California Regional Water Quality Control Board
San Francisco Bay Region

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Edmund G. Brown, Jr.
Governor

REVISED TENTATIVE ORDER NO. R2-2011-XXXX
NPDES NO. CA0038636

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

Table 1. Dischargers Information

Dischargers	East Bay Regional Park District (EBRPD), Union Sanitary District (USD), and East Bay Dischargers Authority (EBDA)
Name of Facility	Hayward Marsh
Facility Address	3050 West Winton Road
	Hayward, CA 94545
	Alameda County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a minor discharge.	

Discharges from the discharge point(s) 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
2AE	Secondary Treated Municipal Wastewater	37º 37’ 46” N	122º 08’ 33” W	Hayward Marsh
2BE	Secondary Treated Municipal Wastewater	37° 37’ 40” N	122° 08’ 31” W	Hayward Marsh

Table 3. Administrative Information

This Order was adopted by the Regional Water Board on:	**<DATE>**
This Order shall become effective on:	**November 1, 2011**
This Order shall expire on:	**October 31, 2016**
The Dischargers 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 the date indicated above.

_____
Bruce H. Wolfe, Executive Officer

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I. FACILITY INFORMATION

The following Dischargers are subject to the waste discharge requirements set forth in this Order:

Table 4. Facility Information

Dischargers	East Bay Regional Park District (EBRPD), Union Sanitary District (USD), and East Bay Dischargers Authority (EBDA)
Name of Facility	Hayward Marsh
Facility Address	3050 West Winton Road
	Hayward, CA 94545
	Alameda County
Facility Contact, Title, and Phone	David Livingston, Manager, Treatment and Disposal Services, (510) 477-7560
Mailing Address	5072 Benson Road, Union City, CA 94587
Type of Facility	Publicly Owned Treatment Works
Facility Design Flow	20 million gallons per day (MGD), design hydraulic capacity

II. FINDINGS

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

A. Background. The East Bay Dischargers Authority (EBDA), Union Sanitary District (USD), and East Bay Regional Park District (EBRPD) (hereinafter collectively the Dischargers) are currently discharging under Order No. R2-2006-0031 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0038636, as amended by Order No. R2-2010-0056, which implements copper and cyanide site-specific objectives. The Dischargers submitted a Report of Waste Discharge, dated November 10, 2010, and applied for an NPDES permit reissuance to discharge reclaimed wastewater from the Alvarado Wastewater Treatment Plant (Plant) to the Hayward Marsh receiving water basins after passing through the Hayward Marsh treatment basins. The discharge is also currently regulated under Order No. R2-2007-0077 (NPDES Permit CA0038849), as amended, which supersedes all requirements on mercury and PCBs from wastewater discharges in the region. This Order does not affect the mercury and PCBs permit. 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 Dischargers herein.

B. Facility and Discharge Description

1. **Facility Description**. Union Sanitary District owns and operates the Alvarado Wastewater Treatment Plant (Plant) in Union City. The Plant provides secondary treatment of domestic, industrial, and commercial wastewaters. Most of its treated effluent is transported to an EBDA deepwater outfall where it mixes with treated effluent from other EBDA agencies. That discharge and associated facilities are regulated under NPDES Permit No. CA0037869 (currently in Order No. R2-2006-0053). Approximately 2.6 million gallons per day (MGD) is diverted to a separate pipeline that supplies wastewater to Hayward Marsh as the freshwater source for the Marsh. EBRPD owns and operates Hayward Marsh. Hayward Marsh, which has a hydraulic capacity of

about 20 MGD, is a 145-acre improved marsh system, including three freshwater marsh basins (85 acres) and two brackish water basins (60 acres) adjacent to Lower San Francisco Bay. The three freshwater marsh basins (Treatment Basins 1, 2A, and 2B) are part of the treatment process, and thus part of the treatment facility. The two brackish water basins (Basins 3A and 3B) and San Francisco Bay are the receiving waters and waters of the United States within the South San Francisco Bay Basin watershed.

Hayward Marsh is operated to enhance the beneficial uses of reclaimed wastewater, to derive net environmental benefits, and as a research site to better understand development and management of a marsh using reclaimed wastewater. The Marsh supports a great density of wintering waterfowl and is an important migratory stopover for shorebirds each spring and fall. It is also a refuge for nesting shorebirds and waterfowl, including the Forster's tern, Caspian tern, black skimmer, the federally-threatened western snowy plover, and the California least tern, a federal and State endangered species. Additionally, the area around Hayward Marsh provides important research opportunities related to the use of recycled water in wetland restoration and management.

Attachment B provides a map of the area around Hayward Marsh. Attachment C provides a flow schematic.

2. **Discharge Description**. Treated secondary effluent enters Treatment Basin 1 from the Plant as the freshwater source to the Marsh. The water is routed through Treatment Basins 2A and 2B and is discharged to Basins 3A and 3B. After mixing with water from San Francisco Bay in Basins 3A and 3B, the reclaimed wastewater from the marsh system is discharged to Lower San Francisco Bay.

C. Legal Authorities. This Order is issued pursuant to Clean Water Act (CWA) section 402 and implements regulations adopted by the United States Environmental Protection Agency (USEPA) and California Water Code (CWC) Chapter 5.5, Division 7 (commencing with section 13370). It shall serve as an NPDES permit for point source discharges 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 NPDES permit reissuance application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F) contains background information and rationale for this Order's requirements and is hereby incorporated into this Order and constitutes part of this Order's Findings. Attachments A through E and G are also incorporated into this Order.

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

F. Technology-Based Effluent Limitations. CWA section 301(b) and NPDES regulations at 40 CFR 122.44 require that permits include conditions meeting applicable technology-based requirements at minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 CFR 133. A detailed discussion of technology-based effluent limitation development is included in the Fact Sheet (Attachment F).

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

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

On [Insert Date], the Regional Water Board adopted a Basin Plan amendment, Resolution No. R2-2011-XXXX, "Resolution for Beneficial Uses of Hayward Marsh," that clarifies the beneficial uses of Hayward Marsh. When approved by the State Water Board, the Office of Administrative Law, and USEPA, the Basin Plan amendment will remove the water contact recreation beneficial use designation from Hayward Marsh and add the preservation of rare and endangered species beneficial use (species found on Hayward Marsh include the threatened western snowy plover and the endangered California least tern).

Two factors provide a basis for removing the REC-1 beneficial use from Hayward Marsh pursuant to 40 CFR 131.10(g)(1) and (3):

- Naturally occurring pollutant concentrations prevent attainment of the REC-1 use. The waterfowl and other wildlife at Hayward Marsh contribute substantially to bacteria in the Marsh.
- Hayward Marsh was created and is sustained using reclaimed wastewater. Therefore, human-caused conditions or sources of pollution prevent attainment of the REC-1 use, and these conditions cannot be remedied or would cause more environmental damage to correct than to leave in place.

Table 5, below, lists beneficial uses of Hayward Marsh specifically identified in the Basin Plan, as amended.

Table 5. Basin Plan Beneficial Uses of Hayward Marsh

Discharge Point	Receiving Water Name	Beneficial Uses
2AE and 2BE	Hayward Marsh	Non-Contact Water Recreation (REC2) Wildlife Habitat (WILD) Estuarine Habitat (EST) Fish Spawning (SPWN) Preservation of Rare and Endangered Species (RARE)

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 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 contained toxics criteria for California and incorporated the previously adopted NTR criteria that applied in the State. USEPA amended the CTR on February 13, 2001. These rules contain water quality criteria 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* (hereinafter the State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria USEPA promulgated for California through the NTR and the priority pollutant objectives the Regional Water Board established in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria USEPA promulgated through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

K. **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.

L. **Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on carbonaceous biochemical oxygen demand (CBOD), total suspended solids (TSS), pH, and total residual chlorine. Derivation of these technology-based limitations is discussed in the Fact Sheet (Attachment F). This Order's technology-based pollutant restrictions implement the minimum applicable federal technology-based requirements. In addition, this Order contains effluent limitations more stringent than the minimum federal technology-based requirements as necessary to meet water quality standards.

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

M. 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 under federal law and requires that existing water quality be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. As discussed in the Fact Sheet, the permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16.

N. Anti-Backsliding Requirements. CWA sections 402(o)(2) and 303(d)(4) and NPDES regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. Most effluent limitations in this Order are no less stringent than those contained in the previous Order, as amended. However, some effluent limitations have been removed and nickel limitations are less stringent. As discussed in the Fact Sheet, the permitted discharge is consistent with the anti-backsliding requirements of the CWA and federal regulations.

O. 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) in Attachment E establishes monitoring and reporting requirements to implement federal and State requirements.

P. Standard and Special Provisions. Attachment D contains standard provisions that apply to all NPDES permits in accordance with 40 CFR 122.41 and additional conditions that apply to specified categories of permits in accordance with 40 CFR 122.42. The Dischargers must comply with all standard provisions and with those additional conditions that apply under 40 CFR 122.42. The Regional Water Board has also included in this Order special provisions that apply to the Dischargers. The Fact Sheet (Attachment F) provides rationale for the special provisions contained in this Order.

Q. Provisions and Requirements Implementing State Law. Section IV.E in this Order contains provisions that are included to implement State law only. Such provisions or requirements are not required or authorized under the federal CWA, and consequently, violations or such provisions or requirements are not subject to the enforcement remedies that are available for NPDES violations.

R. Notification of Interested Parties. The Regional Water Board notified the Dischargers and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for the discharge and provided them with an opportunity to submit written comments and recommendations. The Fact Sheet provides details.

S. Consideration of Public Comment. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, that this Order supersedes Order No. R2-2006-0031 as amended by Order No. R2-2010-0056, except for enforcement purposes, and, to meet the provisions contained in CWC Division 7 (commencing with section 13000) and regulations adopted thereunder, and federal CWA provisions and regulations and guidelines adopted thereunder, the Dischargers shall comply with the requirements of this Order.

III. DISCHARGE PROHIBITIONS

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

B. Neither the treatment nor the discharge of treated wastewater, nor the management of Hayward Marsh, shall create a nuisance as defined by CWC section 13050(m).

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Technology-Based Hayward Marsh Influent (Alvarado Wastewater Treatment Plant Effluent) Limitations at Monitoring Location E-1

The Dischargers shall comply with the following effluent limitations at USD's discharge to the EBDA outfall interceptor, with compliance measured at Monitoring Location E-1 for carbonaceous biochemical oxygen demand (5-day @ 20°C) (CBOD), total suspended solids (TSS), pH, and fecal coliform bacteria, and at Monitoring Location E-1-D for total chlorine residual, as described in the attached MRP (Attachment E).

Table 6. Technology-Based Marsh Influent (Alvarado Wastewater Treatment Plant Effluent) Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Carbonaceous Biochemical Oxygen Demand (CBOD)	mg/L	25	40	---	---	---
Total Suspended Solids (TSS)	mg/L	30	45	---	---	---
pH (1)	s.u.	---	---	---	6.5	8.5
Chlorine, Total Residual	mg/L	---	---	---	---	0.0 (2)

Footnotes to Table 6:

(1) If the Dischargers monitor pH continuously, pursuant to 40 CFR 401.17, the Dischargers shall be in compliance with the pH limitation specified herein provided that both of the following conditions are satisfied: (i) the total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month, and (ii) no individual excursion from the range of pH values shall exceed 60 minutes.

(2) This requirement is defined as below the limit of detection in standard test methods as defined in the latest edition of *Standard Methods for the Examination of Water and Wastewater*. Due to the remote location of Basin 1 and the lack of a power source, grab samples shall be collected and tested on-site using USEPA-approved test kits (Standard Methods 4500 Cl F and G). The Dischargers may elect to use a continuous on-line monitoring system for measuring flows, chlorine, and sodium bisulfate (or other dechlorinating agent) dosage (including a safety factor) and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, the Executive Officer may conclude that these chlorine residual exceedances are false positives and are not violations of this Order's total residual chlorine limit.

B. Water Quality-Based Effluent Limitations

1. **Water Quality-Based Effluent Limitations for Toxic Pollutants at Discharge Point Nos. 2AE and 2BE.** The Dischargers shall comply with the following effluent limitations at Discharge Point Nos. 2AE and 2BE (the average of 2AE and 2BE), with compliance measured at Monitoring Locations C-2AE and C-2BE, as described in the attached MRP (Attachment E).

Table 7. Water Quality-Based Effluent Limitations

Parameter	Units	Effluent Limitations	
		Average Monthly Effluent Limit (AMEL)	Maximum Daily Effluent Limit (MDEL)
Copper (1)	µg/L	12	20
Cyanide	µg/L	6.7	15
Nickel (1)	µg/L	20	27
Benzo(a)anthracene	µg/L	0.049	0.098
Benzo(b)fluoranthene	µg/L	0.049	0.098
Benzo(k)fluoranthene	µg/L	0.049	0.098
Total Ammonia	mg/L as Nitrogen	34	120

(1) Metals limitations are expressed as total recoverable metal.

