthly sample exceeds the monthly average limit), the Discharger shall, within 24 hours after the results are received, increase its sampling frequency to daily until the results from the additional sampling show that the parameter is in compliance with the monthly average limit.
- (2) If any maximum daily limit is exceeded, the Discharger shall increase its sampling frequency to daily within 24 hours after the results are received that indicate the

exceedance of the maximum daily limit until two samples collected on consecutive days show compliance with the maximum daily limit.

- (3) If final or intermediate results of an acute bioassay test indicate a violation or threatened violation (e.g., the percentage of surviving test organisms of any single acute bioassay test is less than 70 percent), the Discharger shall initiate a new test as soon as practical, and the Discharger shall investigate the cause of the mortalities and report its findings in the next self monitoring report (SMR).
- (4) The Discharger shall calibrate chlorine residual analyzers against grab samples as frequently as necessary to maintain accurate control and reliable operation. If an effluent violation is detected, the Discharger shall collect grab samples at least every 30 minutes until compliance with the limit is achieved, unless the Discharger monitors chlorine residual continuously. In such cases, the Discharger shall continue to conduct continuous monitoring as required by its permit.
- (5) When a bypass occurs (except one subject to provision III.A.3.b.6 below), the Discharger shall monitor flows and collect samples on a daily basis for all constituents at affected discharge points that have effluent limits for the duration of the bypass (including acute toxicity using static renewals), except chronic toxicity, unless otherwise stipulated by the MRP.
- (6) Unless otherwise stipulated by the MRP, when a bypass approved pursuant to Attachment D, Standard Provisions, Sections I.G.2 or I.G.4, occurs, the Discharger shall monitor flows and, using appropriate procedures as specified in the MRP, collect and retain samples for affected discharge points on a daily basis for the duration of the bypass. The Discharger shall analyze for total suspended solids (TSS) using 24-hour composites (or more frequent increments) and for bacteria indicators with effluent limits using grab samples. If TSS exceeds 45 mg/L in any composite sample, the Discharger shall also analyze the retained samples for that discharge for all other constituents that have effluent limits, except oil and grease, mercury, dioxin-TEQ, and acute and chronic toxicity. Additionally, at least once each year, the Discharger shall analyze the retained samples for one approved bypass discharge event for all other constituents that have effluent limits, except oil and grease, mercury, dioxin-TEQ, and acute and chronic toxicity. This monitoring shall be in addition to the minimum monitoring specified in the MRP.

c. Storm Water Monitoring

The requirements of this section only apply to facilities that are not covered by an NPDES permit for storm water discharges and where not all site storm drainage from process areas (i.e., areas of the treatment facility where chemicals or wastewater could come in contact with storm water) is directed to the headworks. For storm water not directed to the headworks during the wet season (October 1 to April 30), the Discharger shall:

- (1) Conduct visual observations of the storm water discharge locations during daylight hours at least once per month during a storm event that produces significant storm water discharge to observe the presence of floating and suspended materials, oil and grease, discoloration, turbidity, and odor, etc.

- (2) Measure (or estimate) the total volume of storm water discharge, collect grab samples of storm water discharge from at least two storm events that produce significant storm water discharge, and analyze the samples for oil and grease, pH, TSS, and specific conductance.

The grab samples shall be taken during the first 30 minutes of the discharge. If collection of the grab samples during the first 30 minutes is impracticable, grab samples may be taken during the first hour of the discharge, and the Discharger shall explain in the Annual Report why the grab samples could not be taken in the first 30 minutes.

- (3) Testing for the presence of non-storm water discharges shall be conducted no less than twice during the dry season (May 1 to September 30) at all storm water discharge locations. Tests may include visual observations of flows, stains, sludges, odors, and other abnormal conditions; dye tests; TV line surveys; or analysis and validation of accurate piping schematics. Records shall be maintained describing the method used, date of testing, locations observed, and test results.
- (4) Samples shall be collected from all locations where storm water is discharged. Samples shall represent the quality and quantity of storm water discharged from the facility. If a facility discharges storm water at multiple locations, the Discharger may sample a reduced number of locations if it establishes and documents through the monitoring program that storm water discharges from different locations are substantially identical.
- (5) Records of all storm water monitoring information and copies of all reports required by the permit shall be retained for a period of at least three years from the date of sample, observation, or report.

d. Receiving Water Monitoring

The requirements of this section only apply when the MRP requires receiving water sampling.

- (1) Receiving water samples shall be collected on days coincident with effluent sampling for conventional pollutants.
- (2) Receiving water samples shall be collected at each station on each sampling day during the period within one hour following low slack water. Where sampling during lower slack water is impractical, sampling shall be performed during higher slack water. Samples shall be collected within the discharge plume and down current of the discharge point so as to be representative, unless otherwise stipulated in the MRP.
- (3) Samples shall be collected within one foot of the surface of the receiving water, unless otherwise stipulated in the MRP.

B. Biosolids Monitoring

This section supplements III.B of Standard Provisions (Attachment D)

When biosolids are sent to a landfill, sent to a surface disposal site, or applied to land as a soil amendment, they must be monitored as follows:

1. Biosolids Monitoring Frequency

Biosolids disposal must be monitored at the following frequency:

Metric tons biosolids/365 days	Frequency
0-290	Once per year
290-1500	Quarterly
1500-15,000	Six times per year
Over 15,000	Once per month

(Metric tons are on a dry weight basis)

2. Biosolids Pollutants to Monitor

Biosolids shall be monitored for the following constituents:

Land Application: arsenic, cadmium, copper, mercury, molybdenum, nickel, lead, selenium, and zinc

Municipal Landfill: Paint filter test (pursuant to 40 CFR 258)

Biosolids-only Landfill or Surface Disposal Site (if no liner and leachate system): arsenic, chromium, and nickel

C. Standard Observations

This section is an addition to III of Standard Provisions (Attachment D)

1. Receiving Water Observations

The requirements of this section only apply when the MRP requires standard observations of the receiving water. Standard observations shall include the following:

- a. *Floating and suspended materials* (e.g., oil, grease, algae, and other macroscopic particulate matter): presence or absence, source, and size of affected area.
- b. *Discoloration and turbidity*: description of color, source, and size of affected area.
- c. *Odor*: presence or absence, characterization, source, distance of travel, and wind direction.
- d. *Beneficial water use*: presence of water-associated waterfowl or wildlife, fisherpeople, and other recreational activities in the vicinity of each sampling station.
- e. *Hydrographic condition*: time and height of corrected high and low tides (corrected to nearest National Oceanic and Atmospheric Administration location for the sampling date and time of sample collection).

- f. Weather conditions:
 - (1) Air temperature; and
 - (2) Total precipitation during the five days prior to observation.

2. Wastewater Effluent Observations

The requirements of this section only apply when the MRP requires wastewater effluent standard observations. Standard observations shall include the following:

- a. *Floating and suspended material of wastewater origin* (e.g., oil, grease, algae, and other macroscopic particulate matter): presence or absence.
- b. *Odor*: presence or absence, characterization, source, distance of travel, and wind direction.

3. Beach and Shoreline Observations

The requirements of this section only apply when the MRP requires beach and shoreline standard observations. Standard observations shall include the following:

- a. *Material of wastewater origin*: presence or absence, description of material, estimated size of affected area, and source.
- b. *Beneficial use*: estimate number of people participating in recreational water contact, non-water contact, or fishing activities.

4. Land Retention or Disposal Area Observations

The requirements of this section only apply to facilities with on-site surface impoundments or disposal areas that are in use. This section applies to both liquid and solid wastes, whether confined or unconfined. The Discharger shall conduct the following for each impoundment:

- a. Determine the amount of freeboard at the lowest point of dikes confining liquid wastes.
- b. Report evidence of leaching liquid from area of confinement and estimated size of affected area. Show affected area on a sketch and volume of flow (e.g., gallons per minute [gpm]).
- c. Regarding odor, describe presence or absence, characterization, source, distance of travel, and wind direction.
- d. Estimate number of waterfowl and other water-associated birds in the disposal area and vicinity.

5. Periphery of Waste Treatment and/or Disposal Facilities Observations

The requirements of this section only apply when the MRP specifies periphery standard observations. Standard observations shall include the following:

- a. *Odor*: presence or absence, characterization, source, and distance of travel.

- b. *Weather conditions*: wind direction and estimated velocity.

IV. STANDARD PROVISIONS – RECORDS

A. Records to be Maintained

This supplements IV.A of Standard Provisions (Attachment D)

The Discharger shall maintain records in a manner and at a location (e.g., wastewater treatment plant or Discharger offices) such that the records are accessible to Regional Water Board staff. The minimum period of retention specified in Section IV, Records, of the Federal Standard Provisions shall be extended during the course of any unresolved litigation regarding the subject discharge, or when requested by the Regional Water Board or Regional Administrator of USEPA, Region IX.

A copy of the permit shall be maintained at the discharge facility and be available at all times to operating personnel.

A. Records of monitoring information shall include

This supplements IV.B of Standard Provision (Attachment D)

1. Analytical Information

Records shall include analytical method detection limits, minimum levels, reporting levels, and related quantification parameters.

2. Flow Monitoring Data

For all required flow monitoring (e.g., influent and effluent flows), the additional records shall include the following, unless otherwise stipulated by the MRP:

- a. Total volume for each day; and
- b. Maximum, minimum, and average daily flows for each calendar month.

3. Wastewater Treatment Process Solids

- a. For each treatment unit process that involves solids removal from the wastewater stream, records shall include the following:
 - (1) Total volume or mass of solids removed from each collection unit (e.g., grit, skimmings, undigested biosolids, or combination) for each calendar month or other time period as appropriate, but not to exceed annually; and
 - (2) Final disposition of such solids (e.g., landfill, other subsequent treatment unit).
- b. For final dewatered biosolids from the treatment plant as a whole, records shall include the following:
 - (1) Total volume or mass of dewatered biosolids for each calendar month;
 - (2) Solids content of the dewatered biosolids; and

(3) Final disposition of dewatered biosolids (disposal location and disposal method).

4. Disinfection Process

For the disinfection process, these additional records shall be maintained documenting process operation and performance:

- a. For bacteriological analyses:
 - (1) Wastewater flow rate at the time of sample collection; and
 - (2) Required statistical parameters for cumulative bacterial values (e.g., moving median or geometric mean for the number of samples or sampling period identified in this Order).
- b. For the chlorination process, when chlorine is used for disinfection, at least daily average values for the following:
 - (1) Chlorine residual of treated wastewater as it enters the contact basin (mg/L);
 - (2) Chlorine dosage (kg/day); and
 - (3) Dechlorination chemical dosage (kg/day).

5. Treatment Process Bypasses

A chronological log of all treatment process bypasses, including wet weather blending, shall include the following:

- a. Identification of the treatment process bypassed;
- b. Dates and times of bypass beginning and end;
- c. Total bypass duration;
- d. Estimated total bypass volume; and
- e. Description of, or reference to other reports describing, the bypass event, the cause, the corrective actions taken (except for wet weather blending that is in compliance with permit conditions), and any additional monitoring conducted.

6. Treatment Facility Overflows

This section applies to records for overflows at the treatment facility. This includes the headworks and all units and appurtenances downstream. The Discharger shall retain a chronological log of overflows at the treatment facility and records supporting the information provided in section V.E.2.

