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Secretary for
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California Regional Water Quality Control Board

San Francisco Bay Region

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Jerry Brown
Governor

REVISED TENTATIVE ORDER NO. R2-2011-0XXX
NPDES NO. CA0037810

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

Table 1. Discharger Information

Discharger	City of Petaluma
Name of Facility	Ellis Creek Water Recycling Facility and its collection system
Facility Address	3890 Cypress Drive Petaluma, CA 94954
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a major discharge.	

Discharges from the Ellis Creek Water Recycling Facility at the discharge point identified below are subject to waste discharge requirements as set forth in this Order.

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Secondary Treated Municipal and Industrial Wastewater	38° 12’ 33”	122° 34’ 22”	Petaluma River

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	DATE
This Order shall become effective on:	March 1, 2011
This Order shall expire on:	February 28, 2016
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 Petaluma
Name of Facility	Ellis Creek Water Recycling Facility and its collection system
Facility Address	3890 Cypress Drive Petaluma, CA 94954
Facility Contact, Title, and Phone	Matthew Pierce, Operations Supervisor, (707) 776-3777
Mailing Address	11 English Street Petaluma, CA 94952
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	6.7 million gallons per day (MGD)
Service Area	City of Petaluma and Town of Pengrove
Service Population	61,500

II. FINDINGS

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

A. Background. The City of Petaluma (hereinafter the Discharger) is currently discharging under Order No. R2-2005-0058, National Pollutant Discharge Elimination System (NPDES) Permit No. CA0037810, as amended by Order No. R2-2010-0054 (updated regional standard provisions amendment) and Order No. R2-2010-0056 (copper and cyanide amendment) (hereinafter the previous orders). The Discharger submitted a Report of Waste Discharge, dated April 23, 2010, and applied for an NPDES permit reissuance to discharge treated wastewater from its Ellis Creek Water Recycling Facility (Facility) to waters of the State and the United States. The Discharger is also subject to the requirements of Order No. R2-2007-0077 (NPDES Permit No. CA0038849), which establishes requirements regarding discharges of mercury to San Francisco Bay. Order No. R2-2007-0077 is unaffected by this Order.

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

B. Facility Description and Discharge Location

1. **Facility Description.** The Discharger owns and operates the Facility and its collection system, both of which are subject to this Order. Facility influent is treated by screening and grit removal, secondary treatment using activated sludge, and secondary clarification. After secondary clarification, some of the water is pumped to the Discharger's tertiary treatment system (flocculation, filtration, and UV disinfection), and subsequently recycled. The Discharger's water recyling activities are regulated under Regional Water Board Order No. 96-011. Remaining flows are directed through a series of oxidation ponds (162 acres) and constructed wetlands (32 acres) for additional biological treatment. After the treatment wetlands, the water is

chlorinated and then flows to either polishing wetlands (31 acres) or a chlorine contact chamber. Wastewater from the polishing wetlands is discharged to the Petaluma River, or sent to the chlorine contact chamber. Wastewater from the chlorine contact chamber is dechlorinated and discharged to the Petaluma River, or recycled for irrigation as described below.

The Discharger's sanitary sewer collection system comprises approximately 224 miles of public sewer pipelines ranging in diameter from 6 to 48 inches. The collection system also includes four primary pump stations: C Street, Wilmington, Payran, and Copeland Street. These pump stations have alarms for notification of system failure and provision of emergency power.

Attachment B provides a map of the area around the Facility. Attachment C provides flow schematics.

2. **Discharge Location and Description**. Treated wastewater that is not recycled is discharged to the Petaluma River through a 24" outfall pipe about ½-mile from the Facility. The outfall pipe splits at a Y junction just prior to discharge so the discharge is at two points. Neither discharge point has a diffuser. The discharge is into the tidally-influenced portion of the Petaluma River approximately 10 miles upstream of San Pablo Bay. The depth of the river above the top of the outfall pipe varies from 1.6 feet to 8.1 feet, depending on the tide.

3. **Recycled Water Activities.** The Discharger recycled about 780 million gallons (2,400 acre-feet) of its wastewater in 2009. This represents about 48% of the wastewater it treated. Most of this recycled water was secondarily-treated and was used for irrigation (522 million gallons for 782 acres of pastures, 194 million gallons for 220 acres at golf courses, and 1.25 million gallons for 47 acres of vineyards).

   In addition to the secondarily-treated recycled water used for irrigation, the Discharger recently installed a tertiary treatment system capable of treating 5.3 MGD. The Discharger anticipates needing approximately 460 million gallons of tertiarily-treated water by 2025 to offset potable water demand. The Discharger also anticipates needing another 200 million gallons to provide uninterrupted supply during drought years. While numerous potential customers have requested recycled water, the Discharger does not currently have a storage and distribution system to deliver it to them. At this time, the Facility is the sole user of tertiarily-treated water. It used 66 million gallons in 2009 for fire suppression systems, toilet flushing, wash water, pump seal water, and other on-site uses. The Discharger proposes to construct a 2.2 million gallon reservoir to store tertiarily treated water and 7,600 linear feet of 20" pipeline to fill the reservoir. Once this project is completed, the City will begin delivering water to 55 parks, playing fields, schools, and golf courses. However, funding for construction has not yet been acquired.

4. **Biosolids Management.** Waste activated sludge from the secondary process is thickened in a gravity belt thickener. Thickened sludge is then pumped to the acid phase digester for initial digestion. After initial digestion, treated sludge is pumped to a methane digester for final volatile solids destruction. Treated sludge from the methane digester is thickened in a rotary screen thickener prior to dewatering in a mechanical screw press. Final dewatered biosolids are disposed of in a municipal solid waste landfill, or reused by land application in accordance with 40 CFR Part 503.

5. **Storm Water Discharge.** The Discharger does not require coverage under the State Water Resources Control Board's (State Water Board) statewide NPDES permit for storm water discharges associated with industrial activities (NPDES General Permit No. CAS000001) because all storm water flows in contact with Facility equipment or sewage is directed to the headworks for treatment.

C. Legal Authorities. This Order is issued pursuant to Clean Water Act (CWA) section 402 and California Water Code (CWC) chapter 5.5, division 7 (commencing with section 13370) and implementing regulations. It shall serve as an NPDES permit for point source discharges from the Facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to CWC article 4, chapter 4, division 7 (commencing with section 13260).

D. Background and Rationale for Requirements. The Regional Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for requirements of the Order, is hereby incorporated into this Order and constitutes part of the findings for this Order. Attachments A through E, and G through H, 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 CEQA chapter 3.

F. Technology-Based Effluent Limitations. CWA section 301(b) and NPDES regulations at Title 40 of the Code of Federal Regulations (40 CFR) section 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. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 CFR 133. Further discussion of the technology-based effluent limitation development is included in the Fact Sheet (Attachment F).

G. Water Quality-Based Effluent Limitations (WQBELs). CWA section 301(b) and 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.

NPDES regulations at 40 CFR 122.44(d)(1)(i) mandate that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, 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 (WQC), 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* (hereinafter 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 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 Board, the Office of Administrative Law (OAL), and USEPA. Requirements of this Order implement the Basin Plan.

The discharge occurs in the tidally-influenced section of the Petaluma River approximately 10 miles upstream of San Pablo Bay. Table 5 below lists the beneficial uses in the Basin Plan for the Petaluma River.

Table 5. Beneficial Uses of the Petaluma River

Receiving Water Name	Beneficial Uses
Petaluma River	Cold Water Habitat (COLD) Estuarine Habitat (EST) Fish Migration (MIGR) Preservation of Rare and Endangered Species (RARE) Fish Spawning (SPWN) Warm Water Habitat (WARM) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Navigation (NAV)

State Water Board Resolution No. 88-63 establishes as State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply (MUN). Because of the marine influence in San Pablo Bay, total dissolved solids levels in this section of the Petaluma River sometimes exceed 3,000 milligrams per liter (mg/L) and thereby meet an exception to State Water Board Resolution No. 88-63. The MUN designation therefore does not apply to this section of the Petaluma River.

The State Water Board's *Water Quality Control Plan for Enclosed Bays and Estuaries—Part 1, Sediment Quality* became effective on August 25, 2009. This plan supersedes other narrative sediment quality objectives, and establishes new sediment quality objectives and related implementation provisions for specifically defined sediments in most bays and estuaries.

I. National Toxics Rule (NTR) and California Toxics Rule (CTR). USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995, and November 9, 1999. About 40 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 WQC for priority pollutants.

J. State Implementation Policy. On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated through the NTR and the priority pollutant objectives 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.

K. 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.

L. 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.

M. Stringency of Requirements for Individual Pollutants. This Order contains both technology-based and water quality based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on biochemical oxygen demand (BOD) and total suspended solids (TSS). 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.

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).

N. Antidegradation Policy. NPDES regulations at 40 CFR 131.12 require that state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy through State Water Board Resolution No. 68-16, which incorporates the federal antidegradation policy where the federal policy applies and requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies.

O. Anti-Backsliding Requirements. CWA sections 402(o)(2) and 303(d)(4) and 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent

limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed.

P. Endangered Species Act. This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the State. The Discharger is responsible for meeting all requirements of applicable State and federal law pertaining to threatened and endangered species.

Q. 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 (MRP, Attachment E) establishes monitoring and reporting requirements to implement federal and State requirements. This MRP is provided in Attachment E.

R. Standard and Special Provisions. Standard provisions, which apply to all NPDES permits in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in Attachment D. The Discharger must comply with all standard provisions and with those additional conditions that apply under 40 CFR 122.42. The Discharger must also comply with the Regional Standard Provisions provided in Attachment G. The Regional Water Board has also included in this Order special provisions applicable to the Discharger. The attached Fact Sheet (Attachment F) provides the rationale for the special provisions.

S. Provisions and Requirements Implementing State Law. None of the requirements in this Order are included to implement State law only.

T. Notification of Interested Parties. The Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and provided them with an opportunity to submit their written comments and recommendations. The Fact Sheet (Attachment F) provides details of the notification.

U. Consideration of Public Comment. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. The Fact Sheet (Attachment F) provides details of the public hearing.

IT IS HEREBY ORDERED, that this Order supersedes Order Nos. R2-2005-0058, R2-2010-0054, and R2-2010-0056 with respect to the Discharger, except for enforcement purposes. In order to meet the provisions contained in CWC Division 7 (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

A. Discharge of treated wastewater at a location or in a manner different from that described in this Order is prohibited.

B. The bypass of untreated or partially treated wastewater to waters of the United States is prohibited, except as provided for in the conditions stated in Attachment D, subsections I.G.2 and I.G.4.

C. The average dry weather influent flow as measured at monitoring station A-001, described in the attached MRP (Attachment E), shall not exceed 6.7 MGD. Actual average dry weather flow shall be determined for compliance with this prohibition over three consecutive dry weather months each year.

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

E. Discharge to the Petaluma River is prohibited during the dry weather period from May 1 through October 20, except when the Facility inflow exceeds the capacity of the recycled water distribution and storage system. From May 1 through October 20, the Discharger shall notify the Regional Water Board case manager by phone or email of the need to discharge immediately upon making the determination that inflow will exceed the capacity of the recycled water distribution and storage system, and provide information supporting the determination. Unless the case manager objects within a reasonable time, the Discharger may then discharge to the extent necessary. The Discharger shall submit a report within five business days from the date of the discharge. In the report, the Discharger shall fully explain the need to discharge and provide information regarding the flow discharged, the duration of discharge, and the capacity of the recycled water distribution and storage system during this period.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations for Conventional and Non-Conventional Pollutants – Discharge Point 001

1. Effluent Limitations for Conventional and Non-Conventional Pollutants

The Discharger shall comply with the following effluent limitations in Table 6 at monitoring station E-001 as defined in the attached MRP (Attachment E).

Table 6. Effluent Limitations for Conventional Pollutants

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
BOD_5	mg/L	30	45	---	---	---
TSS[1]	mg/L	30	45	---	---	---
BOD and TSS percent removal	%	85 (minimum)	---	---	---	---
Oil and Grease	mg/L	10	---	20	---	---
pH[2]	s.u	---	---	---	6.5	8.5
Chlorine residual [3]	mg/L	---	---	---	---	0.0

Unit Abbreviations:

mg/L = milligrams per liter
s.u. = standard units

Footnotes to Table 6:

[1] TSS. The Discharger shall begin complying with the effluent limits for TSS on November 1, 2011, as indicated in a letter from the Regional Water Board to the Discharger dated October 28, 2009. This delay allows bullrush plants in the new treatment wetlands to mature and adequately reduce TSS.

[2] pH. 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 is outside the required range 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.

[3] Chlorine residual. The Discharger may elect to use continuous on-line monitoring systems for measuring flows and chlorine and sulfur dioxide concentrations and dosage (including a safety factor) to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Regional Water Board staff may conclude that false positive chlorine residual exceedances are not violations of the effluent limitation.

2. **Enterococcus Bacteria:** The discharge at Discharge Point 001 shall meet the following limitation of bacteriological quality, with compliance measured at Monitoring Location E-001-D, as defined in the attached MRP (Attachment E):

   The 30-day geometric mean shall not exceed 35 enterococcus colonies per 100 milliliters (mL).

B. Effluent Limitations for Toxic Substances – Discharge Point 001

The Discharger shall comply with the following effluent limitations in Table 7 at monitoring station E-001 as defined in the attached MRP (Attachment E).

Table 7. Effluent Limitations for Toxic Pollutants

Constituent	Units	Effluent Limitations	
		Average Monthly	Maximum Daily
Copper	µg/L	7.8	12
Cyanide	µg/L	5.8	13
Dioxin-TEQ	µg/L	1.4×10^{-8}	2.8×10^{-8}

Unit Abbreviation:

µg/L = micrograms per liter

C. Whole Effluent Toxicity

1. Whole Effluent Acute Toxicity

a. The Discharger shall comply with the following acute toxicity limitations at monitoring station E-001:

   (1) An 11-sample median value of not less than 90 percent survival; and

   (2) An 11-sample 90^{th} percentile value of not less than 70 percent survival.

   Bioassays shall be conducted in compliance with Section V.A of the MRP (Attachment E.)

b. These acute toxicity limitations are further defined as follows:

(1) **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.

(2) **11-sample 90th percentile**. A bioassay test showing survival of less than 70 percent represents a violation of this effluent limit, if one or more of the past ten or less bioassay tests show less than 70 percent survival.

c. Bioassays shall be performed using the most up-to-date USEPA protocol and the most sensitive species as specified in writing by the Executive Officer based on the most recent screening test results. Bioassays shall be conducted in compliance with "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms," currently 5th Edition (EPA-821-R-02-012), with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP) upon the Discharger's request with justification.

2. Whole Effluent Chronic Toxicity

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 monitoring station E-001 as described in the MRP (Attachment E).

a. Compliance with the Basin Plan narrative toxicity objective shall be demonstrated according to the following tiered requirements based on results from representative samples of the treated effluent meeting test acceptability criteria:

(1) Conduct routine monitoring.

(2) Conduct accelerated monitoring after exceeding a three-sample median of 1 chronic toxicity unit (TUc[1]) or a single-sample maximum of 2 TUc or greater.

(3) Return to routine monitoring if accelerated monitoring does not exceed the "trigger" in (2), above.

(4) If accelerated monitoring confirms consistent toxicity in excess of either "trigger" in (2), above, initiate toxicity identification evaluation/toxicity reduction evaluation (TIE/TRE) procedures in accordance with Provision VI.C.2.b.

(5) Return to routine monitoring after appropriate elements of TRE workplan are implemented and either the toxicity drops below the "trigger" levels in (2), above, or

[1] A TUc equals 100 divided by the no observable effect level (NOEL). The NOEL is determined from IC, EC, or NOEC values. These terms, their usage, and other chronic toxicity monitoring program requirements are defined in more detail in the MRP (Attachment E).

based on the results of the TRE, the Executive Officer authorizes a return to routine monitoring.

b. The Discharger shall monitor chronic toxicity using 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 MRP (Attachment E) Appendix E-1. Chronic toxicity 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. In addition, bioassays shall be conducted in compliance with the most recently promulgated test methods, "Short-Term Methods For Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms," currently fourth edition (EPA-821-R-02-013); "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms," currently third edition (EPA-821-R-02-014); and "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms," currently second Edition (EPA/600/4 91/003), with exceptions granted by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP) upon the Discharger's request and justification.

D. Reclamation Specifications

Regional Water Board Order No. 96-011 contains water reclamation requirements for this Discharger.

V. POND SPECIFICATIONS

A. A minimum freeboard of 2.0 feet shall be maintained in oxidation ponds (Nos. 1 – 8) and treatment wetlands (Nos. 9-10) at all times. Exceptions to this requirement are allowed when an increase in pond storage capacity is needed just prior to, or during, the reclamation season provided there is no threat of overflow due to storm conditions or other circumstances. During these periods when the storage capacity is needed, the Discharger shall maintain a freeboard of 1.0 foot and ensure that the higher pond levels do not threaten the integrity of the pond levees.

B. All ponds shall be protected from erosion, washout, and flooding from the maximum flood having a predicted frequency of once in 100 years.

VI. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

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 receiving water:

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

   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 beyond present natural background levels;

d. Visible, floating, suspended, or deposited oil or other products of petroleum origin; and

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 render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State at any place within 1 foot of the water surface:

a. Dissolved Oxygen	5.0 mg/L, minimum Furthermore, the median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.
b. Dissolved Sulfide	Natural background levels
c. pH	The pH shall not be depressed below 6.5 or raised above 8.5. The discharge shall not cause changes greater than 0.5 pH units in normal ambient pH levels.
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.
d. Unionized Ammonia	0.16 mg/L maximum and 0.025 mg/L annual median. These limits shall apply at receiving water stations C-1, C-2B, and C-R.

3. The discharge shall not cause a violation of any particular water quality standard for receiving waters adopted by the Regional Water Board or the State Water Board 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.

B. Groundwater Limitations

Not Applicable.

VII. PROVISIONS

A. Standard Provisions

1. **Federal Standard Provisions.** The Discharger shall comply with Federal Standard Provisions included in Attachment D of this Order.

2. **Regional Standard Provisions.** The Discharger shall comply with all applicable items of the Regional Standard Provisions, and Monitoring and Reporting Requirements (Supplement to Attachment D) for NPDES Wastewater Discharge Permits (Attachment G), including amendments thereto.

B. MRP Requirements

The Discharger shall comply with the MRP (Attachment E), and future revisions thereto, and applicable sampling and reporting requirements in the standard provisions listed in 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 have or will have a reasonable potential to cause or contribute to, or will cease to have, 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 may be modified as necessary to reflect updated WQOs and wasteload allocations in TMDLs. Adoption of effluent limitations contained in this Order is not intended to restrict in any way future modifications based on legally adopted WQOs or TMDLs, or as otherwise permitted under federal regulations governing NPDES permit modifications.

c. If translator, dilution, or other water quality studies provide a basis for determining that a permit condition should be modified.

d. If receiving water does not meet promulgated ammonia WQOs.

e. If State Water Board precedential decisions, new policies, new laws, or new regulations on chronic toxicity or total chlorine residual become available.

f. If an administrative or judicial decision on a separate NPDES permit or WDRs addresses requirements similar to this discharge.

g. Or as otherwise authorized by law.