2. **Effluent Fecal Coliform Bacteria Limitations at Monitoring Location E-1:** Treated wastewater shall meet the following limits for bacteriological quality:

   a. 5-sample geometric mean fecal coliform density of 500 MPN/100mL.

   b. 11-sample 90th percentile value of 1,100 MPN/100mL.

V. RECEIVING WATER LIMITATIONS

A. Hayward Marsh Receiving Waters

1. The discharge of waste shall not cause the following limits to be exceeded in Hayward Marsh receiving waters within one foot of the water surface (as measured at Monitoring Locations C-3A, C-3B, and E-3):

   a. Dissolved Oxygen 5.0 mg/L, minimum

   The median dissolved oxygen concentration for any three consecutive months shall not be less than 80 percent of the dissolved oxygen

content at saturation. When natural factors cause concentrations less than that specified above, the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.

b. Dissolved Sulfide — The maximum dissolved sulfide concentration in the receiving water shall not exceed 0.1 mg/L.

c. pH — 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.

2. Additionally, the Dischargers shall provide sufficient circulation through the Marsh to maintain the following conditions:

   a. No visible floating, suspended, or deposited oil or other products of petroleum origin;

   b. No floating, suspended, or deposited macroscopic particulate matters or foam of sewage origin;

   c. No bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;

   d. No 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; and

   e. Alteration of temperature, turbidity, or apparent color beyond present natural background levels.

B. The discharge shall not cause a violation of any water quality standard for receiving waters adopted by the Regional or State Water Boards as required by the CWA and regulations adopted thereunder. If more stringent 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 the more stringent standards.

VI. PROVISIONS

A. Standard Provisions

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

2. **Regional Standard Provisions.** The Dischargers 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 Dischargers shall comply with the MRP (Attachment E) and future revisions thereto, including applicable sampling and reporting requirements in the Federal and Regional 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 will have, or will cease to have, a reasonable potential to cause or contribute to adverse impacts on water quality or beneficial uses of the receiving waters.

b. If new or revised water quality objectives or Total Maximum Daily Loads (TMDLs) come into effect for the San Francisco Bay estuary and contiguous waters (whether statewide, regional, or site-specific). In such cases, effluent limitations in this Order may be modified as necessary to reflect updated water quality objectives 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 water quality objectives or TMDLs, or as otherwise permitted under Federal regulations governing NPDES permit modifications.

c. If translator or other water quality studies (e.g., the Mixing Zone Study required by Provision VI.C.10) provide a basis for determining that permit conditions should be modified.

d. If an administrative or judicial decision on a separate NPDES permit or WDR addresses requirements similar to those applicable to this discharge.

e. Or as otherwise authorized by law.

The Dischargers may request permit modification based on the above. The Dischargers shall include with any such request an antidegradation and antibacksliding analysis.

2. Special Studies and Additional Monitoring Requirements

a. Effluent Characterization Study and Report—Discharge Points 2AE and 2BE

(1) Study Elements

The Dischargers shall continue to characterize and evaluate discharge from the following discharge points to verify that the “no” or “cannot determine” reasonable potential analysis conclusions of this Order remain valid and to inform the next permit

reissuance. The Dischargers shall collect representative samples of the discharges as set forth below, with locations as defined in the MRP (Attachment E):

Discharge Point	Monitoring Station	Frequency
2AE	C-2AE	1/5 years within 12 months of the due date for application for reissuance
2BE	C-2BE	1/5 years within 12 months of the due date for application for reissuance

The samples shall be analyzed for the priority pollutants listed in Table C of the Regional Standard Provisions (Attachment G), except for those priority pollutants with effluent limitations where the MRP already requires monitoring. Compliance with this requirement shall be achieved in accordance with the specifications of Regional Standard Provisions (Attachment G) sections III.A.1 and III.A.2.

The Dischargers shall evaluate if concentrations of any of these priority pollutants increase over past performance. The Dischargers shall investigate the cause of such increase. The investigation may include, but need not be limited to, an increase in monitoring frequency, monitoring of internal process streams, and monitoring of influent sources. The Dischargers shall establish remedial measures addressing any increase resulting in Reasonable Potential to cause or contribute to an excursion above applicable water quality objectives. This requirement may be satisfied through identification of the constituent as a "pollutant of concern" in the Dischargers' Pollutant Minimization Program, described in Provision VI.C.3.

(2) Reporting Requirements

(a) Routine Reporting

The Dischargers shall, within 30 days of receipt of analytical results, report in the transmittal letter for the appropriate monthly self-monitoring report the following:

i. Indication that a sample or samples for this characterization study was or were collected; and

ii.. Identification of priority pollutants detected above or within one order of magnitude of their applicable water quality criteria (see Fact Sheet [Attachment F] Table F-8, Reasonable Potential Analysis Summary for the criteria), together with the detected concentrations of those pollutants.

(b) Final Report

The Dischargers shall submit a final report that presents the priority pollutant data collected as part of this study and summarizes the data evaluation and any source investigation and remedial measures undertaken 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. Ambient Background Receiving Water Study

The Dischargers shall collect or participate in collecting background ambient receiving water monitoring data for priority pollutants that are required to perform an RPA and to calculate effluent limitations. The data on the conventional water quality parameters (pH, salinity, and hardness) shall also be sufficient to characterize these parameters in the ambient receiving water at a point after the discharge has mixed with the receiving waters. This provision may be met through monitoring through a collaborative study. This Order may be reopened as appropriate to incorporate effluent limitations or other requirements based on Regional Water Board review of these data.

The Dischargers shall submit a report that presents all the data to the Regional Water Board 180 days prior to Order expiration. This report shall be submitted with the application for permit reissuance.

3. Best Management Practices and Pollutant Minimization

a. Pollutant Minimization Program

The Dischargers shall continue to improve, in a manner acceptable to the Executive Officer, their existing Pollutant Minimization Plan to promote minimization of pollutant loadings to the treatment plant and therefore to the receiving waters.

b. Annual Pollution Prevention Report

The Dischargers shall submit an annual report, acceptable to the Executive Officer, no later than August 31 of each calendar year. The annual report shall cover July of the preceding year through June of the current year. The Dischargers may provide one report, which covers effluent flows transported through the EBDA outfall, to the Hayward Marsh, and through the wet weather outfall. Each annual report shall include at least the following information:

(1) *Brief description of the treatment plant, treatment plant processes and service area.*

(2) *Discussion of the current pollutants of concern.* Periodically, the Dischargers shall determine which pollutants are currently a problem and/or which pollutants may be potential future problems. This discussion shall include the reasons why the pollutants were chosen.

(3) *Identification of sources for the pollutants of concern.* This discussion shall include how the Dischargers intend to estimate and identify pollutant sources. The Dischargers shall also identify sources or potential sources not directly within the ability or authority of the Dischargers to control, such as pollutants in the potable water supply and air deposition.

(4) *Identification of tasks to reduce the sources of the pollutants of concern.* This discussion shall identify and prioritize tasks to address the Dischargers' pollutants of concern. The Dischargers may implement the tasks themselves or participate in group, regional, or national tasks that will address its pollutants of concern. The Dischargers are strongly encouraged to participate in group, regional, or national actions that will address their

pollutants of concern whenever it is efficient and appropriate to do so. A time line shall be included for the implementation of each task.

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

(6) *Continuation of Public Outreach Program.* The Dischargers shall prepare a public outreach program to communicate pollution minimization measures to their 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 various media. Information shall be specific to target audiences. The Dischargers shall coordinate with other agencies as appropriate.

(7) *Discussion of criteria used to measure Pollutant Minimization Plan's and tasks' effectiveness.* The Dischargers shall establish criteria to evaluate the effectiveness of their Pollutant Minimization Plan. This discussion shall address the specific criteria used to measure the effectiveness of each of the tasks in Provision VI.C.3.b.(3-6), above.

(8) *Documentation of efforts and progress.* This discussion shall detail all of the Dischargers' activities in the Pollutant Minimization Plan during the reporting year.

(9) *Evaluation of Pollutant Minimization Plan's and tasks' effectiveness.* The Dischargers shall use the criteria established in b.(7), above, to evaluate the Pollution Minimization Plan's and tasks' effectiveness.

(10) *Identification of specific tasks and time schedules for future efforts.* Based on the evaluation of effectiveness, the Dischargers shall describe how they will continue or change their Pollutant Minimization Plan tasks to more effectively reduce the loadings of pollutant to the Plant, and therefore in its effluent.

c. Pollutant Minimization Program for Pollutants with Effluent Limitations

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

(1) A sample result is reported as DNQ and the effluent limitation is less than the Reporting Limit (RL); or

(2) A sample result is reported as Not Detected (ND) and the effluent limitation is less than the MDL, using definitions described in the SIP.

d. Pollutant Minimization Program Submittals for Pollutants with Effluent Limitations

If triggered by the reasons in **3.c**. above, the Dischargers' Pollutant Minimization Plan shall include, but not be limited to, the following actions and submittals acceptable to the Regional Water Board:

(1) 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;

(2) Quarterly monitoring for the reportable priority pollutants in the influent to the wastewater treatment system, or alternative measures approved by the Executive Officer when it is demonstrated that influent monitoring is unlikely to produce useful analytical data;

(3) 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;

(4) Implementation of appropriate cost-effective control measures for the reportable priority pollutants, consistent with the control strategy; and

(5) The annual report required by **3.b.** above, shall specifically address the following items:

i. All Pollutant Minimization Plan monitoring results for the previous year;
ii. A list of potential sources of the reportable priority pollutant(s);
iii. A summary of all actions undertaken pursuant to the control strategy; and
iv. A description of actions to be taken in the following year.

4. Marsh Operation

The Dischargers plan to operate and maintain the Marsh without chemical treatment (i.e., herbicides and algaecides) and implement all feasible measures prior to any chemical treatment. If chemical treatment is proposed, then such treatment shall be in accordance with the provisions of State Water Board General Permit Nos. CAG990004 (Biological and Residual Pesticide Discharges to Waters of the United States from Vector Control Applications), CAG990006 (Residual Pesticide Discharges to Waters of the United States from Aquatic Animal Invasive Species Control Applications), CAG990007 (Biological and Residual Pesticide Discharges to Waters of the United States from Spray Applications), and the Basin Plan.

5. Marsh Management Plan

By November 1, 2012, the Dischargers shall review and update their Marsh Management Plan, as appropriate, to ensure compliance with the Receiving Water Limitations in this Order. This review shall explore how the Dischargers will minimize the effects of un-ionized ammonia in Basins 3A and 3B, and ensure that dissolved oxygen levels are not adversely affecting aquatic life. At a minimum, this review shall include:

a. Feasibility of modifying the existing mixing channel to provide more tidal influence, if necessary, to meet water quality standards;

b. Analysis of use of vegetation to reduce algal growth; and,

c. Evaluation of the need for continuously monitoring portions of Hayward Marsh for dissolved oxygen, pH, temperature, and salinity to better understand diurnal patterns and the effect they may have on aquatic life.

The Dischargers shall describe in a separate section of their Annual Report, as required by MRP section IX.B (Attachment E), the results of their annual review of marsh management processes, and include an estimated time schedule to update their Marsh Management Plan to document any revisions in marsh management implemented in the previous year.

6. Marsh Contingency Plan

The Dischargers shall continue to implement the following approved programs and plans: (a) a Marsh Contingency Plan for the protection of the Marsh and Lower San Francisco Bay during contingency operations, (b) a program to prevent public contact recreation within the Marsh, and (c) a special receiving water monitoring plan and program to assess impacts on near-shore biota.

Annually, the Dischargers shall review and update as necessary the Marsh Contingency Plan. Plan revisions, or a letter stating that no changes are needed, shall be included in a separate section of the Dischargers' Annual Report, as required by MRP section IX.B (Attachment E).

7. Primary Responsibility of Operation

Basins 1, 2A, and 2B are part of the treatment process and not waters of the United States. For purposes of enforcement of this Order's requirements, the Regional Water Board will consider EBRPD to have the primary responsibility for the operation of these basins to meet water quality objectives and prevent nuisance. EBRPD shall employ best management practices to avoid harming wildlife that frequent these basins. The Regional Water Board will consider USD to be responsible for supplying treated wastewater that is in compliance with the limitations specified in section IV of this Order.

8. Copper Action Plan

The Dischargers shall implement monitoring and surveillance, pretreatment, source control and pollution prevention for copper in accordance with the following tasks and time schedule. The Dischargers may provide one report, which covers effluent flows transported to the EBDA outfall, to the Hayward Marsh, and through the wet weather outfall, for each report required below.