C. Claims of Confidentiality

Not Supplemented

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

Not Supplemented

B. Signatory and Certification Requirements

Not Supplemented

C. Monitoring Reports

This section supplements V.C of Standard Provisions (Attachment D)

1. Self Monitoring Reports

For each reporting period established in the MRP, the Discharger shall submit an SMR to the Regional Water Board in accordance with the requirements listed in this document and at the frequency the MRP specifies. The purpose of the SMR is to document treatment performance, effluent quality, and compliance with the waste discharge requirements of this Order.

a. Transmittal letter

Each SMR shall be submitted with a transmittal letter. This letter shall include the following:

- (1) Identification of all violations of effluent limits or other waste discharge requirements found during the reporting period;
- (2) Details regarding violations: parameters, magnitude, test results, frequency, and dates;
- (3) Causes of violations;
- (4) Discussion of corrective actions taken or planned to resolve violations and prevent recurrences, and dates or time schedule of action implementation (if previous reports have been submitted that address corrective actions, reference to the earlier reports is satisfactory);
- (5) Data invalidation (Data should not be submitted in an SMR if it does not meet quality assurance/quality control standards. However, if the Discharger wishes to invalidate any measurement after it was submitted in an SMR, a letter shall identify the measurement suspected to be invalid and state the Discharger's intent to submit, within 60 days, a formal request to invalidate the measurement. This request shall include the original measurement in question, the reason for invalidating the measurement, all relevant documentation that supports invalidation [e.g., laboratory sheet, log entry, test results, etc.], and discussion of the corrective actions taken or planned [with a time schedule for completion] to prevent recurrence of the sampling or measurement problem.);

- (6) If the Discharger blends, the letter shall describe the duration of blending events and certify whether blended effluent was in compliance with the conditions for blending; and
- (7) Signature (The transmittal letter shall be signed according to Section V.B of this Order, Attachment D – Standard Provisions.).

b. Compliance evaluation summary

Each report shall include a compliance evaluation summary. This summary shall include each parameter for which the permit specifies effluent limits, the number of samples taken during the monitoring period, and the number of samples that exceed applicable effluent limits.

c. Results of analyses and observations

- (1) Tabulations of all required analyses and observations, including parameter, date, time, sample station, type of sample, test result, method detection limit, method minimum level, and method reporting level, if applicable, signed by the laboratory director or other responsible official.
- (2) When determining compliance with an average monthly effluent limitation and more than one sample result is available in a month, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of detected but not quantified (DNQ) or nondetect (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
 - (a) The data set shall be ranked from low to high, reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
 - (b) The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

If a sample result, or the arithmetic mean or median of multiple sample results, is below the reporting limit, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the Discharger conducts a Pollutant Minimization Program, the Discharger shall not be deemed out of compliance.

- (3) Dioxin-TEQ Reporting: The Discharger shall report for each dioxin and furan congener the analytical results of effluent monitoring, including the quantifiable limit (reporting level), the method detection limit, and the measured concentration. The Discharger shall report all measured values of individual congeners, including data qualifiers. When calculating dioxin-TEQ, the Discharger shall set congener concentrations below the minimum levels (ML) to zero. The Discharger shall

calculate and report dioxin-TEQs using the following formula, where the MLs, toxicity equivalency factors (TEFs), and bioaccumulation equivalency factors (BEFs) are as provided in Table A:

$$\text{Dioxin-TEQ} = \Sigma (C_x \times \text{TEF}_x \times \text{BEF}_x)$$

where: C_x = measured or estimated concentration of congener x

TEF_x = toxicity equivalency factor for congener x

BEF_x = bioaccumulation equivalency factor for congener x

Table A

Minimum Levels, Toxicity Equivalency Factors,
and Bioaccumulation Equivalency Factors

Dioxin or Furan Congener	Minimum Level (pg/L)	1998 Toxicity Equivalency Factor (TEF)	Bioaccumulation Equivalency Factor (BEF)
2,3,7,8-TCDD	10	1.0	1.0
1,2,3,7,8-PeCDD	50	1.0	0.9
1,2,3,4,7,8-HxCDD	50	0.1	0.3
1,2,3,6,7,8-HxCDD	50	0.1	0.1
1,2,3,7,8,9-HxCDD	50	0.1	0.1
1,2,3,4,6,7,8-HpCDD	50	0.01	0.05
OCDD	100	0.0001	0.01
2,3,7,8-TCDF	10	0.1	0.8
1,2,3,7,8-PeCDF	50	0.05	0.2
2,3,4,7,8-PeCDF	50	0.5	1.6
1,2,3,4,7,8-HxCDF	50	0.1	0.08
1,2,3,6,7,8-HxCDF	50	0.1	0.2
1,2,3,7,8,9-HxCDF	50	0.1	0.6
2,3,4,6,7,8-HxCDF	50	0.1	0.7
1,2,3,4,6,7,8-HpCDF	50	0.01	0.01
1,2,3,4,7,8,9-HpCDF	50	0.01	0.4
OCDF	100	0.0001	0.02

d. Data reporting for results not yet available

The Discharger shall make all reasonable efforts to obtain analytical data for required parameter sampling in a timely manner. Certain analyses require additional time to complete analytical processes and report results. For cases where required monitoring parameters require additional time to complete analytical processes and reports, and results are not available in time to be included in the SMR for the subject monitoring period, the Discharger shall describe such circumstances in the SMR and include the data for these parameters and relevant discussions of any observed exceedances in the next SMR due after the results are available.

e. Flow data

The Discharger shall provide flow data tabulation pursuant to Section IV.B.2.

f. Annual self monitoring report requirements

By the date specified in the MRP, the Discharger shall submit an annual report to the Regional Water Board covering the previous calendar year. The report shall contain the following:

- (1) Annual compliance summary table of treatment plant performance, including documentation of any blending events;
- (2) Comprehensive discussion of treatment plant performance and compliance with the permit (This discussion shall include any corrective actions taken or planned, such as changes to facility equipment or operation practices that may be needed to achieve compliance, and any other actions taken or planned that are intended to improve performance and reliability of the Discharger's wastewater collection, treatment, or disposal practices.);
- (3) Both tabular and graphical summaries of the monitoring data for the previous year if parameters are monitored at a frequency of monthly or greater;
- (4) List of approved analyses, including the following:
 - (a) List of analyses for which the Discharger is certified;
 - (b) List of analyses performed for the Discharger by a separate certified laboratory (copies of reports signed by the laboratory director of that laboratory shall not be submitted but be retained onsite); and
 - (c) List of "waived" analyses, as approved;
- (5) Plan view drawing or map showing the Discharger's facility, flow routing, and sampling and observation station locations;
- (6) Results of annual facility inspection to verify that all elements of the SWPP Plan are accurate and up to date (only required if the Discharger does not route all storm water to the headworks of its wastewater treatment plant); and
- (7) Results of facility report reviews (The Discharger shall regularly review, revise, and update, as necessary, the O&M Manual, the Contingency Plan, the Spill Prevention Plan, and Wastewater Facilities Status Report so that these documents remain useful and relevant to current practices. At a minimum, reviews shall be conducted annually. The Discharger shall include, in each Annual Report, a description or summary of review and evaluation procedures, recommended or planned actions, and an estimated time schedule for implementing these actions. The Discharger shall complete changes to these documents to ensure they are up-to-date.).

g. Report submittal

The Discharger shall submit SMRs to:

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

h. Reporting data in electronic format

The Discharger has the option to submit all monitoring results in an electronic reporting format approved by the Executive Officer. If the Discharger chooses to submit SMRs electronically, the following shall apply:

- (1) Reporting Method: The Discharger shall submit SMRs electronically via a process approved by the Executive Officer (see, for example, the letter dated December 17, 1999, "Official Implementation of Electronic Reporting System [ERS]" and the progress report letter dated December 17, 2000).
- (2) Monthly or Quarterly Reporting Requirements: For each reporting period (monthly or quarterly as specified in the MRP), the Discharger shall submit an electronic SMR to the Regional Water Board in accordance with the provisions of Section V.C.1.a-e, except for requirements under Section V.C.1.c(1) where ERS does not have fields for dischargers to input certain information (e.g., sample time). However, until USEPA approves the electronic signature or other signature technologies, Dischargers that use ERS shall submit a hard copy of the original transmittal letter, an ERS printout of the data sheet, and a violation report (a receipt of the electronic transmittal shall be retained by the Discharger). This electronic SMR submittal suffices for the signed tabulations specified under Section V.C.1.c(1).
- (3) Annual Reporting Requirements: Dischargers who have submitted data using the ERS for at least one calendar year are exempt from submitting the portion of the annual report required under Section V.C.1.f(1) and (3).

D. Compliance Schedules

Not supplemented

E. Twenty-Four Hour Reporting

This section supplements V.E of Standard Provision (Attachment D)

1. Spill of Oil or Other Hazardous Material Reports

- a. Within 24 hours of becoming aware of a spill of oil or other hazardous material that is not contained onsite and completely cleaned up, the Discharger shall report by telephone to the Regional Water Board at (510) 622-2369.

- b. The Discharger shall also report such spills to the State Office of Emergency Services [telephone (800) 852-7550] only when the spills are in accordance with applicable reporting quantities for hazardous materials.
- c. The Discharger shall submit a written report to the Regional Water Board within five working days following telephone notification unless directed otherwise by The Regional Water Board. A report submitted electronically is acceptable. The written report shall include the following:
 - (1) Date and time of spill, and duration if known;
 - (2) Location of spill (street address or description of location);
 - (3) Nature of material spilled;
 - (4) Quantity of material involved;
 - (5) Receiving water body affected, if any;
 - (6) Cause of spill;
 - (7) Estimated size of affected area;
 - (8) Observed impacts to receiving waters (e.g., oil sheen, fish kill, water discoloration);
 - (9) Corrective actions taken to contain, minimize, or clean up the spill;
 - (10) Future corrective actions planned to be taken to prevent recurrence, and schedule of implementation; and
 - (11) Persons or agencies notified.

2. Unauthorized Discharges from Municipal Wastewater Treatment Plants¹

The following requirements apply to municipal wastewater treatment plants that experience an unauthorized discharge at their treatment facilities and are consistent with and supercede requirements imposed on the Discharger by the Executive Officer by letter of May 1, 2008, issued pursuant to California Water Code Section 13383.

a. Two (2)-Hour Notification

For any unauthorized discharges that result in a discharge to a drainage channel or a surface water, the Discharger shall, as soon as possible, but not later than two (2) hours after becoming aware of the discharge, notify the State Office of Emergency Services (telephone 800-852-7550), the local health officers or directors of environmental health with jurisdiction over the affected water bodies, and the Regional Water Board. The notification to the Regional Water Board shall be via the Regional Water Board's online reporting system at www.wbers.net, and shall include the following:

- (1) Incident description and cause;

¹ California Code of Regulations, Title 23, Section 2250(b), defines an unauthorized discharge to be a discharge, not regulated by waste discharge requirements, of treated, partially treated, or untreated wastewater resulting from the intentional or unintentional diversion of wastewater from a collection, treatment or disposal system.

- (2) Location of threatened or involved waterways or storm drains;
- (3) Date and time the unauthorized discharge started;
- (4) Estimated quantity and duration of the unauthorized discharge (to the extent known), and the estimated amount recovered;
- (5) Level of treatment prior to discharge (e.g., raw wastewater, primary treated, undisinfected secondary-treated, and so on); and
- (6) Identity of the person reporting the unauthorized discharge.

b. 24-hour Certification

Within 24 hours, the Discharger shall certify to the Regional Water Board, at www.wbers.net, that the State Office of Emergency Services and the local health officers or directors of environmental health with jurisdiction over the affected water bodies have been notified of the unauthorized discharge.

c. 5-Day Written Report

Within five business days, the Discharger shall submit a written report, via the Regional Water Board's online reporting system at www.wbers.net, that includes, in addition to the information required above, the following:

- (1) Methods used to delineate the geographical extent of the unauthorized discharge within receiving waters;
- (2) Efforts implemented to minimize public exposure to the unauthorized discharge;
- (3) Visual observations of the impacts (if any) noted in the receiving waters (e.g., fish kill, discoloration of water) and the extent of sampling if conducted;
- (4) Corrective measures taken to minimize the impact of the unauthorized discharge;
- (5) Measures to be taken to minimize the chances of a similar unauthorized discharge occurring in the future;
- (6) Summary of Spill Prevention Plan or O&M Manual modifications to be made, if necessary, to minimize the chances of future unauthorized discharges; and
- (7) Quantity and duration of the unauthorized discharge, and the amount recovered.

d. Communication Protocol

To clarify the multiple levels of notification, certification, and reporting, the current communication requirements for unauthorized discharges from municipal wastewater treatment plants are summarized in Table B that follows.

Table B

Summary of Communication Requirements for Unauthorized Discharges¹ from
Municipal Wastewater Treatment Plants

Discharger is required to:	Agency Receiving Information	Time frame	Method for Contact
1. Notify	California Emergency Management Agency (Cal EMA)	As soon as possible, but not later than 2 hours after becoming aware of the unauthorized discharge.	Telephone – (800) 852-7550 (obtain a control number from Cal EMA)
	Local health department	As soon as possible, but not later than 2 hours after becoming aware of the unauthorized discharge.	Depends on local health department
	Regional Water Board	As soon as possible, but not later than 2 hours after becoming aware of the unauthorized discharge.	Electronic ² www.wbers.net
2. Certify	Regional Water Board	As soon as possible, but not later than 24 hours after becoming aware of the unauthorized discharge.	Electronic ³ www.wbers.net
3. Report	Regional Water Board	Within 5 business days of becoming aware of the unauthorized discharge.	Electronic ⁴ www.wbers.net

F. Planned Changes

Not supplemented

G. Anticipated Noncompliance

Not supplemented

¹ California Code of Regulations, Title 23, Section 2250(b), defines an unauthorized discharge to be a discharge, not regulated by waste discharge requirements, of treated, partially treated, or untreated wastewater resulting from the intentional or unintentional diversion of wastewater from a collection, treatment or disposal system.