The Discharger may request permit modification based on any of the circumstances described above. With any such request, the Discharger shall include an antidegradation and antibacksliding analysis.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. Effluent Characterization for Selected Constituents

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

The Discharger shall evaluate on an annual basis if concentrations of any constituents increase over past performance. The Discharger shall investigate the cause of any 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 requirement 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 these 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.

b. Chronic Toxicity Reduction Evaluation (TRE)

(1) The Discharger shall prepare a generic TRE work plan within 90 days of the effective date of this Order to be ready to respond to toxicity events. The Discharger shall review and update the work plan as necessary so it remains current and applicable to the discharge and discharge facilities.

(2) Within 30 days of exceeding either trigger for accelerated monitoring, the Discharger shall submit to the Regional Water Board a TRE work plan, which should be the generic work plan revised as appropriate for this toxicity event after consideration of available discharge data.

(3) Within 30 days of completing the accelerated monitoring tests observed to exceed either trigger, the Discharger shall initiate a TRE in accordance with a TRE work plan that incorporates any and all comments from the Executive Officer.

(4) The TRE shall be specific to the discharge and be in accordance with current technical guidance and reference materials, including USEPA guidance materials.

The TRE shall be conducted as a tiered evaluation process, such as summarized below:

(a) Tier 1 consists of basic data collection (routine and accelerated monitoring).

(b) Tier 2 consists of evaluation of optimization of the treatment process, including operation practices and in-plant process chemicals.

(c) Tier 3 consists of a toxicity identification evaluation (TIE).

(d) Tier 4 consists of evaluation of options for additional effluent treatment processes.

(e) Tier 5 consists of evaluation of options for modifications of in-plant treatment processes.

(f) Tier 6 consists of implementation of selected toxicity control measures, and follow-up monitoring and confirmation of implementation success.

(5) The TRE may be ended at any stage if monitoring finds there is no longer consistent toxicity (complying with requirements of Section IV.C.2 of the Order).

(6) 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.

(7) 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.

(8) Many recommended TRE elements parallel required or recommended efforts for source control, pollution prevention, and storm water control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements or recommended efforts of such programs may be acceptable to comply with TRE requirements.

(9) The Regional Water Board recognizes that chronic toxicity may be episodic and identification of causes of and reduction of sources of chronic toxicity may not be successful in all cases. Consideration of enforcement action by the Regional Water Board will be based in part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.

3. Best Management Practices and Pollution Minimization Program

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

b. The Discharger shall submit an annual 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:

i. *A brief description of the treatment plant, treatment plant processes and service area*.

ii. *A discussion of the current pollutants of concern.* Periodically, the discharger shall analyze its own situation to determine which pollutants are currently a problem and which pollutants may be potential future problems. This discussion shall include the reasons why the pollutants were chosen.

iii. *Identification of sources for the pollutants of concern*. This discussion shall include how the Discharger intends to estimate and identify sources of the pollutants. The Discharger 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 air deposition.

iv. *Identification of tasks to reduce the sources of the pollutants of concern.* This discussion shall identify and prioritize tasks to address the Discharger's pollutants of concern. The Discharger may implement tasks themselves or participate in group, regional, or national tasks that will address its pollutants of concern. The Discharger is strongly encouraged to participate in group, regional, or national tasks that will address its pollutants of concern whenever it is efficient and appropriate to do so. A time line shall be included for the implementation of each task.

v. *Outreach to employees.* The Discharger shall inform employees about the pollutants of concern, potential sources, and how they might be able to help reduce the discharge of these pollutants of concern into the treatment facilities. The Discharger may provide a forum for employees to provide input.

vi. *Continuation of Public Outreach Program.* The Discharger shall prepare a public outreach program to communicate pollution prevention to its service area. Outreach may include participation in existing community events such as county fairs, initiating new community events such as displays and contests during Pollution Prevention Week, conducting school outreach programs, conducting plant tours, and providing public information in newspaper articles or advertisements, radio or television stories or spots, newsletters, utility bill inserts, and web site. Information shall be specific to the target audiences. The Discharger shall coordinate with other agencies as appropriate.

vii. *Discussion of criteria used to measure Program's and tasks' effectiveness*. The Discharger shall establish criteria to evaluate the effectiveness of its Pollution Minimization Program. This shall also

include a discussion of the specific criteria used to measure the effectiveness of each of the tasks in sections VI.C.3. b.iii, iv, v, and vi.

viii. *Documentation of efforts and progress.* This discussion shall detail all of the Discharger's activities in the Pollution Minimization Program during the reporting year.

ix. *Evaluation of Pollutant Minimization Program's and tasks' effectiveness.* This Discharger shall use the criteria established in section VI.C.3. b.vii. to evaluate the Program's and tasks' effectiveness.

x. *Identification of specific tasks and time schedules for future efforts.* Based on the evaluation, the Discharger shall detail how it intends to continue or change its tasks in order to more effectively reduce the amount of pollutants to the treatment plant, and subsequently in its effluent.

c. Pollutant Minimization Program for 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 DNQ when the effluent limitation is less than the MDL, sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) and either:

i. A sample result is reported as DNQ and the effluent limitation is less than the RL; or

ii. A sample result is reported as 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 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. An 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 an 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 the effluent limitation;

iv. Implementation of appropriate cost-effective control measures for the reportable priority pollutants, consistent with the control strategy; and

v. The annual report required by section VI.C.3.b above, shall specifically address the following items:

1. All Pollutant Minimization Program monitoring results for the previous year;

2. A list of potential sources of the reportable priority pollutants;

3. A summary of all actions undertaken pursuant to the control strategy; and

4. A description of actions to be taken in the following year.

4. Reliability Status Report

The Discharger shall submit a Reliability Status Report, or an update as necessary, annually, to the Regional Water Board by February 1 each year.

(1) The Discharger shall develop and maintain a Reliability Status Report for its wastewater treatment facilities that will allow the Regional Water Board to evaluate the reliability of the 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 appropriate 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 operations. 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, 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 also include, in each annual self-monitoring report, a description or summary of review and evaluation procedures and changes to its Reliability Status Report.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Pretreatment Program

(1) The Discharger shall implement and enforce its approved pretreatment program in accordance with federal pretreatment regulations (40 CFR 403); pretreatment

standards promulgated under CWA sections 307(b), 307(c), and 307(d); pretreatment requirements specified under 40 CFR 122.44(j); and the requirements in Attachment H, "Pretreatment Requirements." The Discharger's responsibilities include, but are not limited to:

i. Enforcement of National Pretreatment Standards of 40 CFR 403.5 and 403.6;

ii. Implementation of its pretreatment program in accordance with legal authorities, policies, procedures, and financial provisions described in the general pretreatment regulations (40 CFR 403) and its approved pretreatment program;

iii. Submission of reports to USEPA, the State Water Board, and the Regional Water Board, as described in Attachment H, "Pretreatment Requirements."

iv. Evaluation of the need to revise local limits under 40 CFR 403.5(c)(1), and within 180 days after the effective date of this Order, submittal of a report acceptable to the Executive Officer describing the changes, with a plan and schedule for implementation.

(2) The Discharger shall implement its approved pretreatment program, and the program shall be an enforceable condition of this Order. If the Discharger fails to perform the pretreatment functions, the Regional Water Board, the State Water Board, or USEPA may take enforcement actions against the Discharger as authorized by the CWA.

b. Biosolids Management Practices Requirements

(1) All sludge generated by the Discharger must be disposed of in a municipal solid waste landfill, reused by land application, or disposed of in a sludge-only landfill in accordance with 40 CFR Part 503. If the Discharger desires to dispose of sludge by a different method, a request for permit modification must be submitted to the USEPA 180 days before start-up of the alternative disposal practice. All the requirements in 40 CFR 503 are enforceable by USEPA whether or not they are stated in an NPDES permit or other permit issued to the Discharger.

(2) Sludge treatment, storage, and reuse shall not create a nuisance, such as objectionable odors or flies, or result in groundwater contamination.

(3) Duty to mitigate: The Discharger shall take all reasonable steps to prevent or minimize any sludge use or disposal that has a likelihood of adversely affecting human health or the environment.

(4) The discharge of biosolids shall not cause waste material to be in a position where it is, or can be, carried from the sludge treatment and storage site and deposited in waters of the State.

(5) The sludge treatment and storage site shall have facilities adequate to divert surface runoff from adjacent areas, to protect boundaries of the site from erosion, and to prevent any conditions that would cause drainage from the materials in the temporary

storage site. Adequate protection is defined as protection from at least a 100-year storm and protection from the highest possible tidal stage that may occur.

(6) For sludge applied to land, placed on a surface disposal site, or fired in a biosolids incinerator as defined in 40 CFR 503, the Discharger shall submit an annual report to USEPA and the Regional Water Board containing monitoring results and compliance with pathogen and vector attraction reduction requirements as specified by 40 CFR 503, postmarked February 15 of each year, for the period covering the previous calendar year.

(7) Sludge disposed of in a municipal solid waste landfill shall meet the requirements of 40 CFR 258. In the annual self-monitoring report, the Discharger shall report the amount of sludge disposed of and the landfills to which it was sent.

(8) This permit does not authorize permanent on-site sludge storage or disposal activities. The Discharger shall file a Report of Waste Discharge and bring the site into compliance with all applicable regulations prior to the Discharger commencing any such activity.

c. Sanitary Sewer Overflows and Sewer System Management Plan

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

The General Waste Discharge Requirements for Collection System Agencies (Order No. 2006-0003 DWQ) has requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. While the Discharger must comply with both the General Waste Discharge Requirements for Collection System Agencies (General Collection System WDRs) and this Order, the General Collection System WDRs more clearly and specifically stipulates 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 the Order for sewage spills from the collection system upstream of the Facility boundaries. Attachments D and G of this Order specify reporting requirements for unauthorized discharges from anywhere within the Facility downstream of the Facility boundaries.

6. Other Special Provisions

a. Copper Action Plan

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

Table 8. Copper Action Plan

Task	Compliance Date
(1) Review Potential Copper Sources The Discharger has submitted an inventory of potential copper sources to the Facility.	Completed June 2010
(2) Implement Copper Control Program The Discharger shall submit a plan for and begin implementation of a program to reduce copper discharges identified in Task 1. The plan shall consist, at a minimum, of the following elements: a. Provide education and outreach to the public (e.g., focus on proper pool and spa maintenance and plumbers' roles in reducing corrosion). b. If corrosion is determined to be a significant copper source, work cooperatively with local water purveyors to reduce and control water corrosivity, as appropriate, and ensure that local plumbing contractors implement best management practices to reduce corrosion in pipes. c. Educate plumbers, designers, and maintenance contractors for pools and spas to encourage best management practices that minimize copper discharges.	With the annual pollution prevention report due in 2011
(3) Implement Additional Measures If the Regional Water Board notifies the Discharger that the three-year rolling mean copper concentration of the receiving water exceeds 3.0 µg/L, the Discharger shall evaluate the effluent copper concentration, shall develop and begin implementation of additional measures to control copper discharges, and shall report annually on the progress and effectiveness of measures taken together with a schedule for measures to be taken in the next 12 months.	With the annual pollution prevention report due after the notification
(4) Studies to Reduce Copper Pollutant Impact Uncertainties. The Discharger shall submit a study plan and schedule to conduct, or cause to be conducted, technical studies to investigate possible copper sediment toxicity and technical studies to investigate sublethal effects on salmonids. Specifically, the Discharger shall include the manner in which the above will be accomplished and describe the studies to be performed with an implementation schedule. To satisfy this requirement, the Discharger may collaborate and conduct these studies as a group.	With the annual pollution prevention report due in 2011
(5) Report Status of Copper Control Program The Discharger shall submit a report documenting copper control program implementation and addressing the effectiveness of the actions taken, including any additional copper controls required by Task 3, above, together with a schedule for actions to be taken in the next 12 months. Additionally, the Discharger shall report the findings and results of the studies completed, planned, or in progress under Task 4. Regarding the Task 4 studies, the Discharger may collaborate and provide this information in a single report to satisfy this requirement for an entire group.	With the annual pollution prevention report due in 2011

b. Cyanide Action Plan

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

Table 9. Cyanide Action Plan

Task	Compliance Date
(1) Review Potential Cyanide Contributors The Discharger shall submit an inventory of potential sources of cyanide to the treatment plant (e.g., metal plate operators, hazardous waste recycling, etc.). If no contributors of cyanide are identified, Tasks 2 and 3 are not required, unless the Discharger receives a request to discharge detectable levels of cyanide to its treatment plant. If so, the Discharger shall notify the Executive Officer and implement Tasks 2 and 3.	Completed June 2010
(2) Implement Cyanide Control Program The Discharger shall submit a plan for and begin implementation of a program to minimize cyanide discharges to its Facility consisting, at a minimum, of the following elements: a. Inspect each potential contributor to assess the need to include that contributing source in the control program. b. Inspect contributing sources included in the control program annually. Inspection elements may be based on USEPA guidance, such as Industrial User Inspection and Sampling Manual for POTWs (EPA 831-B-94-01). c. Develop and distribute educational materials to contributing sources and potential contributing sources regarding the need to prevent cyanide discharges. d. Prepare an emergency monitoring and response plan to be implemented if a significant cyanide discharge occurs.	With annual pollution prevention report due in 2011
(3) Implement Additional Cyanide Control Measures If the Regional Water Board notifies the Discharger that ambient monitoring shows cyanide concentrations of 1.0 µg/L or higher in the main body of San Francisco Bay, then within 90 days of the notification, the Discharger shall commence with actions to identify and abate cyanide sources responsible for the elevated ambient concentrations and shall report annually on the progress and effectiveness of actions taken together with a schedule for actions to be taken in the next 12 months.	With the annual pollution prevention report starting with the report due after notification
(4) Report Status of Cyanide Control Program The Discharger shall submit an annual report documenting implementation of the cyanide control program and addressing the effectiveness of actions taken, including any additional cyanide controls required by Tasks 2 and 3, above, together with a schedule for actions to be taken in the next 12 months.	With annual pollution prevention report due each year starting with the 2011 report

VII.COMPLIANCE DETERMINATION

Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined in Attachment A—Definitions, 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 reporting level (RL).

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:

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

Coefficient of Variation (*CV*)
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)
DNQ are those sample results less than the RL, but greater than or equal to the laboratory's MDL.

Dilution Credit
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)
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
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
The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Estuaries
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
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)
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
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)
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 (40 CFR), Part 136, Attachment B, revised as of July 3, 1999.

Minimum Level (ML)
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
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)
Sample results less than the laboratory's MDL.

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

Pollutant Minimization Program (PMP)
PMP means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Regional Water

Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to California Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

Pollution Prevention
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)
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
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
Any water designated as municipal or domestic supply (MUN) in a Regional Water Board Basin Plan.

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

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

where:

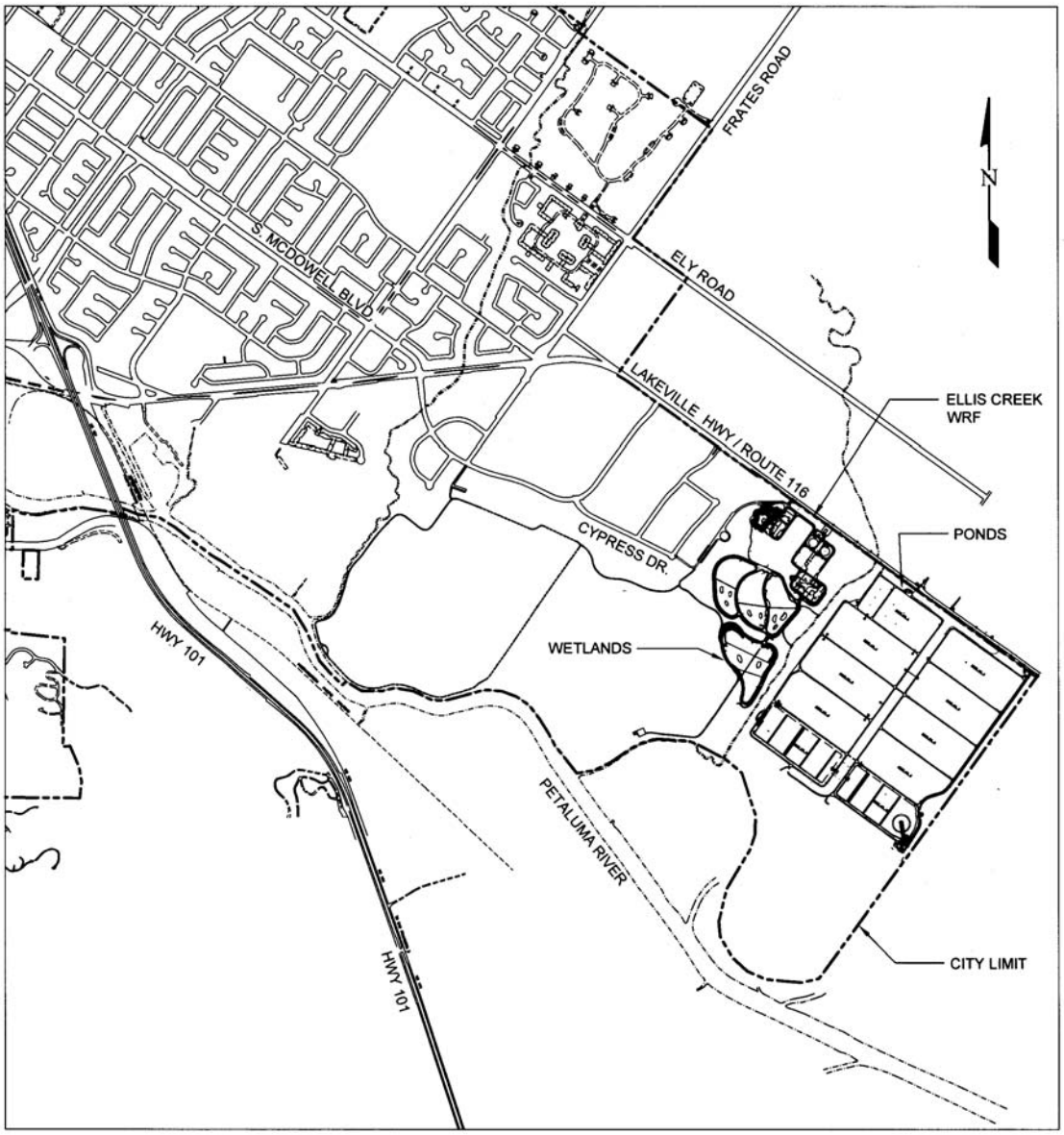
- x is the observed value;
- μ is the arithmetic mean of the observed values; and
- n is the number of samples.