Table 8. Copper Action Plan

Task	Compliance Date
1. Review Potential Copper Sources The Dischargers shall submit an inventory of potential copper sources to the treatment plant.	Completed

Task	Compliance Date
2. Implement Copper Control Program The Dischargers shall submit a plan for and begin implementation of a program to reduce copper discharges identified in Task 1. For publicly owned treatment works, 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.	Completed
3. Implement Additional Measures If the Regional Water Board notifies the Dischargers that the three-year rolling mean copper concentration of the Lower San Francisco Bay exceeds 3.6 µg/L, the Dischargers shall evaluate their effluent copper concentration trend and if it is increasing, develop and begin implementing additional measures to control copper discharges. The Dischargers shall report on the progress and effectiveness of actions taken, together with a schedule for actions to be taken in the next 12 months.	With annual pollution prevention report due August 31 following 90 days after notification
4. Undertake Studies to Reduce Copper Pollutant Impact Uncertainties The Dischargers shall submit an updated study plan and schedule to conduct, or cause to be conducted, technical studies that investigate possible copper sediment toxicity and technical studies to investigate sublethal effects on salmonids. Specifically, the Dischargers 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, dischargers may collaborate and conduct these studies as a group.	With annual pollution prevention report due August 31, 2012
5. Report Status of Copper Control Program The Dischargers shall submit an annual 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 Dischargers shall report the findings and results of the studies completed, planned, or in progress under Task 4. Regarding the Task 4 studies, dischargers may collaborate and provide this information in a single report to satisfy this requirement for an entire group.	With annual pollution prevention report due August 31 each year.

9. Cyanide Action Plan

The Dischargers shall implement monitoring and surveillance, pretreatment, source control, and pollutions prevention for cyanide in accordance with the following tasks and time schedule. The Dischargers may provide one report, which covers effluent flows transported to the EBDA outfall, to the Hayward Marsh, and through the wet weather outfall, for each report required below.

Table 9. Cyanide Action Plan

Task		Compliance Date
1.	**Review Potential Cyanide Contributors** The Dischargers shall submit an inventory of potential cyanide sources to the treatment plant (e.g., metal plating operations, hazardous waste recycling, etc.) If no cyanide sources are identified, Tasks 2 and 3 are not required, unless the Dischargers receive a request to discharge detectable levels of cyanide to the sewer. If so, the Dischargers shall notify the Executive Officer and implement Tasks 2 and 3.	Completed
2.	**Implement Cyanide Control Program** The Dischargers shall submit a plan and begin implementation of a program to minimize cyanide discharges to the treatment plant consisting, at a minimum, of the following elements: a. Inspect each potential source 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.	Completed
3.	**Implement Additional Cyanide Control Measures** If the Regional Water Board notifies the Dischargers 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 Dischargers shall commence actions to identify and abate cyanide sources responsible for the elevated ambient concentrations, and shall report on the progress and effectiveness of actions taken, together with a schedule for actions to be taken in the next 12 months.	With next annual pollution prevention report due August 31 (at least 90 days following notification)
4.	**Report Status of Cyanide Control Program** The Dischargers shall submit an annual report documenting cyanide control program implementation and addressing the effectiveness of actions taken, including any additional cyanide controls required by Task 3, above, together with a schedule for actions to be taken in the next 12 months.	With annual pollution prevention report due August 31 each year

10. Mixing Zone Study

The Dischargers shall perform a mixing zone study according to the following tasks and schedule to confirm and refine the conclusions of the existing mixing zone studies (i.e., *2010 Amendment of Cyanide and Copper Salt Water Quality-Based Effluent Limits, Strategies for Compliance* [RMC, Inc., February 8, 2010] and *Estimation of Dilution for Hayward Marsh Discharge to San Francisco Bay* [LimnoTech, August 17, 2011]) that justify mixing zones and dilution credits for ammonia, copper, and nickel.

Table 10. Mixing Zone Study

Task	Compliance Date
1. Mixing Zone Study Plan The Dischargers shall submit a mixing zone study plan, acceptable to the Executive Officer, to justify mixing zones and dilution credits for total ammonia, copper, and nickel. The plan shall include a time schedule for completion and address the requirements of SIP section 1.4.2.2, Mixing Zone Conditions, and include steps to: a. Characterize receiving water concentrations of ammonia (total and un-ionized), copper, and nickel in both Hayward Marsh and greater San Francisco Bay. b. Evaluate pollutant dispersion and dilution at critical flows in both Hayward Marsh and greater San Francisco Bay (e.g., using tracers, dyes, modeling, or monitoring). c. Demonstrate compliance with SIP mixing zone requirements. The demonstration shall include, but not be limited to, characterizing acute toxicity within Hayward Marsh and demonstrating that the discharge does not cause acutely toxic conditions to aquatic life passing through the mixing zone (e.g., through acute toxicity testing), and identifying potential adverse impacts on species listed under federal or State endangered species laws, or their habitat, and identifying measures to fully mitigate any such impacts. d. Select the smallest practicable mixing zone. For purposes of this task, if the Dischargers can feasibly comply with limits based on a particular mixing zone, then that mixing zone shall be considered practicable. Other factors may also affect practicability.	July 31, 2012
2. Implement Mixing Zone Study Plan The Dischargers shall implement the mixing zone study plan, including any revisions the Executive Officer requires.	September 30, 2012
3. Submit Mixing Zone Study Report The Dischargers shall submit a Mixing Zone Study report, acceptable to the Executive Officer, that includes the results of the study described in the study plan and recommends mixing zones consistent with SIP requirements. The report shall describe any measures necessary to eliminate possible acute toxicity within the mixing zone and any adverse impacts to species listed under federal or State endangered species laws or their habitat.	August 31, 2013

11. Ammonia and Nickel Pre-treatment and Source Control

The Dischargers shall submit an inventory of potential sources of total ammonia and nickel to Hayward Marsh no later than October 1, 2012; and shall submit a plan acceptable to the Executive Officer for implementation of a program to reduce and control those sources no later than October 1, 2014. The Dischargers shall report annually on their progress in their Annual Self-Monitoring Report, commencing with that due on February 1, 2013.

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 Dischargers 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:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

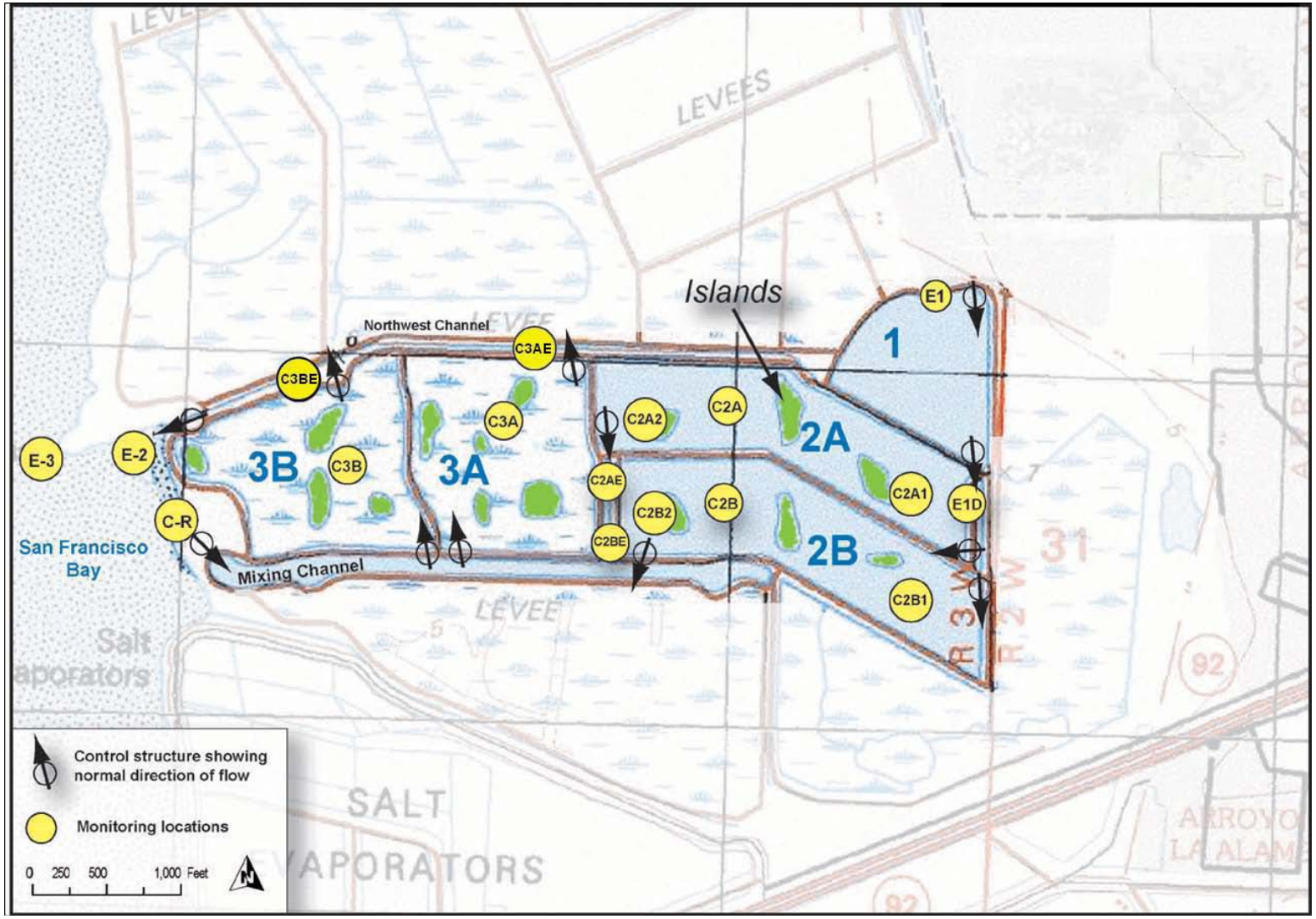
$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

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

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

ATTACHMENT C – PROCESS FLOW DIAGRAM



ATTACHMENT D –STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Dischargers 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 Dischargers 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 the Dischargers 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 Dischargers 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 Dischargers 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 Dischargers 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 the Dischargers 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 Dischargers 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 Dischargers' 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 Dischargers 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 the Dischargers 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 Dischargers 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 Dischargers know 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 Dischargers 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 Dischargers. 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 Dischargers 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 Dischargers 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 Dischargers 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 Dischargers 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 Dischargers 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 Dischargers wish to continue an activity regulated by this Order after the expiration date of this Order, the Dischargers 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 Dischargers 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 Dischargers' 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 Dischargers 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 Dischargers (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 Dischargers 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 Dischargers 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 plant manager, operator of a well or a well field, superintendent, position of equivalent

responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 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 Dischargers monitor 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 Dischargers shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Dischargers become aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Dischargers become 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 Dischargers 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 Dischargers' 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 Dischargers 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 Dischargers 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 Dischargers become 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 Dischargers 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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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

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

I. GENERAL MONITORING PROVISIONS

A. The Dischargers 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, the MRP prevails.

B. The Dischargers 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 and must be specified in the permit.

II. MONITORING LOCATIONS

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

Table E-1. Monitoring Station Locations

Type of Sampling Location	Monitoring Location Name	Monitoring Location Description
Hayward Marsh Influent (Alvarado Wastewater Treatment Plant Effluent)	E-1	Outfall from the Alvarado Wastewater Treatment Plant between the point of discharge to Hayward Marsh Treatment Basin 1 and the point at which all waste tributary to the outfall is present.
Treatment Basins	E-1-D	Treatment Basin 1 discharge point to Treatment Basins 2A and 2B
	C-2A C-2B	Midway through Treatment Basin 2A Midway through Treatment Basin 2B
Effluent	C-2AE C-2BE	Treatment Basin 2A discharge point to Receiving Water Basins Treatment Basin 2B discharge point to Receiving Water Basins
Receiving Water Basins	C-3A C-3B	Midway through Receiving Water Basin 3A Midway through Receiving Water Basin 3B
Hayward Marsh Discharge to Lower San Francisco Bay	E-2	Point just outside the final flap gate at the end of the Northwest Channel.
	E-3	Point located outside the earthen discharge channel prior to discharge into Lower San Francisco Bay.
Lower San Francisco Bay	C-R	Point in Lower San Francisco Bay representative of a mixture of Lower San Francisco Bay and marsh discharges.
	C-R-B	Point in Lower San Francisco Bay representative of the portion of Lower San Francisco Bay not affected by Marsh discharge.

III. HAYWARD MARSH INFLUENT MONITORING REQUIREMENTS

The Dischargers shall monitor influent to Hayward Marsh (the Alvarado Wastewater Treatment Plant effluent) at Monitoring Location E-1 as follows.

Table E-2. Marsh Influent Monitoring – Monitoring Location E-1

Parameter	Units	Sample Type(1)	Minimum Sampling Frequency
Flow Rate (2)	MGD	C-24	1/Day
pH	s.u.	G	1/Week
Carbonaceous Biochemical Oxygen Demand (5-Day @ 20°C) (CBOD)	mg/L	C-24	1/Week
Total Suspended Solids (TSS)	mg/L	C-24	1/Week
Fecal Coliform Bacteria	MPN/100 mL	G	2/Week
Dissolved Oxygen	mg/L	G	1/Week
	% Saturation	G	1/Week
Sulfides(3)	mg/L	G	1/Week
Hardness	mg/L as $CaCO_3$	C-24	1/Month
Total Ammonia (as N)	mg/L	G	1/Month
Nitrate Nitrogen	mg/L	G	1/Month
Temperature	°C	G	1/Week
Salinity	ppt	G	1/Month
All Applicable Standard Observations	--	--	1/Week
Copper, Total Recoverable	µg/L	G	1/Quarter
Nickel, Total Recoverable	µg/L	G	1/Quarter
Cyanide, Total Recoverable	µg/L	G	1/Quarter

Footnotes to Table E-2:

Units:

MGD	=	million gallons per day
s.u.	=	standard units
mg/L	=	milligrams per liter
MPN/100 mL	=	Most Probable Number per 100 milliliters
°C	=	degrees Celsius
ppt	=	parts per thousand
C-24	=	24-hour Composite
G	=	Grab

(1) Grab samples shall be collected coincident with composite samples collected for analysis of regulated parameters.