² In the event that the Discharger is unable to provide online notification within 2 hours of becoming aware of an unauthorized discharge, it shall phone the Regional Water Board’s spill hotline at (510) 622-2369 and convey the same information contained in the notification form. In addition, within 3 business days of becoming aware of the unauthorized discharge, the Discharger shall enter the notification information into the Regional Water Board’s online system in electronic format.

³ In most instances, the 2-hour notification will also satisfy 24-hour certification requirements. This is because the notification form includes fields for documenting that OES and the local health department have been contacted. In other words, if the Discharger is able to complete all the fields in the notification form within 2 hours, certification requirements are also satisfied. In the event that the Discharger is unable to provide online certification within 24 hours of becoming aware of an unauthorized discharge, it shall phone the Regional Water Board’s spill hotline at (510) 622-2369 and convey the same information contained in the certification form. In addition, within 3 business days of becoming aware of the unauthorized discharge, the Discharger shall enter the certification information into the Regional Water Board’s online system in electronic format.

⁴ If the Discharger cannot satisfy the 5-day reporting requirements via the Regional Water Board’s online reporting system, it shall submit a written report (preferably electronically in pdf) to the appropriate Regional Water Board case manager. In cases where the Discharger cannot satisfy the 5-day reporting requirements via the online reporting system, it must still complete the Regional Water Board’s online reporting requirements within 15 calendar days of becoming aware of the unauthorized discharge.

H. Other Noncompliance

Not supplemented

I. Other Information

Not supplemented

VI. STANDARD PROVISIONS – ENFORCEMENT

Not Supplemented

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

Not Supplemented

VIII. DEFINITIONS

This section is an addition to Standard Provisions (Attachment D)

More definitions can be found in Attachment A of this NPDES Permit.

1. Arithmetic Calculations

- a. Geometric mean is the antilog of the log mean or the back-transformed mean of the logarithmically transformed variables, which is equivalent to the multiplication of the antilogarithms. The geometric mean can be calculated with either of the following equations:

$$\text{Geometric Mean} = \text{Anti log} \left(\frac{1}{N} \sum_{i=1}^N \text{Log}(C_i) \right)$$

or

$$\text{Geometric Mean} = (C_1 * C_2 * \dots * C_N)^{1/N}$$

Where “N” is the number of data points for the period analyzed and “C” is the concentration for each of the “N” data points.

- b. Mass emission rate is obtained from the following calculation for any calendar day:

$$\text{Mass emission rate (lb/day)} = \frac{8.345}{N} \sum_{i=1}^N Q_i C_i$$

$$\text{Mass emission rate (kg/day)} = \frac{3.785}{N} \sum_{i=1}^N Q_i C_i$$

In which “N” is the number of samples analyzed in any calendar day and “Qi” and “Ci” are the flow rate (MGD) and the constituent concentration (mg/L) associated with each of the “N” grab samples that may be taken in any calendar day. If a composite sample is taken, “Ci” is the concentration measured in the composite sample and “Qi” is the average flow rate occurring during the period over which the samples are composited. The daily concentration

of a constituent measured over any calendar day shall be determined from the flow-weighted average of the same constituent in the combined waste streams as follows:

$$C_d = \text{Average daily concentration} = \frac{1}{Q_t} \sum_{i=1}^N Q_i C_i$$

In which “N” is the number of component waste streams and “Q” and “C” are the flow rate (MGD) and the constituent concentration (mg/L) associated with each of the “N” waste streams. “Q_t” is the total flow rate of the combined waste streams.

- c. Maximum allowable mass emission rate, whether for a 24-hour, weekly 7-day, monthly 30-day, or 6-month period, is a limitation expressed as a daily rate determined with the formulas in the paragraph above, using the effluent concentration limit specified in the permit for the period and the specified allowable flow.
- d. POTW removal efficiency is the ratio of pollutants removed by the treatment facilities to pollutants entering the treatment facilities (expressed as a percentage). The Discharger shall determine removal efficiencies using monthly averages (by calendar month unless otherwise specified) of pollutant concentration of influent and effluent samples collected at about the same time and using the following equation (or its equivalent):

$$\text{Removal Efficiency (\%)} = 100 \times [1 - (\text{Effluent Concentration} / \text{Influent Concentration})]$$

2. Biosolids means the solids, semi-liquid suspensions of solids, residues, screenings, grit, scum, and precipitates separated from or created in wastewater by the unit processes of a treatment system. It also includes, but is not limited to, all supernatant, filtrate, centrate, decantate, and thickener overflow and underflow in the solids handling parts of the wastewater treatment system.
3. Blending is the practice of recombining wastewater that has been biologically treated with wastewater that has bypassed around biological treatment units.
4. Bottom sediment sample is (1) a separate grab sample taken at each sampling station for the determination of selected physical-chemical parameters, or (2) four grab samples collected from different locations in the immediate vicinity of a sampling station while the boat is anchored and analyzed separately for macroinvertebrates.
5. Composite sample is a sample composed of individual grab samples collected manually or by an automatic sampling device on the basis of time or flow as specified in the MRP. For flow-based composites, the proportion of each grab sample included in the composite sample shall be within plus or minus five percent (+/-5%) of the representative flow rate of the waste stream being measured at the time of grab sample collection. Alternatively, equal volume grab samples may be individually analyzed with the flow-weighted average calculated by averaging flow-weighted ratios of each grab sample analytical result. Grab samples comprising time-based composite samples shall be collected at intervals not greater than those specified in the MRP. The quantity of each grab sample comprising a time-based composite sample shall be a set of flow proportional volumes as specified in the MRP. If a particular time-based or flow-based composite sampling protocol is not specified in the MRP, the Discharger shall determine and implement the most representative sampling protocol for the given parameter subject to Executive Officer approval.

6. Depth-integrated sample is defined as a water or waste sample collected by allowing a sampling device to fill during a vertical traverse in the waste or receiving water body being sampled. The Discharger shall collect depth-integrated samples in such a manner that the collected sample will be representative of the waste or water body at that sampling point.
7. Flow sample is an accurate measurement of the average daily flow volume using a properly calibrated and maintained flow measuring device.
8. Grab sample is an individual sample collected in a short period of time not exceeding 15 minutes. Grab samples represent only the condition that exists at the time the wastewater is collected.
9. Initial dilution is the process that results in the rapid and irreversible turbulent mixing of wastewater with receiving water around the point of discharge.
10. Overflow is the intentional or unintentional spilling or forcing out of untreated or partially treated wastes from a transport system (e.g., through manholes, at pump stations, and at collection points) upstream from the treatment plant headworks or from any part of a treatment plant facility.
11. Priority pollutants are those constituents referred to in 40 CFR Part 122 as promulgated in the Federal Register, Vol. 65, No. 97, Thursday, May 18, 2000, also known as the California Toxics Rule, the presence or discharge of which could reasonably be expected to interfere with maintaining designated uses.
12. Storm water means storm water runoff, snow melt runoff, and surface runoff and drainage. It excludes infiltration and runoff from agricultural land.
13. Toxic pollutant means any pollutant listed as toxic under federal Clean Water Act section 307(a)(1) or under 40 CFR 401.15.
14. Untreated waste is raw wastewater.
15. Waste, waste discharge, discharge of waste, and discharge are used interchangeably in the permit. The requirements of the permit apply to the entire volume of water, and the material therein, that is disposed of to surface and ground waters of the State of California.

Table C

List of Monitoring Parameters and Analytical Methods

CTR No.	Pollutant/Parameter	Analytical Method ¹	Minimum Levels ² (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
1.	Antimony	204.2					10	5	50	0.5	5	0.5		1000
2.	Arsenic	206.3				20		2	10	2	2	1		1000
3.	Beryllium						20	0.5	2	0.5	1			1000
4.	Cadmium	200 or 213					10	0.5	10	0.25	0.5			1000
5a.	Chromium (III)	SM 3500												
5b.	Chromium (VI)	SM 3500				10	5							1000
	Chromium (total) ³	SM 3500					50	2	10	0.5	1			
6.	Copper	200.9					25	5	10	0.5	2			1000
7.	Lead	200.9					20	5	5	0.5	2			10,000
8.	Mercury	1631 (note) ⁴												
9.	Nickel	249.2					50	5	20	1	5			1000
10.	Selenium	200.8 or SM 3114B or C						5	10	2	5	1		1000
11.	Silver	272.2					10	1	10	0.25	2			1000
12.	Thallium	279.2					10	2	10	1	5			1000
13.	Zinc	200 or 289					20		20	1	10			
14.	Cyanide	SM 4500 CN ⁻ C or I				5								
15.	Asbestos (only required for dischargers to MUN waters) ⁵	0100.2 ⁶												
16.	2,3,7,8-TCDD and 17 congeners (Dioxin)	1613												
17.	Acrolein	603	2.0	5										
18.	Acrylonitrile	603	2.0	2										
19.	Benzene	602	0.5	2										
33.	Ethylbenzene	602	0.5	2										
39.	Toluene	602	0.5	2										
20.	Bromoform	601	0.5	2										
21.	Carbon Tetrachloride	601	0.5	2										
22.	Chlorobenzene	601	0.5	2										
23.	Chlorodibromomethane	601	0.5	2										
24.	Chloroethane	601	0.5	2										
25.	2-Chloroethylvinyl Ether	601	1	1										
26.	Chloroform	601	0.5	2										
75.	1,2-Dichlorobenzene	601	0.5	2										
76.	1,3-Dichlorobenzene	601	0.5	2										

¹ The suggested method is the USEPA Method unless otherwise specified (SM = Standard Methods). The Discharger may use another USEPA-approved or recognized method if that method has a level of quantification below the applicable water quality objective. Where no method is suggested, the Discharger has the discretion to use any standard method.

² Minimum levels are from the *State Implementation Policy*. They are the concentration of the lowest calibration standard for that technique based on a survey of contract laboratories. Laboratory techniques are defined as follows: GC = Gas Chromatography; GCMS = Gas Chromatography/Mass Spectrometry; LC = High Pressure Liquid Chromatography; Color = Colorimetric; FAA = Flame Atomic Absorption; GFAA = Graphite Furnace Atomic Absorption; ICP = Inductively Coupled Plasma; ICPMS = Inductively Coupled Plasma/Mass Spectrometry; SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption (i.e., USEPA 200.9); Hydride = Gaseous Hydride Atomic Absorption; CVAA = Cold Vapor Atomic Absorption; DCP = Direct Current Plasma.

³ Analysis for total chromium may be substituted for analysis of chromium (III) and chromium (IV) if the concentration measured is below the lowest hexavalent chromium criterion (11 µg/L).

⁴ The Discharger shall use ultra-clean sampling (USEPA Method 1669) and ultra-clean analytical methods (USEPA Method 1631) for mercury monitoring. The minimum level for mercury is 2 ng/l (or 0.002 µg/l).

⁵ MUN = Municipal and Domestic Supply. This designation, if applicable, is in the Findings of the permit.

⁶ *Determination of Asbestos Structures over 10 [micrometers] in Length in Drinking Water Using MCE Filters*, USEPA 600/R-94-134, June 1994.