Toxicity Reduction Evaluation (TRE)
TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may

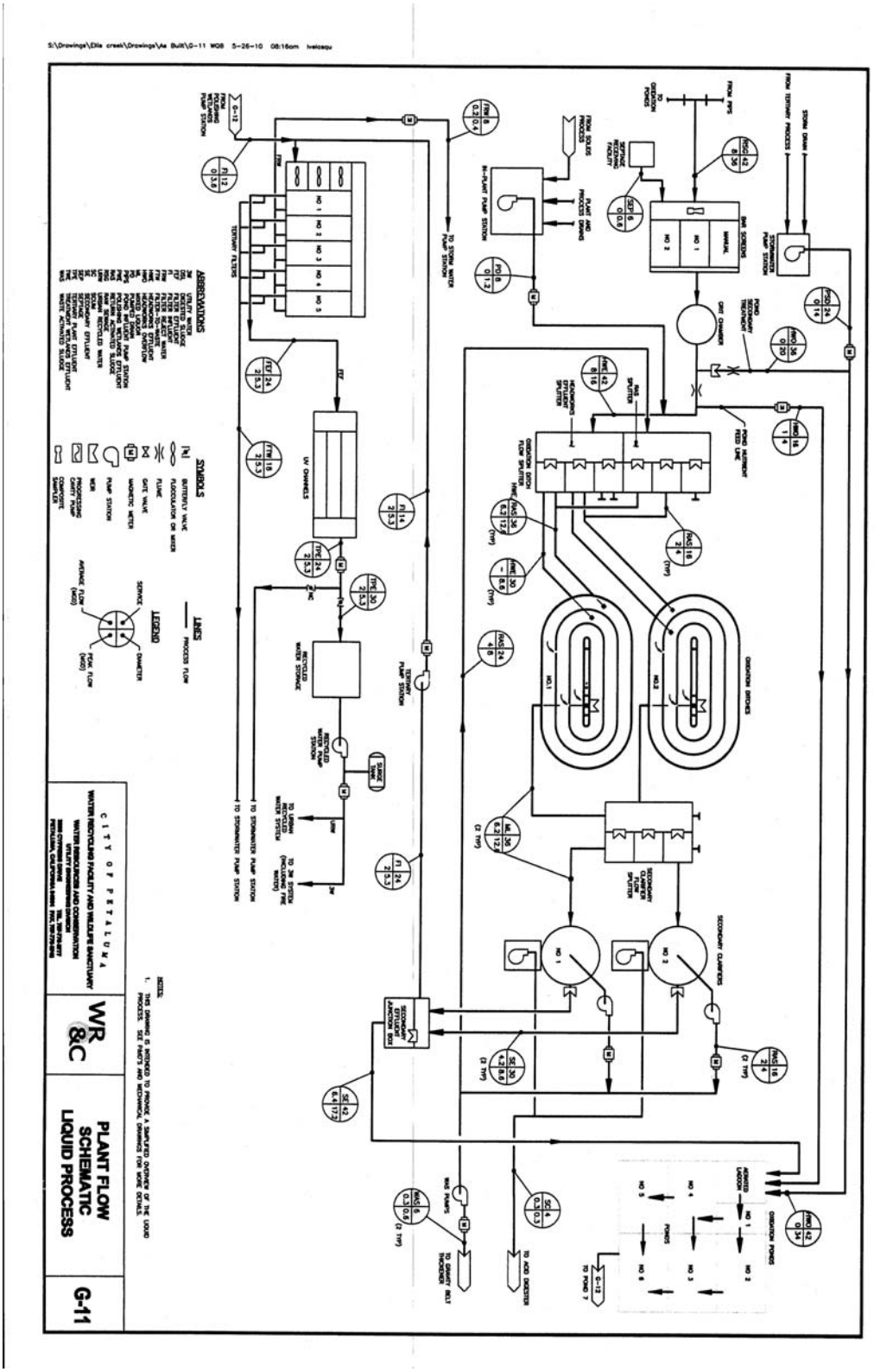
be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

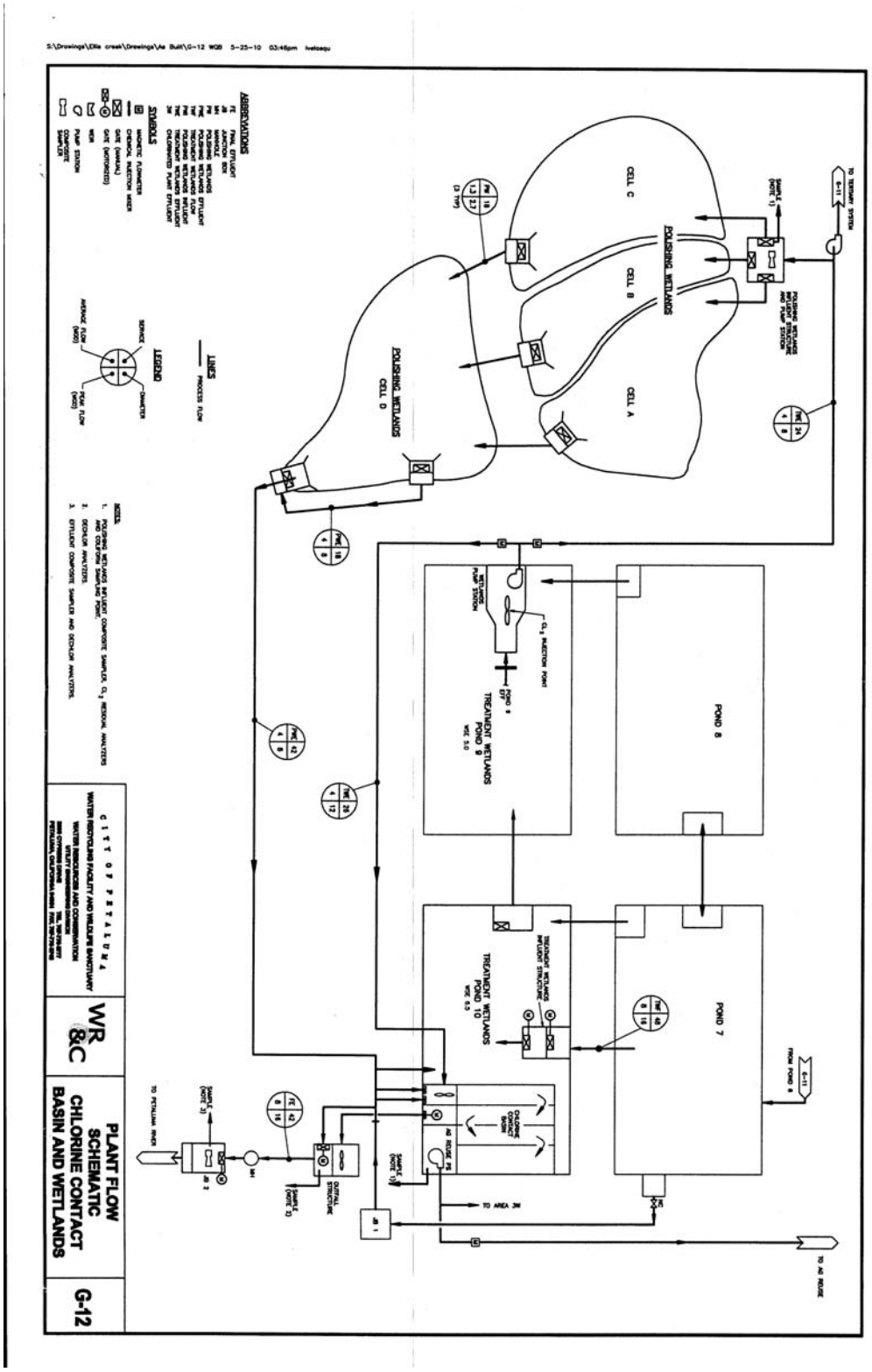
ATTACHMENT B – FACILITY MAP

ELLIS CREEK WATER RECYCLING FACILITY
LOCATION MAP



ATTACHMENT C – PROCESS FLOW DIAGRAM




PLANT FLOW SCHEMATIC
CHLORINE CONTACT BASIN AND WETLANDS
G-12
POLISHING WETLANDS CELL A
POLISHING WETLANDS CELL B
POLISHING WETLANDS CELL C
POLISHING WETLANDS CELL D
POND 7
POND 8
TREATMENT WETLANDS POND 9
TREATMENT WETLANDS POND 10
CHLORINE CONTACT BASIN
TO PETALUMA RIVER
TO AG REUSE
TO AREA 3R

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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 122.41(e)).

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 122.41(m)(4)(i)):

   a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 122.41(n)(3)):

a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 CFR 122.41(n)(3)(i));

b. The permitted facility was, at the time, being properly operated (40 CFR 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 CFR 122.41(n)(3)(iii)); and

d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 122.41(j)(2).)

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 CFR 122.41(j)(3)(i));

2. The individual(s) who performed the sampling or measurements (40 CFR 122.41(j)(3)(ii));

3. The date(s) analyses were performed (40 CFR 122.41(j)(3)(iii));

4. The individual(s) who performed the analyses (40 CFR 122.41(j)(3)(iv));

5. The analytical techniques or methods used (40 CFR 122.41(j)(3)(v)); and

6. The results of such analyses. (40 CFR 122.41(j)(3)(vi).)

C. Claims of confidentiality for the following information will be denied (40 CFR 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 CFR 122.7(b)(1)); and

2. Permit applications and attachments, permits and effluent data. (40 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 Facility 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 CFR 122.22(b)(2)); and

c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 122.41(l)(6)(i).)

2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 CFR 122.41(l)(6)(ii)):

   a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 CFR 122.41(l)(6)(ii)(A).)

   b. Any upset that exceeds any effluent limitation in this Order. (40 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 122.42(b)(3).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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Tables

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

40 CFR 122.48 requires that all NPDES permits specify monitoring and reporting requirements. California Water Code (CWC) sections 13267 and 13383 also authorize the Regional Water Board to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement federal and California regulations.

I. GENERAL MONITORING PROVISIONS

A. The Discharger shall comply with this MRP. The Executive Officer may amend this MRP pursuant to 40 CFR 122.62, 122.63, and 124.5. If any discrepancies exist between the MRP and the Regional Standard Provisions (Attachment G), this 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 and receiving water 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	A-001	At any point in the treatment facility's headworks at which all waste contributing to the system is present, and preceding any phase of treatment.
Effluent	E-001	At any point in the outfall pipe between the point of discharge and the point at which all flow contributing to the outfall is present. May be the same as E-001-D.
Effluent	E-001-D	At any point in the disinfection facility for flow E-001, where adequate contact with the disinfectant is assured.
Receiving Water	C-1	In the Petaluma River directly above the point of discharge.
Receiving Water	C-2A	In the Petaluma River 500 feet upstream of the discharge.
Receiving Water	C-2B	In the Petaluma River 500 feet downstream of the discharge.
Receiving Water	C-R	In the Petaluma River 2,000 feet downstream of the discharge.
Land Observations	P-1 through P-'n'	Along the corner and perimeter of the waste treatment facilities at equidistant intervals, not to exceed 200 feet. (A sketch showing the locations of the stations shall accompany each annual report).
Collection System	O-1 through O-'n'	At points in the collection system including manholes, pump stations, or any other locations where overflows occur.

III. INFLUENT MONITORING REQUIREMENTS

The Discharger shall monitor influent to the Facility at A-001 as follows.

Table E-2. Influent Monitoring – A-001

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow[1]	mgd	Continuous	Cont/D
	mg	1/Day	1/Day
BOD_5	mg/L	C-24	2/Week
	kg/day	Calculate	2/Week
TSS	mg/L	C-24	2/Week
	kg/day	Calculate	2/Week
Cyanide	µg/L	Grab	1/Month

Legend for Table E-2

Unit Abbreviations:

mg = million gallons
mgd = million gallons per day
mg/L = milligrams per liter
kg/day = kilograms per day
µg/L = micrograms per liter

Sample Type:

C-24 = 24-hour composite

Sampling Frequency:

1/Day = One time per day
2/Week = Two times per week
3/Week = Three times per week
1/Month = Once per month
Cont/D = Measured continuously, and recorded and reported daily

Footnote for Table E-2.

[1] Flow Monitoring. Flow shall be monitored continuously, and the following information shall be reported in self-monitoring reports each month:

- Daily: Daily flow (mg)
- Monthly: Average daily flow (mgd)
- Monthly: Maximum daily flow (mgd)
- Monthly: Minimum daily flow (mgd)
- Monthly: Total flow volume (mg)

IV. EFFLUENT MONITORING REQUIREMENTS

The Discharger shall monitor its treated wastewater as set forth in Table E-3.

Table E-3. Effluent Monitoring

Parameter	Units	Monitoring Station	Sample Type	Minimum Sampling Frequency
Flow [1]	MG and MGD	E-001	Continuous	Cont/D
pH [2]	s.u.	E-001	Grab	Daily
BOD_5	mg/L	E-001	C-24	2 times per week
	kg/day	---	Calculated	2 times per week

Parameter	Units	Monitoring Station	Sample Type	Minimum Sampling Frequency
TSS	mg/L	E-001	C-24	2 times per week
	kg/day	E-001	Calculated	2 times per week
BOD and TSS % Removal[3]	% removal	E-001	Calculated	Monthly
Oil and Grease[4]	mg/L	E-001	Multiple grabs	Monthly
	kg/day	E-001	Calculated	Monthly
Enterococcus Bacteria	MPN/100 mL	E-001-D	Grab	1 time per week
Temperature	°C	E-001	Grab	Daily
Total Chlorine Residual[5]	mg/L	E-001	Cont/H	Hourly
Acute Toxicity	% Survival	E-001	C-24	Monthly
Chronic Toxicity	TUc	E-001	C-24	Quarterly
Total Ammonia[6]	mg/L as N	E-001	C-24	Monthly
Un-ionized Ammonia	mg/L as N	E-001	Calculated	Monthly
Dissolved Oxygen	mg/L	E-001	Grab	Daily
Sulfides, Total and Dissolved (if D.O. < 2.0 mg/L)	mg/L	E-001	Grab	Daily
Copper	µg/L	E-001	C-24	Monthly
Cyanide	µg/L	E-001	Grab	Monthly
Dioxin-TEQ	µg/L	E-001	Grab	Annually
Remaining Priority Pollutants[7]	µg/L	E-001		Once per 5 years
Standard Observations	---	All P stations	---	Monthly

Legend to Table E-3:

Unit Abbreviations:

MG	= million gallons
MGD	= million gallons per day
s.u.	= standard units
mg/L	= milligrams per liter
kg/day	= kilograms per day
TUc	= chronic toxicity units
MPN/100 mL	= most probable number per 100 milliliters
NTU	= national turbidity units
µg/L	= micrograms per liter

Sample Type:

C-24	= 24-hour composite
Cont/D	= measured continuously, and recorded and reported daily
Cont/H	= measured continuously, and recorded and reported hourly

Footnotes to Table E-3:

[1] Flow Monitoring. Flow shall be monitored continuously, and the following information shall be reported in self-monitoring reports each month:

- Daily: Daily flow (MG)
- Monthly: Average daily flow (MGD)
- Monthly: Maximum daily flow (MGD)
- Monthly: Minimum daily flow (MGD)
- Monthly: Total flow volume (MG)

[2] pH. If pH is monitored continuously, the minimum and maximum pH values for each day shall be reported in monthly self-monitoring reports.

[3] BOD and TSS % Removal. The percent removal for BOD and TSS shall be reported for each calendar month in accordance with Effluent Limitations IV.A. 1 and 2. BOD and TSS samples shall be collected simultaneously with influent samples.

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

[5] Total Chlorine Residual. During times when at least a portion of the effluent has been routed through the chlorine contact chamber, effluent chlorine concentrations shall be measured continuously. Otherwise, when dechlorinating naturally through the polishing wetlands, effluent chlorine concentrations shall be measured by collection of grab samples twice daily at least four hours apart. 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.

[6] Total Ammonia. Monitoring for total ammonia shall occur concurrently with monitoring for temperature and pH, for determination of the un-ionized ammonia fraction.

[7] Remaining priority pollutants. For these pollutants, the sampling frequencies shall be the higher of those in this table or those under the pretreatment program sampling required in MRP section VIII. Pretreatment program monitoring can be used to satisfy relevant parts of these sampling requirements.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

The Discharger shall monitor acute toxicity at E-001 as follows.

A. Whole Effluent Acute Toxicity

1. Compliance with the acute toxicity effluent limitations of this Order shall be evaluated by measuring survival of test organisms exposed to flow-through bioassays if appropriate after written notification by the Executive Officer. Static-renewal bioassays are permitted until that time, to allow time for plants in the treatment wetlands to mature, for the Discharger to construct a facility capable of running flow-through bioassays, and for statewide policy on toxicity assessments to become effective.

2. Test organisms shall be fathead minnow (*Pimephales promelas*) 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 in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms,* 5th Edition.

4. If specific identifiable substances in the discharge can be demonstrated by the Discharger as being rapidly rendered harmless upon discharge to the receiving water, compliance with the acute toxicity limit may be determined after the test samples are adjusted to remove the influence of those substances. Written approval from the Executive Officer must be obtained to authorize such an adjustment.

5. The sample may be taken from final secondary effluent 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 monitoring location E-001 for critical life stage toxicity testing as indicated below. For toxicity tests requiring renewals, 24-hour composite samples collected on consecutive days are required.

b. Test Species. The test species shall be *Americamysis bahia*. The Discharger shall conduct a screening chronic toxicity test as described in Appendix E-1 following any significant change in the nature of the effluent or prior to application for permit renewal. The most sensitive species shall be used thereafter for routine chronic toxicity monitoring. The Executive Officer may change to another test species if data suggest that another test species is more sensitive to the discharge.

c. Frequency. The frequency of routine and accelerated chronic toxicity monitoring shall be as specified below.

(1) Routine Monitoring: Quarterly

(2) Accelerated Monitoring: Monthly

The Discharger shall accelerate monitoring to monthly after exceeding a three-sample median of 1 TUc or a single sample maximum of 2 TUc for discharges via Discharge Point 001, or as otherwise specified by the Executive Officer.

Monitoring conducted pursuant to a toxicity identification evaluation/toxicity reduction evaluation (TIE/TRE) effort shall satisfy the requirements for routine and accelerated monitoring while the TIE/TRE investigation is underway.

d. Methodology. Sample collection, handling, and preservation shall be in accordance with USEPA protocols. In addition, bioassays shall be conducted in compliance with the most recently promulgated test methods, as shown in Appendix E-1. These are *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms,* currently third edition (EPA-821-R-02-014), and *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms,* currently fourth Edition (EPA-821-R-02-013), with exceptions

granted the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

e. Dilution Series. The Discharger shall conduct tests with a control and five effluent concentrations (including 100% effluent). Test sample pH in each dilution in the series may be controlled to the level of the effluent sample as received prior to being salted up.

2. Chronic Toxicity Reporting Requirements

a. Routine Reporting. Toxicity test results for the current reporting period shall include, at a minimum, for each test:

(1) Sample dates

(2) Test initiation date

(3) Test species

(4) End point values for each dilution (e.g., number of young, growth rate, percent survival)

(5) NOEC values in percent effluent

(6) IC_{15}, IC_{25}, IC_{40}, and IC_{50} values (or EC_{15}, EC_{25} ... etc.) as percent effluent

(7) TUc values (100/NOEC, 100/IC_{25}, or 100/EC_{25})

(8) Mean percent mortality (±s.d.) after 96 hours in 100% effluent (if applicable)

(9) NOEC and LOEC values for reference toxicant tests

(10) IC_{50} or EC_{50} values for reference toxicant tests

(11) 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 self-monitoring report and shall include a summary table of chronic toxicity data from at least eleven of the most recent samples. The information in the table shall include items listed above under 2.a, specifically item numbers (1), (3), (5), (6) (IC_{25} or EC_{25}), (7), and (8).