(2) Marsh influent flows shall be measured continuously and recorded and reported daily. For influent flows, the following information shall also be reported monthly:

Daily:	Average daily flow (MGD)
Daily	Maximum daily flow (MGD)
Daily	Minimum daily flow (MGD)

(3) Sulfides shall be monitored only when dissolved oxygen is <5 mg/L.

IV. TREATMENT BASINS MONITORING REQUIREMENTS

A. Treatment Basin 1 Discharge to Treatment Basins 2A and 2B

The Dischargers shall monitor the waters within Hayward Marsh Treatment Basin 1 at Monitoring Location E-1-D as follows.

Table E-3. Treatment Basin 1 Effluent Monitoring – Monitoring Location E-1-D

Parameter	Units	Sample Type	Minimum Sampling Frequency
Dissolved Oxygen	mg/L	G	1/Month
	% Saturation	G	1/Month
Sulfides[(1)]	mg/L	G	1/Month
All Applicable Standard Observations	--	--	1/Month
Total Residual Chlorine[(2)]	mg/L	G	1/Day

Footnotes to Table E-3:

Units:

mg/L = milligrams per liter
G = Grab

(1) Sulfides shall be monitored only when dissolved oxygen is <5 mg/L.

(2) Dechlorinated effluent (E-1-D) shall be monitored on a daily basis. Due to the remote location of Basin 1, the samples will be collected as grab samples and tested on-site using USEPA-approved test kits. If continuous monitoring is used, chlorine residual analyzers shall be calibrated against grab samples as frequently as necessary to maintain accurate control and reliability. If an effluent violation is detected, grab samples shall be taken every 30 minutes until compliance is achieved, and the maximum and average concentrations and duration of each non-zero residual event shall be reported along with the cause and corrective actions taken.

B. Treatment Basins 2A and 2B

The Dischargers shall monitor the waters within Hayward Marsh Treatment Basins 2A and 2B at Monitoring Locations C-2A and C-2B as follows.

Table E-4. Treatment Basins 2A and 2B Monitoring – Monitoring Locations C-2A and C-2B

Parameter	Units	Sample Type[(1)]	Minimum Sampling Frequency
Dissolved Oxygen	mg/L	G	1/Month
	% Saturation	G	1/Month
Sulfides[(2)]	mg/L	G	1/Month
pH	s.u.	G	1/Month
Total Ammonia (as N)	mg/L	G	1/Month
Nitrate Nitrogen	mg/L	G	1/Month
Temperature	°C	G	1/Month
Salinity	ppt	G	1/Month
All Applicable Standard Observations	--	--	1/Week

Footnotes to Table E-4:
Units:
mg/L = milligrams per liter
s.u. = standard units
°C = degrees Celsius
ppt = parts per thousand
G = Grab
(1) Grab samples shall be collected coincident with composite samples collected for the analysis of regulated parameters.
(2) Sulfides shall be monitored only when dissolved oxygen is <5 mg/L.

V. EFFLUENT MONITORING REQUIREMENTS

The Dischargers shall monitor the effluent from Hayward Marsh Treatment Basins 2A and 2B at Monitoring Locations C-2AE and C-2BE as follows.

Table E-5. Treatment Basins 2A and 2B Effluent Monitoring – Monitoring Locations C-2AE and C-2BE

Parameter	Units	Sample Type(1)	Minimum Sampling Frequency
pH	s.u.	G	1/Month
Total Ammonia (as N)	mg/L	G	1/Month
Nitrate Nitrogen	mg/L	G	1/Month
Salinity	ppt	G	1/Month
Chromium (VI), Total Recoverable	µg/L	C-24	1/5 Years
Copper, Total Recoverable	µg/L	C-24	1/Quarter
Nickel, Total Recoverable	µg/L	C-24	1/Quarter
Cyanide, Total Recoverable	µg/L	C-24	1/Quarter
Benzo(a)anthracene	µg/L	G	1/Year
Benzo(b)fluoranthene	µg/L	G	1/Year
Benzo(k)fluoranthene	µg/L	G	1/Year

Footnotes to Table E-5:
Units:
s.u. = standard units
mg/L = milligrams per liter
ppt = parts per thousand
G = Grab
C-24 = 24-hour Composite
(1) Grab samples shall be collected coincident with composite samples collected for the analysis of regulated parameters.

VI. RECEIVING WATER BASINS MONITORING REQUIREMENTS

The Dischargers shall monitor Hayward Marsh Receiving Water Basins at Monitoring Locations C-3A and C-3B as follows.

Table E-6. Receiving Water Basins Monitoring – Monitoring Locations C-3A and C-3B

Parameter	Units	Sample Type(1)	Minimum Sampling Frequency
Dissolved Oxygen	mg/L	G	1/Month
	% Saturation	G	1/Month

Parameter	Units	Sample Type(1)	Minimum Sampling Frequency
Sulfides(2)	mg/L	G	1/Month
pH	s.u.	G	1/Month
Total Ammonia (as N)	mg/L	G	1/Month
Nitrate Nitrogen	mg/L	G	1/Month
Temperature	°C	G	1/Month
Salinity	ppt	G	1/Month

Footnotes to Table E-4:

Units:

mg/L= milligrams per liter
s.u. = standard units
°C = degrees Celsius
ppt = parts per thousand
G = Grab

(1) Grab samples shall be collected coincident with composite samples collected for the analysis of regulated parameters.

(2) Sulfides shall be monitored only when dissolved oxygen is <5 mg/L.

VII. HAYWARD MARSH DISCHARGE TO LOWER SAN FRANCISCO BAY MONITORING REQUIREMENTS

A. Discharge from Northwest Channel

The Dischargers shall monitor the discharge from the Northwest Channel at Monitoring Location E-2 as follows.

Table E-7. Discharge from Northwest Channel Monitoring – Monitoring Location E-2

Parameter	Units	Sample Type(1)	Minimum Sampling Frequency
Dissolved Oxygen	mg/L	G	1/Month
	% Saturation	G	1/Month
Sulfides(2)	mg/L	G	1/Month
pH	s.u.	G	1/Month
Total Ammonia (as N)	mg/L	G	1/Month
Nitrate Nitrogen	mg/L	G	1/Month
Temperature	°C	G	1/Month
Salinity	Ppt	G	1/Month

Footnotes to Table E-6:

Units:

mg/L = milligrams per liter
s.u. = standard units
°C = Degrees Celsius
ppt = parts per thousand
G = Grab

(1) Grab samples shall be collected coincident with composite samples collected for the analysis of regulated parameters.

(2) Sulfides shall be monitored only when dissolved oxygen is <5 mg/L.

B. Discharge from Earthen Discharge Channel to Lower San Francisco Bay

The Dischargers shall monitor the discharge from the earthen discharge channel to Lower San Francisco Bay at Monitoring Location E-3 as follows.

Table E-8. Discharge from Earthen Discharge Channel to Lower San Francisco Bay Monitoring – Monitoring Location E-3

Parameter	Units	Sample Type[1]	Minimum Sampling Frequency
Dissolved Oxygen	mg/L	G	1/Month
	% Saturation		
Sulfides[2]	mg/L	G	1/Month
pH	s.u.	G	1/Month
Total Ammonia (as N)	mg/L	G	1/Month
Nitrate Nitrogen	mg/L	G	1/Month
Temperature	°C	G	1/Month
Salinity	ppt	G	1/Month
All Applicable Standard Observations	--	--	1/Week

Footnotes to Table E-7:

Units:

mg/L = milligrams per liter
s.u. = standard units
°C = Degrees Celsius
ppt = parts per thousand
G = Grab

(1) Grab samples shall be collected coincident with composite samples collected for the analysis of regulated parameters.

(2) Sulfides shall be monitored only when dissolved oxygen is <5 mg/L.

VIII. LOWER SAN FRANCISCO BAY RECEIVING WATER MONITORING REQUIREMENTS

The Dischargers shall monitor Lower San Francisco Bay at Monitoring Locations C-R-B and CR as follows.

Table E-9. Lower San Francisco Bay Monitoring – Monitoring Locations CR and C-R-B

Parameter	Units	Sample Type[1]	Minimum Sampling Frequency
Dissolved Oxygen	mg/L	G	1/Month
	% Saturation	G	1/Month
Sulfides[2]	mg/L	G	1/Month
pH	s.u.	G	1/Month

Parameter	Units	Sample Type[1]	Minimum Sampling Frequency

Footnotes to Table E-8:

Units:

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

(1) Grab samples shall be collected coincident with composite samples collected for the analysis of regulated parameters.

(2) Sulfides shall be monitored only when dissolved oxygen is <5 mg/L.

IX. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

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

B. Self-Monitoring Reports (SMRs)

1. **SMR Format.** At any time during the term of this Order, the State or Regional Water Board may notify the Dischargers to electronically submit SMRs using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/water_issues/programs/ciwqs/). Until such notification is given, the Dischargers shall submit paper SMRs. The CIWQS website will provide additional directions for SMR submittal in the event of a service interruption for electronic submittal.

2. **SMR Due Dates and Contents.** The Dischargers shall submit SMRs by the due dates, and with the contents, specified below:

   a. **Monthly SMRs —** Monthly SMRs shall be due 30 days after the end of each calendar month, covering that calendar month. The monthly SMR shall contain the applicable items described in sections V.B and V.C of both Attachments D and G of this Order. See Provision VI.C.2.a (Effluent Characterization Study and Report) of this Order for information that must also be reported with the monthly SMR.

   b. **Annual SMR —** Annual SMRs shall be due February 1 each year, covering the previous calendar year. The annual SMR shall contain the items described in section V.C.1.f of the Regional Standard Provisions (Attachment G). See also Provisions VI.C.2.a (Effluent Characterization Study and Report—Discharge Points 2AE, and 2BE), VI.C.5 (Marsh Management Plan) and VI.C.6 (Marsh Contingency Plan) of the Order for requirements to submit reports with the annual SMR.

   c. **Additional Specifications for Submitting SMRs to CIWQS —** If the Dischargers submits SMRs to CIWQS, they shall submit analytical results and other information using one of the following methods:

Table E-10. SMR Reporting for CIWQS

Parameter	Method of Reporting	
	EDF/CDF data upload or manual entry	Attached File
All parameters identified in influent, effluent, and receiving water monitoring tables (except Dissolved Oxygen and Temperature)	Required for All Results	
Dissolved Oxygen Temperature	Required for Monthly Maximum and Minimum Results Only (1)	Dischargers may use this method for all results or keep records
Cyanide Arsenic Cadmium Chromium Copper Lead Mercury Nickel Selenium Silver Zinc Dioxins and Furans (by U.S. EPA Method 1613)	Required for All Results (2)	
Antimony Beryllium Thallium Pollutants by U.S. EPA Methods 601, 602, 608, 610, 614, 624, and 625	Not Required (unless identified in influent, effluent, or receiving water monitoring tables), But Encouraged (1)	Dischargers may use this method and submit results with application for permit reissuance, unless data submitted by CDF/EDF upload
Volume and Duration of Blended Discharge	Required for All Blended Effluent Discharges	
Analytical Method	Not Required (Dischargers may select "data unavailable") (1)	
Collection Time Analysis Time	Not Required (Dischargers may select "0:00") (1)	

Footnotes for Table E-10:

(1) The Dischargers shall continue to monitor at the minimum frequency specified in the monitoring tables, keep records of the measurements, and make the records available upon request.

(2) These parameters require EDF/CDF data upload or manual entry regardless of whether monitoring is required by this MRP or other provisions of this Order (except for biosolids, sludge, or ash provisions).

3. **Monitoring Periods.** Monitoring periods for all required monitoring shall be completed as set forth in the table below:

Table E-11. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period
Continuous	Day after permit effective date	All
1/Hour	Day after permit effective date	Hourly

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period
1/Day	Day after permit effective date	Midnight through 11:59 PM or any 24-hour period that reasonably represents a calendar day for purposes of sampling.
1/Week	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday
1/Month	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	1st day of calendar month through last day of calendar month
1/Quarter	Closest of March 1, June 1, September 1, December 1 following (or on) permit effective date	December 1 through February 28 or 29 March 1 through May 31 June 1 through August 31 September 1 through November 30
2/Year	Closest of June1 or December 1 following (or on) permit effective date	Once during December 1 through May 31 Once during June 1 through November 30
1/Year	January 1 following (or on) permit effective date	January 1 through December 31, preferably during the discharge season
1/5 Years	Day after permit effective date	Once during the permit term within 12 months prior to applying for permit reissuance.
Per Discharge Event	Anytime during the discharge event or as soon as possible after aware of the event	At a time when sampling can characterize the discharge event

4. **ML and MDL Reporting.** The Dischargers shall report with each sample result the applicable Reporting Level (RL) and Method Detection Limit (MDL), as determined by the procedure in 40 CFR 136. The Dischargers shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

   a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

   b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported. For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (± a percentage of the reported value), numerical ranges (low to high), or any other means the laboratory considers appropriate.