CTR No.	Pollutant/Parameter	Analytical Method ¹	Minimum Levels ² (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
77.	1,4-Dichlorobenzene	601	0.5	2										
27.	Dichlorobromomethane	601	0.5	2										
28.	1,1-Dichloroethane	601	0.5	1										
29.	1,2-Dichloroethane	601	0.5	2										
30.	1,1-Dichloroethylene or 1,1-Dichloroethene	601	0.5	2										
31.	1,2-Dichloropropane	601	0.5	1										
32.	1,3-Dichloropropylene or 1,3-Dichloropropene	601	0.5	2										
34.	Methyl Bromide or Bromomethane	601	1.0	2										
35.	Methyl Chloride or Chloromethane	601	0.5	2										
36.	Methylene Chloride or Dichloromethane	601	0.5	2										
37.	1,1,2,2-Tetrachloroethane	601	0.5	1										
38.	Tetrachloroethylene	601	0.5	2										
40.	1,2-Trans-Dichloroethylene	601	0.5	1										
41.	1,1,1-Trichloroethane	601	0.5	2										
42.	1,1,2-Trichloroethane	601	0.5	2										
43.	Trichloroethene	601	0.5	2										
44.	Vinyl Chloride	601	0.5	2										
45.	2-Chlorophenol	604	2	5										
46.	2,4-Dichlorophenol	604	1	5										
47.	2,4-Dimethylphenol	604	1	2										
48.	2-Methyl-4,6-Dinitrophenol or Dinitro-2-methylphenol	604	10	5										
49.	2,4-Dinitrophenol	604	5	5										
50.	2-Nitrophenol	604		10										
51.	4-Nitrophenol	604	5	10										
52.	3-Methyl-4-Chlorophenol	604	5	1										
53.	Pentachlorophenol	604	1	5										
54.	Phenol	604	1	1		50								
55.	2,4,6-Trichlorophenol	604	10	10										
56.	Acenaphthene	610 HPLC	1	1	0.5									
57.	Acenaphthylene	610 HPLC		10	0.2									
58.	Anthracene	610 HPLC		10	2									
60.	Benzo(a)Anthracene or 1,2 Benzanthracene	610 HPLC	10	5										
61.	Benzo(a)Pyrene	610 HPLC		10	2									
62.	Benzo(b)Fluoranthene or 3,4 Benzofluoranthene	610 HPLC		10	10									
63.	Benzo(ghi)Perylene	610 HPLC		5	0.1									
64.	Benzo(k)Fluoranthene	610 HPLC		10	2									
74.	Dibenzo(a,h)Anthracene	610 HPLC		10	0.1									
86.	Fluoranthene	610 HPLC	10	1	0.05									
87.	Fluorene	610 HPLC		10	0.1									
92.	Indeno(1,2,3-cd) Pyrene	610 HPLC		10	0.05									
100.	Pyrene	610 HPLC		10	0.05									
68.	Bis(2-Ethylhexyl)Phthalate	606 or 625	10	5										
70.	Butylbenzyl Phthalate	606 or 625	10	10										
79.	Diethyl Phthalate	606 or 625	10	2										
80.	Dimethyl Phthalate	606 or 625	10	2										
81.	Di-n-Butyl Phthalate	606 or 625		10										
84.	Di-n-Octyl Phthalate	606 or 625		10										

CTR No.	Pollutant/Parameter	Analytical Method ¹	Minimum Levels ² (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
59.	Benzidine	625		5										
65.	Bis(2-Chloroethoxy)Methane	625		5										
66.	Bis(2-Chloroethyl)Ether	625	10	1										
67.	Bis(2-Chloroisopropyl)Ether	625	10	2										
69.	4-Bromophenyl Phenyl Ether	625	10	5										
71.	2-Chloronaphthalene	625		10										
72.	4-Chlorophenyl Phenyl Ether	625		5										
73.	Chrysene	625		10	5									
78.	3,3'-Dichlorobenzidine	625		5										
82.	2,4-Dinitrotoluene	625	10	5										
83.	2,6-Dinitrotoluene	625		5										
85.	1,2-Diphenylhydrazine (note) ⁷	625		1										
88.	Hexachlorobenzene	625	5	1										
89.	Hexachlorobutadiene	625	5	1										
90.	Hexachlorocyclopentadiene	625	5	5										
91.	Hexachloroethane	625	5	1										
93.	Isophorone	625	10	1										
94.	Naphthalene	625	10	1	0.2									
95.	Nitrobenzene	625	10	1										
96.	N-Nitrosodimethylamine	625	10	5										
97.	N-Nitrosodi-n-Propylamine	625	10	5										
98.	N-Nitrosodiphenylamine	625	10	1										
99.	Phenanthrene	625		5	0.05									
101.	1,2,4-Trichlorobenzene	625	1	5										
102.	Aldrin	608	0.005											
103.	α-BHC	608	0.01											
104.	β-BHC	608	0.005											
105.	γ-BHC (Lindane)	608	0.02											
106.	δ-BHC	608	0.005											
107.	Chlordane	608	0.1											
108.	4,4'-DDT	608	0.01											
109.	4,4'-DDE	608	0.05											
110.	4,4'-DDD	608	0.05											
111.	Dieldrin	608	0.01											
112.	Endosulfan (alpha)	608	0.02											
113.	Endosulfan (beta)	608	0.01											
114.	Endosulfan Sulfate	608	0.05											
115.	Endrin	608	0.01											
116.	Endrin Aldehyde	608	0.01											
117.	Heptachlor	608	0.01											
118.	Heptachlor Epoxide	608	0.01											
119-125.	PCBs: Aroclors 1016, 1221, 1232, 1242, 1248, 1254, 1260	608	0.5											
126.	Toxaphene	608	0.5											

⁷ Measurement for 1,2-Diphenylhydrazine may use azobenzene as a screen: if azobenzene is measured at >1 ug/l, then the Discharger shall analyze for 1,2-Diphenylhydrazine.

APPENDIX B

Revised Tentative Cease and Desist Order

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

REVISED TENTATIVE CEASE AND DESIST ORDER NO. R2-2010-00XX

**REQUIRING THE CITY OF CALISTOGA TO CEASE AND DESIST DISCHARGING
PARTIALLY-TREATED WASTEWATER TO WATERS OF THE STATE**

WHEREAS the California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter “Regional Water Board”), finds that:

1. The City of Calistoga (hereinafter “Discharger”) owns and operates a wastewater treatment plant located at 1100 Dunaweal Lane, Calistoga, Napa County. The plant treats domestic, commercial, and industrial wastewater from the City of Calistoga.
2. The wastewater discharge was previously regulated by waste discharge requirements in Order No. R2-2006-0066 (NPDES No. CA0037966).
3. Concurrent with the adoption of this Cease and Desist Order, the Regional Water Board adopted Order **No R2-2010-00XX** (hereinafter “Permit”), reissuing waste discharge requirements for the Discharger. The Permit contains prohibitions, limitations, and provisions regulating the discharge. The limitations include those listed in Table 1 below, among others.

Table 1. Effluent Limitations for Toxic Pollutants

Pollutant	Units	Effluent Limitations	
		Average Monthly	Maximum Daily
Chlorodibromomethane	µg/L	3.4	6.4
Dichlorobromomethane	µg/L	4.9	9.0

4. Effluent monitoring indicates that it is infeasible for the Discharger to comply with the effluent limits in Table 1 for the following reasons:

Chlorodibromomethane: Statistical analysis of chlorodibromomethane effluent data, collected from January 2005 through April 2009, shows that the 95th percentile (9.1 µg/L) is greater than the average monthly effluent limit (AMEL) (3.4 µg/L), and the 99th percentile (11 µg/L) is greater than the maximum daily effluent limit (MDEL) (6.4 µg/L).

Dichlorobromomethane: Statistical analysis of dichlorobromomethane effluent data, collected from January 2005 through April 2009, shows that the 95th percentile (26 µg/L) is greater than the AMEL (4.9 µg/L), and the 99th percentile (31 µg/L) is greater than the MDEL (9.0 µg/L).

6. California Water Code § 13301 authorizes the Regional Water Board to issue a Cease and Desist Order when it finds that a waste discharge is taking place, or threatening to take place, in violation of Regional Water Board requirements.

City of Calistoga Dunaweal Wastewater Treatment Plant
Revised Tentative Cease and Desist Order

7. Because the Discharger will violate or threatens to violate required effluent limits, this Order is necessary to ensure that the Discharger achieves compliance. This Order establishes a time schedule for the Discharger to complete necessary investigative, preventive, and remedial actions to address its imminent and threatened violations.
8. The time schedule in this Order is intended to be as short as possible. It accounts for the considerable uncertainty in determining effective measures necessary to achieve compliance. The time schedule is based on reasonably expected times needed to evaluate alternatives, select a final alternative, and construct improvements as appropriate.
9. As part of the time schedule to achieve compliance, this Order requires the Discharger to comply with interim limits. These interim limits are intended to ensure that the Discharger maintains at least its existing performance while completing all tasks required during the time schedule. The interim limits are based on performance from 2005 through 2009, calculated as the 99.87th percentile (three standard deviations from the mean) of measured chlorodibromomethane and dichlorobromomethane discharge concentrations.
10. This Order is an enforcement action and, as such, is exempt from the provisions of the California Environmental Quality Act (Public Resources Code § 21000 et seq.) in accordance with 14 CCR § 15321.
11. The Regional Water Board notified the Discharger and interested persons of its intent to consider adoption of this Cease and Desist Order, and provided an opportunity to submit written comments and appear at a public hearing. The Regional Water Board, in a public hearing, heard and considered all comments.
12. Water Code § 13385(j)(3) states that mandatory minimum penalties do not apply for effluent limit violations when the waste discharge is in compliance with a cease and desist order and the conditions specified in Water Code § 13385(j)(3)(A-B) are met.

IT IS HEREBY ORDERED, in accordance with Water Code § 13301, that the Discharger shall cease and desist from discharging, or threatening to discharge, wastes in violation of its Permit by complying with the following provisions:

1. Prescribed Actions. The Discharger shall comply with the actions in Table 2 in accordance with the time schedule provided therein to comply with all effluent limits contained in Table 1. All deliverables listed in Table 2 shall be acceptable to the Executive Officer, who will review them for adequacy and compliance with the Table 2 requirements. The Discharger shall further implement all actions set forth in each deliverable, unless the Executive Officer finds the deliverable to be unacceptable.
2. Reporting Delays. If the Discharger is delayed, interrupted, or prevented from meeting one or more of the requirements in Table 2 due to circumstances beyond its reasonable control, the Discharger shall promptly notify the Executive Officer, provide the reasons and justification for the delay, and propose a time schedule for resolving the delay.
3. Effective Date. This Order shall become effective on the effective date of the Permit.

City of Calistoga Dunaweal Wastewater Treatment Plant
 Revised Tentative Cease and Desist Order

Table 2. Time Schedule and Prescribed Actions

Action	Deadline
a. Comply with the following interim effluent limits at Discharge Points 001 and 002: <i>Chlorodibromomethane</i> : 14 µg/L maximum daily effluent limitation. <i>Dichlorobromomethane</i> : 36 µg/L maximum daily effluent limitation.	Upon effective date of Order
b. Submit a plan for reducing effluent chlorination to levels that will decrease the production of chlorodibromomethane and dichlorobromomethane. The chlorine dose must remain sufficient to comply with the bacteria limits specified in Permit Section IV.A.	November 1, 2010
c. Implement the plan developed in action “b” in accordance with changes that may be specified by the Regional Water Board’s Executive Officer.	January 1, 2011
d. Submit a report documenting the results of implementing action “c.”	September 1, 2011
e. If implementation of action “c” does not bring the effluent into compliance (as defined in State Implementation Policy section 2.4.5) with the Permit effluent limits, submit a plan to study the feasibility of alternative methods to achieve compliance. These may include installing aerators in the effluent storage ponds to encourage aerobic degradation of chlorodibromomethane and dichlorobromomethane prior to river discharge, source control of precursor compounds (methane and bromomethane), and use of alternative disinfection technologies such as chlorine dioxide, ozone, UV. The plan shall identify an implementation schedule for investigating these options, selecting a preferred option, and implementing the preferred option.	July 31, 2012
f. Implement the plan developed in action “e” in accordance with changes that may be specified by the Regional Water Board’s Executive Officer.	September 30, 2012
g. Submit annual status reports including preliminary findings from the work performed in actions “c” and “e” above.	Annually each February 28 in the Pollutant Minimization Program Report
h. Achieve full compliance with the effluent limitations in Permit Section V.B for chlorodibromomethane and dichlorobromomethane. If the Discharger fails to achieve full compliance with the effluent limitations by the deadline, it shall submit by the deadline a report addressing why compliance was not achieved and provide a plan and time schedule for achieving compliance as soon as possible.	August 31, 2014

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 **DATE**.

BRUCE H. WOLFE
 Executive Officer

APPENDIX C

Comment Letter

CITY OF CALISTOGA

1232 Washington Street • Calistoga, CA 94515
707.942.2800

July 8, 2010



Mr. John Madigan
Water Resources Control Engineer
California Regional Water Quality Control Board,
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612
By email: JMadigan@waterboards.ca.gov

Subject: City of Calistoga Comments on Tentative Order and Tentative Cease and Desist Order for the City of Calistoga Dunaweal Wastewater Treatment Plant (Reissuance of NPDES Permit No. CA0037966)

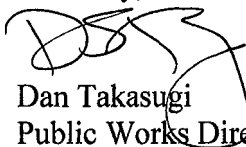
Dear Mr. Madigan:

The City of Calistoga has reviewed the Tentative Order and Tentative Cease and Desist Order (CDO) issued by the Regional Water Board on June 11, 2010. The attached comments are being submitted prior to the July 12, 2010 deadline to be considered for inclusion in the final adopted permit and CDO.