VI. RECEIVING WATER REQUIREMENTS

The Discharger shall monitor the Petaluma River at C-1, C-2A, C-2B, and C-R according to Table E-4.

Table E-4. Receiving Water Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Temperature	°C	Grab	Monthly
Conductivity	mhos/cm	Grab	Monthly
pH	s.u	Grab	Monthly

Parameter	Units	Sample Type	Minimum Sampling Frequency
Salinity	ppt	Grab	Monthly
Total Ammonia	mg/L as N	Grab	Monthly
Un-ionized Ammonia	mg/L as N	Calculated	Monthly
Turbidity	NTU	Grab	Monthly
Dissolved Oxygen	mg/L	Grab	Monthly
Sulfides, Total and Dissolved	mg/L	Grab	Monthly
Hardness	mg/L	Grab	Monthly
Chlorophyll-a	µg/L	Grab	Monthly

Unit Abbreviations:

°C	= degrees Centigrade
mhos/cm	= micro-ohms per centimeter
s.u.	= standard units
ppt	= parts per thousand
mg/L	= milligrams per liter
NTU	= national turbidity units
µg/L	= micrograms per liter

VII. LAND DISCHARGE MONITORING REQUIREMENTS

Not Applicable

VIII. RECLAMATION MONITORING REQUIREMENTS

Not Applicable

IX. OTHER MONITORING REQUIREMENTS

Pretreatment and Biosolids Monitoring Requirements

The Discharger shall comply with the pretreatment requirements specified in Table E-5 for influent (at monitoring location A-001), effluent (at monitoring location E-001), and biosolids monitoring.

Table E-5. Pretreatment and Biosolids Monitoring Requirements

Constituents	Influent	Effluent(1)	Biosolids	Sample Type	
				A-001 & E-001	Biosolids
Volatile Organic Compounds	2/year	2/year	2/year	multiple grabs(5a)	grabs(5d)
BNA(2)	2/year	2/year	2/year	multiple grabs(5a)	grabs(5d)
Metals(3)	1/month	1/month	2/year	24-hour composite(5b,5c)	grabs(5d)
Hexavalent Chromium(4)	1/month	1/month	2/year	multiple grabs(5a)	grabs(5d)
Mercury	1/month	1/month	2/year	24-hour composite(5b,5c)	grabs(5d)
Cyanide(5)	1/month	1/month	2/year	multiple grabs(5a)	grabs(5d)

Footnotes for Table E-5:

(1) The Discharger may elect to use the effluent monitoring conducted in accordance with Table E-3 to satisfy these pretreatment monitoring requirements.

(2) BNA: base/neutrals and acid extractable organic compounds

(3) The metals are arsenic, cadmium, copper, lead, nickel, silver, zinc, selenium, and mercury.

(4) The Discharger may elect to report total chromium instead of hexavalent chromium. Samples collected for total chromium measurements shall be 24-hour composites.

(5) Sample types:

a. Multiple grab samples for VOC, BNA, hexavalent chromium, and cyanide must consist of a minimum of four discrete grab samples, collected at equal intervals spaced over the course of a 24-hour period, with each grab sample analyzed separately and the results mathematically flow-weighted, or with all grab samples combined (volumetrically flow-weighted) prior to analysis.

b. If an automatic compositor is used, the Discharger shall obtain 24-hour composite samples through flow-proportioned composite sampling. Alternatively, 24-hour composite samples may consist of discrete grab samples combined (volumetrically flow-weighted) prior to analysis or mathematically flow-weighted.

c. The Discharger may use automatic compositors for mercury if either (1) the compositing equipment (hoses and containers) comply with ultraclean specifications, or (2) appropriate equipment blank samples demonstrate that the compositing equipment has not contaminated the sample.

d. The biosolids sample shall be a composite of the biosolids to be disposed. Biosolids collection and monitoring shall comply with the requirements specified in Attachment H, Appendix H-C. The Discharger shall also comply with the biosolids monitoring requirements of 40 CFR 503.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

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

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this Order, the State or Regional Water Board may notify the Discharger to 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 that there is a service interruption for electronic submittal.

2. The Discharger shall report in the SMR the results of all monitoring specified in this MRP under sections III through VII. The Discharger shall submit monthly SMRs, including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. Monthly SMRs shall be due 30 days after the end of each calendar month. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR. Annual SMRs shall be due February 1 of each year, covering the previous calendar year. The report shall contain the items described in the Regional Standard Provisions (Attachment G).

3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-6. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period
Continuous	Permit effective date	All
1/Hour	Permit effective date	Every hour on the hour
1/Day	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.
1/Week 2/Week 3/Week 5/Week	Permit effective date	Sunday through Saturday
1/Month	Permit effective date	First day of calendar month through last day of calendar month
1/Quarter	Permit effective date	November 1 – January 31, February 1 – April 30, May 1 – July 31, August 1 – October 31
1/discharge period for storage pond discharges	Permit effective date	October 21 – April 30
2/Year	Permit effective date	Once during the wet season (typically November 1 – April 30) and once during the dry season (typically May 1 through October 31)

4. The Discharger shall report with each sample result the applicable reported Minimum Level (ML) 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 ML 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:

   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 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.

   The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall (1) clearly identify violations of the WDRs, (2) discuss corrective actions taken or planned, and (3) propose a time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

   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 permit, 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, which must be signed and certified as required by the Standard Provisions (Attachment D). The Discharger shall submit the original DMR and one copy of the DMR to one of the addresses listed below:

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

In the first monthly SMR following the respective due dates, 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 IC_{25} or EC_{25}. If the IC_{25} or EC_{25} cannot be statistically determined, the NOEL shall be equal to the NOEC derived using hypothesis testing.

B. Effective concentration (EC) is a point estimate of the toxicant concentration that would cause an adverse effect on a quantal, "all or nothing," response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Karber. EC_{25} is the concentration of toxicant (in percent effluent) that causes a response in 25 percent of the test organisms.

C. Inhibition concentration (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a nonlethal, nonquantal biological measurement, such as growth. For example, an IC_{25} is the estimated concentration of toxicant that would cause a 25 percent reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as USEPA's Bootstrap Procedure.

D. No observed effect concentration (NOEC) is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. It is determined using hypothesis testing.

II. Chronic Toxicity Screening Phase Requirements

A. The Discharger shall perform screening phase monitoring:

1. Subsequent to any significant change in the nature of the effluent discharged through changes in sources or treatment, except those changes resulting from reductions in pollutant concentrations attributable to source control efforts, or

2. Prior to permit reissuance. Screening phase monitoring data shall be included in the NPDES permit application for reissuance. The information shall be as recent as possible, but may be based on screening phase monitoring conducted within 5 years before the permit expiration date.

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 of 100%, 85%, 70%, 50%, 25%, and 0 %, where "%" is percent effluent as discharged, or as otherwise approved the Executive Officer.

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 Discharger 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	*(Skeletonema costatum)* *(Thalassiosira pseudonana)*	Growth rate	4 days	1
Red alga	*(Champia parvula)*	Number of cystocarps	7–9 days	3
Giant kelp	*(Macrocystis pyrifera)*	Percent germination; germ tube length	48 hours	2
Abalone	*(Haliotis rufescens)*	Abnormal shell development	48 hours	2
Oyster Mussel	*(Crassostrea gigas)* *(Mytilus edulis)*	Abnormal shell development; percent survival	48 hours	2
Echinoderms - Urchins Sand dollar	*(Strongylocentrotus purpuratus, S. franciscanus)* *(Dendraster excentricus)*	Percent fertilization	1 hour	2
Shrimp	*(Mysidopsis bahia)*	Percent survival; growth	7 days	3
Shrimp	*(Holmesimysis costata)*	Percent survival; growth	7 days	2
Topsmelt	*(Atherinops affinis)*	Percent survival; growth	7 days	2
Silversides	*(Menidia beryllina)*	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	*(Pimephales promelas)*	Survival; growth rate	7 days	4
Water flea	*(Ceriodaphnia dubia)*	Survival; number of young	7 days	4
Alga	*(Selenastrum capricornutum)*	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[1]	
	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[2] Marine/Estuarine	0 4	1 or 2 3 or 4	3 0
Total number of tests	4	5	3

[1] (a) Marine refers to receiving water salinities greater than 1 ppt at least 95 percent of the time during a normal water year.

(b) Freshwater refers to receiving water with salinities less than 1 ppt at least 95 percent of the time during a normal water year.

(b) Estuarine refers to receiving water salinities that fall between those of marine and freshwater, as described above.

[2] 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.

ATTACHMENT F - FACT

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ATTACHMENT F – FACT SHEET

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

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

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	2 494006001
CIWQS Place ID	248087
Discharger	City of Petaluma
Name of Facility	Ellis Creek Water Recycling Facility and its collection system
Facility Address	3890 Cypress Drive Petaluma, CA 94954
Facility Contact, Title, Phone	Matthew Pierce, Operations Supervisor, 707-776-3777
Authorized Person to Sign and Submit Reports	Same as above
Mailing Address	P.O. Box 61, Petaluma, CA 94953
Billing Address	Same as Mailing Address
Type of Facility	Publicly Owned Treatment Works (POTW)
Major or Minor Facility	Major
Threat to Water Quality	2
Complexity	A
Pretreatment Program	Yes
Reclamation Requirements	Yes (Regional Water Board Order No. 96-011)
Mercury Discharge Requirements	Regional Water Board Order No. R2-2007-0077
Facility Permitted Flow	6.7 million gallons per day (MGD) dry weather flow
Facility Design Flow	6.7 MGD
Watershed	San Pablo Bay
Receiving Water	Petaluma River
Receiving Water Type	Estuarine
Service Area	City of Petaluma and Town of Pengrove
Service Area Population	61,500

A. The City of Petaluma (hereinafter the Discharger) is the owner and operator of the Ellis Creek Water Recycling Facility (Facility) and its associated collection system. For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein. The Facility treats about 4.5 MGD (average dry weather flow) of wastewater from the City of Petaluma and adjacent areas. The wastewater is primarily residential, although there are four industrial facilities (Clover Stornetta, Lace House Linen, Petaluma Creamery, and Petaluma Poultry) that contribute about 0.4 MGD to this flow.

B. The discharge of treated wastewater from the Facility to the Petaluma River, a water of the State and the United States, was previously regulated by Order No. R2-2005-0058 (NPDES Permit No. CA0037810), which was adopted on October 19, 2005, and became effective on October 20, 2005.

C. The Discharger filed a Report of Waste Discharge and submitted a complete application for reissuance of its Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit dated April 23, 2010.

II. FACILITY DESCRIPTION

A. Description of Wastewater and Biosolids Treatment

1. **Facility Description.** Facility influent from the collection system is treated by screening and grit removal, secondary treatment using activated sludge, and secondary clarification. After secondary clarification, some of the water is pumped to the Discharger's tertiary treatment system (flocculation, filtration, and UV disinfection), and subsequently recycled. The Discharger's water recycling activities are regulated under Regional Water Board Order No. 96-011. Remaining flows are directed through a series of oxidation ponds (162 acres) and constructed wetlands (32 acres) for additional biological treatment. After the treatment wetlands, the water is chlorinated and then flows to either polishing wetlands (31 acres) or a chlorine contact chamber. Wastewater from the polishing wetlands is discharged to the Petaluma River, or sent to the chlorine contact chamber. Wastewater from the chlorine contact chamber is dechlorinated and discharged to the Petaluma River, or reused for irrigation at a number of agricultural and recreational sites.

   The Discharger's sanitary sewer collection system comprises approximately 224 miles of public sewer pipelines ranging in diameter from 6 to 48 inches. The collection system also includes four primary pump stations: C Street, Wilmington, Payran, and Copeland Street. These pump stations have alarms for notification of system failure and provision of emergency power.

2. **Discharge Location and Description**. Treated wastewater that is not recycled is discharged to the Petaluma River through a 24" outfall pipe about ½-mile from the Facility. The outfall pipe splits at a Y junction just prior to discharge so the discharge is at two points. Neither discharge point has a diffuser. The discharge is into the tidally-influenced portion of the Petaluma River approximately 10 miles upstream of San Pablo Bay. The depth of the river above the top of the outfall pipe varies from 1.6 feet to 8.1 feet, depending on the tide.

3. **Recycled Water Activities.** The Discharger recycled about 780 million gallons (2,400 acre-feet) of its wastewater in 2009. This represents about 48% of the wastewater it treated. Most of this recycled water was secondarily-treated and was used for irrigation (522 million gallons for 782 acres of pastures, 194 million gallons for 220 acres at golf courses, and 1.25 million gallons for 47 acres of vineyards).

   In addition to the secondarily treated water reused for irrigation, the Discharger recently installed a tertiary treatment system capable of treating 5.3 MGD. The Discharger anticipates needing approximately 460 million gallons of tertiarily-treated water by 2025 to offset potable water demand. The Discharger also anticipates needing another 200 million gallons to provide uninterrupted supply during drought years. While numerous potential customers have requested

recycled water, the Discharger does not currently have a storage and distribution system to deliver it to them. At this time, the Facility is the sole user of tertiarily-treated water. It used 66 million gallons in 2009 for fire suppression systems, toilet flushing, wash water, pump seal water, and other on-site uses. The Discharger proposes to construct a 2.2 million gallon reservoir to store tertiarily-treated water and 7,600 linear feet of 20" pipeline to fill the reservoir. Once this project is completed, the City will begin delivering water to 55 parks, playing fields, schools, and golf courses. However, funding for construction has not yet been acquired.

4. **Biosolids Management.** Waste activated sludge from the secondary process is thickened in a gravity belt thickener. Thickened sludge is then pumped to the acid phase digester for initial digestion. After initial digestion, treated sludge is pumped to a methane digester for final volatile solids destruction. Treated sludge from the methane digester is thickened in a rotary screen thickener prior to dewatering in a mechanical screw press. Final dewatered biosolids are disposed of in a municipal solid waste landfill, or reused by land application in accordance with 40 CFR Part 503.

5. **Storm Water Discharge.** The Discharger does not require coverage under the State Water Board's statewide NPDES permit for storm water discharges associated with industrial activities (NPDES General Permit No. CAS000001) because all storm water flows in contact with Facility equipment or sewage is directed to the headworks for treatment.

B. Discharge Point and Receiving Waters

The location of the discharge point and the 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	Secondary Treated Municipal Wastewater	38° 12' 33"	122° 34' 22"	Petaluma River

The Petaluma River is located within the San Pablo watershed. The discharge is a shallow water discharge because the discharge does not always receive 10:1 initial dilution.

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

Effluent limitations contained in Order No. R2-2005-0058, as amended (hereinafter the previous orders) and representative monitoring data from the term of the previous Orders are presented in Tables F-3 and F-4, below.

Table F-3. Historic Effluent Limitations and Monitoring Data for Conventional and Non-Conventional Pollutants

Parameter	Units	Effluent Limitations		Monitoring Data (from 01/09 to 05/10)	
		Monthly Average	Weekly Average	Average	Range
BOD	mg/L	30	45	2.2±0.4	2-4
BOD removal	% removal	85		99±0.5	96-99.6
TSS before 1/09	mg/L	45	65	30±11[1]	4.8-67[1]
TSS after 1/09	mg/L	30	45	1.6±0.7	0.4-5.3
TSS removal	% removal	85		99±0.7	96-99.8
Oil & Grease	mg/L	10	---	2.5±1.1	1.5-4.4
pH	s.u.	6.5-8.5		---	6.7-7.6
Total coliform	MPN/100 ml	median: ≥ 23 maximum ≥ 240		2.0±0.2	2-4
Acute toxicity	% survival	median: ≥ 90 90th percentile: ≥ 70			100-100
Chronic toxicity	TUc	accelerated monitoring triggered if 3-sample median: ≥ 1.0 or maximum ≥ 2.0		<1	---

[1] From January 2005 through December 2008

Units:

mg/L = milligrams per liter
s.u. = standard units
MPN/100 mL = Most Probable Number per 100 milliliters
TUc = chronic toxicity units

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

Parameter	Units	Effluent Limitations		Monitoring Data with wetland treatment (from 010/09 to 05/10)	
		Monthly Average	Daily Maximum	Average	Range
Copper	µg/L	7.8	12	3.1±1.1	1.4-4.8
Mercury	µg/L	0.066	---	0.003±0.002	0.002-0.007
Nickel	µg/L	---	7.1	4.6±0.6	4.0-5.4
Selenium	µg/L	4.1	8.2	0.3±0.3	0.2-0.7
Cyanide	µg/L	7.0	14	3.3±1.6	0.004-4.0

µg/L = micrograms per liter

D. Compliance Summary

1. **Compliance with Numeric Effluent Limits.** Table F-5 lists effluent limitation violations of Order No. R2-2005-0058.

Table F-5. Numeric Effluent Limitation Exceedances

Date of Violation	Exceeded Parameter	Units	Effluent Limitation	Reported Concentration
4/3/2006	TSS Removal	% removal	85 minimum	84
5/31/2006	Total Coliform	MPN/100 ml	240	300

Date of Violation	Exceeded Parameter	Units	Effluent Limitation	Reported Concentration
1/10/2007	Chlorine Residual	mg/L	0	3
4/30/2007	TSS Monthly Average	mg/L	45	50.7
4/30/2007	TSS Removal	% removal	85 minimum	82
2/15/2008	Chlorine Residual	mg/L	0	3
4/8/2008	Chlorine Residual	mg/L	0	1.78

The Regional Water Board has assessed Mandatory Minimum Penalties for the above violations through February 15, 2008. A Mandatory Minimum Penalty for the April 8, 2008, violation is pending as of the adoption date of this Order.

2. **Compliance with Previous Orders Provisions.** A list of special activities required by the previous Orders and the status of those requirements are shown in Table F-6, below.

Table F-6. Compliance with Previous Orders Provisions

Provision Number	Requirement	Status of Completion
R2-2005-0058		
F.3	Background Receiving Water Study. The study was due 180 prior to permit expiration.	Completed.
F.4	Cyanide Site-Specific Objectives study. The study was due three years after the effective date of the permit.	Discharger contributed funds to the development of cyanide Site-Specific Objectives for San Francisco Bay.
F.6	Disinfection study. The study was due nine months after the effective date of the permit.	Completed.
F.7	Pollution Prevention and Pollutant Minimization Program.	Annual status reports submitted as required.
F.8	Mercury Mass Loading Reduction Study. This study is triggered if there is a violation of certain permit effluent limitations.	Study not triggered.
F.15	New Plant Status Report. Requires the Discharger to report when the new treatment plant started operating.	Completed.
F.19	Wastewater Facilities, Review and Evaluation, and Status Report. Required annually.	Completed.
F.20	Operations and Maintenance Manual, Review and Status Report. Required annually.	Completed.
F.21	Contingency Plan, Review and Status Report.	Completed.
R2-2008-0026		
Table 4.1	Cyanide Action Plan, Source Identification	Completed.
Table 5.1	Copper Action Plan, Source Identification	Completed.