   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 minimum level (ML) value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time are the

Dischargers to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

C. Discharge Monitoring Reports

1. As described in section IX.B.1 above, at any time during the term of this Order, the State or Regional Water Board may notify the Dischargers to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). Once notified by the State or Regional Water Board, the Dischargers shall submit hardcopy DMRs. Until such notification is given, the Dischargers are not required to submit DMRs in accordance with the requirements described below.

2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Dischargers 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.

ATTACHMENT F - FACT SHEET

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ATTACHMENT F – FACT SHEET

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

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

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Hayward Marsh discharge.

Table F-1. Facility Information

WDID	2 019209001
Dischargers	East Bay Regional Park District (EBRPD), Union Sanitary District (USD), and East Bay Dischargers Authority (EBDA)
Name of Facility	Hayward Marsh
Facility Address	3050 West Winton Road
	Hayward, CA 94545
	Alameda County
Facility Contact, Title, Phone	David Livingston, Manager, Treatment and Disposal Services (USD), (510) 477-7560
Authorized Person to Sign and Submit Reports	David Livingston, Manager (USD), (510) 477-7560 Matt Graul, Water Resources Manager (EBRPD), (510) 544-2327
Mailing Address	5072 Benson Road, Union City, CA 94587
Billing Address	Same
Type of Facility	Publicly Owned Treatment Works
Major or Minor Facility	Minor
Threat to Water Quality	1
Complexity	2B
Pretreatment Program	Yes, required by Order No. R2-2006-0053
Reclamation Requirements	Producer
Facility Average Daily Flow	2.6 million gallons per day (MGD) (Annual Average Daily Flow Rate)
Facility Design Flow	20 MGD (Hayward Marsh Hydraulic Capacity)
Watershed	South San Francisco Bay Basin
Receiving Water	Hayward Marsh and San Francisco Bay
Receiving Water Type	Estuarine

A. East Bay Dischargers Authority (EBDA), Union Sanitary District (USD), and East Bay Regional Park District (EBRPD) (hereinafter collectively the Dischargers) are co-permittees under this permit. The Union Sanitary District's Alvarado Wastewater Treatment Plant (Plant), a municipal wastewater treatment facility, provides secondary treatment of domestic, industrial, and commercial wastewaters from the Fremont, Newark, and Union City areas. Most of the treated effluent is

transported to an EBDA deepwater outfall where it mixes with treated effluent from other EBDA agencies and is regulated under Order No. R2-2006-0053 (NPDES Permit No. CA0037869). A portion of the treated effluent from the Plant (an average of approximately 2.6 MGD) is transported to Hayward Marsh. EBDA owns and operates the pump station at USD and the force main that conveys Plant flows to the EBDA outfall. USD owns and operates the force main valve that diverts flow through a downstream pipeline to Hayward Marsh. EBRPD owns and operates the marsh.

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

B. Treated wastewater is discharged from the Hayward Marsh Treatment Basins to the Hayward Marsh Receiving Water Basins and ultimately, to Lower San Francisco Bay. The Hayward Marsh Receiving Water Basins and Lower San Francisco Bay are waters of the United States. This discharge is classified as a minor discharge since the discharge is intermittent on a diurnal and seasonal basis.

Discharge from the Hayward Marsh Treatment Basins is currently regulated by Order No. R2-2006-0031 (NPDES Permit No. CA0038636), as amended by Order No. R2-2010-0056. Order No. R2-2006-0031 was adopted on May 10, 2006, expired on May 9, 2011, and was administratively extended until adoption of the current order. Order No. R2-2010-0056 amended Order No. R2-2006-0031 to implement cyanide and copper site-specific objectives. Mercury and PCBs discharges from Hayward Marsh are regulated by Order No. R2-2007-0077 (NPDES Permit CA0038849), which supersedes all requirements on mercury and PCBs from wastewater discharges in the region. This Order supersedes Order No. R2-2006-0031, as amended, but does not affect Order No. R2-2007-0077.

C. The Dischargers filed a Report of Waste Discharge and submitted an application for reissuance of their waste discharge requirements (WDRs) and NPDES permit dated November 10, 2010. The application was subsequently deemed complete.

II. FACILITY DESCRIPTION

A. Description of Wastewater Treatment

1. **Secondary Treatment.** USD owns and operates the Plant, which provides secondary treatment consisting of screening, primary sedimentation, activated sludge, secondary clarification, and chlorination/disinfection of final effluent. Sludge is anaerobically digested, dewatered using centrifuge processes, and disposed of at an authorized disposal site. Most of the treated effluent is transported to the EBDA pipeline where it mixes with treated effluent from other EBDA agencies and is transported to a dechlorination station near the San Leandro Marina. This treated effluent is transported to EBDA's deepwater outfall in Lower San Francisco Bay (west of the Oakland Airport). That discharge is regulated under NPDES Permit No. CA0037869 (currently in Order No. R2-2006-0053). Approximately 2.6 million gallons per day (MGD) is diverted to a separate pipeline that supplies wastewater to Hayward Marsh. This discharge is subject to this Order.

2. **Hayward Marsh.** Hayward Marsh is a 145-acre improved marsh system, including three freshwater marsh basins (Treatment Basins 1, 2A, and 2B) totaling 85 acres and two brackish water basins (Receiving Water Basins 3A and 3B) totaling 60 acres, adjacent to Lower San Francisco Bay. Basins 1, 2A, and 2B provide wastewater treatment in addition to the Plant's secondary treatment. The hydraulic capacity of the marsh system is about 20 MGD.

   Secondary-treated wastewater from the Plant enters the Hayward Marsh Treatment Basins at Monitoring Location E-1. From there, it flows through Treatment Basins 1, 2A, and 2B. These basins are part of the treatment process. Effluent is discharged from Basins 2A and 2B into a mixing channel from Discharge Point Nos. 2AE and 2BE, where it mixes with saline water from Lower San Francisco Bay before entering the Receiving Water Basins 3A and 3B. After mixing with saline water in Receiving Water Basins 3A and 3B, reclaimed wastewater from the brackish marsh system is discharged into Lower San Francisco Bay.

3. **Hayward Marsh History.** Originally part of natural tidelands, the Marsh was destroyed in the 19th century when a dike was created to impede tidal action and allow the area to be used for salt evaporation ponds. Commercial salt production ceased during the 1940s, and the area remained in an unused, degraded condition. During the 1970s, the Hayward Area Shoreline Planning Agency was formed to restore the shoreline area. The restoration work was divided into two phases and completed in the early 1980s.

   The second phase, Hayward Marsh, involved construction of 145 acres of fresh and brackish marshes. Funded by the U.S. Fish & Wildlife Service, the City of Hayward, and a grant from the State Coastal Conservancy, Hayward Marsh was specifically designed to use secondary-treated wastewater. In 1983, EBDA entered into an agreement with EBRPD for operation and maintenance of the Marsh. A key component of this agreement was that EBDA would supply up to 20 MGD of secondary treated wastewater as the freshwater source for the Marsh. In 1983, EBRPD and EBDA obtained the first NPDES permit for Hayward Marsh (Order No. 83-5). USD and EBDA began supplying effluent to Hayward Marsh in 1988.

   Attachment B provides a map of the marsh. Attachment C provides a flow schematic.

B. Discharge Points and Receiving Waters

Table F-2, below, identifies the locations of the discharge points and receiving waters. Hayward Marsh is located in the South Bay Basin watershed management area, and discharges to Lower San Francisco Bay.

Table F-2. Outfall Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
2AE	Secondary Treated Municipal Wastewater	37º 37' 46" N	122º 08' 33" W	Hayward Marsh and San Francisco Bay
2BE	Secondary Treated Municipal Wastewater	37° 37' 40" N	122° 08' 31" W	Hayward Marsh and San Francisco Bay

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

Tables F-3 and F-4, below, present effluent limitations contained in the previous Order, as amended, and monitoring data collected from May 2006 to August 2010.

Table F-3. Previous Effluent Limitations and Monitoring Data for Conventional and Non-Conventional Pollutants from Discharge Point No. E-1

Parameter	Units	Effluent Limitations			Monitoring Data (From May 2006-August 2010))		
		Monthly Average	Weekly Average	Daily Maximum	Highest Monthly Average	Highest Weekly Average	Highest Daily Discharge
BOD	mg/L	30	45	---	31	40	---
TSS	mg/L	30	45	---	24	29	---
pH	s.u.	6.5 – 8.5			6.8 – 7.5		
Total Residual Chlorine	mg/L	---	---	0.0[1]	---	---	0.0
Fecal Coliform Bacteria	MPN/100 mL	[2]			---		

Footnotes to Table F-3:

Units

mg/L = milligrams per liter

MPN/100 mL = Most Probable Number per 100 milliliters

(1) Effluent limitation and monitoring results reported as an instantaneous maximum effluent limitation, with compliance measured at Monitoring Location E-1-D.

(2) The 5-day log mean fecal coliform bacteria shall not exceed 500 MPN/100mL and a 90th percentile value of 1,100 MPN/100 mL.

Table F-4. Previous Effluent Limitations and Monitoring Data for Toxic Pollutants from Discharge Point Nos. 2AE and 2BE (Average of 2AE and 2BE)

Parameter	Units	Final Limits		Interim Limits		Monitoring Data (From May 2006 – August 2010)
		Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Highest Daily Concentration
Copper[1]	µg/L	12	20	---	---	11.8
Nickel	µg/L	14	22	---	36	17.5
Cyanide[1]	µg/L	6.7	15	---	---	4.95
4,4'-DDD	µg/L	0.00084	0.0017	---	0.05	<0.0027
Heptachlor	µg/L	0.00021	0.00042	---	0.01	<0.0018
Heptachlor Epoxide	µg/L	0.00011	0.00022	---	0.01	<0.0020

Footnotes to Table F-4:

µg/L = micrograms per liter

(1) These limitations are from the Copper and Cyanide Site Specific Objectives permit amendment, Order No. R2-2010-0056.

D. Compliance Summary

The Dischargers violated its average monthly BOD limit (30 mg/L) at Monitoring Location E-1 once in January 2009 when it reported a monthly average of 31 mg/L. Because the BOD concentration exceeded the limit only by a small amount and the violation occurred only once, no formal enforcement was pursued.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

This Order is issued pursuant to Clean Water Act (CWA) section 402 and implementing regulations adopted by the USEPA and Chapter 5.5, Division 7 of the CWC (commencing with section 13370). It serves as an NPDES permit for point source discharges to surface waters. This Order also serves as WDRs pursuant to CWC Article 4, Chapter 4, Division 7 (commencing with section 13260).

B. California Environmental Quality Act (CEQA)

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

C. State and Federal Regulations, Policies, and Plans

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

   On [Insert Date], the Regional Water Board adopted a Basin Plan amendment, "Resolution for Beneficial Uses of Hayward Marsh," that clarifies the beneficial uses of Hayward Marsh. When approved by the State Water Board, the Office of Administrative Law, and USEPA, the Basin Plan amendment will remove the water contact recreation beneficial use (REC-1) designation from Hayward Marsh and add the preservation of rare and endangered species (RARE) beneficial use (species found on Hayward Marsh include the threatened western snowy plover and the endangered California least tern).

   Two factors provide a basis for removing the REC-1 beneficial use from Hayward Marsh pursuant to 40 CFR 131.10(g)(1) and (3):

   - Naturally occurring pollutant concentrations prevent attainment of the REC-1 use. The waterfowl and other wildlife at Hayward Marsh contribute substantially to bacteria in the Marsh.
   - Hayward Marsh was created and is sustained using reclaimed wastewater. Therefore, human-caused conditions or sources of pollution prevent attainment of the REC-1 use, and these conditions cannot be remedied or would cause more environmental damage to correct than to leave in place.

   Table F-5, below, lists the beneficial uses of Hayward Marsh specifically identified in the Basin Plan, as amended.

Table F-5. Basin Plan Beneficial Uses of Hayward Marsh

Discharge Point	Receiving Water Name	Beneficial Uses
2AE and 2BE	Hayward Marsh	Non-Contact Water Recreation (REC2) Wildlife Habitat (WILD) Estuarine Habitat (EST) Fish Spawning (SPWN) Preservation of Rare and Endangered Species (RARE)

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.