The City's comments are minor and primarily related to clarification and corrections of permitting and operating history. The Tentative Order includes appropriate methods of regulating discharges from the City's Dunaweal Wastewater Treatment Plant, reflecting years of discussions with Regional Water Board staff and extensive studies conducted by the City. The City appreciates the time granted by the Regional Water Board staff to consider options and conduct the special studies. The City will continue to maintain and operate its wastewater treatment facilities to ensure production of high quality effluent while practicing responsible stewardship of the Upper Napa River.

Please contact me at 707-942-2782 (or by email, DTakasugi@ci.calistoga.ca.us) if you have any questions on the attached comments.

Sincerely,



Dan Takasugi
Public Works Director/City Engineer

Attachment 1 – Comments on Reissuance of NPDES Permit No. CA0037966

Cc: Bill Johnson, wjohnson@waterboard.ca.gov
Lila Tang, ltang@waterboards.ca.gov
Warren Schenstrom, WSchenstrom@ci.calistoga.ca.us
Jim Smith, jsmith@ci.calistoga.ca.us

July 12, 2010

City of Calistoga
 Dunaweal Wastewater Treatment Plant

**Comments Regarding the Reissuance of NPDES
 Permit No. CA0037966**

The City of Calistoga (City) appreciates the opportunity to submit the following comments on the Tentative Order (TO) and Cease and Desist Order (CDO) released for review and comment on June 11, 2010.

For suggested revisions to the text of the TO and CDO, underline is shown for suggested additions, and ~~strike-out~~ is shown for suggested deletions.

Comments Regarding Tentative Order – Substantive

1. **The City requests that procedures/definitions used by the Regional Water Board to determine compliance with effluent limits be clearly defined and included in the Final Order. The following recommended changes are based on language included in previous drafts and in the City’s current permit. Having this terminology and procedures included in the permit provides easily accessible information for the City and clarifies how procedures will be followed.**

The City requests that footnote [2] be included with Table 7, as shown below. Footnote [2] defines the process used to assess compliance with effluent limits and was included in previous draft versions of the permit. This language is not currently located anywhere in the permit or the attached standard provisions.

IV.B. Effluent Limitations for Toxic Pollutants - Discharge Points 001 and 002 (page 10, footnote to Table 7)

Table 7. Effluent Limitations for Toxic Pollutants

Parameter	Units	Effluent Limitations ^[1] , ^[2]	
		AMEL	MDEL

^[1] a. Limitations for toxic pollutants apply to the average concentration of all samples collected during the averaging period (daily = 24-hour period; monthly = calendar month).

b. All metals limitations are expressed as total recoverable metal.

^[2] A daily maximum or average monthly value for a given constituents shall be considered noncompliant with the effluent limitations only if it exceeds the effluent limit and the Reporting Level for that constituent. Section 2.4.5 of the SIP and Tables B and C of the Attachment G indicate the Minimum Level (ML) for compliance determination purposes. An ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

The City requests that Provision VII. be added to the Final Order (on page 18), which explains the compliance determination process. The following language is recommended as included in the City's current permit.

VII. Compliance Determination (page 18)

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

A. General

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

B. Multiple Sample Data

When determining compliance with an AMEL or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or ND. In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

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

C. Average Monthly Effluent Limitation (AMEL)

If the average (or when applicable, the median determined by subsection B above for multiple sample data) of daily discharges over a calendar month exceeds the AMEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of noncompliance in a 31-day month). If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the Discharger will be considered out of compliance for that calendar month. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

D. Average Weekly Effluent Limitation (AWEL)

If the average (or when applicable, the median determined by subsection B above for multiple sample data) of daily discharges over a calendar week exceeds the AWEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance Limitations and Discharge Requirements for each day of that week for that parameter, resulting in 7 days of non-compliance. If only a single sample is taken during the calendar week and the

analytical result for that sample exceeds the AWEL, the Discharger will be considered out of compliance for that calendar week. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar week during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar week.

E. Maximum Daily Effluent Limitation (MDEL)

If a daily discharge (or when applicable, the median determined by subsection B above for multiple sample data of a daily discharge) exceeds the MDEL for a given parameter, the Discharger will be considered out of compliance for that parameter for that 1 day only within the reporting period. For any 1 day during which no sample is taken, no compliance determination can be made for that day.

2. **The City requests approval to composite oil and grease samples over the regular 8 hour shift for operators at the wastewater treatment plant, rather than over a 24 hour period. Collecting samples over 24 hours requires off-hours scheduling for plant personnel.**

When discharging, the City determines the river-to-effluent flow ratio by measuring the Napa River flowrate at 9am each morning and dividing that value by the total effluent volume discharged over the previous 24 hours. This method has been utilized over the past 4 years and is similar to the approach approved in the Yountville NPDES permit (Order No. R2-2010-0072). The City requests permit approval of this calculation method when assessing compliance with Prohibition III.B.

The City requests that Footnote [10], which references sampling requirements for priority pollutants not regularly monitored, be included with Table E-3.

The following edits to Table E-3 and its footnotes are suggested to address the issues described above.

Attachment E, IV.A. Effluent Monitoring Requirements (Table E-3, page E-4)

Table E-3. Effluent Monitoring - Monitoring Location EFF-001 and EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency
Oil and Grease ^[4]	mg/L	C-24 8	1/Month
Other Metals (Arsenic, Beryllium, Cadmium, Chromium, Lead, Nickel, Selenium, Silver, Zinc and Thallium)	ug/L	[10]	2/Year
Remaining Priority Pollutants	ug/L	[10]	1/Permit Term
Ratio - River Flow:Effluent Flow ^[9]	--	Calculate	1/Day

^[4] Each oil and grease sample shall consist of a composite sample comprised of three grab samples taken at equal intervals during the regular 8 hour day shift on the sampling date, with each grab sample being collected in a glass container. The grab samples shall be mixed in proportion to the instantaneous flow rates occurring at the time of each grab sample, within the accuracy of plus or minus 5 percent. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent rinsings as soon as possible after use, and the solvent rinsings shall be added to the composite sample for extraction or analysis.

[9] The Discharger shall calculate and report the river flow-to-effluent ratio once per day when discharging to the Napa River. It shall be calculated and report it as the ratio of the instantaneous flow rate of the Napa River measured discharge compared to the corresponding Napa River flow determined at RSW-004 (at 9am every morning), or another point the Executive Officer approves in writing, to the effluent flowrate during previous 24 hours (9am to 9am) measured at EFF-001 or at EFF-002.

[10] Sampling for all priority pollutants is described in Attachment G.

- 3. Sulfide is not a concern unless dissolved oxygen concentrations are low. The City requests that pond monitoring for dissolved sulfide only be required when the pond dissolved oxygen concentration is less than 2.0 mg/L. The suggested change is shown below.**

Attachment E, VIII.B. Pond Monitoring Requirements (Table E-6, page E-10)

Table E-6. Pond Monitoring Requirements – Monitoring Locations PON-001 through PON-004

Parameter	Units	Sample Type	Minimum Sampling Frequency
Dissolved Sulfide <u>(only required if dissolved oxygen is < 2.0 mg/L)</u>	mg/L	Grab	2/Year
Dissolved Oxygen	mg/L	Grab	2/Year
Standard Observations	--	Observation	1/Month

- 4. The City is classified as a “Minor Discharger,” and as such, is not required to submit DMRs at this time. The City understands that when electronic reporting is implemented statewide, SMRs and DMRS may become the same report. Until that time, the City is only required to submit SMRs. The following changes are requested for the Monitoring and Reporting Program (Attachment E) to reflect the current requirements.**

Attachment E, IX.C. Discharge Monitoring Reports (page E-13)

1. As described in Section X.B.1 above, at any time during the term of this Order, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of DMRs. Until such notification is given, the Discharger is not required to shall submit DMRs in accordance with the requirements described below.
- 5. The City’s wastewater facilities are sufficiently sized and have not had any problems handling peak wet weather inflows. There have been no wet weather bypasses of treatment processes since the new facilities came online in October 2003. The equalization basin used for storage under peak flow conditions can hold 5.6 MG, not 6 MG as currently indicated in the Fact Sheet. The City requests that Fact Sheet language be modified (as follows) to reflect the performance history and correct equalization volume.**

Attachment F, II. A. Facility Description (page F-4,5)

The Plant includes additional facilities for peak wet weather flows. The headworks screens are designed to handle an influent flow of up to 4 MGD. Under peak flow conditions, an additional inflow of 3 MGD can bypass the screens and be temporarily stored in a 5.6 €

million gallon (MG) equalization basin. Influent stored in the equalization basin is sent to the aeration basins for secondary treatment when influent flows subside to less than 4 MGD. The equalization basin can be emptied at a rate equal to the available aeration basin capacity, up to a maximum of 1 MGD.

Under most circumstances, The peak wet weather capacity of the treatment plant combined with the 5.6 MG equalization basin has successfully prevented wet weather bypass to the Napa River. There have been no bypasses of treatment processes since October, 2003 (when the current facilities became operational).

- 6. The antimony criterion applied to discharges to the Napa River is a human health objective (for consumption of organisms and water), not an aquatic life objective. The fact sheet incorrectly includes antimony in the discussion of aquatic life objectives. The Napa River is designated in the Region 2 Basin Plan as a municipal and domestic supply (MUN beneficial use). However, there are no known drinking water intakes in the Upper Napa River. The following corrections and clarifying statements are suggested.**

Attachment F, IV.A.2. Discharge Prohibitions (page F-12, and footnote 1)

Organisms within the mixing zone would be unlikely to experience any acute or chronic toxicity. For most pollutants, the 99th percentile observed during the most recent permit term was less than the most protective water quality objective. Antimony, Copper, and cyanide, were exceptions¹. Nevertheless, the Discharger's mixing zone study indicates that mixing occurs rapidly, and during worst case conditions, any organisms floating through the mixing zone would have a short residence time (approximately 5 minutes, which is much shorter than the 1-hour averaging period for acute water quality objectives or the 4-day averaging period for chronic water quality objectives) and would therefore be unlikely to experience acute or chronic toxicity. Moreover, the threat to beneficial uses is further minimized because the Order prohibits discharge during most of the year (Prohibition III.C) and allows discharge only when the river-to-wastewater ratio is adequate. The Discharger recycles 100 percent of its effluent when discharge is prohibited (June 16 through October 31), and recycles approximately 25 percent of its effluent during the wet season.

¹ Chlorodibromomethane, and dichlorobromomethane, and antimony are also exceptions, but the objectives for these ~~two~~ three pollutants are not for aquatic life protection; they are for human health protection from the consumption of fish and water. The Napa River is designated a Municipal and Domestic Supply (MUN) and human health objectives were applied (as applicable) to the derivation of effluent limits for the Discharger. However, the upper Napa River alongside the Calistoga WWTP is not considered a potential drinking water source and there are no known drinking water intakes in the upper Napa River.

- 7. Working with the Napa County Resource Conservation District, the City is helping to establish a continuous river flow monitoring gage with telemetry downstream of Discharge Point 002. When this gage is fully calibrated and telemetry is established, the City will have a more accurate method of measuring Napa River flowrates and compliance with the minimum river-to-effluent flow ratios.**

Discharge Point 002 is used minimally by the City during periods of peak wet weather flowrates. The City always utilizes the maximum capacity of its filter system prior to initiating discharge at 002.

Suggested language for the Fact Sheet is provided below to clarify the above issues.