E. Planned Changes

The Discharger plans to increase its ability to produce and use recycled water, pending acquisition of federal funds. The planned upgrades potentially include installation of additional recycled water distribution pipelines and connection of new users, improvements to older recycled water pump stations, and expansion of the Facility's tertiary treatment system.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

This Order's requirements are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order is issued pursuant to federal Clean Water Act (CWA) section 402 and California Water Code (CWC) chapter 5.5, division 7, commencing with section 13370, and implementing regulations. It will serve as an NPDES permit for point source discharges from this Facility to surface waters. This Order also serves as waste discharge requirements (WDRs) pursuant to CWC article 4, chapter 4, division 7, commencing with section 13260.

B. California Environmental Quality Act (CEQA)

Under CWC section 13389, this action to issue 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* (hereinafter 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 Board, the Office of Administrative Law (OAL), and USEPA. Requirements of this Order implement the Basin Plan.

   The discharge occurs in the tidally-influenced section of the Petaluma River approximately 10 miles upstream of San Pablo Bay. Table F-7 below lists the beneficial uses in the Basin Plan for the Petaluma River.

Table F-7. Basin Plan Beneficial Uses

Receiving Water Name	Beneficial Uses
Petaluma River	Cold Water Habitat (COLD) Estuarine Habitat (EST) Fish Migration (MIGR) Preservation of Rare and Endangered Species (RARE) Fish Spawning (SPWN) Warm Water Habitat (WARM) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Navigation (NAV)

State Water Board Resolution No. 88-63 establishes as State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply (MUN). Because of the marine influence in San Pablo Bay, total dissolved solids in this section of the Petaluma River sometimes exceed 3,000 mg/L and thereby meet

an exception to State Water Board Resolution No. 88-63. The MUN designation therefore does not apply to this section of the Petaluma River.

The *Water Quality Control Plan for Enclosed Bays and Estuaries—Part 1, Sediment Quality* contains a narrative WQO: "Pollutants in sediments shall not be present in quantities that, alone or in combination, are toxic to benthic communities in bays and estuaries of California." This WQO is to be implemented by integrating three lines of evidence: sediment toxicity, benthic community condition, and sediment chemistry. The Policy requires that if the Regional Water Board determines that a discharge has reasonable potential to cause or contribute to an exceedance of this WQO, it is to impose the WQO as a receiving water limit.

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 and 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 (WQC) for priority toxic pollutants.

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 promulgated through the NTR and the WQOs established in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria 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. **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.

5. **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.

6. **Antidegradation Policy.** 40 CFR 131.12 requires that State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16. Resolution 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution 68-16 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.

   The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16. This Order continues the status quo with respect to the level of discharge authorized in the previous orders and thus there will be no change in water quality beyond the level that was authorized in the last permit. The limitations in this Order comply with antidegradation requirements and meet the requirements of the SIP because they hold the Discharger to performance levels that will neither cause nor contribute to water quality impairment, nor further water quality degradation. This is because this Order does not provide for an increase in the permitted design flow, allow for a reduced level of treatment, or increase effluent limitations.

   Because there will be no lowering of water quality beyond the current level authorized in the previous orders, which is the baseline by which to measure whether degradation will occur, antidegradation requirements are met. Therefore, further analysis in this permit is unnecessary, and findings authorizing degradation are thus unnecessary.

7. **Anti-Backsliding Requirements.** CWA Sections 402(o)(2) and 303(d)(4) and 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 permit, with some exceptions in which limitations may be relaxed. This Order does not retain effluent limits for nickel, selenium, and bis(2-ethylhexylphthalate) because there is no reasonable potential for these pollutants. This is consistent with State Water Board Order WQ 2001-16.

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

In November 2006, USEPA approved a revised list of impaired water bodies [the 303(d) list] prepared by the State pursuant to CWA section 303(d), which requires identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. Where it has not done so already, the Regional Water Board plans to adopt total maximum daily loads (TMDLs) for pollutants on the 303(d) list. TMDLs establish wasteload allocations for point sources and load allocations for non-point sources, and are established to achieve the water quality standards for the impaired waterbodies. The SIP requires that final effluent limitations for all 303(d)-listed pollutants be consistent with the TMDLs and associated wasteload allocations.

The tidally-influenced portion of the Petaluma River is 303(d)-listed as impaired by diazinon, nickel, nutrients, and pathogens. San Pablo Bay is 303(d)-listed as impaired by chlordane, DDT, dieldrin, dioxin compounds, furan compounds, mercury, nickel, PCBs, dioxin-like PCBs, selenium, and exotic species. On February 12, 2008, USEPA approved a mercury TMDL for San Pablo Bay,

which is implemented in part through Regional Water Board Order No. R2-2007-0077; therefore, mercury is not regulated under this Order. On March 29, 2010, USEPA approved a PCB TMDL for San Pablo Bay.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the NPDES regulations: 40 CFR section 122.44(a) requires that permits include applicable technology-based limitations and standards; and section 122.44(d) requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative WQC to protect the beneficial uses of the receiving water. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established.

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

A. Discharge Prohibitions

1. **Discharge Prohibition III.A (No discharge other than that described in this Order):** This prohibition is based on CWC section 13260, which requires filing a Report of Waste Discharge before discharge can occur. Discharges not described in the Report of Waste Discharge, and subsequently in this Order, are prohibited.

2. **Discharge Prohibition III.B (No bypass or overflow of untreated or partially treated wastewaters):** This prohibition is based on 40 CFR 122.41(m)(4). See federal Standard Provisions, Attachment D, section I.G.

3. **Discharge Prohibition III.C (Average dry weather flow not to exceed dry weather design capacity):** This prohibition is based on the Facility design treatment capacity. Exceedance of the Facility's average dry weather flow design capacity may lower the reliability of achieving compliance with the requirements of this Order.

4. **Discharge Prohibition III. D (No sanitary sewer overflows to waters of the United States):** Discharge Prohibition No. 15 from Basin Plan Table 4-1 and the CWA prohibit the discharge of wastewater to surface waters except as authorized under an NPDES permit. Publicly-Owned Treatment Works must achieve secondary treatment at a minimum and any more stringent limitations necessary to meet water quality standards [33 U.S.C. § 1311 (b)(1)(B and C)]. Therefore, the CWA and the Basin Plan prohibit sanitary sewer overflows that result in the discharge of raw sewage, or sewage not meeting effluent limitations in this Order, to surface waters.

5. **Discharge Prohibition III.E (No discharge to the Petaluma River except when inflow exceeds recycled water system capacity):** This prohibition is based on Basin Plan Prohibition 1 and on State Water Board Resolution No. 2009-001, *Policy for Water Quality Control for Recycled Water*. Except under certain conditions, the Basin Plan prohibits

wastewater discharges that do not receive a minimum initial dilution of at least 10:1 into any nontidal water, dead-end slough, similar confined waters, or any immediate tributaries thereof. The discharge is located in the upper reaches of the tidally-influenced portion of the Petaluma River where impacts to beneficial uses are a concern. The outfall does not have a diffuser so the initial dilution is unknown, but it is likely less than 10:1 during low flows or low tides. The Discharger currently recycles most of its wastewater for agriculture during the summer and early fall when river flows are low, and it has demonstrated that discharges are unnecessary except when inflow to the Facility exceeds capacity of the recycled water distribution and storage system. During these conditions, river flow and dilution rates are expected to be higher and impacts to beneficial uses would be reduced.

State Water Board Resolution No. 2009-001 is intended to promote sustainable local water supplies by increasing the acceptance and promoting the use of recycled water. The policy sets a goal to increase the use of recycled water statewide by at least one million acre feet per year (afy) over 2002 level by 2020 and by at least two million afy by 2030. The policy also requires Regional Water Boards to exercise their authority to the fullest extent possible to encourage the use of recycled water.

B. Shallow Water Discharge and Basin Plan Discharge Prohibition 1

The Basin Plan generally prohibits discharges not receiving a minimum 10:1 initial dilution or to dead end sloughs (Chapter 4, Table 4-1, Discharge Prohibition 1). Because the outfall to the Petaluma River is not equipped with a diffuser, the discharge does not receive an initial dilution of at least 10:1. However, in accordance with Basin Plan section 4.2, this Order grants the Discharger an exception to the discharge prohibition.

Basin Plan section 4.2 states that exceptions to Prohibition 1 will be considered for discharges where:

- An inordinate burden would be placed on the discharger relative to the beneficial uses protected and an equivalent level of environmental protection can be achieved by alternate means, such as an alternative discharge site, a higher level of treatment, and/or improved treatment reliability;

- A discharge is approved as part of a reclamation project; or

- It can be determined that net environmental benefits will be derived as a result of the discharge.

The Basin Plan further states, “In reviewing requests for exceptions, the Water Board will consider the reliability of the discharger's system in preventing inadequately treated wastewater from being discharged to the receiving water and the environmental consequences of such discharges.”

The Regional Water Board historically has granted an exception to Prohibition 1 from October 21 through April 30 each year for discharges to the Petaluma River. This Order continues this exception based on the inordinate burden that would be placed on the Discharger relative to the beneficial uses protected if the exception were not granted and the equivalent level

of water quality protection the Discharger achieves through alternate means. Moreover, the Discharger implements a recycled water program, which allows the Discharger to refrain from discharging during the dry months (the Discharger does not typically discharge to receiving waters between May 1 and October 20 of each year).

During the previous permit term, the Discharger completed significant capital improvements to enhance the treatment it provides and the reliability of that treatment in preventing inadequately treated wastewater from being discharged. The new facilities were placed into service in 2009, replacing the aged Hopper Street Wastewater Treatment Plant with improved treatment technology. The upgraded facility offers new conventional secondary treatment processes and adds ponds and wetland treatment systems to enhance effluent quality while providing environmental benefits, such as critical freshwater habitat for birds, mammals, reptiles, and amphibians. Attachment G section I.D.2 of the Order requires the Discharger to routinely review how it 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. Provision VII.C.4 of the Order requires the Discharger to routinely analyze its collection and treatment system to prevent discharges of inadequately treated wastewater.

The enhanced treatment provided by the new facilities provides a level of environmental protection equivalent to compliance with Basin Plan Discharge Prohibition 1, while avoiding the inordinate burden that would be placed on the Discharger relative to the beneficial uses protected by complying with the prohibition. Compliance with the prohibition would require installation of a pressurized pipeline from the Ellis Creek Water Recycling Facility to the deep waters of San Pablo Bay. This 100,000 foot pipeline would consist of a 60,000 foot overland segment and a 40,000 foot in-Bay segment; preliminary cost estimates for construction alone exceed $95,000,000. Expenditures associated with required environmental studies, mitigation measures, and long term operation and maintenance would increase project costs to well over $100,000,000 in today's dollars. Moreover, the projected pipeline route would cross a variety of habitats where threatened or endangered species are known or suspected to reside. Pipeline installation activities could result in harm to upland, wetland, and aquatic environs and their associated species. Additionally, construction activities and electricity production needed to drive the pumps that push the effluent through the pipeline would result in both short-term and long-term increases in greenhouse gas emissions.

Furthermore, the Discharger maintains significant recycled water projects. Over the last two years, it recycled an average of 46.5 percent of its annual treated wastewater flow (100 percent of its dry weather treated wastewater flow). Recycled water is used at two local golf courses totaling 220 acres, 782 acres of pasture, a 47-acre vineyard, and various cooling water and construction applications. In 2006, the Discharger completed the Petaluma Water System Recycled Water and Groundwater Master Plan, which calls for more development and use of tertiarily-treated recycled water. The new Ellis Creek Water Recycling Facility is able to filter and disinfect treated wastewater to meet unrestricted re-use requirements. As distribution infrastructure is completed, the Discharger will expand its recycled water program.

C. Technology-Based Effluent Limitations

1. Scope and Authority for Technology-Based Effluent Limitations

CWA section 301(b) and 40 CFR 122.44 require that permits include conditions meeting technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 CFR 133. These Secondary Treatment Regulations include the following minimum requirements. In addition, the 30-day average percent removal for BOD_5 and TSS, by concentration, is not to be less than 85 percent.

Table F-8. Secondary Treatment Requirements

Parameters	30-Day Average	7-Day Average
BOD_5	30 mg/L	45 mg/L
TSS	30 mg/L	45 mg/L
pH	6.0 – 9.0	

2. Applicable Effluent Limitations

This Order retains the effluent limitations for conventional and non-conventional pollutants from the previous orders. The bases for these limitations are detailed below.

a. **BOD_5 and TSS**. The effluent limitations for BOD_5 and TSS are based on secondary treatment requirements.

b. **Oil and Grease**. The effluent limitations for oil and grease are based on Basin Plan Table 4-2.

c. **pH**. The pH limitation is based on Basin Plan Table 4-2 for shallow water discharges.

d. **Enterococcus Bacteria**. The enterococcus effluent limitation is based on the Basin Plan Table 3-2, which cites the 30-day geometric mean enterococcus bacteria limit based on USEPA criteria established at 40 CFR 131.41 for coastal recreational water, including coastal estuaries, in California. These water quality criteria became effective on December 16, 2004 [69 Fed. Register 67218 (November 16, 2006)]. It is also consistent with the Basin Plan amendment establishing bacteria objectives for waters designated for contact recreation in marine and estuarine waters (Resolution No. R2-2010-0066). The Regional Water Board adopted this amendment on April 14, 2010, but it is not yet effective because the State Water Board and Office of Administrative Law have not yet approved it. Resolution No. R2-2010-0066 sets new enterococcus objectives and limits for marine and estuarine waters.

e. **Total Chlorine Residual.** The total chlorine residual effluent limitation for chlorine residual is based on Basin Plan Table 4-2.

D. Water Quality-Based Effluent Limits (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, which USEPA approved prior to May 1, 2001, or Basin Plan provisions approved by USEPA on May 29, 2000. 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) 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 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." 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 achieve applicable WQOs contained in state plans and policies, and the CTR and NTR.

b. NPDES regulations and the SIP provide the basis to establish Maximum Daily Effluent Limitations (MDELs).

(1) NPDES Regulations. NPDES regulations at 40 CFR 122.45(d) state, "For continuous discharges all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall *unless impracticable* be stated as maximum daily and average monthly discharge limitations for all discharges other than publicly owned treatment works."

(2) SIP. SIP 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 WQOs

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 in marine and freshwater, 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 designed to implement these WQOs, based on available information.

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 Basin Plan Tables 3-3 and 3-4 include numeric objectives for certain of these priority toxic pollutants that supersede the CTR criteria. Human health criteria are further identified as "water and organisms" and "organisms only." The CTR criteria applicable to "organisms only" apply to this discharge because the receiving water is not a source of drinking water.

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 NTR criteria apply to San Pablo Bay, the receiving water for this Discharger.

d. **Technical Support Document for Water Quality-Based Toxics Controls.** Where numeric objectives have not been established or updated in the Basin Plan, NPDES regulations at 40 CFR 122.44(d) require that WQBELs be established based on USEPA criteria, supplemented where necessary by other relevant information, to attain and maintain narrative WQOs to fully protect designated beneficial uses. To determine the need for and, when necessary, establish WQBELs, the Regional Water Board has followed the requirements of applicable NPDES regulations, including 40 CFR 122 and 131, as well as guidance and requirements in the Basin Plan, USEPA's *Technical Support Document for Water Quality-Based Toxics Control* (the TSD, EPA/505/2-90-001, 1991), and the SIP.

e. **Basin Plan Receiving Water Salinity Policy.** The Basin Plan (like the CTR and the NTR) states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water are to be considered in determining applicable WQOs. Freshwater criteria 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 the lower of the salt or freshwater criteria (the latter calculated based on ambient hardness) for each substance.

The receiving water for this discharge is the Petaluma River, which is tributary to San Pablo Bay. The Petaluma River is tidally-influenced and has salinities between the two categories described above. This section of the Petaluma River is therefore classified as estuarine, and the reasonable potential analysis and effluent limitations in this Order are based on the more stringent of the fresh and saltwater objectives.

f. **Receiving Water Hardness.** The Discharger did not submit any new hardness data for the permit reissuance. A hardness value of 194 mg/L as $CaCO_3$, which is the adjusted geometric mean (AGM) of 84 hardness values obtained through the Discharger's monitoring of the Petaluma River from January 1994 through December 2003, was used. The AGM represents the value that 30% of the data points fall below. The hardness data set was reduced (from 240 data points to 84 data points) to eliminate hardness values obtained when the receiving water salinity was above 1.0 part per thousand (ppt). Since salinity was not monitored during all sampling events, a linear regression analysis was performed on the available salinity and total dissolved solids data to project missing salinity values associated with hardness monitoring data.

g. **Site-Specific Metals Translators.** NPDES regulations at 40 CFR 122.45(c) require that effluent limitations for metals be expressed as total recoverable metal. Since applicable WQOs for metals are typically expressed as dissolved metal, translators must be used to convert concentrations from dissolved to total recoverable and vice versa. The CTR includes default translators; however, site-specific conditions, such as water temperature, pH, suspended solids, and organic carbon greatly affect the form of metal (dissolved, non-filterable, or otherwise) present in the water and therefore available to cause toxicity. In general, the dissolved form of the metal is more available and more toxic to aquatic life than non-filterable forms. Site-specific translators can be developed to account for site-specific conditions, thereby preventing exceedingly stringent or under protective WQOs.

For nickel, this Order uses the site-specific translators recommended in the Clean Estuary Partnership's *North of Dumbarton Bridge Copper and Nickel Development and Selection of Final Translators* (2005). Those translators were 0.27 (AMEL) and 0.57 (MDEL).

For copper, this Order uses site-specific translators the Discharger developed: 0.66 (AMEL) and 0.77 (MDEL). These translators are based on data collected in April 2000, March 2001, and during one week in January 2010. However, these data do not represent the full range of conditions when discharges occur, including during the autumn prior to significant rain events and during low river flow. In response to Regional Water Board requirements set forth in a letter pursuant to CWC section 13267 dated May 20, 2010, the Discharger has collected additional data that represents the full range of conditions when discharges occur, and it will propose updated translators by February 2011. This Order may be reopened to amend the copper limits if the new translators are different from those in this Order. The Discharger must demonstrate that CWA anti-backsliding requirements are met if it proposes new copper limits that are less stringent than those in this Order.

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. Except for ammonia and sediment quality (discussed separately below), the methods prescribed in SIP section 1.3 were used to determine if the discharge demonstrates reasonable potential. The Reasonable Potential Analysis (RPA) compares the effluent data with numeric and narrative WQOs in the Basin Plan, NTR, and CTR.

a. **SIP Reasonable Potential Methodology.**
In accordance with SIP section 1.3, the RPA identifies the observed maximum effluent concentration (MEC) for each pollutant based on effluent concentration data. There are three triggers in determining Reasonable Potential:

(1) The first trigger (Trigger 1) is activated if the MEC is greater than or equal to the lowest applicable WQO (MEC ≥ 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 > WQO), and the pollutant is detected in any of the effluent samples.

(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 the MEC and B are less than the WQO.

b. **Effluent Data**

Effluent data and the nature of the Facility discharge were used to determine if the discharge has Reasonable Potential. The RPA is based on effluent monitoring data collected from October 2005 to February 2010 for most inorganic pollutants and from October 2005 to February 2009 for most organic pollutants.

c. **Ambient Background Data**

Ambient background values are typically used to determine Reasonable Potential and to calculate effluent limitations, when necessary. For the RPA, ambient background concentrations are the observed maximum detected water column concentrations. The SIP states that, for calculating WQBELs, ambient background concentrations are either the observed maximum ambient water column concentrations or, for criteria intended to protect human health from carcinogenic effects, the arithmetic mean of observed ambient water concentrations. There were no pollutants that triggered Reasonable Potential based on criteria intended to protect human health from carcinogenic effects; therefore, the observed maximum ambient water column concentrations were used.