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, and amended it on May 4, 1995, and November 9, 1999. About 40 criteria in the NTR applied in California. On May 18, 2000, USEPA adopted the CTR. The CTR contained toxics criteria for California and incorporated the previously adopted NTR criteria that applied in the State. USEPA amended the CTR on February 13, 2001. These rules contain water quality criteria 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* (hereinafter the State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria USEPA promulgated for California through the NTR and the priority pollutant objectives the Regional Water Board established in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria USEPA promulgated through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

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

5. **Antidegradation Policy.** 40 CFR 131.12 requires that State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16, which incorporates the federal antidegradation policy where it applies under federal law and requires that existing water quality be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies.

The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. With this Order, as explained in Fact Sheet section IV.E, there will be no change in receiving water quality beyond the level authorized in the previous Order. The limitations in this Order comply with antidegradation requirements because treatment performance will be maintained.

6. **Anti-Backsliding Requirements.** CWA sections 402(o) 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. Most effluent limitations in this Order are no less stringent than those contained in the previous Order, as amended. However, some effluent limitations have been removed, and nickel limitations are less stringent. As discussed in Fact Sheet sections IV.D.4 and IV.E, backsliding is permissible in these instances.

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

On November 12, 2010, the USEPA approved a revised list of impaired water bodies prepared by the State pursuant to CWA section 303(d), which requires identification of water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. Although Hayward Marsh is not on the list, Lower San Francisco Bay appears on the list due to chlordane, DDT, dieldrin, dioxin compounds, furan compounds, invasive species, mercury, polychlorinated biphenyls (PCBs), dioxin-like PCBs, and trash.

TMDLs establish wasteload allocations for point sources and load allocations for non-point sources and are intended to achieve the water quality standards for the impaired waterbodies. The Regional Water Board has adopted, and the State Water Board and USEPA have approved, TMDLs for mercury and PCBs in San Francisco Bay. Regional Water Board Order No. R2-2007-0077 implements these TMDLs and regulates Hayward Marsh mercury and PCB discharges.

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 discharged into waters of the United States. Control of pollutants 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 122.44(a) requires that permits include technology-based limitations and standards, and 40 CFR 122.44(d) requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain numeric and narrative water quality objectives to protect receiving water beneficial uses.

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

A. Discharge Prohibitions

1. **Discharge Prohibition III.A** (Discharge of treated wastewater different from that described in Order): This prohibition is the same as in the previous Order and based on 40 CFR 122.21(a), duty to apply, and CWC section 13260, which requires filing an application and

Report of Waste Discharge before discharges can occur. Discharges not described in the permit application and Report of Waste Discharge, and subsequently in the Order, are prohibited.

2. **Discharge Prohibition III.B** (Nuisance): This prohibition is the same as in the previous Order and based on CWC section 13030(m), which describes the specific conditions that constitute a nuisance. Provisions VI.C.6 and VI.C.7 require the Dischargers to have a Marsh Management Plan and Marsh Contingency Plan, both of which include activities related to preventing a nuisance.

B. Shallow Water Discharge and Basin Plan Discharge Prohibition 1

Basin Plan Table 4-1, Discharge Prohibition 1, prohibits discharges not receiving a minimum 10:1 initial dilution, or into any non-tidal waters, dead end sloughs, similar confined waters, or immediate tributaries thereof. Basin Plan section 4 also states that an exception to this prohibition can be made under certain circumstances:

- 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, or improved treatment reliability;

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

- Net environmental benefits will be derived as a result of the discharge.

This Order grants the Dischargers an exception for discharges to Hayward Marsh due to the net environmental benefits derived from the Marsh as a result of the discharge:

1. Regular monitoring indicates that avian species diversity has increased steadily in the Marsh since bird censuses commenced in 1990. The marsh supports a great density of wintering waterfowl, numbering as high as 40,000 ducks each season, and is an important migratory stopover for shorebirds each spring and fall. At least 200 species of birds have used the Marsh. There has also been a trend toward relatively greater numbers of water bird species over land birds, which may be attributable to improved wetland habitat management. The avian diversity and density attracts researchers, recreational bird watchers, and organized environmental groups who visit the Marsh regularly.

2. The marsh is a refuge for nesting shorebirds and waterfowl, and provides important nesting habitat for over 25 species of birds with active nests. This represents a substantial regional nesting population for waterfowl and shorebirds and at one time also represented one of the largest colonies of nesting snowy egrets and black-crowned night herons in Lower San Francisco Bay.

3. Several bird species of special interest, including the Forster's tern, Caspian tern, black skimmers and the federally-threatened western snowy plover, nest within the Marsh.

4. The California least tern, a federal and state endangered species, has nested successfully on an island within the Marsh complex since 1990. To support the California least tern, tern habitat was enhanced within the Marsh with over 15,000 square feet of new nesting habitat being created. The habitat area was created with the assistance of more than 3,200 volunteers who donated over 13,500 hours of volunteer service. During the 2010 nesting season, there were 53 nests, which produced 91 chicks and approximately 75 fledgelings.

5. The Hayward Marsh discharge creates a salinity transition zone that provides suitable and attractive habitat for rearing of juvenile bay fish. An October 2005 aquatic survey indicated that top smelt, *Atherinops affinis*, and rainwater killifish, *Lucania parva*, were present in abundance. Estuaries, such as Hayward Marsh, are often used for spawning and as a nursery area for the young of the year for both species. The top smelt sampled are primarily young of the year fish that were likely to have been spawned in this location. The fish within the Marsh are important because the black skimmer, Caspian, Forster's and California least terns forage on small fish that inhabit the waters within the Marsh complex.

6. Hayward Marsh provides many onsite educational and interpretive opportunities for local schools and residents. The Hayward Area Recreation and Parks District operates the Hayward Shoreline Interpretive Center, which specializes in educational programs on wetlands, shoreline habitats and the ecology of San Francisco Bay and offers interpretive programs year-round.

7. Hayward Marsh has considerable value as a wetland restoration demonstration site for local, national and international scientists, academics, consultants, engineers, planners, politicians, delegates and other professionals. Visitors from as far as South Korea, Russia, Japan, China, Vietnam and Taiwan have come to tour the Hayward Marsh system and learn about the concept, design, and operation and maintenance.

The Regional Water Board adopted Resolution No. 94-086, *Policy on the Use of Wastewater to Create, Restore, and/or Enhance Wetlands*, under which Hayward Marsh is covered. Pursuant to Resolution No. 94-086, the Dischargers are exempt from the discharge prohibition for not receiving at least 10:1 dilution since the use of treated effluent as a freshwater source to Hayward Marsh has a demonstrated net environmental benefit, provided the Dischargers continue to meet the terms and conditions of this Order. This exception is retained from the previous Order.

C. Technology-Based Effluent Limitations

- **Secondary Treatment Standards**

CWA section 301(b) requires USEPA to develop secondary treatment standards for publicly-owned treatment works at a level of effluent quality attainable through applying secondary or equivalent treatment. USEPA promulgated such technology-based effluent guidelines at 40 CFR 133. 40 CFR 133 and Basin Plan Table 4-2 impose the following minimum requirements.

Table F-6. Secondary Treatment Effluent Limitations

Parameter	Units	30-Day Average	7-Day Average
BOD_5[1]	mg/L	30	45

Parameter	Units	30-Day Average	7-Day Average
TSS	mg/L	30	45
BOD_5 and TSS	% Removal	85	--
pH	Standard Units	6.5 – 8.5	

1 The Basin Plan allows substitution of CBOD for BOD, with a 30-day average limit of 25 mg/L and a 7-day average limit of 40 mg/L.

These limitations are retained from the previous Order, except that CBOD limitations replace BOD limitations, as allowed by Basin Plan Table 4-2, footnote b. Because the secondary treatment standards relate to the treatment technology at the USD's Alvarado Wastewater Treatment Plant, this Order establishes these technology-based effluent limitations (with the exception of the CBOD and TSS percent removal requirement, as explained below) on the USD discharge to the EBDA outfall interceptor, with compliance measured at Monitoring Location E-1.

Because Order No. R2-2006-0053, which covers discharges from the EBDA deepwater outfall, requires compliance with the BOD_5 and TSS percent removal effluent limitations for all EBDA dischargers combined, this Order does not repeat the percent removal requirement.

- **Total Residual Chlorine**

  This effluent limitation is retained from the previous Order and is based on Basin Plan section 4.5.5.1 and Table 4-2.

D. Water Quality-Based Effluent Limitations (WQBELs)

WQBELs have been derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law. USEPA also approved SIP procedures for calculating individual WQBELs prior to May 1, 2001. USEPA approved the Basin Plan provisions for calculating WQBELs on May 29, 2000. Most Basin Plan beneficial uses and water quality objectives were approved under State law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives 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 [Clean Water] Act" pursuant to 40 CFR 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than those required to implement water quality standards for CWA purposes.

1. Scope and Authority

a. 40 CFR 122.44(d)(1)(i) requires permits to include WQBELs for pollutants, including toxicity, that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard (Reasonable Potential). 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 that 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 (1) to protect the receiving water beneficial uses as specified in the Basin Plan, and (2) to achieve applicable water quality objectives contained in the CTR, NTR, and Basin Plan.

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 that WQBELs be expressed as MDELs and AMELs.

c. MDELs in this Order are necessary to protect against acute water quality effects, such as fish kills or mortality to aquatic organisms.

2. Applicable Beneficial Uses and Water Quality Objectives

The water quality objectives that apply to the receiving waters 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 water quality objectives established by more than one of these sources.

a. Basin Plan. The Basin Plan specifies numeric water quality objectives for 10 priority toxic pollutants, as well as narrative water quality objectives for toxicity and bioaccumulation 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 Basin Plan's narrative toxicity objective (section 3.3.18) states, in part, "All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms." The bioaccumulation objective states, in part, "Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered." Effluent limitations and provisions contained in this Order are based on available information to implement these water quality objectives.

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 the San Francisco Bay Region, although Basin Plan Tables 3-3 and 3-4 include numeric water quality objectives for some of these priority toxic pollutants that supersede the CTR criteria. Human health criteria are further identified as for consumption of "water and organisms" and "organisms only." Because the receiving water is not designated for human consumption, the human health criteria do not apply to the receiving water.

c. **NTR.** The NTR establishes numeric aquatic life criteria for selenium, numeric aquatic life and human health criteria for cyanide, and numeric human health criteria for 34 other toxic organic pollutants for waters of San Francisco Bay upstream to, and including, the Sacramento River-San Joaquin River Delta.

d. **Technical Support Document for Water Quality-Based Toxics Controls.** Where numeric objectives have not been established or updated in the Basin Plan, 40 CFR 122.44(d) requires that WQBELs be established based on USEPA criteria, supplemented where necessary by other relevant information, to attain and maintain narrative water quality objectives to fully protect designated beneficial uses. To determine the need for WQBELs and establish them when necessary, the Regional Water Board has in some cases relied on USEPA's *Technical Support Document for Water Quality-Based Toxics Control* (the TSD, EPA/505/2-90-001, 1991)

e. **Sediment Quality Objectives.** The *Water Quality Control Plan for Enclosed Bays and Estuaries—Part 1, Sediment Quality* contains a narrative water quality objective, "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 water quality objective 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 water quality objective, it is to impose the water quality objective as a receiving water limit.

f. **Receiving Water Salinity.** The Basin Plan and CTR state that the receiving water salinity characteristics (i.e., freshwater vs. saltwater) are to be considered in determining the applicable water quality objectives. 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. Hayward Marsh and Lower San Francisco Bay have salinities that transition between these two categories (estuarine), so the applicable criteria are the lower of the marine or freshwater criteria (the latter calculated based on ambient hardness) for each substance.

g. **Receiving Water Hardness.** Ambient hardness values are used to calculate freshwater water quality objectives that are hardness dependent. Because the minimum hardness measured in Basins 3A and 3B was 4,810 mg/L, the previous Order used a hardness value of 400 mg/L (as $CaCO_3$), consistent with the SIP requirement to use a hardness value no greater than 400 mg/L when calculating water quality objectives for certain metals. More recent additional hardness data from within Hayward Marsh are unavailable. Therefore, like the previous Order, this Order uses a hardness of 400 mg/L to calculate the water quality objectives for certain metals in this Order.

h. **Site-Specific Metal Translators.** 40 CFR 122.45(c) requires effluent limitations for metals to be expressed as total recoverable metal. Since water quality objectives for metals are typically expressed in the dissolved form, translators must be used to convert metals concentrations from dissolved to total recoverable and vice versa. In the CTR, USEPA establishes default translators that may be used in NPDES permits. However,

site-specific conditions, such as water temperature, pH, suspended solids, and organic carbon, greatly impact the form of metal (dissolved, filterable, or otherwise) present in the water and therefore available to cause toxicity. In general, the dissolved form is more available and more toxic to aquatic life than filterable forms. Site-specific translators can be developed to account for site-specific conditions, thereby preventing exceedingly stringent or under protective water quality objectives.

USD submitted a site-specific translator study for Hayward Marsh, *Hayward Marsh Metal Translator Study, Union Sanitary District* on February 27, 2002. USD collected samples at several locations within Hayward Marsh eight times between September 2000 and December 2001. The sample locations included Hayward Marsh stations 3A and 3B and locations in Lower San Francisco Bay near the marsh discharge. Since only eight data points were available from Hayward Marsh, 12 additional data points were used from the Alameda Regional Monitoring Program (RMP) station.