Attachment F, IV.A.2. Discharge Prohibitions (page F-12)

The Discharger provides a level of protection equivalent to installing diffusers by providing tertiary treatment (additional filtration) for the majority of its discharges. This Order contains more stringent effluent limits for BOD, TSS, and turbidity for tertiary-treated wastewater from Discharge Point 001 than those imposed on wastewater treated only to secondary treatment standards. These more stringent effluent limits will ensure that this advanced level of treatment continues. In addition to this advanced treatment, the 10:1 river-to-wastewater flow ratio required at Discharge Point 001 provides additional environmental protection, warranting an exception to Basin Plan Prohibition 1. The Discharger provides equivalent protection for its secondary-treated wastewater by complying with a 50:1 river-to-wastewater flow ratio at Discharge Point 002. The 50:1 river-to-wastewater flow ratio for Discharge Point 002 also encourages maximum wastewater recycling and use of the Plant's tertiary treatment capacity, and limits secondary-treated discharge to its current level. The Discharger utilizes Discharge Point 002 on a minimal basis in response to peak wet weather events and only when capacity of the filters is exceeded. In fact, Discharge Point 002 was used for just 20 days during the 2008/09 discharge season and for only 20 days during the 2009/10 discharge season. The Discharger can operate its facility under this requirement without hardship.

During previous permit terms, the Discharger evaluated the river-to-wastewater flow ratio using an estimated flowrate measured at RSW-004. In 2009, the Discharger worked with the Napa County Resource Conservation District to install a stream gage with telemetry on the Dunaweal Bridge (RSW-007). The sensors became operational in December 2009 and data collected at this point is being used to calibrate the sensor to the staff gage. When calibration is complete, the Discharger will initiate a formal request to the Executive Officer to change the river flow monitoring site to RSW-007.

- 8. The City requests the following changes to the mixing zone discussion in the Fact Sheet. These changes will clarify how the mixing zone was determined and how the mixing zone study results may be used to comply with Basin Plan provisions.**

Attachment F, IV.A.2. Discharge Prohibitions (page F-11)

The previous permit required a river-to-wastewater ratio of 10:1 for Discharge Point 001 and, since the secondary effluent from Discharge Point 002 has lower effluent quality than the tertiary effluent from Discharge Point 001, a ratio of 50:1 for Discharge Point 002. This Order retains these river-to-wastewater ratios to minimize the discharge's impact on the receiving water. However, this does not fully address the issue of initial dilution and previous permits did not clearly outline their rationale. Initial dilution can be delineated by the zone of near-field ~~roughly equates to instantaneous~~ mixing. Because neither outfall

has a diffuser, ~~neither outfall has~~ initial dilution is determined by the effluent plume's initial momentum. This fact is made evident in the dilution credit discussion in Fact Sheet Section IV.C.4.b, below, and is addressed by the following justification for a partial exception for the initial dilution element of Prohibition 1. The minimum river-to-wastewater flow ratios are necessary to ensure compliance with the full intent of Prohibition 1, specifically (b) through (d), above.

9. **Initially, the Napa River Collaborative Monitoring Program included five participants: Napa Sanitation District, City of American Canyon, City of Calistoga, Town of Yountville, and City of St. Helena. Monitoring efforts conducted in 2002 and 2003 established that the Napa River is delineated into tidal and non-tidal stretches, with the farthest reach of saltwater influence measured at the City of Napa's northern boundary (just upstream of the Trancas Bridge). Freshwater objectives then apply to discharges from the City of Calistoga, the City of St. Helena, and the Town of Yountville, while saltwater objectives apply to Napa Sanitation District and City of American Canyon. Subsequent collaborative monitoring efforts in the non-tidal reach of the Napa River were undertaken by only the three dischargers in this area (Calistoga, Yountville, and St. Helena). Suggested language is indicated below to include this history in the Fact Sheet.**

Attachment F, IV.C.3. Determining the Need for WQBELs (page F-18)

- c. **Ambient Background Data.** On March 5, 2003, a group of five dischargers to the Napa River, including the City of Calistoga, submitted the "Collaborative Napa River Receiving Water Evaluation," which provided ambient background data for the non-tidal section of the Napa River located upstream of between the cities of Calistoga and the City of Napa. Water quality data from a monitoring location immediately upstream of the discharge was selected to represent background water quality for the RPA using freshwater objectives. These data were supplemented by receiving water data collected by the City of Calistoga, City of St. Helena, and the Town of Yountville from April 2007 to February 2009. (The Napa Sanitation District and the City of American Canyon were not involved in recent monitoring efforts, because their discharges are located in the lower, tidal section of the Napa River and are subject to saltwater objectives.) The SIP states that, for calculating WQBELs, ambient background concentrations are either the observed maximum ambient water column concentrations or, for objectives intended to protect human health from carcinogenic effects, the arithmetic mean of observed ambient water concentrations. For the RPA, ambient background concentrations are the observed maximum detected water column concentrations.
10. **The Regional Water Board staff estimated a mixing zone size for copper, antimony, cyanide, dichlorobromomethane, and chlorodibromomethane corresponding to the smallest practicable dilution credits. These smaller mixing zones were not actually modeled or delineated in the City's Mixing Zone Study Report. The City requests that the estimation be acknowledged in the Fact Sheet, as suggested below.**

Attachment F, IV.C.4.b. WQBEL Calculations (page F-23, 24)

For each pollutant, the smallest practicable mixing zone is the mixing zone that results in the smallest dilution credit, not to exceed 10:1 which is the upper bound for the model results. The dilution credit was determined based on the smallest credit resulting in WQBELs with which the Discharger could comply. The dilution credits were set so that the 95th percentile of the historic effluent data was less than the resulting AMEL; the 99th percentile was less than the resulting MDEL; and the mean was less than the resulting long term average of the projected distribution. This Order allows dilution credits of D=1 for cyanide, D=2 for copper, and D=4 for antimony, corresponding to a Regional Water Board staff estimate of maximum dilution zone sizes of approximately 12 feet by 1.1 feet, 11 feet by 1.9 feet, and 79 feet by 1.9 feet, respectively. The maximum dilution credit of D=9 was used for chlorodibromomethane and dichlorobromomethane; however, the Discharger cannot comply with these effluent limits. The mixing zone study does not justify a larger mixing zone and greater dilution credit.

11. The City is in compliance with all requirements of the Statewide General Order for Sanitary Sewer Systems. Fact Sheet language suggested to acknowledge this participation and compliance is presented below.

Attachment F, VII.C.5. Sanitary Sewer Overflows and Sewer System Management Plan (page F-33)

The General Order requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans and report all sanitary sewer overflows, among other requirements and prohibitions. Furthermore, the General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. Inasmuch that the Discharger's collection system is part of the system that is subject to this Order, certain standard provisions apply as specified in Section VI.C.5, Sanitary Sewer Overflows and Sewer System Management Plan. The Discharger must comply with both the General Order and this Order. The Discharger and public agencies that are discharging wastewater into the facility were required to enroll under the General Order by December 1, 2006. The Discharger enrolled in the General Order, reports sanitary sewer overflows, and has developed and certified its Sewer System Management Plan.

Comments Regarding Tentative Order – Typographical/Non-Substantive

12. The City suggests correction of the following typographical errors.

Attachment E, V. Whole Effluent Toxicity Testing Requirements (page E-6)

The Discharger shall monitor acute whole effluent toxicity at the compliance locations (EFF-001 and EFF-002) and frequencies specified in Table E-3, as follows.

Attachment E, V.B.1.a. Whole Effluent Chronic Toxicity (page E-6)

- a. *Sampling.* The Discharger shall collect 24-hour composite samples of the effluent at the compliance points specified in Table E-3 for critical life stage toxicity testing as indicated below. For toxicity tests requiring renewals, 24-hour composite samples shall be collected on consecutive days.

Attachment E, V.B.3.e. Chronic Toxicity Reduction Evaluation (TRE) (page E-8)

- e. The TRE may be ended at any stage if monitoring finds there is no longer consistent toxicity (i.e., if the results comply with Section IV.A.4 D., Effluent Limitations, of this Order).

Attachment E, VII. Receiving Water Monitoring Requirements (page E-10, Table E-5)

There is no footnote [2] identified in Table E-5.

Attachment F, I.B. Permit Information (page F-4)

The discharge of treated wastewater from the facility to the Napa River, a water of the United States, is currently regulated by Order No. R2-2006-0066 (National Pollutant Discharge Elimination System [NPDES] Permit No. CA0037966), which was adopted on October 11, 2006, and expires on February 28 ~~October 10~~, 2010.

Attachment F, IV.C.4.b. WQBEL Calculations (page F-23)

The largest mixing zones based on scenarios 3 and 4 were 410 feet long by 145 feet wide for Discharge Point 001, and 43 feet long by 5 feet wide for Discharge Point 002. The mixing zones based on scenario 5 were 525 feet long by 12 feet wide for Discharge Point 001, and 8 feet long by 7 feet wide for Discharge Point 002. The modeled plumes hugged the shoreline nearest the discharge. Near-field (i.e., momentum-induced) dilution corresponding to these scenarios ranged from approximately 3:1 to 4:1 at distances ranging from approximately 3 to 17 feet downstream of the modeled outfall.

The Discharger's April 2010 study found that the modeled mixing zones discussed above (extending as far as 525 feet long or 145 feet wide) would comply with all the above conditions. On a pollutant-by-pollutant basis, the smallest practicable mixing zone can be no larger than those evaluated in the study. Since these mixing zones meet the SIP criteria listed above, smaller mixing zones also meet these criteria.

Provision IV.B. Effluent Limitations for Toxic Pollutants - Discharge Points 001 and 002 (page 10, Table 7) - Matches correct values shown in Table F-9 and on page F-24.

Table 7. Effluent Limitations for Toxic Pollutants

Parameter	Units	Effluent Limitations ^[1]	
		AMEL	MDEL
Antimony	µg/L	275	396
Copper	µg/L	11	20
Cyanide	µg/L	7.3	18
Chlorodibromomethane	µg/L	3.4	6.4
Dichlorobromomethane	µg/L	4.9	9.0
Dioxin-TEQ	µg/L	1.3 x 10 ⁻⁸	2.6 x 10 ⁻⁸

Comments Regarding Cease and Desist Order – Substantive

- 13. The City requests additional time to develop and implement alternative plans to control formation of dichlorobromomethane and chlorodibromomethane in its wastewater effluent (Tasks e and f, Table 2). The available alternatives will be costly for the City to implement and will require extensive planning to ensure sufficient financial resources are available. The proposed extensions are for intermediate deadlines only, as indicated in Table 2 below.**

Table 2. Time Schedule and Prescribed Actions

Action	Deadline
a. Comply with the following interim effluent limits at Discharge Points 001 and 002: <i>Chlorodibromomethane</i> : 14 µg/L maximum daily effluent limitation. <i>Dichlorobromomethane</i> : 36 µg/L maximum daily effluent limitation.	Upon effective date of Order
b. Submit a plan for reducing effluent chlorination to levels that will decrease the production of chlorodibromomethane and dichlorobromomethane. The chlorine dose must remain sufficient to comply with the bacteria limits specified in Permit Section IV.A.	November 1, 2010
c. Implement the plan developed in action "b" in accordance with changes that may be specified by the Regional Water Board's Executive Officer.	January 1, 2011
d. Submit a report documenting the results of implementing action "c."	September 1, 2011
e. If implementation of action "c" does not bring the effluent into compliance (as defined in State Implementation Policy section 2.4.5) with the Permit effluent limits, submit a plan to study the feasibility of alternative methods to achieve compliance. These may include installing aerators in the effluent storage ponds to encourage aerobic degradation of chlorodibromomethane and dichlorobromomethane prior to river discharge, source control of precursor compounds (methane and bromomethane), and use of alternative disinfection technologies such as chlorine dioxide, ozone, UV. The plan shall identify an implementation schedule for investigating these options, selecting a preferred option, and implementing the preferred option.	September 1, 2011 <u>July 31, 2012</u>
f. Implement the plan developed in action "e" in accordance with changes that may be specified by the Regional Water Board's Executive Officer.	November 1, 2011 <u>September 30, 2012</u>
g. Submit annual status reports including preliminary findings from the work performed in actions "c" and "e" above.	Annually each February 28 in the Pollutant Minimization Program Report
h. Achieve full compliance with the effluent limitations in Permit Section V.B for chlorodibromomethane and dichlorobromomethane. If the Discharger fails to achieve full compliance with the effluent limitations by the deadline, it shall submit by the deadline a report addressing why compliance was not achieved and provide a plan and time schedule for achieving compliance as soon as possible.	August 31, 2014

APPENDIX D

Response to Comments

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

RESPONSE TO WRITTEN COMMENTS

ON THE REISSUANCE OF NPDES PERMIT AND ADOPTION OF CEASE AND DESIST ORDER FOR DISCHARGE IN VIOLATION OF NPDES PERMIT FOR:

City of Calistoga
Dunaweal Wastewater Treatment Plant and its associated collection system
1100 Dunaweal Lane, Napa County
NPDES Permit No. CA0037966

I. City of Calistoga (Discharger) – July 8, 2010

II. Staff-Initiated Revisions

Note: The format of this staff response begins with a brief introduction of the party's comment, followed with staff's response. Interested persons should refer to the original letters to ascertain the full substance and context of each comment.