Regional Water Board staff used receiving water data the Discharger collected in 2002 and 2003 for most pollutants. For ammonia, receiving water data collected by the Discharger from 2006 through 2010 was used.

d. RPA Determination for Priority Pollutants

The MECs, most stringent applicable WQOs, and background concentrations used in the RPA are presented in the following table, along with the RPA results (yes or no) for each priority pollutant analyzed. Reasonable Potential was not determined for all pollutants, because there are not applicable WQO for all pollutants, and monitoring data are not available for others. Based on a review of the effluent data collected from October 2005 to February 2010, the pollutants that exhibit Reasonable Potential are copper and cyanide by Trigger 1, and dioxin-TEQ by Trigger 3.

Table F-9. Reasonable Potential Analysis Summary

CTR #	Priority Pollutants	Governing WQO/WQC (µg/L)	MEC or Minimum DL [1][2] (µg/L)	Maximum Background or Minimum DL [1][2] (µg/L)	RPA Results [3]
1	Antimony	4300	0.43	1.1	No
2	Arsenic	36	3.6	29	No
3	Beryllium	No Criteria	0.23	< 0.06	Ud
4	Cadmium	1.9	0.25	< 0.03	No
5a	Chromium (III)	360	1.2	Not Available	No
5b	Chromium (VI)	11	1.3	2.8	No
6	**Copper**	**5.9**	**9.4**	**14.7**	**Yes**
7	Lead	7.4	0.72	0.8	No
8	Mercury (303d listed)	0.025	0.028	0.011	Yes[4]
9	Nickel (303d listed)	30	9.1	19	No
10	Selenium (303d listed)	5	1.2	12	No
11	Silver	2.2	0.086	< 0.02	No
12	Thallium	6.3	0.13	0.2	No
13	Zinc	86	17	20	No
14	**Cyanide**	**2.9**	**8.5**	**0.9**	**Yes**
15	Asbestos	No Criteria	Not Available	Not Available	Ud
16	2,3,7,8-TCDD (303d listed)	1.4E-08	< 7.0E-07	< 6.4E-07	No
	Dioxin TEQ (303d listed)	**1.4E-08**	**1.2E-09**	**2.52E-9**	**Yes**
17	Acrolein	780	1.3	< 1	No
18	Acrylonitrile	0.66	< 0.66	< 0.66	No
19	Benzene	71	< 0.25	< 0.25	No
20	Bromoform	360	<0.32	< 0.32	No
21	Carbon Tetrachloride	4.4	< 0.22	< 0.22	No
22	Chlorobenzene	21000	< 0.29	< 0.29	No
23	Chlorodibromomethane	34	<0.31	< 0.31	No
24	Chloroethane	No Criteria	<0.37	< 0.37	Ud
25	2-Chloroethylvinyl ether	No Criteria	<0.56	< 0.56	Ud
26	Chloroform	No Criteria	<0.26	<0.26	Ud
27	Dichlorobromomethane	46	<0.25	< 0.25	No
28	1,1-Dichloroethane	No Criteria	< 0.26	< 0.26	Ud
29	1,2-Dichloroethane	99	< 0.27	< 0.27	No
30	1,1-Dichloroethylene	3.2	< 0.23	< 0.23	No
31	1,2-Dichloropropane	39	< 0.28	< 0.28	No
32	1,3-Dichloropropylene	1700	< 0.29	< 0.29	No
33	Ethylbenzene	29000	< 0.26	< 0.26	No
34	Methyl Bromide	4000	< 0.27	< 0.27	No
35	Methyl Chloride	No Criteria	< 0.27	< 0.27	Ud
36	Methylene Chloride	1600	<0.18	< 0.18	No
37	1,1,2,2-Tetrachloroethane	11	< 0.3	< 0.3	No
38	Tetrachloroethylene	8.9	< 0.21	< 0.21	No

CTR #	Priority Pollutants	Governing WQO/WQC (µg/L)	MEC or Minimum DL [1][2] (µg/L)	Maximum Background or Minimum DL [1][2] (µg/L)	RPA Results [3]
39	Toluene	200000	<0.24	< 0.24	No
40	1,2-Trans-Dichloroethylene	140000	< 0.23	< 0.23	No
41	1,1,1-Trichloroethane	No Criteria	< 0.23	< 0.23	Ud
42	1,1,2-Trichloroethane	42	<0.3	< 0.3	No
43	Trichloroethylene	81	<0.26	< 0.26	No
44	Vinyl Chloride	525	< 0.36	< 0.36	No
45	2-Chlorophenol	400	< 2.0	< 2.0	No
46	2,4-Dichlorophenol	790	< 2.0	< 2.0	No
47	2,4-Dimethylphenol	2300	< 1.7	< 1.7	No
48	2-Methyl- 4,6-Dinitrophenol	765	< 1.8	< 1.8	No
49	2,4-Dinitrophenol	14000	< 1.7	< 1.7	No
50	2-Nitrophenol	No Criteria	<1.8	< 1.8	Ud
51	4-Nitrophenol	No Criteria	< 1.7	< 1.7	Ud
52	3-Methyl 4-Chlorophenol	No Criteria	< 1.8	< 1.8	Ud
53	Pentachlorophenol	7.9	< 1.6	< 1.6	No
54	Phenol	4600000	<1.4	< 1.4	No
55	2,4,6-Trichlorophenol	6.5	< 1.2	< 1.2	No
56	Acenaphthene	2700	< 0.06	< 0.06	No
57	Acenaphthylene	No Criteria	< 0.06	< 0.06	Ud
58	Anthracene	110000	< 0.06	< 0.06	No
59	Benzidine	0.00054	< 10	< 10	No
60	Benzo(a)Anthracene	0.049	< 0.06	< 0.06	No
61	Benzo(a)Pyrene	0.049	< 0.06	< 0.06	No
62	Benzo(b)Fluoranthene	0.049	< 0.06	< 0.06	No
63	Benzo(ghi)Perylene	No Criteria	Not Available	< 0.06	Ud
64	Benzo(k)Fluoranthene	0.049	< 0.06	< 0.06	No
65	Bis(2-Chloroethoxy)Methane	No Criteria	< 1.9	< 1.9	Ud
66	Bis(2-Chloroethyl)Ether	1.4	< 1.9	< 1.9	No
67	Bis(2-Chloroisopropyl)Ether	170000	< 1.6	< 1.6	No
68	Bis(2-Ethylhexyl)Phthalate	5.9	< 1.9	< 1.9	No
69	4-Bromophenyl Phenyl Ether	No Criteria	< 1.9	< 1.9	Ud
70	Butylbenzyl Phthalate	5200	< 2.0	< 2.0	No
71	2-Chloronaphthalene	4300	< 2.0	< 2.0	No
72	4-Chlorophenyl Phenyl Ether	No Criteria	< 2.0	< 2.0	Ud
73	Chrysene	0.049	< 0.06	< 0.06	No
74	Dibenzo(a,h)Anthracene	0.049	< 0.06	< 0.06	No
75	1,2-Dichlorobenzene	17000	< 0.27	< 0.27	No
76	1,3-Dichlorobenzene	2600	< 0.27	< 0.27	No
77	1,4-Dichlorobenzene	2600	< 0.31	< 0.31	No
78	3,3 Dichlorobenzidine	0.077	< 10	< 10	No
79	Diethyl Phthalate	120000	< 1.7	< 1.7	No
80	Dimethyl Phthalate	2900000	< 1.9	< 1.9	No
81	Di-n-Butyl Phthalate	12000	< 1.8	< 1.8	No
82	2,4-Dinitrotoluene	9.1	< 1.9	< 1.9	No
83	2,6-Dinitrotoluene	No Criteria	< 2.0	< 2.0	Ud
84	Di-n-Octyl Phthalate	No Criteria	< 1.8	< 1.8	Ud
85	1,2-Diphenylhydrazine	0.54	< 1.8	< 1.8	No
86	Fluoranthene	370	< 0.06	< 0.06	No
87	Fluorene	14000	< 0.06	< 0.06	No
88	Hexachlorobenzene	0.00077	< 1.8	< 1.8	No
89	Hexachlorobutadiene	50	< 1.8	< 1.8	No
90	Hexachlorocyclopentadiene	17000	< 1.8	< 1.8	No
91	Hexachloroethane	8.9	< 1.9	< 1.9	No

CTR #	Priority Pollutants	Governing WQO/WQC (µg/L)	MEC or Minimum DL [1][2] (µg/L)	Maximum Background or Minimum DL [1][2] (µg/L)	RPA Results [3]
92	Indeno(1,2,3-cd)Pyrene	0.049	< 0.06	< 0.06	No
93	Isophorone	600	< 1.9	< 1.9	No
94	Naphthalene	No Criteria	< 0.06	< 0.06	Ud
95	Nitrobenzene	1900	< 1.9	< 1.9	No
96	N-Nitrosodimethylamine	8.1	< 1.8	< 1.8	No
97	N-Nitrosodi-n-Propylamine	1.4	< 1.9	< 1.9	No
98	N-Nitrosodiphenylamine	16	< 1.7	< 1.7	No
99	Phenanthrene	No Criteria	< 0.06	< 0.06	Ud
100	Pyrene	11000	< 0.06	< 0.06	No
101	1,2,4-Trichlorobenzene	No Criteria	< 2.0	< 2.0	Ud
102	Aldrin	0.00014	< 0.005	< 0.005	No
103	Alpha-BHC	0.013	< 0.004	< 0.004	No
104	Beta-BHC	0.046	< 0.004	< 0.004	No
105	Gamma-BHC	0.063	< 0.002	< 0.002	No
106	Delta-BHC	No Criteria	< 0.004	< 0.004	Ud
107	Chlordane (303d listed)	0.00059	< 0.02	< 0.02	No
108	4,4'-DDT (303d listed)	0.00059	< 0.006	< 0.006	No
109	4,4'-DDE (linked to DDT)	0.00059	< 0.006	< 0.006	No
110	4,4'-DDD	0.00084	< 0.006	< 0.006	No
111	Dieldrin (303d listed)	0.00014	< 0.006	< 0.006	No
112	Alpha-Endosulfan	0.0087	< 0.006	< 0.006	No
113	beta-Endolsulfan	0.0087	< 0.006	< 0.006	No
114	Endosulfan Sulfate	240	< 0.006	< 0.006	No
115	Endrin	0.0023	< 0.006	< 0.006	No
116	Endrin Aldehyde	0.81	< 0.004	< 0.004	No
117	Heptachlor	0.00021	< 0.006	< 0.006	No
118	Heptachlor Epoxide	0.00011	< 0.006	< 0.006	No
119-125	PCBs sum (303d listed)	0.00017	< 0.08	< 0.08	No
126	Toxaphene	0.0002	< 0.5	< 0.5	No
	Tributylin	0.0074	Not Available	< 0.00128	No
	Total PAHs	15	0.05	< 0.02	No

[1] The Maximum Effluent Concentration (MEC) and maximum background concentration are the actual detected concentrations unless preceded by a "<" sign, in which case the value shown is the minimum detection level (DL).
[2] The MEC or maximum background concentration is "Not Available" when there are no monitoring data for the constituent.
[3] RPA Results = Yes, if MEC > WQO/WQC, B > WQO/WQC and MEC is detected, or Trigger 3;
= No, if MEC and B are < WQO/WQC or all effluent data are undetected;
= Undetermined (Ud), if no criteria have been promulgated or there are insufficient data.
[4] Mercury is addressed through Regional Water Board Order No. R2-2007-0077.

e. Reasonable Potential Analysis for Ammonia

Ammonia is a toxic pollutant. Basin Plan section 4.5.5.2 requires that the SIP methodology be used to derive WQBELs for toxic pollutants, but it does not specify how RPAs are to be conducted. For this Order, the procedures outlined in the *Technical Support Document for Toxics Control* (TSD) (EPA/505/2-90-001, March 1991) were used.

(1) TSD RPA Procedure

The TSD allows using measured receiving water concentrations (RWC) or projected RWC from effluent data to perform an RPA. The following summarizes steps to

determine reasonable potential for excursions above ambient criteria using effluent data:

Step 1. Determine the number of total observations (n) for a set of effluent data and determine the highest value from that data set (the maximum effluent concentration or MEC).

Step 2. Determine the coefficient of variation (CV) from the data set. For a data set where n<10, the CV is estimated to equal 0.6. For a data set where n>10, the CV is calculated as the standard deviation divided by the mean.

Step 3. Determine an appropriate ratio for projecting a selected upper bound concentration (e.g., the 99th or 95th percentile) assuming a lognormal distribution.

To do this, the percentile represented by the MEC in a data set of "*n*" samples, p_n, needs to be determined based on the desired confidence interval, e.g., 95% or 99%.

$$p_n = (1 - \text{confidence interval})^{1/n}$$

Then concentrations based on two percentile values, $C_{upper\ bound}$, and C_{Pn} need to be calculated using the following equation.

$$C_p = \exp(Z_p\sigma - 0.5\sigma^2)$$

where $\sigma^2 = \ln(CV^2+1)$, p is the percentile (upper bound or p_n), and Z_p is the standard normal distribution value for the percentile p.

The ratio, R, is then determined to be

$$R = \frac{C_{upper\ bound}}{C_{Pn}}$$

Step 4. Multiply the MEC by the ratio, R, determined by Step 3. Use this value with the appropriate dilution to project the receiving water concentration (RWC) (the dilution ratio of 1:1 is used for this RPA; no dilution is considered).

$$RWC = MEC \times R / \text{dilution ratio}$$

Step 5. Compare the projected RWC to the applicable WQC (CCC, CMC, human health criteria, etc). If the RWC is greater than or equal to a criterion, then there is Reasonable Potential.

(2) TSD-based RPA for Ammonia

i. *Ammonia WQOs.* The Basin Plan contains WQOs for un-ionized ammonia of 0.025 mg/L as an annual median for all surface waters and 0.16 mg/L as a maximum for receiving waters north of the Golden Gate Channel.

ii. *Ammonia Data Translation*. Effluent and receiving water monitoring data are available for total ammonia, not un-ionized ammonia, because (1) sampling and laboratory methods are not available to analyze for un-ionized ammonia; and (2) the fraction of total ammonia that exists in the toxic un-ionized form depends on the pH, salinity, and temperature of the water. The following equations can be used to calculate un-ionized ammonia from total ammonia data [Ambient Water Quality Criteria for Ammonia (saltwater) – 1989, USEPA Publication 440/5-88-004, USEPA, 1989]:

For salinity > 10 ppt: fraction of $NH_3 = \frac{1}{1+10^{(pK - pH)}}$

Where:

pK = 9.245 + 0.116*(I) + 0.0324*(298-T) + 0.0415*(P)/(T)
I = the molal ionic strength of saltwater = 19.9273*(S)/(1000-1.005109*S)
S = salinity (parts per thousand)
T = temperature in Kelvin
P = pressure (one atmosphere)

iii. *Ammonia Dilution.* For purposes of this discharge, no dilution was assumed for ammonia, i.e., dilution ratio=1; therefore, the RWC is the same as the projected upper bound concentration, i.e., RWC=MEC×R (see Step 4 under "TSD RPA Procedure" above).

iv. *Two Approaches.* According to the TSD, the RPA can be performed based on the projected RWC using effluent data or measured receiving water concentrations. Both values may be compared directly with WQOs.

(a) RPA Based on Effluent Data

Step 1. The number (n) of observations of effluent data from November 2009 through March 2010 was 11.

Step 2. The maximum un-ionized ammonia concentration was 0.023 mg/L, the mean was 0.00679 mg/L, the standard deviation was 0.00659, and the coefficient of variation was 0.972.

Step 3. The ratio for projecting the upper bound concentration for the 99th was calculated as follows:

p_n = (1 - confidence interval)$^{1/n}$ = $(1 - 0.99)^{1/11}$ = 0.762

$Z_{pn} = Z_{1-0.762}$ = 0.71 (from Z statistic table)

$Z_{1\text{-}0.99}$ =2.32

$$C_{pn} = \exp(Z_{pn}\sigma - 0.5\sigma^2) = \exp(0.71 * 0.00659 - 0.5 * 0.00629^2) = 1.28$$
$$C_{99} = \exp(Z_{99}\sigma - 0.5\sigma^2) = \exp(2.32 * 0.00659 - 0.5 * 0.00629^2) = 4.78$$

$$R = \frac{C_{99}}{C_{Pn}} = \frac{4.78}{1.28} = 3.73$$

Step 4. The projected maximum concentration using a dilution ratio of 1:1 (no dilution) was

RWC = MEC × R / dilution = 0.023 mg/L * 3.73 / 1 = 0.09 mg/L

Step 5. The projected RWC (0.09 mg/L) is less than the Basin Plan acute objective (0.16 mg/L), and the median concentration (0.00346 mg/L) is less than the chronic objective (0.025 mg/L). Therefore, there is no reasonable potential based on the effluent data.

(b) RPA Based on Receiving Water Data

The Discharger collected 88 receiving water samples from four stations (one 500 feet upstream of the outfall, one directly above the outfall, one 500 feet downstream of the outfall, and one 2,000 feet downstream of the outfall) from 2006 through 2010 to evaluate Reasonable Potential.

Total ammonia concentrations were converted to un-ionized ammonia for each data point using the method described in section IV.D.3.e(2)ii. The maximum un-ionized ammonia concentration of the 88 samples was 0.026 mg/L. The median un-ionized ammonia concentrations of the four receiving water stations were 0.0034 mg/L, 0.0045 mg/L, 0.0043 mg/L, and 0.0032 mg/L. The maximum unionized ammonia concentration (0.026 mg/L) is less than the Basin Plan acute WQO (0.16 µg/L), and the maximum median concentration of the four receiving water stations (0.0045 mg/L) is less than the chronic WQO (0.025 mg/L). Therefore, there is no Reasonable Potential based on receiving water data.

f. **Reasonable Potential Analysis for Sediment Quality Objectives**

The *Water Quality Control Plan for Enclosed Bays and Estuaries—Part 1, Sediment Quality* contains a narrative WQO: "Pollutants in sediments shall not be present in quantities that, alone or in combination, are toxic to benthic communities in bays and estuaries of California." This WQO is to be implemented by integrating three lines of evidence: sediment toxicity, benthic community condition, and sediment chemistry. The Policy requires that if the Regional Water Board determines that a discharge has reasonable potential to cause or contribute to an exceedance of this WQO, it is to impose the WQO as a receiving water limit.

g. **Constituents with limited data.** In some cases, Reasonable Potential cannot be determined because effluent data are limited, or ambient background concentrations are unavailable. The MRP (Attachment E) requires the Discharger to 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 numeric effluent limitations are necessary.

h. **Pollutants with No Reasonable Potential.** WQBELs are not included in this Order for constituents that do not demonstrate Reasonable Potential; however, the MRP (Attachment E) still requires monitoring for those pollutants.