According to a *Metal Translator Analyses* memorandum dated March 3, 2006, a regression analysis of these data, consistent with SIP section 1.4.1, indicates that the copper and nickel dissolved fractions are not correlated with TSS. The dissolved fractions for each of these constituents are lognormally distributed. A statistical analysis resulted in the translators presented in Table F-7. This Order continues to use these translators, consistent with the previous Order and Order No. R2-2010-0056 (for copper).

Table F-7. Site Specific Metal Translators

Constituent	Sample Size	Chronic Translator	Acute Translator
Copper	20	0.599	0.940
Nickel	20	0.527	0.884

3. Determining the Need for WQBELs

Assessing whether a pollutant has Reasonable Potential is the fundamental step in determining whether or not a WQBEL is required. Using the methods prescribed in SIP section 1.3, the effluent data from Discharge Point Nos. 2AE and 2BE were analyzed to determine if the discharge demonstrates Reasonable Potential. The Reasonable Potential Analysis compared these effluent data with the numeric and narrative water quality objectives in the Basin Plan, NTR, and CTR.

a. Reasonable Potential Analysis (RPA). There are three triggers in determining Reasonable Potential according to SIP section 1.3.

(1) The first trigger is activated if the observed maximum effluent concentration (MEC) is greater than the lowest applicable water quality objective (MEC $\geq$ water quality objective), which has been adjusted, if appropriate, for pH, hardness, and translator data. If the MEC is greater than the adjusted water quality objective, 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 water quality objective (B > water quality objective) 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 MEC and B are less than the water quality objective. A limitation may be required under certain circumstances to protect beneficial uses.

b. Effluent Data. The Dischargers monitor for priority pollutants using analytical methods that provide the best detection limits reasonably feasible. The effluent data and the nature of the discharge were analyzed to determine if the discharge has Reasonable Potential. The RPA was based on the effluent monitoring data collected from May 2006 through August 2010. The Dischargers monitored toxic pollutants from Discharge Point Nos. 2AE and 2BE concurrently. Using the most conservative approach, the maximum concentration observed at either of the two discharge points was used as the MEC for the RPA.

c. Ambient Background Data. Ambient background values are typically used to determine Reasonable Potential and to calculate effluent limitations, when necessary. The SIP states that, for calculating WQBELs, ambient background concentrations are either the observed maximum ambient water column concentrations or, for water quality objectives intended to protect human health from carcinogenic effects, the arithmetic mean of observed ambient water concentrations.

SIP section 1.4.3 allows background concentrations to be determined on a discharge-by-discharge or water body-by-water body basis. The background data for CTR and NTR parameters used in the RPA were generated at the Yerba Buena RMP station. The Yerba Buena RMP station, relative to other RMP stations, best fits SIP guidance criteria for establishing background conditions. Far-field background station is appropriate because San Francisco Bay is a very complex estuarine system with highly variable and seasonal upstream freshwater inflows and diurnal tidal saltwater inputs. Yerba Buena RMP station data from 1993 through 2008 were used for the RPA.

The RMP does not monitor for all the constituents listed in the CTR. On May 15, 2003, a group of San Francisco Bay Region municipal wastewater dischargers known as the Bay Area Clean Water Agencies (BACWA) submitted a collaborative receiving water study entitled, *San Francisco Bay Ambient Water Monitoring Interim Report* (2003). This study includes monitoring results from sampling events in 2002 and 2003 for the remaining priority pollutants not monitored by the RMP and includes the Yerba Buena RMP station. The BACWA report, *Ambient Water Monitoring: Final CTR Sampling Update* report, dated June 15, 2004, provides additional data.

d. Reasonable Potential Determination. The MECs, most stringent applicable water quality objectives, and background concentrations used in the RPA are presented in Table F-8 below, along with the RPA result (yes or no) for each pollutant analyzed. Reasonable Potential was not determined for all pollutants because WQC do not exist for all pollutants and monitoring data were unavailable for others. The RPA determined that

copper, nickel, cyanide, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, and ammonia demonstrate Reasonable Potential.

Table F-8. Reasonable Potential Analysis Summary

CTR #	Priority Pollutants	MEC or Minimum DL [(1),(2)] (µg/L)	Governing Water Quality Objective/WQC (µg/L)	Maximum Background or Minimum DL [(1),(2)] (µg/L)	RPA Results [(3)]
1	Antimony	0.54	4,300	1.8	No
2	Arsenic	5.8	36	2.5	No
3	Beryllium	0.13	No Criteria	0.22	Ud
4	Cadmium	0.054	3.4	0.13	No
5a	Chromium (III)	Not Available	640	Not Available	Cannot Determine
5b	Chromium (VI) [(4)]	13	11	4.4	Cannot Determine
6	**Copper**	**16**	**12**	**2.6**	**Yes**
7	Lead	7.0	8.5	0.8	No
8	Mercury (303d listed) [(5)]	---	---	---	---
9	**Nickel**	**21**	**16**	**3.7**	**Yes**
10	Selenium	0.55	5.0	0.39	No
11	Silver	0.11	2.2	0.052	No
12	Thallium	<0.20	6.3	0.21	No
13	Zinc	34	86	5.1	No
14	**Cyanide**	**5.2**	**2.9**	**<0.4**	**Yes**
15	Asbestos	Not Available	No Criteria	Not Available	Ud
16	2,3,7,8-TCDD (303d listed)	<4.9E-07	1.4E-08	8.2E-09	No
17	Acrolein	<2.1	780	<0.50	No
18	Acrylonitrile	<1.2	0.66	0.03	No
19	Benzene	<0.11	71	<0.05	No
20	Bromoform	<0.27	360	<0.5	No
21	Carbon Tetrachloride	<0.19	4.4	0.06	No
22	Chlorobenzene	<0.21	21,000	<0.5	No
23	Chlorodibromomethane	<0.16	34	<0.05	No
24	Chloroethane	<0.51	No Criteria	<0.5	Ud
25	2-Chloroethylvinyl ether	<0.28	No Criteria	<0.5	Ud
26	Chloroform	<0.16	No Criteria	<0.5	Ud
27	Dichlorobromomethane	<0.14	46	<0.05	No
28	1,1-Dichloroethane	<0.23	No Criteria	<0.05	Ud
29	1,2-Dichloroethane	<0.19	99	0.04	No
30	1,1-Dichloroethylene	<0.10	3.2	<0.5	No
31	1,2-Dichloropropane	<0.19	39	<0.05	No
32	1,3-Dichloropropylene	<0.14	1700	<0.5	No
33	Ethylbenzene	<0.30	29,000	<0.5	No
34	Methyl Bromide	<0.25	4,000	<0.5	No
35	Methyl Chloride	<0.50	No Criteria	<0.5	Ud
36	Methylene Chloride	<0.09	1,600	22	No
37	1,1,2,2-Tetrachloroethane	<0.36	11	<0.05	No
38	Tetrachloroethylene	<0.09	8.8	<0.05	No
39	Toluene	<0.14	200,000	<0.3	No
40	1,2-Trans-Dichloroethylene	0.11	140,000	<0.5	No
41	1,1,1-Trichloroethane	<0.14	No Criteria	<0.5	Ud
42	1,1,2-Trichloroethane	<0.16	42	<0.05	No
43	Trichloroethylene	<0.16	81	<0.5	No
44	Vinyl Chloride	<0.42	525	<0.5	No
45	2-Chlorophenol	<0.20	400	<1.2	No
46	2,4-Dichlorophenol	0.69	790	<1.3	No

CTR #	Priority Pollutants	MEC or Minimum DL (1),(2) (µg/L)	Governing Water Quality Objective/WQC (µg/L)	Maximum Background or Minimum DL (1),(2) (µg/L)	RPA Results (3)
47	2,4-Dimethylphenol	1.1	2,300	<1.3	No
48	2-Methyl- 4,6-Dinitrophenol	<0.96	770	<1.2	No
49	2,4-Dinitrophenol	<0.96	14,000	<0.7	No
50	2-Nitrophenol	<0.16	No Criteria	<1.3	Ud
51	4-Nitrophenol	<0.29	No Criteria	<1.6	Ud
52	3-Methyl 4-Chlorophenol	<0.16	No Criteria	<1.1	Ud
53	Pentachlorophenol	<0.14	7.9	<1	No
54	Phenol	1.7	4,600,000	<1.3	No
55	2,4,6-Trichlorophenol	<0.15	6.5	<1.3	No
56	Acenaphthene	<0.068	2,700	0.0019	No
57	Acenaphthylene	<0.031	No Criteria	0.0013	Ud
58	Anthracene	0.17	110,000	5.9E-04	No
59	Benzidine	<0.96	0.00054	<0.0015	No
60	**Benzo(a)Anthracene**	**0.14**	**0.049**	**5.3E-03**	**Yes**
61	Benzo(a)Pyrene	0.014	0.049	3.3E-03	No
62	**Benzo(b)Fluoranthene**	**0.078**	**0.049**	**4.6E-03**	**Yes**
63	Benzo(ghi)Perylene	0.05	No Criteria	4.5E-03	Ud
64	**Benzo(k)Fluoranthene**	**0.071**	**0.049**	**1.8E-03**	**Yes**
65	Bis(2-Chloroethoxy)Methane	<0.13	No Criteria	<0.3	Ud
66	Bis(2-Chloroethyl)Ether	<0.15	1.4	<0.00015	No
67	Bis(2-Chloroisopropyl)Ether	<0.16	170,000	Not Available	No
68	Bis(2-Ethylhexyl)Phthalate	0.64	5.9	<0.7	No
69	4-Bromophenyl Phenyl Ether	<0.11	No Criteria	<0.23	Ud
70	Butylbenzyl Phthalate	<0.13	5,200	0.0056	No
71	2-Chloronaphthalene	<0.16	4,300	<0.3	No
72	4-Chlorophenyl Phenyl Ether	<0.15	No Criteria	<0.3	Ud
73	Chrysene	<0.048	0.049	2.8E-03	No
74	Dibenzo(a,h)Anthracene	0.044	0.049	6.4E-04	No
75	1,2-Dichlorobenzene	<0.15	17,000	<0.3	No
76	1,3-Dichlorobenzene	<0.15	2,600	<0.3	No
77	1,4-Dichlorobenzene	<0.14	2,600	<0.3	No
78	3,3-Dichlorobenzidine	<0.17	0.077	<0.001	No
79	Diethyl Phthalate	<0.40	120,000	<0.21	No
80	Dimethyl Phthalate	<0.042	2,900,000	<0.21	No
81	Di-n-Butyl Phthalate	<0.35	12,000	0.016	No
82	2,4-Dinitrotoluene	<0.075	9.1	<0.27	No
83	2,6-Dinitrotoluene	<0.096	No Criteria	<0.29	Ud
84	Di-n-Octyl Phthalate	<0.14	No Criteria	<0.38	Ud
85	1,2-Diphenylhydrazine	Not Available	0.54	0.0037	Ud
86	Fluoranthene	0.26	370	0.011	No
87	Fluorene	0.14	14,000	2.1E-03	No
88	Hexachlorobenzene	<0.089	0.00077	2.2E-05	No
89	Hexachlorobutadiene	<0.17	50	<0.3	No
90	Hexachlorocyclopentadiene	<0.061	17,000	<0.3	No
91	Hexachloroethane	<0.15	8.9	<0.2	No
92	Indeno(1,2,3-cd)Pyrene	0.044	0.049	3.98E-03	No

CTR #	Priority Pollutants	MEC or Minimum DL (1),(2) (µg/L)	Governing Water Quality Objective/WQC (µg/L)	Maximum Background or Minimum DL (1),(2) (µg/L)	RPA Results (3)
93	Isophorone	<0.14	600	<0.3	No
94	Naphthalene	<0.16	No Criteria	0.013	Ud
95	Nitrobenzene	<0.16	1,900	<0.25	No
96	N-Nitrosodimethylamine	<0.17	8.1	<0.3	No
97	N-Nitrosodi-n-Propylamine	<0.16	1.4	<0.001	No
98	N-Nitrosodiphenylamine	<0.14	16	<0.001	No
99	Phenanthrene	<0.57	No Criteria	0.0095	Ud
100	Pyrene	0.24	11,000	0.019	No
101	1,2,4-Trichlorobenzene	<0.16	No Criteria	<0.3	Ud
102	Aldrin	<0.0014	0.00014	2.8E-06	No
103	Alpha-BHC	<0.0018	0.013	4.96E-04	No
104	beta-BHC	<0.0032	0.046	4.13E-04	No
105	gamma-BHC	<0.0023	0.063	7.03E-04	No
106	delta-BHC	<0.0024	No Criteria	5.3E-05	Ud
107	Chlordane (303d listed)	<0.014	0.0006	1.8E-04	No
108	4,4'-DDT (303d listed)	<0.0028	0.0006	1.7E-04	No
109	4,4'-DDE (linked to DDT)	<0.0018	0.00059	6.9E-04	No
110	4,4'-DDD	<0.0027	0.00084	3.1E-04	No
111	Dieldrin (303d listed)	<0.0029	0.00014	2.6E-04	No
112	Alpha-Endosulfan	<0.0024	0.0087	3.1E-05	No
113	beta-Endolsulfan	<0.0022	0.0087	6.9E-05	No
114	Endosulfan Sulfate	<0.0029	240	8.2E-05	No
115	Endrin	<0.0022	0.0023	4.0E-05	No
116	Endrin Aldehyde	<0.0030	0.81	Not Available	Cannot Determine
117	Heptachlor	<0.0018	0.00021	1.9E-05	No
118	Heptachlor Epoxide	<0.0020	0.00011	9.4E-05	No
119-125	PCBs sum (303d listed)(5)	--	--	--	--
126	Toxaphene	<0.071	0.0002	Not Available	Cannot Determine
	Tributyltin	<0.0026	0.0074	0.0022	No
	Total PAHs	Not Available	15	0.0841	Cannot Determine
	Total Ammonia (mg/L)	**42**	**0.92**	**0.19**	**Yes**

Footnotes to Table F-8:

(1) The MEC or maximum background concentration is the actual detected concentration unless there is a "<" sign before it, in which case the value shown is the minimum detection level.