I. City of Calistoga (Discharger) – July 8, 2010

Discharger, Comment 1

The Discharger requests that procedures and definitions used to determine compliance with effluent limits be clearly defined and included in the Final Order as included in the current permit.

The Discharger requests that the following footnote [2] be included with Table 7:

[2] A daily maximum or average monthly value for a given constituents shall be considered noncompliant with the effluent limitations only if it exceeds the effluent limit and the Reporting Level for that constituent. Section 2.4.5 of the SIP and Tables B and C of the Attachment G indicate the Minimum Level (ML) for compliance determination purposes. An ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

The Discharger also requests that Section VIII, Compliance Determination, subsections A through E, which explain how compliance with permit limits is determined, be included in the Final Order as Section VII, A through E.

Response 1

We partly agree and have revised the Tentative Order for clarity in several places, as shown in this Response to Comments. However, we have not made revisions when the same procedures and definitions exist elsewhere in the Tentative Order, or can be specified by reference to another document.

We revised Table 7 as follows (including revisions made in response to Comment 12):

Table 7. Effluent Limitations for Toxic Pollutants

Parameter	Units	Effluent Limitations ^[1,2]	
		AMEL	MDEL
Antimony	µg/L	2725	3936
Copper	µg/L	11	20
Cyanide	µg/L	7.3	18
Chlorodibromomethane	µg/L	3.4	6.4
Dichlorobromomethane	µg/L	4.9	9.0
Dioxin-TEQ	µg/L	1.3 x 10 ⁻⁸	2.6 x 10 ⁻⁸

[1] a. Limitations for toxic pollutants apply to the average concentration of all samples collected during the averaging period (daily = 24-hour period; monthly = calendar month).

b. All metals limitations are expressed as total recoverable metal.

[2] SIP Section 2.4.5 describes compliance determination; Attachment G, Tables A and C, indicates the Minimum Level (ML) for compliance determination purposes.

The Discharger’s requested change refers to Table B of Attachment G, which does not specify MLs; we instead refer to Attachment A, which does (for dioxins). Similarly, SIP Section 2.4.5 discusses compliance determination, but not specifically MLs. The first sentence requested describes when a value for a pollutant will be deemed out of compliance, which is now described in Section VII.A, General. The last sentence requested defines the term ML, which is defined in Attachment A already.

We revised the Tentative Order to include the previous permit’s Section VIII as Section VII as requested. However, we did not include the text about multiple sample data because that text is already in Attachment G.

Discharger, Comment 2

The Discharger requests approval to composite oil and grease samples over the regular 8-hour shift for operators at the wastewater treatment plant, rather than over a 24-hour period, which requires off-hours scheduling for plant personnel.

The Discharger also requests that their method of determining the river-to-effluent flow ratio be approved in the permit. The Discharger currently measures flow at 9:00 am each day, and divides it by the total effluent volume over the previous 24 hours.

Finally, the Discharger requests that a footnote be added to Attachment E, Table E-3, Effluent Monitoring Requirements, referring to requirements for priority pollutant sampling contained in Attachment G.

Response 2

We partly agree. We revised Table E-3 and footnote 4 as follows:

Table E-3. Effluent Monitoring – Monitoring Location EFF-001 and EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow ^[1]	MGD	Cont	Cont/D
pH ^[2]	s.u.	Cont.	Cont/D
BOD ₅	mg/L	C-24	1/Week
	kg/day	C-24	1/Week
TSS	mg/L	C-24	1/Week
	kg/day	C-24	1/Week
Total Chlorine Residual ^[3]	mg/L	Cont/2-hour	1/every two hours
Oil and Grease ^[4]	mg/L	C-24 ^[4]	1/Month

^[4] Each oil and grease sample shall consist of a composite sample comprised of three grab samples taken at equal intervals of not less than 3.5 hours during the sampling date, with each grab sample being collected in a glass container. The grab samples shall be mixed in proportion to the instantaneous flow rates occurring at the time of each grab sample, within the accuracy of plus or minus 5 percent. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent rinsings as soon as possible after use, and the solvent rinsings shall be added to the composite sample for extraction or analysis.

We revised Table E-3, footnote 9, which describes calculation of the river-to-effluent flow ratio, as follows:

^[9] The Discharger shall calculate and report the river-to-effluent flow ratio once per day when discharging to the Napa River. It shall be calculated and report it as the ratio of the instantaneous flow rate of the Napa River measured of the discharge compared to the corresponding Napa River flow determined at RSW-004 at 9am every morning, or another point the Executive Officer approves in writing, to the effluent flow rate during the previous 24 hours (9am to 9am) measured at EFF-001 and EFF-002.

Finally, we added the following to Table E-3 as footnote 10 and included references to it in the table as appropriate:

^[10] Sampling for all priority pollutants is described in Attachment G.

Discharger, Comment 3

The Discharger requests that pond monitoring for dissolved sulfide be required only when the pond dissolved oxygen concentration is less than 2.0 milligrams per liter (mg/L), and suggests the following change to Attachment E, Section VII.B, Table E-6, Pond Monitoring Requirements.

**Table E-6. Pond Monitoring Requirements – Monitoring Locations
PON-001 through PON-004**

Parameter	Units	Sample Type	Minimum Sampling Frequency
Dissolved Sulfide (<u>only required if dissolved oxygen is < 2.0 mg/L.</u>)	mg/L	Grab	2/Year
Dissolved Oxygen	mg/L	Grab	2/Year
Standard Observations	--	Observation	1/Month

Response 3

We agree and revised the Tentative Order as suggested.

Discharger, Comment 4

The Discharger is classified as a “Minor Discharger,” and as such is not required to submit DMRs at this time. The Discharger suggests the following change to Attachment E, Section IX.C, Discharge Monitoring Reports:

1. *As described in Section X.B.1 above, at any time during the term of this Order, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of DMRs. Until such notification is given, the Discharger is not required to ~~shall~~ submit DMRs in accordance with the requirements described below.*

Response 4

We did not make the suggested revision. The subsequent section (Attachment E, Section IX.C.2) states in part “Once notified by the State or Regional Water Board, the Discharger shall submit hard-copy DMRs.” Unless and until the State or Regional Water Board notifies the Discharger to submit hard-copy DMRs, it is not required to do so. Nevertheless, it could be required to do so during the permit term, if notified.

Discharger, Comment 5

The Discharger requests revisions to Fact Sheet Section II.A, Facility Description, to correct the volume of the equalization basin, and to reflect the Discharger’s recent wet-weather performance:

Response 5

We agree, and as requested, we revised Fact Sheet Section II.A, Facility Description, fourth paragraph, as follows:

The Plant includes additional facilities for peak wet weather flows. The headworks screens are designed to handle an influent flow of up to 4 MGD. Under peak flow conditions, an additional inflow of 3 MGD can bypass the screens and be temporarily stored in a 5.6 million gallon (MG) equalization basin. Influent stored in the equalization basin is sent to the aeration basins for secondary treatment when influent flows subside to less than 4 MGD. The equalization basin can be emptied at a rate equal to the available aeration basin capacity, up to a maximum of 1 MGD. ~~Under most~~

circumstances, ~~†~~The peak wet weather capacity of the treatment plant combined with the 5.6 MG equalization basin ~~prevents~~ has prevented wet-weather bypass to the Napa River since October 2003, when the current facilities became operational.

Discharger, Comment 6

The antimony criterion applied to discharges to the Napa River is a human health water quality objective (for consumption of organisms and water), but antimony is incorrectly included in the Fact Sheet's discussion of aquatic life water quality objectives. The Basin Plan establishes the MUN beneficial use (municipal and domestic water supply) for the Napa River; however, there are no known drinking water intakes in the upper Napa River. The Discharger recommends revisions to correct and clarify Fact Sheet Section IV.A.2, Discharge Prohibitions.

Response 6

We agree and revised the Tentative Order as suggested. The antimony criterion is the water quality objective for municipal supply, which is equal to the drinking water Maximum Contaminant Level (MCL); the Discharger is correct that it is not an aquatic life water quality objective, and is established because Napa River has the MUN beneficial use. We revised Fact Sheet Section IV.A.2, paragraph 5 and footnote 1, as follows:

Organisms within the mixing zone would be unlikely to experience any acute or chronic toxicity. For most pollutants, the 99th percentile observed during the most recent permit term was less than the most protective water quality objective. ~~Antimony, e~~Copper, and cyanide, were exceptions.¹ Nevertheless, the Discharger's mixing zone study indicates that mixing occurs rapidly, and during worst case conditions, any organisms floating through the mixing zone would have a short residence time (approximately 5 minutes, which is much shorter than the 1-hour averaging period for acute water quality objectives or the 4-day averaging period for chronic water quality objectives) and would therefore be unlikely to experience acute or chronic toxicity. Moreover, the threat to beneficial uses is further minimized because the Order prohibits discharge during most of the year (Prohibition III.C) and allows discharge only when the river-to-wastewater ratio is adequate. The Discharger recycles 100 percent of its effluent when discharge is prohibited (June 16 through October 31), and recycles approximately 25 percent of its effluent during the wet season.

¹ Antimony, Echlorodibromomethane, and dichlorobromomethane are also exceptions, but the objectives for these ~~two~~ pollutants are not for aquatic life protection; they are for human health protection from the consumption of fish and water (chlorodibromomethane, and dichlorobromomethane), and for protection of waters suitable or potentially suitable for drinking water supply (antimony). Although the Napa River's beneficial uses include MUN, there are no known drinking water intakes in the upper Napa River.

Discharger, Comment 7

The Discharger recommends the following revisions and additions to Fact Sheet Section IV.A.2, Discharge Prohibitions, paragraphs 6 and 7:

The Discharger provides a level of protection equivalent to installing diffusers by providing tertiary treatment (additional filtration) for the majority of its discharges. This Order contains more stringent effluent limits for BOD, TSS, and turbidity for tertiary-treated wastewater from Discharge Point 001 than those imposed on wastewater treated only to secondary treatment standards. These more stringent effluent limits will ensure that this advanced level of treatment continues. In addition to this advanced treatment, the 10:1 river-to-wastewater flow ratio required at Discharge Point 001 provides additional environmental protection, warranting an exception to Basin Plan Prohibition 1. The Discharger provides equivalent protection for its secondary-treated wastewater by complying with a 50: 1 river-to-wastewater flow ratio at Discharge Point 002. The 50: 1 river-to-wastewater flow ratio for Discharge Point 002 also encourages maximum wastewater recycling and use of the Plant's tertiary treatment capacity, and limits secondary-treated discharge to its current level. The Discharger utilizes Discharge Point 002 on a minimal basis in response to peak wet weather events and only when capacity of the filters is exceeded. In fact, Discharge Point 002 was used for just 20 days during the 2008/09 discharge season and for only 20 days during the 2009/10 discharge season. The Discharger can operate its facility under this requirement without hardship.

During previous permit terms, the Discharger evaluated the river-to-wastewater flow ratio using an estimated flow rate measured at RSW-004. In 2009, the Discharger worked with the Napa County Resource Conservation District to install a stream gage with telemetry on the Dunaweal Bridge (RSW-007). The sensors became operational in December 2009 and data collected at this point is being used to calibrate the sensor to the staff gage. When calibration is complete, the Discharger will initiate a formal request to the Executive Officer to change the river flow monitoring site to RSW-007.

Response 7

We revised the Tentative Order as suggested.

Discharger, Comment 8

The Discharger requests revisions to the mixing zone discussion in Fact Sheet Section IV.A.2, Discharge Prohibitions, to clarify how the mixing zone size was determined and how the mixing zone study results may be used to comply with Basin Plan provisions.