4. WQBEL Calculations

a. **Pollutants with Reasonable Potential.** WQBELs were developed for the pollutants determined to have Reasonable Potential 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. **Shallow/Deep Water Discharge.** The Facility discharge does not achieve 10:1 initial dilution at all times and is therefore viewed as a shallow water discharge; no dilution credit is provided, with the exception of cyanide. Because cyanide is a non-persistent pollutant that quickly disperses and degrades, the Basin Plan sets forth a dilution credit of 3.25:1 (D=2.25) for calculating cyanide WQBELs.

c. **Development of WQBELs for Specific Pollutants**

(1) Copper

a. **WQOs.** The most stringent applicable copper WQOs are from the Basin Plan for protection of marine aquatic life from chronic and acute effects: 6.0 and 9.4 micrograms per liter (µg/L), expressed as dissolved metal. These WQOs were converted to total recoverable metal using the site-specific translators of 0.66 (chronic) and 0.77 (acute), as described in section IV.D.2.g. The resulting chronic WQO of 6.0µg/L and acute WQO of 9.4µg/L were used for the RPA.

b. **RPA Results.** This Order establishes WQBELs for copper because the MEC (9.4 µg/L) exceeds the governing WQO (6.0 µg/L) for copper, demonstrating Reasonable Potential by Trigger 1.

c. **WQBELs**. Copper WQBELs, calculated according to SIP procedures with a CV of 0.39, using site-specific translators, are an AMEL of 7.8 µg/L and an MDEL of 12 µg/L.

d. **Anti-backsliding.** This Order retains the limits established in the previous Order (No. R2-2010-0056, *Amendment of Waste Discharge Requirements for Municipal and Industrial Dischargers to Implement Cyanide and Copper Site Specific Objectives*) and therefore complies with anti-backsliding requirements.

(2) Cyanide

a. **WQOs.** The most stringent applicable cyanide WQOs are from the Basin Plan for protection of marine aquatic life in San Francisco Bay from chronic and acute effects: 2.9 µg/L and 9.4 µg/L (cyanide site-specific objectives).

b. **RPA Results.** This Order establishes WQBELs for cyanide because the MEC (8.5 µg/L) exceeds the governing WQO (2.9 µg/L), demonstrating Reasonable Potential by Trigger 1.

c. **WQBELs.** Cyanide WQBELs, calculated according to SIP procedures with a CV of 0.71 and a dilution credit of D=2.25, are an AMEL of 5.8 µg/L and an MDEL of 13 µg/L.

d. **Anti-backsliding**. The newly calculated cyanide WQBELs are more stringent than those that previous Order No. R2-2010-0056 (*Amendment of Waste Discharge Requirements for Municipal and Industrial Dischargers to Implement Cyanide and Copper Site Specific Objectives*) established; therefore, imposing these new WQBELs complies with anti-backsliding requirements.

(3) Dioxin – TEQ

a. **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 is applicable 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 as impaired by dioxin and furan compounds in the current 303(d) listing of receiving waters, where water quality objectives 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 1.4×10^{-8} µg/L for the protection of human health, when aquatic organisms are consumed. When the CTR was promulgated, USEPA stated its support of the regulation of other dioxin and dioxin-like compounds through the use of toxicity equivalencies (TEQs) in NPDES permits. For California waters, USEPA stated specifically, "if the discharge of dioxin or dioxin-like compounds has reasonable potential to cause or contribute to a violation of a narrative criterion, numeric WQBELs for dioxin or dioxin-like

compounds should be included in NPDES permits and should be expressed using a TEQ scheme." [65 Fed. Reg. 31682, 31695 (2000)]

This 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 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 2,3,7,8-TCDD. These "equivalent" concentrations were then compared to the CTR numeric criterion for 2,3,7,8-TCDD (1.4×10^{-8} µg/L). Although the 1998 WHO scheme includes TEFs for dioxin-like PCBs, they are not included in this Order's 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.** This Order establishes effluent limitations for dioxin-TEQ based on Trigger 3. Effluent and receiving water monitoring has shown that dioxin-TEQ is present in detectable concentrations. In addition, San Pablo Bay, to which the Petaluma River is tributary, is listed as impaired due to dioxin and furan compounds.

c. **WQBELs.** Dioxin-TEQ WQBELs, calculated according to SIP procedures with a default CV of 0.6 and no dilution credit, are an AMEL of 1.4×10^{-8} µg/L and an MDEL of 2.8×10^{-8} µg/L.

d. **Anti-backsliding.** Anti-backsliding requirements are satisfied because the previous orders included the same effluent limitations for dioxin-TEQ.

d. **Effluent Limit Calculations**

The following table shows the WQBEL calculations for copper, cyanide, and dioxin-TEQ.

Table F-10. Effluent Limitation Calculations

PRIORITY POLLUTANTS	Copper	Cyanide	Dioxin-TEQ
Units	**ug/L**	**ug/L**	**ug/L**
Basis and Criteria type	Basin Plan SSOs	Basin Plan SSOs	Basin Plan Narrative
SSO Criteria -Acute	6.0	9.4	-----

PRIORITY POLLUTANTS	Copper	Cyanide	Dioxin-TEQ
Units	**ug/L**	**ug/L**	**ug/L**
SSO Criteria -Chronic	9.4	2.9	-----
Water Effects ratio (WER)	1	1	1
Site Specific Translator - MDEL	0.77	-----	-----
Site Specific Translator - AMEL	0.66	-----	-----
Lowest WQO	9.1	2.9	1.4E-08
Dilution Factor (D) (if applicable)	0	2.25	0
No. of samples per month	4	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y	N
HH criteria analysis required? (Y/N)	N	Y	Y
Applicable Acute WQO	12	9.4	
Applicable Chronic WQO	9.1	2.9	
HH criteria	-----	220000	1.4E-08
Background (Maximum Conc for Aquatic Life calc)	15	0.9	
Background (Average Conc for Human Health calc)	-----	1.9	2.5E-09
Is the pollutant on the 303d list (Y/N)?	N	N	Y
ECA acute	12	29	
ECA chronic	9.1	7	
ECA HH		714996	1.4E-08
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	Y
Avg of effluent data points	3.3	3.4	
Std Dev of effluent data points	1.1	2.4	
CV calculated	0.34	0.71	N/A
CV (Selected) - Final	0.34	0.71	0.6
ECA acute mult99	0.49	0.28	
ECA chronic mult99	0.69	0.48	
LTA acute	6.0	7.9	
LTA chronic	6.2	3.5	
minimum of LTAs	6.0	3.5	
AMEL mult95	1.3	1.7	1.6
MDEL mult99	2.0	3.6	3.1
AMEL (aq life)	7.8	5.8	
MDEL(aq life)	12	12.7	
MDEL/AMEL Multiplier	1.57	2.17	2.01
AMEL (human hlth)		714996	1.4E-08
MDEL (human hlth)		1553200	2.8E-08
Final limit - AMEL	**7.8**	**5.8**	**1.4E-08**
Final limit - MDEL	**12**	**13**	**2.8E-08**

5. Whole Effluent Acute Toxicity

This Order includes effluent limitations for whole effluent acute toxicity based on Basin Plan Table 4-3 that are unchanged from the previous orders. All bioassays are to be performed according to the USEPA approved method in 40 CFR 136, currently *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, 5th Edition.

6. Whole Effluent Chronic Toxicity

a. Toxicity Objective. Basin Plan section 3.3.18 states, "There shall be no chronic toxicity in ambient waters. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community."

b. Permit Requirements. This Order includes the Basin Plan narrative chronic toxicity objective as the applicable effluent limit. It is implemented through monitoring with numeric triggers for accelerated monitoring. These triggers are based on Basin Plan Table 4-5.

c. Screening Phase Study. The Discharger is required to conduct a chronic toxicity screening phase study, as described in Appendix E-1 of the MRP (Attachment E), prior to the next permit re-issuance.

7. Anti-backsliding and Antidegradation

Effluent limitations in this Order that are less stringent than those in the previous orders or are not retained from the previous orders comply with anti-backsliding and antidegradation requirements for the reasons explained below.

- The previous orders contained effluent limitations for nickel and selenium; however, the RPA shows that the discharge no longer demonstrates Reasonable Potential for these pollutants. Therefore, this Order does not retain these limitations. Elimination of these limitations is consistent with State Water Board Order No. WQ 2001-16 and not expected to degrade water quality because the Discharger is expected to maintain and improve its current level of treatment during the permit term.

- This Order does not retain the previous interim effluent limitation for mercury because mercury discharges are now regulated under Regional Water Board Order No. R2-2007-0077, which complied with anti-backsliding and antidegradation requirements.

E. Reclamation Specifications

Regional Water Board Order No. 96-011 contains water reclamation requirements for this Discharger.

V. Pond Specifications

These requirements are retained from the previous orders. They are required to prevent flooding or accidental discharge of untreated or partially treated wastewater to waters of the United States.

VI. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

Receiving water limitations V.A.1 and V.A.2 are based on the narrative and numeric WQOs in Basin Plan Chapter 3. Receiving water limitation V.A.3 is retained from the previous orders and requires compliance with federal and State water quality standards.

B. Groundwater

Not Applicable.

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. CWC sections 13267 and 13383 authorize the Regional Water Board to require technical and monitoring reports. The MRP (Attachment E) establishes monitoring and reporting requirements to implement federal and State requirements.

The principal purposes of a monitoring program are to:

- Document compliance with waste discharge requirements and prohibitions established by the Regional Water Board,
- Facilitate self-policing by the Discharger in the prevention and abatement of pollution arising from waste discharge,
- Develop or assist in the development of limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards, 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 and sets out requirements for reporting of routine monitoring data in accordance with NPDES regulations, the CWC, and State 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 RPAs.

The following provides the rationale for the monitoring and reporting requirements contained in the MRP.

A. Influent Monitoring

Influent monitoring requirements for BOD_5 and TSS are unchanged from the previous orders, as amended, to allow determination of compliance with this Order's 85% removal requirement. Cyanide influent monitoring is required by the Basin Plan with implementation of the cyanide site-specific objectives.

B. Effluent Monitoring

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

- Un-ionized ammonia monitoring is required on a monthly basis to determine Reasonable Potential for the next permit cycle. This requires no additional sampling because it is a calculated value using the results for other monitored parameters.

- Routine monitoring is not retained for nickel, selenium, and bis(2-exylhethylphthalate) because these pollutants no longer demonstrate Reasonable Potential.

- Routine monitoring for mercury is not retained because this pollutant is now regulated under a separate order (Order No. R2-2007-0077.)

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Monthly 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity. The MRP requires the use of fathead minnow as the bioassay test species.

2. **Chronic Toxicity.** This Order requires the Discharger to conduct quarterly chronic toxicity testing. The Discharger conducted an effluent toxicity screening study during the previous Orders' term that indicated that *Americamysis bahia* is the most sensitive species for chronic toxicity testing. The Discharger is required to re-screen in accordance with Appendix E-1 of the MRP (Attachment E) after any significant change in the nature of the effluent or prior to 180 days prior to the expiration of this Order.

D. Receiving Water Monitoring

MRP Table E-4 requires the Discharger to continue receiving water monitoring to ensure compliance with receiving water requirements.

E. Pretreatment and Biosolids Monitoring Requirements

The pretreatment monitoring requirements for influent, effluent, and biosolids are retained from the previous Orders and are required to assess compliance with the Discharger's USEPA-approved pretreatment program. Biosolids monitoring is required pursuant to 40 CFR Part 503.

This Order specifies the sampling type for pretreatment monitoring. Specifically, it requires multiple grab samples for VOCs, BNA, cyanide, and hexavalent chromium, consistent with the

federal pretreatment requirements of 40 CFR 403.12, which requires 24-hour composites, and with the Regional Standard Provisions. Composites made up of discrete grabs are necessary for these parameters to minimize potential losses during automatic compositing. VOCs are volatile, and cyanide and BNAs are also somewhat volatile. Hexavalent chromium is chemically unstable.

VIII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which in accordance with 40 CFR 122.41 and 122.42 apply to all NPDES dischargers and must be included in every NPDES permit, are set forth in Attachment D of this Order. The Discharger must comply with all standard provisions and with those additional conditions that apply under 40 CFR 122.42.

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. They are incorporated expressly in this Order as Attachment D. Regulations at 40 CFR 123.25(a)(12) allow the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 CFR 123.25, this Order omits federal conditions that address enforcement authority specified in 40 CFR 122.41(j)(5) and (k)(2) because the enforcement authority under the CWC is more stringent. In lieu of these conditions, this Order incorporates by reference CWC section 13387(e). This Order also modifies the Federal Standard Provisions to impose more stringent requirements as set forth in the Regional Standard Provisions (Attachment G).

B. MRP Requirements

The Discharger is required to monitor the permitted discharges to evaluate compliance with permit conditions. The MRP (Attachment E) includes monitoring requirements. This provision is based on 40 CFR 122.63.

C. Special Provisions

1. Reopener Provisions

These provisions are based on 40 CFR 123 and allow future modification of this Order and its effluent limitations and other requirements as necessary to respond to updated information.

2. Special Studies and Additional Monitoring Requirements

a. **Effluent Characterization Study.** This Order does not include effluent limitations for priority pollutants that do not demonstrate Reasonable Potential, but this provision requires the Discharger to continue monitoring for these pollutants as described in the Regional Standard Provisions (Attachment G) and as specified in the MRP (Attachment E). If concentrations of these constituents increase significantly, the Discharger must 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 WQOs. This provision is based on the SIP and is retained from the previous orders.

b. **Chronic Toxicity Reduction Evaluation (TRE)**. These general TIE/TRE requirements establish guidelines for TIE/TRE evaluations and are unchanged from the previous permit.

3. Best Management Practices and Pollution Minimization Program

This provision for a Pollutant Minimization Program is based on Basin Plan section 4.13.2 and SIP section 2.4.5.

4. Reliability Status Report

This provision is required to ensure that the Discharger maintains a high standard of treatment system reliability and continues to qualify for an exception to Basin Plan Discharge Prohibition 1 as further discussed in Fact Sheet section IV.B.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. **Pretreatment Program.** This provision is based on 40 CFR 403 (General Pretreatment Regulations for Existing and New Sources of Pollution) and is retained from the previous orders.

b. **Biosolids Management Practices Requirements.** This provision is based on Basin Plan section 4.17 and 40 CFR Parts 257 and 503, and is retained from the previous orders.

c. **Sanitary Sewer 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 Provisions, section VI.C.5. 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 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) contains the same notification and reporting requirements for spills from wastewater treatment facilities.

6. Other Special Provisions

a. **Copper Action Plan.** This provision is based on Basin Plan sections 7.2.2.2 and 7.2.2.5. It is necessary to ensure that use of copper site-specific objectives is consistent with antidegradation policies. These requirements are continued from Order No. R2-2010-0056. The Discharger completed an inventory of potential copper sources in June 2010.

b. **Cyanide Action Plan.** This provision is based on Basin Plan Chapter 4 (see Regional Water Board Resolution No. R2-2006-0086, Cyanide Site-Specific Objectives). It is necessary to ensure that use of cyanide site-specific objectives is consistent with antidegradation policies. These requirements are continued from Order No. R2-2010-0056. The Discharger completed an inventory of potential cyanide sources in June 2010.

IX. PUBLIC PARTICIPATION

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

A. Notification of Interested Parties

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided an opportunity to submit written comments and recommendations. Notification was provided through the Marin Independent Journal for one day in September 2010.

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 provided on the cover page of this Order, to the Attention of Vincent Christian.

To receive full consideration and a written response, written comments must be received at the Regional Water Board offices by 5:00 p.m. on November 1, 2010.

C. Public Hearing

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

Date:	January 12, 2011
Time:	9:00 am
Location:	Elihu Harris State Office Building 1515 Clay Street, 1st Floor Auditorium Oakland, CA 94612
Contact:	Vincent Christian, (510) 622-2336, email vchristian@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.

Dates and venues may change. The Regional Water Board 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 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 8:45 a.m. and 5:00 p.m., Monday through Friday. Copying of documents may be arranged by calling 510-622-2300.

F. Register of Interested Persons

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

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Vincent Christian at 510-622-2336 or e-mail at vchristian@waterboards.ca.gov.

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 point(s) 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.

i. 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

ii. 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 sample(s) 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.

B. 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:

i. 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.

ii. 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:

$$\text{Dioxin-TEQ} = \Sigma (C_x \times TEF_x \times BEF_x)$$

where: C_x = measured or estimated concentration of congener *x*
TEF_x = toxicity equivalency factor for congener x
BEFx = 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:

   (i) List of analyses for which the Discharger is certified;

   (ii) 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

   (iii) 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 Regional Water Board staff. 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 Plants[1]

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;

2) Location of threatened or involved waterway(s) 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.

[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.

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 Discharges[1] 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

H. Other 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.

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:

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

   or

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

   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 "Q_i" and "C_i" 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, "C_i" is the concentration measured in the composite sample and "Q_i" 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):

Removal Efficiency (%) = 100 × [1-(Effluent Concentration/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[5]	Minimum Levels[6] (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)[7]	SM 3500					50	2	10	0.5	1			1000
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)[8]												
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)[9]	0100.2 [10]												
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										

[5] 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.

[6] 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.

[7] Analysis for total chromium may be substituted for analysis of chromium (III) and chromium (VI) if the concentration measured is below the lowest hexavalent chromium criterion (11 ug/l).

[8] 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 ug/l).

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

[10] *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[5]	Minimum Levels[6] (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
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										
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 Dichlorormethane	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									

CTR No.	Pollutant/Parameter	Analytical Method[5]	Minimum Levels[6] (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
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										
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)[11]	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											

[11] 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.

CTR No.	Pollutant/Parameter	Analytical Method[5]	Minimum Levels[6] (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
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											

ATTACHMENT H – PRETREATMENT REQUIREMENTS

Pretreatment Program Provisions

1. The Discharger shall implement all pretreatment requirements contained in 40 CFR 403, as amended. The Discharger shall be subject to enforcement actions, penalties, and fines as provided in the Clean Water Act (33 USC 1351 et seq.), as amended. The Discharger shall implement and enforce its Approved Pretreatment Program or modified Pretreatment Program as directed by the Regional Water Board's Executive Officer or USEPA. USEPA and/or the State may initiate enforcement action against an industrial user for noncompliance with applicable standards and requirements as provided in the Clean Water Act.

2. The Discharger shall enforce the requirements promulgated under Sections 307(b), 307(c), 307(d) and 402(b) of the Clean Water Act. The Discharger shall cause industrial users subject to Federal Categorical Standards to achieve compliance no later than the date specified in those requirements or, in the case of a new industrial user, upon commencement of the discharge.

3. The Discharger shall perform the pretreatment functions as required in 40 CFR 403 and amendments or modifications thereto including, but not limited to:

   i) Implement the necessary legal authorities to fully implement the pretreatment regulations as provided in 40 CFR 403.8(f)(1);

   ii) Implement the programmatic functions as provided in 40 CFR 403.8(f)(2);

   iii) Publish an annual list of industrial users in significant noncompliance as provided per 40 CFR 403.8(f)(2)(vii);

   iv) Provide for the requisite funding and personnel to implement the pretreatment program as provided in 40 CFR 403.8(f)(3); and

   v) Enforce the national pretreatment standards for prohibited discharges and categorical standards as provided in 40 CFR 403.5 and 403.6, respectively.

4. The Discharger shall submit annually a report to USEPA Region 9, the State Water Board and the Regional Water Board describing its pretreatment program activities over the previous twelve months. In the event that the Discharger is not in compliance with any conditions or requirements of the Pretreatment Program, the Discharger shall also include the reasons for noncompliance and a plan and schedule for achieving compliance. The report shall contain, but is not limited to, the information specified in Appendix A entitled, "Requirements for Pretreatment Annual Reports," which is made a part of this Order. The annual report is due on the last day of February each year.

5. The Discharger shall submit semiannual pretreatment reports to USEPA Region 9, the State Water Board and the Regional Water Board describing the status of its significant industrial users (SIUs). The report shall contain, but is not limited to, the information specified in Appendix B entitled, "Requirements for Semiannual Pretreatment Reports," which is made part of this Order. The semiannual reports are due July 31st (for the period January through June) and January 31st (for the period July through December) of each year. The Executive Officer may exempt a Discharger from

the semiannual reporting requirements on a case by case basis subject to State Water Board and USEPA's comment and approval.

6. The Discharger may combine the annual pretreatment report with the semiannual pretreatment report (for the July through December reporting period). The combined report shall contain all of the information requested in Appendices A and B and will be due on January 31st of each year.

7. The Discharger shall conduct the monitoring of its treatment Plant's influent, effluent, and sludge as described in Appendix C entitled, "Requirements for Influent, Effluent and Sludge Monitoring," which is made part of this Order. The results of the sampling and analysis, along with a discussion of any trends, shall be submitted in the semiannual reports. A tabulation of the data shall be included in the annual pretreatment report. The Executive Officer may require more or less frequent monitoring on a case by case basis.

APPENDIX H-A

REQUIREMENTS FOR PRETREATMENT ANNUAL REPORTS

The Pretreatment Annual Report is due each year on the last day of February. [If the annual report is combined with the semiannual report (for the July through December period) the submittal deadline is January 31st of each year.] The purpose of the Annual Report is 1) to describe the status of the Publicly Owned Treatment Works (POTW) pretreatment program and 2) to report on the effectiveness of the program, as determined by comparing the results of the preceding year's program implementation. The report shall contain at a minimum, but is not limited to, the following information:

1) **Cover Sheet**

The cover sheet must contain the name(s) and National Pollutant Discharge Elimination Discharge System (NPDES) permit number(s) of those POTWs that are part of the Pretreatment Program. Additionally, the cover sheet must include: the name, address and telephone number of a pretreatment contact person; the period covered in the report; a statement of truthfulness; and the dated signature of a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for overall operation of the POTW (40 CFR 403.12(j)).

2) **Introduction**

The Introduction shall include any pertinent background information related to the Discharger, the POTW and/or the industrial user base of the area. Also, this section shall include an update on the status of any Pretreatment Compliance Inspection (PCI) tasks, Pretreatment Performance Evaluation tasks, Pretreatment Compliance Audit (PCA) tasks, Cleanup and Abatement Order (CAO) tasks, or other pretreatment-related enforcement actions required by the Regional Water Board or USEPA. A more specific discussion shall be included in the section entitled, "Program Changes."

3) **Definitions**

This section shall contain a list of key terms and their definitions that the Discharger uses to describe or characterize elements of its pretreatment program.

4) **Discussion of Upset, Interference and Pass Through**

This section shall include a discussion of Upset, Interference or Pass Through incidents, if any, at the POTW(s) that the Discharger knows of or suspects were caused by industrial discharges. Each incident shall be described, at a minimum, consisting of the following information:

a) a description of what occurred;

b) a description of what was done to identify the source;

c) the name and address of the IU responsible;

d) the reason(s) why the incident occurred;

e) a description of the corrective actions taken; and

f) an examination of the local and federal discharge limits and requirements for the purposes of determining whether any additional limits or changes to existing requirements may be necessary to prevent other Upset, Interference or Pass Through incidents.

5) **Influent, Effluent and Sludge Monitoring Results**

This section shall provide a summary of the analytical results from the "Influent, Effluent and Sludge Monitoring" as specified in Appendix C. The results should be reported in a summary matrix that lists monthly influent and effluent metal results for the reporting year.

A graphical representation of the influent and effluent metal monitoring data for the past five years shall also be provided with a discussion of any trends.

6) **Inspection and Sampling Program**

This section shall contain at a minimum, but is not limited to, the following information:

a) Inspections: the number of inspections performed for each type of IU; the criteria for determining the frequency of inspections; the inspection format procedures;

b) Sampling Events: the number of sampling events performed for each type of IU; the criteria for determining the frequency of sampling; the chain of custody procedures.

7) **Enforcement Procedures**

This section shall provide information as to when the approved Enforcement Response Plan (ERP) had been formally adopted or last revised. In addition, the date the finalized ERP was submitted to the Regional Water Board shall also be given.

8) **Federal Categories**

This section shall contain a list of all of the federal categories that apply to the Discharger. The specific category shall be listed including the subpart and 40 CFR section that applies. The maximum and average limits for the each category shall be provided. This list shall indicate the number of Categorical Industrial Users (CIUs) per category and the CIUs that are being regulated pursuant to the category. The information and data used to determine the limits for those CIUs for which a combined waste stream formula is applied shall also be provided.

9) **Local Standards**

This section shall include a table presenting the local limits.

10) **Updated List of Regulated SIUs**

This section shall contain a complete and updated list of the Discharger's Significant Industrial Users (SIUs), including their names, addresses, and a brief description of the individual SIU's type of business. The list shall include all deletions and additions keyed to the list as submitted in the previous annual report.All deletions shall be briefly explained.

11) **Compliance Activities**

a) **Inspection and Sampling Summary:** This section shall contain a summary of all the inspections and sampling activities conducted by the Discharger over the past year to gather information and data regarding the SIUs. The summary shall include:

(1) the number of inspections and sampling events conducted for each SIU;

(2) the quarters in which these activities were conducted; and

(3) the compliance status of each SIU, delineated by quarter, and characterized using all applicable descriptions as given below:

(a) in consistent compliance;

(b) in inconsistent compliance;

(c) in significant noncompliance;

(d) on a compliance schedule to achieve compliance, (include the date final compliance is required);

(e) not in compliance and not on a compliance schedule;

(f) compliance status unknown, and why not.

b) **Enforcement Summary:** This section shall contain a summary of the compliance and enforcement activities during the past year. The summary shall include the names of all the SIUs affected by the following actions:

(1) Warning letters or notices of violations regarding SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

(2) Administrative Orders regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

(3) Civil actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

(4) Criminal actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

(5) Assessment of monetary penalties. Identify the amount of penalty in each case and reason for assessing the penalty.

(6) Order to restrict/suspend discharge to the POTW.

(7) Order to disconnect the discharge from entering the POTW.

12) **Baseline Monitoring Report Update**

This section shall provide a list of CIUs that have been added to the pretreatment program since the last annual report. This list of new CIUs shall summarize the status of the respective Baseline Monitoring Reports (BMR). The BMR must contain all of the information specified in 40 CFR 403.12(b). For each of the new CIUs, the summary shall indicate when the BMR was due; when the CIU was notified by the POTW of this requirement; when the CIU submitted the report; and/or when the report is due.

13) **Pretreatment Program Changes**

This section shall contain a description of any significant changes in the Pretreatment Program during the past year including, but not limited to: legal authority, local limits, monitoring/ inspection program and frequency, enforcement protocol, program's administrative structure, staffing level, resource requirements and funding mechanism. If the manager of the pretreatment program changes, a revised organizational chart shall be included. If any element(s) of the program is in the process of being modified, this intention shall also be indicated.

14) **Pretreatment Program Budget**

This section shall present the budget spent on the Pretreatment Program. The budget, either by the calendar or fiscal year, shall show the amounts spent on personnel, equipment, chemical analyses and any other appropriate categories. A brief discussion of the source(s) of funding shall be provided.

15) **Public Participation Summary**

This section shall include a copy of the public notice as required in 40 CFR 403.8(f)(2)(vii). If a notice was not published, the reason shall be stated.

16) **Sludge Storage and Disposal Practice**

This section shall have a description of how the treated sludge is stored and ultimately disposed. The sludge storage area, if one is used, shall be described in detail. Its location, a description of the containment features and the sludge handling procedures shall be included.

17) **PCS Data Entry Form**

The annual report shall include the PCS Data Entry Form. This form shall summarize the enforcement actions taken against SIUs in the past year. This form shall include the following information: the POTW name, NPDES Permit number, period covered by the report, the number of SIUs in significant noncompliance (SNC) that are on a pretreatment compliance schedule, the

number of notices of violation and administrative orders issued against SIUs, the number of civil and criminal judicial actions against SIUs, the number of SIUs that have been published as a result of being in SNC, and the number of SIUs from which penalties have been collected.

18) **Other Subjects**

Other information related to the Pretreatment Program that does not fit into one of the above categories should be included in this section.

Signed copies of the reports shall be submitted to the Regional Administrator at USEPA, the State Water Board and the Regional Water Board at the following addresses:

Regional Administrator
United States Environmental Protection Agency
Region 9, Mail Code: WTR-7
Clean Water Act Compliance Office
Water Division
75 Hawthorne Street
San Francisco, CA 94105

Pretreatment Program Manager
Regulatory Unit
State Water Resources Control Board
Division of Water Quality
1001 I Street
Sacramento, CA 95814

Pretreatment Coordinator
NPDES Permits Division
SF Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

APPENDIX H-B

REQUIREMENTS FOR SEMIANNUAL PRETREATMENT REPORTS

The semiannual pretreatment reports are due on July 31st (for pretreatment program activities conducted from January through June) and January 31st (for pretreatment activities conducted from July through December) of each year, unless an exception has been granted by the Regional Water Board's Executive Officer. The semiannual reports shall contain, at a minimum, but is not limited to, the following information:

1) **Influent, Effluent and Sludge Monitoring**

The influent, effluent and sludge monitoring results shall be included in the report. The analytical laboratory report shall also be included, with the QA/QC data validation provided upon request. A description of the sampling procedures and a discussion of the results shall be given. (Please see Appendix C for specific detailed requirements.) The contributing source(s) of the parameters that exceed NPDES limits shall be investigated and discussed. In addition, a brief discussion of the contributing source(s) of all organic compounds identified shall be provided.

The Discharger has the option to submit all monitoring results via an electronic reporting format approved by the Executive Officer. The procedures for submitting the data will be similar to the electronic submittal of the NPDES self-monitoring reports as outlined in the December 17, 1999 Regional Water Board letter, Official Implementation of Electronic Reporting System (ERS). The Discharger shall contact the Regional Water Board's ERS Project Manager for specific details in submitting the monitoring data.

If the monitoring results are submitted electronically, the analytical laboratory reports (along with the QA/QC data validation) should be kept at the discharger's facility.

2) **Industrial User Compliance Status**

This section shall contain a list of all Significant Industrial Users (SIUs) that were not in consistent compliance with all pretreatment standards/limits or requirements for the reporting period. The compliance status for the previous reporting period shall also be included. Once the SIU has determined to be out of compliance, the SIU shall be included in the report until consistent compliance has been achieved. A brief description detailing the actions that the SIU undertook to come back into compliance shall be provided.

For each SIU on the list, the following information shall be provided:

a. Indicate if the SIU is subject to Federal categorical standards; if so, specify the category including the subpart that applies.

b. For SIUs subject to Federal Categorical Standards, indicate if the violation is of a categorical or local standard.

c. Indicate the compliance status of the SIU for the two quarters of the reporting period.

d. For violations/noncompliance occurring in the reporting period, provide (1) the date(s) of violation(s); (2) the parameters and corresponding concentrations exceeding the limits

and the discharge limits for these parameters and (3) a brief summary of the noncompliant event(s) and the steps that are being taken to achieve compliance.

3) **POTW's Compliance with Pretreatment Program Requirements**

This section shall contain a discussion of the Discharger's compliance status with the Pretreatment Program Requirements as indicated in the latest Pretreatment Compliance Audit (PCA) Report, Pretreatment Compliance Inspection (PCI) Report or Pretreatment Performance Evaluation (PPE) Report. It shall contain a summary of the following information:

a. Date of latest PCA, PCI or PPE and report.

b. Date of the Discharger's response.

c. List of unresolved issues.

d. Plan and schedule for resolving the remaining issues.

The reports shall be signed by a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for the overall operation of the Publicly Owned Treatment Works (POTW) (40 CFR 403.12(j)). Signed copies of the reports shall be submitted to the Regional Administrator at USEPA, the State Water Board and the Regional Water Board at the following addresses:

Regional Administrator
United States Environmental Protection Agency
Region 9, Mail Code: WTR-7
Clean Water Act Compliance Office
Water Division
75 Hawthorne Street
San Francisco, CA 94105

Pretreatment Program Manager
Regulatory Unit
State Water Resources Control Board
Division of Water Quality
1001 I Street
Sacramento, CA 95814

Pretreatment Coordinator
NPDES Permits Division
SF Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

APPENDIX H-C

REQUIREMENTS FOR INFLUENT, EFFLUENT AND SLUDGE MONITORING

The Discharger shall conduct sampling of its treatment plant's influent, effluent and sludge at the frequency as shown in Table E-5 of the Monitoring and Reporting Program (MRP).

The monitoring and reporting requirements of the POTW's Pretreatment Program are in addition to those specified in Tables E-2 and E-3 the MRP. Any subsequent modifications of the requirements specified in Tables E-2 and E-3 shall be adhered to and shall not affect the requirements described in this Appendix unless written notice from the Regional Water Board is received. When sampling periods coincide, one set of test results, reported separately, may be used for those parameters that are required to be monitored by both Tables E-2 and E-3 and the Pretreatment Program. The Pretreatment Program monitoring reports shall be sent to the Pretreatment Program Coordinator.

1. Influent and Effluent Monitoring

The Discharger shall monitor for the parameters using the required test methods listed in Table E-5 of the MRP. Any test method substitutions must have received prior written Regional Water Board approval. Influent and effluent sampling locations shall be the same as those sites specified in the MRP.

The influent and effluent sampled should be taken during the same 24-hour period. All samples must be representative of daily operations. Grab samples shall be used for volatile organic compounds, cyanide and phenol. In addition, any samples for oil and grease, polychlorinated biphenyls, dioxins/furans, and polynuclear aromatic hydrocarbons shall be grab samples. For all other pollutants, 24-hour composite samples must be obtained through flow-proportioned composite sampling. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR 136 and amendments thereto. For effluent monitoring, the reporting limits for the individual parameters shall be at or below the minimum levels (MLs) as stated in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (2000) [also known as the State Implementation Policy (SIP)]; any revisions to the MLs shall be adhered to. If a parameter does not have a stated minimum level, then the Discharger shall conduct the analysis using the lowest commercially available and reasonably achievable detection levels.

The following standardized report format should be used for submittal of the influent and effluent monitoring report. A similar structured format may be used but will be subject to Regional Water Board approval. The monitoring reports shall be submitted with the Semiannual Reports.

A. Sampling Procedures – This section shall include a brief discussion of the sample locations, collection times, how the sample was collected (i.e., direct collection using vials or bottles, or other types of collection using devices such as automatic samplers, buckets, or beakers), types of containers used, storage procedures and holding times. Include description of prechlorination and chlorination/dechlorination practices during the sampling periods.

B. Method of Sampling Dechlorination – A brief description of the sample dechlorination method prior to analysis shall be provided.

C. Sample Compositing – The manner in which samples are composited shall be described. If the compositing procedure is different from the test method specifications, a reason for the variation shall be provided.

D. Data Validation – All quality assurance/quality control (QA/QC) methods to be used shall be discussed and summarized. These methods include, but are not limited to, spike samples, split samples, blanks and standards. Ways in which the QA/QC data will be used to qualify the analytical test results shall be identified. A certification statement shall be submitted with this discussion stating that the laboratory QA/QC validation data has been reviewed and has met the laboratory acceptance criteria. The QA/QC validation data shall be submitted to the Regional Water Board upon request.

E. A tabulation of the test results shall be provided.

F. Discussion of Results – The report shall include a complete discussion of the test results. If any pollutants are detected in sufficient concentration to upset, interfere or pass through Plant operations, the type of pollutant(s) and potential source(s) shall be noted, along with a plan of action to control, eliminate, and/or monitor the pollutant(s). Any apparent generation and/or destruction of pollutants attributable to chlorination/dechlorination sampling and analysis practices shall be noted.

2. **Sludge Monitoring**

Sludge should be sampled in the same 24-hour period during which the influent and effluent are sampled except as noted in (C) below. The same parameters required for influent and effluent analysis shall be included in the sludge analysis. The sludge analyzed shall be a composite sample of the sludge for final disposal consisting of:

A. Sludge lagoons – 20 grab samples collected at representative equidistant intervals (grid pattern) and composited as a single grab, or

B. Dried stockpile – 20 grab samples collected at various representative locations and depths and composited as a single grab, or

C. Dewatered sludge- daily composite of 4 representative grab samples each day for 5 days taken at equal intervals during the daily operating shift taken from a) the dewatering units or b) from each truckload, and shall be combined into a single 5-day composite.

The USEPA manual, POTW Sludge Sampling and Analysis Guidance Document, August 1989, containing detailed sampling protocols specific to sludge is recommended as a guidance for sampling procedures. The USEPA manual Analytical Methods of the National Sewage Sludge Survey, September 1990, containing detailed analytical protocols specific to sludge, is recommended as a guidance for analytical methods.

In determining if the sludge is a hazardous waste, the Discharger shall adhere to Article 2, "Criteria for Identifying the Characteristics of Hazardous Waste," and Article 3, "Characteristics of Hazardous Waste," of Title 22, California Code of Regulations, Sections 66261.10 to 66261.24 and all amendments thereto.

Sludge monitoring reports shall be submitted with the appropriate Semiannual Report. The following standardized report format should be used for submittal of the report. A similarly structured form may be used but will be subject to Regional Water Board approval.

A. Sampling procedures – Include sample locations, collection procedures, types of containers used, storage/refrigeration methods, compositing techniques and holding times. Enclose a map of sample locations if sludge lagoons or stockpiled sludge is sampled.

B. Data Validation – All quality assurance/quality control (QA/QC) methods to be used shall be discussed and summarized. These methods include, but are not limited to, spike samples, split samples, blanks and standards. Ways in which the QA/QC data will be used to qualify the analytical test results shall be identified. A certification statement shall be submitted with this discussion stating that the laboratory QA/QC validation data has been reviewed and has met the laboratory acceptance criteria. The QA/QC validation data shall be submitted to the Regional Water Board upon request.

C. Test Results – Tabulate the test results and include the percent solids.

D. Discussion of Results – The report shall include a complete discussion of test results. If the detected pollutant(s) is reasonably deemed to have an adverse effect on sludge disposal, a plan of action to control, eliminate, and/or monitor the pollutant(s) and the known or potential source(s) shall be included. Any apparent generation and/or destruction of pollutants attributable to chlorination/ dechlorination sampling and analysis practices shall be noted.

The Discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants that the permittee believes may be causing or contributing to Interference, Pass Through or adversely impacting sludge quality.