Response 8

We agree and revised the Tentative Order similar to the Discharger's suggestion. The Discharger's comment correctly points out that the description of initial dilution in the Tentative Order is incorrect; for a surface water discharge, initial dilution is defined as significant mixing produced by momentum-induced velocity of the discharge (Basin Plan

Section 3.1). We revised Fact Sheet Section IV.A.2, Discharge Prohibitions, to more accurately explain why a partial exception from Basin Plan Prohibition 1 is needed, as follows:

The previous permit required a river-to-wastewater ratio of 10:1 for Discharge Point 001 and, since the secondary effluent from Discharge Point 002 has lower effluent quality than the tertiary effluent from Discharge Point 001, a ratio of 50:1 for Discharge Point 002. This Order retains these river-to-wastewater ratios to minimize the discharge's impact on the receiving water. However, this does not fully address the issue of initial dilution and previous permits did not clearly outline their rationale. ~~Initial dilution roughly equates to instantaneous mixing. Because neither outfall has a diffuser, neither outfall has initial dilution.~~ for a surface discharge is defined by Basin Plan Section 3.1 as significant mixing produced by the momentum-induced velocity of a discharge. Partly because neither outfall has a diffuser, neither outfall achieves initial dilution of 10:1 or greater as required by Basin Plan Prohibition 1. This fact is made evident in the dilution credit discussion in Fact Sheet Section IV.C.4.b, below, and is addressed by the following justification for a partial exception for the initial dilution element of Prohibition 1. The minimum river-to-wastewater flow ratios are necessary to ensure compliance with the full intent of Prohibition 1, specifically (b) through (d), above.

Discharger, Comment 9

The Napa River Collaborative Monitoring Program originally included five participants: Napa Sanitation District, City of American Canyon, City of Calistoga, Town of Yountville, and City of St. Helena. Monitoring in 2002 and 2003 established that the Napa River has tidal and non-tidal stretches, with tidal influence extending to the City of Napa's northern boundary (just upstream of the Trancas Bridge). Subsequent collaborative monitoring in the non-tidal reach of the Napa River was undertaken by only the three dischargers in this area (Calistoga, Yountville, and St. Helena). The Discharger suggests revisions to Fact Sheet Section IV.C.3.c, Ambient Background Data, to include this history.

Response 9

We agree and, as suggested, revised Fact Sheet Section IV.C.3.c, Ambient Background Data, as follows:

- c. Ambient Background Data.** On March 5, 2003, a group of five dischargers to the Napa River, including the City of Calistoga, submitted the "Collaborative Napa River Receiving Water Evaluation," which provided ambient background data for the non-tidal section of the Napa River upstream of between the cities of Calistoga and the City of Napa. Water quality data from a monitoring location immediately upstream of the discharge was selected to represent background water quality for the RPA, which used freshwater water quality objectives. These data were supplemented by receiving water data collected by the City of Calistoga, the City of St. Helena, and the Town of Yountville from April 2007 to February 2009. (The Napa Sanitation District and the City of American Canyon were not involved in recent monitoring efforts because their discharges are

located in the lower, tidally-influenced section of the Napa River.) The SIP states that, for calculating WQBELs, ambient background concentrations are either the observed maximum ambient water column concentrations or, for objectives intended to protect human health from carcinogenic effects, the arithmetic mean of observed ambient water concentrations. For the RPA, ambient background concentrations are the observed maximum detected water column concentrations.

Discharger, Comment 10

The Discharger requests that Fact Sheet Section IV.C.4.b, Dilution Credit, state that the sizes of the mixing zones corresponding to the granted dilution credits are estimated by Regional Water Board staff. These smaller mixing zones were not actually modeled or delineated in the City's Mixing Zone Study Report.

Response 10

We agree. Regional Water Board staff estimated the mixing zone sizes corresponding to the granted dilution credits using CORMIX output files that the Discharger generated as part of its mixing zone study. We revised Fact Sheet Section IV.C.4.b, next to last paragraph, as follows:

For each pollutant, the smallest practicable mixing zone is the mixing zone that results in the smallest dilution credit, not to exceed 10:1 which is the upper bound for the model results. The dilution credit was determined based on the smallest credit resulting in WQBELs with which the Discharger could comply. The dilution credits were set so that the 95th percentile of the historic effluent data was less than the resulting AMEL; the 99th percentile was less than the resulting MDEL; and the mean was less than the resulting long term average of the projected distribution. This Order allows dilution credits of D=1 for cyanide, D=2 for copper, and D=4 for antimony, corresponding to estimated maximum dilution mixing zone sizes of approximately 12 feet by 1.1 feet, 11 feet by 1.9 feet, and 79 feet by 1.9 feet, respectively. Regional Water Board staff estimated these mixing zone sizes by using CORMIX output files the Discharger provided. The maximum dilution credit of D=9 was used for chlorodibromomethane and dichlorobromomethane; however, the Discharger cannot comply with these effluent limits. The mixing zone study does not justify a larger mixing zone and greater dilution credit.

Discharger, Comment 11

The Discharger requests that Fact Sheet Section VII.C.5, Sanitary Sewer Overflows and Sewer System Management Plan, acknowledge the Discharger's participation in and compliance with the Statewide General Order for Sanitary Sewer Systems.

Response 11

We agree and, as suggested, revised the Tentative Order as shown below.

The General Order requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans and report all sanitary sewer overflows, among other

requirements and prohibitions. Furthermore, the General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. Inasmuch that the Discharger's collection system is part of the system that is subject to this Order, certain standard provisions apply as specified in Section VI.C.5, Sanitary Sewer Overflows and Sewer System Management Plan. The Discharger must comply with both the General Order and this Order. The Discharger and public agencies that are discharging wastewater into the facility were required to enroll under the General Order by December 1, 2006. The Discharger enrolled under the General Order, reports sanitary sewer overflows, and has developed and certified its Sewer System Management Plan.

Discharger, Comment 12

The Discharger suggests correction of several typographical errors.

Attachment E, Section V, Whole Effluent Toxicity Testing Requirements

The Discharger shall monitor ~~æute~~ whole effluent toxicity at the compliance locations (EFF-001 and EFF-002) and frequencies specified in Table E-3, as follows.

Attachment E, Section V.B.1.a, Whole Effluent Chronic Toxicity

a. Sampling. The Discharger shall collect 24-hour composite samples of the effluent at the compliance points specified in Table E-3 for critical life stage toxicity testing as indicated below. For toxicity tests requiring renewals, 24-hour composite samples shall be collected on consecutive days.

Attachment E, Section V.B.3.e, Chronic Toxicity Reduction Evaluation (TRE)

e. The TRE may be ended at any stage if monitoring finds there is no longer consistent toxicity (i.e., if the results comply with Section IV.A.4 D., Effluent Limitations, of this Order).

Attachment E, Table E-5

Footnotes [3] and [4] should be changed to [2] and [3].

Attachment F, Section I.B, Permit Information

The discharge of treated wastewater from the facility to the Napa River, a water of the United States, is currently regulated by Order No. R2-2006-0066 (National Pollutant Discharge Elimination System [NPDES] Permit No. CA0037966), which was adopted on October 11, 2006, and ~~expireds~~ on February 28 ~~October 10~~, 2010.

Attachment F, IV.C.4.b. WQBEL Calculations

The largest mixing zones based on scenarios 3 and 4 were 410 feet long by ~~4~~15 feet wide for Discharge Point 001, and 43 feet long by 5 feet wide for Discharge Point 002. The mixing zones based on scenario 5 were 525 feet long by 12 feet wide for Discharge Point 001, and 8 feet long by 7 feet wide for Discharge Point 002. The modeled plumes hugged the shoreline nearest the discharge. Near-field (i.e., momentum-induced) dilution corresponding to these scenarios ranged from approximately 3:1 to 4:1 at distances ranging from approximately 3 to 17 feet downstream of the modeled outfall.

The Discharger's April 2010 study found that the modeled mixing zones discussed above (extending as far as 525 feet long or 1415 feet wide) would comply with all the above conditions. On a pollutant-by-pollutant basis, the smallest practicable mixing zone can be no larger than those evaluated in the study. Since these mixing zones meet the SIP criteria listed above, smaller mixing zones also meet these criteria.

Table 7, Effluent Limitations for Toxic Pollutants

Matches correct values shown in Table F-9 and on page F-24.

Table 7. Effluent Limitations for Toxic Pollutants

Parameter	Units	Effluent Limitations ^[1]	
		AMEL	MDEL
Antimony	µg/L	275	396
Copper	µg/L	11	20
Cyanide	µg/L	7.3	18
Chlorodibromomethane	µg/L	3.4	6.4
Dichlorobromomethane	µg/L	4.9	9.0
Dioxin-TEQ	µg/L	1.3 x 10 ⁻⁸	2.6 x 10 ⁻⁸

Response 12

We agree and revised the Tentative Order as suggested.

Discharger, Comment 13

The Discharger requests additional time to complete tasks required by the Tentative Cease and Desist Order to control chlorodibromomethane and dichlorobromomethane. The proposed changes do not change the date on which the Discharger must comply with Permit effluent limitations on these pollutants. The proposed revisions are as follows:

Table 2. Time Schedule and Prescribed Actions

Action	Deadline
a. Comply with the following interim effluent limits at Discharge Points 001 and 002: Chlorodibromomethane: 14 µg/L maximum daily effluent limitation. Dichlorobromomethane: 36 µg/L maximum daily effluent limitation.	Upon effective date of Order
b. Submit a plan for reducing effluent chlorination to levels that will decrease the production of chlorodibromomethane and dichlorobromomethane. The chlorine dose must remain sufficient to comply with the bacteria limits specified in Permit Section IV.A.	November 1, 2010
c. Implement the plan developed in action "b" in accordance with changes that may be specified by the Regional Water Board's Executive Officer.	January 1, 2011
d. Submit a report documenting the results of implementing action "c."	September 1, 2011
e. If implementation of action "c" does not bring the effluent into compliance (as defined in State Implementation Policy section 2.4.5) with the Permit effluent limits, submit a plan to study the feasibility of alternative methods to achieve compliance. These may include installing aerators in the effluent	September 1, 2011 July 31, 2012

Action	Deadline
storage ponds to encourage aerobic degradation of chlorodibromomethane and dichlorobromomethane prior to river discharge, source control of precursor compounds (methane and bromomethane), and use of alternative disinfection technologies such as chlorine dioxide, ozone, UV. The plan shall identify an implementation schedule for investigating these options, selecting a preferred option, and implementing the preferred option.	
f. Implement the plan developed in action “e” in accordance with changes that may be specified by the Regional Water Board’s Executive Officer.	November 1, 2011 <u>September 30, 2012</u>
g. Submit annual status reports including preliminary findings from the work performed in actions “c” and “e” above.	Annually each February 28 in the Pollutant Minimization Program Report
h. Achieve full compliance with the effluent limitations in Permit Section V.B for chlorodibromomethane and dichlorobromomethane. If the Discharger fails to achieve full compliance with the effluent limitations by the deadline, it shall submit by the deadline a report addressing why compliance was not achieved and provide a plan and time schedule for achieving compliance as soon as possible.	August 31, 2014

Response 13

We agree that the suggested intermediate deadlines seem reasonable and revised the Tentative Cease and Desist Order as suggested.

IV. Staff-Initiated Revisions

Staff-Initiated Revision 1:

A sentence was added to clarify Fact Sheet Section II.D.2, Acute Toxicity, as follows:

2. **Acute toxicity.** The Discharger's acute toxicity monitoring data show five violations of the acute toxicity effluent limitations at discharge point 001 from October 2006 – February 2009. Between February 2008 and April 2009, the single-sample minimum of 70 percent survival was violated three times (results of 0, 25, and 65 percent survival) and the minimum three-sample median requirement of 90 percent was violated twice (results of 25 and 65 percent survival). The Discharger subsequently conducted accelerated monitoring and additional testing, as required by its permit, until the results showed a return to compliance. The effluent acute toxicity was attributed to the type of coagulant being used; bioassay results returned to compliance after the coagulant was changed. Regional Water Board staff sent a staff enforcement letter. There were no violations of the acute toxicity effluent limitations at Discharge Point 002.

Staff-Initiated Revision 2:

Minor changes were made to clarify the Tentative Order's terminology for the Discharger's various wastewater ponds. In the revised Tentative Order, the term "wastewater ponds" means all wastewater and effluent storage ponds operated by the Discharger. The term "riverside wastewater ponds" refers to the four ponds, visible on Attachment B, next to the Napa River. These ponds are operated in series and are the last step prior to discharge through Discharge Point 001. The term "effluent storage pond" refers to the on-site effluent storage pond. The term "irrigation storage ponds" refers to the off-site irrigation storage ponds, visible on Attachment C, used to store tertiary-treated effluent for reuse. Finally, references to "Pond 1" and "Pond 2" in Section VI.C.4.b have been changed to refer to "Riverside Storage Pond 1" and "Riverside Storage Pond 2."