(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 => Water Quality Objective/WQC, or B > Water Quality Objective/WQC and MEC is detected;
= No, if MEC and B are < Water Quality Objective/WQC or all effluent data are undetected;
= Undetermined (Ud), if no criteria have been promulgated;
= Cannot Determine, if there are insufficient data.

(4) Effluent and receiving water data was reported as total chromium. Therefore, reasonable potential cannot be determined for chromium (VI). The Dischargers shall monitor for chromium (VI), as discussed in the MRP (Attachment E), to collect data to determine reasonable potential of chromium (VI) in future RPAs.

(5) SIP section 1.3 excludes from its RPA procedure priority pollutants for which a TMDL has been developed. TMDLs have been developed for mercury and PCBs in San Francisco Bay. Mercury and PCBs from wastewater discharges are regulated by NPDES Permit No. CA0038849 (currently Regional Water Board Order No. R2-2007-0077), which implements the San Francisco Bay Mercury and PCB TMDLs.

(1) Constituents with limited data. In some cases, Reasonable Potential cannot be determined because effluent data are limited or ambient background concentrations are unavailable. Provision VI.C.2.a of this Order requires the Dischargers to continue to monitor for these constituents in the effluent using analytical methods that provide the lowest feasible detection limits. When additional data become available, further RPA will be conducted to determine whether to add numeric effluent limitations to this permit or to continue monitoring.

(2) Pollutants with no Reasonable Potential. WQBELs are not included in this Order for constituents that do not demonstrate Reasonable Potential; however, monitoring for such pollutants is still required. If concentrations of these constituents are found to have increased significantly, this Order requires the Dischargers to investigate the sources of the increase (see Provision VI.C.2.a and Provision VI.C.3.b(3) of this Order). This Order also requires the Dischargers to implement remedial measures if increased pollutant concentrations pose a threat to water quality in the receiving water (see Provision VI.C.3.b(3) of this Order).

4. WQBEL Calculations

a. Dilution Credits

(1) Cyanide. The Basin Plan contains site-specific water quality objectives for cyanide to protect marine aquatic life. In addition, the Basin Plan lists site-specific cyanide dilution credits for shallow water dischargers, including Hayward Marsh. The WQBELs for cyanide are based on the Basin Plan dilution credit of 3.25:1 (D=2.25).

(2) Copper, Nickel, and Ammonia. On February 8, 2010, the Dischargers submitted *2010 Amendment of Cyanide and Copper Salt Water Quality-Based Effluent Limits, Strategies for Compliance;* this was amended by the August 17, 2011, technical memorandum *Estimation of Dilution for Hayward Marsh Discharge to San Francisco Bay* (hereinafter collectively the Mixing Zone Study). It evaluated mixing and dilution of effluent discharges to Hayward Marsh as they flow through the Marsh and out to Lower San Francisco Bay. The Mixing Zone Study concluded that a dilution of 2:1 (two parts total effluent plus ambient receiving water to one part effluent) is achieved within 7 meters from shore, and a dilution of 36:1 (D = 35) is achieved within 80 meters from shore. The larger mixing zone, corresponding to 36:1 dilution and extending throughout Basins 3A and 3B to a distance 80 meters from shore, meets all SIP section 1.4.2.2.A and 1.4.2.2.B requirements, as discussed below. Therefore, smaller mixing zones also meet these SIP requirements.

In accordance with SIP section 1.4.2.2.A, a mixing zone extending out to 80 meters from shore does not:

(a) *Compromise the integrity of the entire water body*. Reclaimed wastewater has been used in Hayward Marsh since restoration efforts began in the 1980s. Since that time, the Marsh has developed into a well-documented, successful habitat for numerous species of birds and fish. RMP data show that copper and ammonia levels in Lower San Francisco Bay (to which Hayward Marsh is tributary) are

below water quality objectives. The mixing zone is small relative to size of San Francisco Bay and does not compromise the integrity of the entire water body.

(b) *Cause acutely toxic conditions to aquatic life passing through the mixing zone*. Basins 3A and 3B are not passageways for aquatic life attempting to move from one water body to another due to their layout and hydraulic design. Nevertheless, waters within the mixing zone (Basins 3A and 3B and a relatively small portion of Lower San Francisco Bay) will not be acutely toxic. The ammonia, copper, and nickel limits derived from the mixing zone are based on the Basin Plan's ammonia, copper, and nickel water quality objectives. The chronic copper and nickel objectives (6.9 ug/L and 8.2 ug/L, respectively) drive the derivations of the copper and nickel limits, not the much higher acute objectives (11 ug/L and 74 ug/L, respectively). Similarly, Basin Plan section 3.3.20 indicates that the un-ionized ammonia objectives are intended to prevent chronic toxicity, not acute toxicity. Moreover, Alvarado Wastewater Treatment Plant discharges are also regulated under Order No. R2-2006-0053 (the EBDA permit), which contains acute toxicity effluent limitations that will ensure that treated wastewater entering Pond 1 is not acutely toxic.

(c) *Restrict passage of aquatic life*. Although aquatic life is present in Basins 3A and 3B, these Basins are not a passageway for aquatic life attempting to move from one water body to another due to their layout and hydraulic design (i.e., they are not tributary to a water body other than San Francisco Bay). The mixing zone outside these Basins is limited to a small fraction of San Francisco Bay (at most 53 square meters in cross-sectional area versus approximately 48,000 square meters for San Francisco Bay at this location). Thus it does not restrict the passage of aquatic life throughout Lower San Francisco Bay.

(d) *Adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws*. Restoration of Hayward Marsh through use of reclaimed water has not adversely affected biologically sensitive or critical habitats. In fact, to the contrary, the use of reclaimed water to support the Marsh has created attractive habitat for several important species, as described in this Fact Sheet, section IV.B.

(e) *Produce undesirable or nuisance aquatic life*. Provision VI.C.6 of this Order requires implementation of a Marsh Management Plan to ensure effective management of water flow, water quality, and vegetation; preservation of salt marsh harvest mouse habitat; and implementation of vector control strategies.

(f) *Result in floating debris, oil, or scum.* Hayward Marsh effluent (secondary-treated and further polished by the treatment basins) does not contain floating debris, oil, or scum. In fact, receiving water limits in section V.A of this Order prohibit floating debris, oil, and scum. The copper, nickel, and ammonia subject to these mixing zones are unlikely to cause floating debris, oil, or scum.

(g) *Produce objectionable color, odor, taste, or turbidity.* Hayward Marsh effluent (secondary-treated and further polished by the treatment basins) does not produce

objectionable color, odor, or turbidity. In fact, receiving water limits in section V.A of this Order prohibit objectionable color, odor, and turbidity. The copper, nickel, and ammonia subject to these mixing zones are unlikely to produce objectionable color, odor, or turbidity. Taste is not a consideration because Hayward Marsh is not a drinking water source.

(h) *Cause objectionable bottom deposits*. Hayward Marsh effluent (secondary-treated and further polished by the treatment basins) does not cause objectionable bottom deposits. In fact, receiving water limits in section V.A of this Order prohibit objectionable bottom deposits. The copper, nickel, and ammonia subject to these mixing zones are unlikely to cause objectionable bottom deposits.

(i) *Dominate San Francisco Bay or overlap a mixing zone from a different outfall*. The Regional Water Board has not established mixing zones for any other nearby dischargers.

(j) *Exist near any drinking water intake*. The salinity of the receiving water is too high for it to be used as a drinking water supply.

In accordance with SIP section 1.4.2.2.B, a mixing zone extending to 80 meters from shore protects beneficial uses and complies with all regulatory requirements. SIP section 1.4.2.2 requires that mixing zones be as small as practicable. For purposes of this Order, if the Dischargers can comply with limits based on a dilution factor corresponding to a particular mixing zone, then that mixing zone is considered practicable.

- **Copper.** Based on a statistical analysis of copper effluent data collected from June 2006 through August 2010 (and averaging concentrations between Discharge Point Nos. 2AE and 2BE), a dilution ratio of 2.5:1 (D=1.5) is sufficient for the Dischargers to comply with the resulting copper limits because the 95th percentile of the effluent data (11 µg/L) is less than the AMEL of 12 µg/L and the 99th percentile of the effluent data (12 µg./L) is less than the MDEL of 20 µg/L (see section IV.C.4.b(1) of this Fact Sheet). Based on Figure 6 of the Mixing Zone Study, a dilution of 2.5:1 is achieved approximately 10 meters from shore. Therefore, this Order establishes a copper mixing zone extending about 10 meters from shore.

- **Nickel.** Based on a statistical analysis of nickel effluent data collected from June 2006 through August 2010 (and averaging concentrations between Discharge Point Nos. 2AE and 2BE), a dilution ratio of 1.5:1 (D=0.5) is sufficient for the Dischargers to comply with the resulting nickel limits because the 95th percentile of the effluent data (14 ug/L) is less than the AMEL of 20 ug/L, and the 99th percentile of the effluent data (17 ug/L) is less than the MDEL of 27 ug/L (see section IV.C.4.b(3) of this Fact Sheet). Based on Appendix A of the Mixing Zone Study, a dilution of 1.5:1 is achieved by Basins 3A and 3B. Therefore, this Order establishes a nickel mixing zone comprised of Basins 3A and 3B.

- **Ammonia.** Based on ammonia effluent data collected from June 2006 through August 2010 (and averaging concentrations between Discharge Point Nos. 2AE and 2BE), a dilution ratio of 36:1 (D=35) is sufficient for the Dischargers to comply with the resulting ammonia limits because the AMEL is slightly higher than the highest monthly average ammonia concentration discharged since May 2006 of 33 mg/L. This maximum average effluent concentration is used to evaluate compliance feasibility in lieu of statistical methods because effluent ammonia concentrations are not random. They vary seasonally, tending to be higher during cold-weather months and lower during warm-weather months. Based on Figure 6 of the Mixing Zone Study, a dilution of 36:1 is achieved approximately 80 meters from shore. Therefore, this Order establishes an ammonia mixing zone extending about 80 meters from shore.

b. Calculation of Pollutant-Specific WQBELs

WQBELs were developed based on the procedures specified in SIP section 1.4 for the pollutants determined to have Reasonable Potential.

(1) Copper

(a) Water Quality Objectives. The most stringent water quality objectives are the Basin Plan's site-specific chronic and acute marine water quality objectives, 6.9 µg/L and 11 µg/L, respectively, expressed as dissolved metal. These water quality objectives were converted to total recoverable metal using site-specific translators of 0.60 (chronic) and 0.94 (acute). This results in a chronic water quality criterion of 12 µg/L and an acute water quality criterion of 12 µg/L.

(b) RPA Results. This Order establishes effluent limitations for copper because the MEC (16 µg/L) exceeds the most stringent water quality objective for this pollutant (11 µg/L), demonstrating Reasonable Potential by Trigger 1.

(c) Calculated WQBELs. WQBELs calculated using a coefficient of variation (CV) of 0.55 and a dilution ratio of 2.5:1 (D = 1.5) are an AMEL of 13 µg/L and an MDEL of 25 µg/L.

(d) Anti-backsliding. The previous Order, as amended by Order No. R2-2010-0056, established an AMEL of 12 µg/L and an MDEL of 20 µg/L, and the Dischargers have been able to comply with these more stringent limits. This Order retains the more stringent limits to avoid backsliding.

(2) Cyanide

(a) Water Quality Objectives. The most stringent water quality objectives are the Basin Plan's site-specific chronic and acute marine water quality objectives, 2.9 µg/L and 9.4 µg/L, respectively.

(b) RPA Results. This Order establishes effluent limitations for cyanide because the MEC (5.2 µg/L) exceeds the most stringent water quality objective for this pollutant (2.9 µg/L), demonstrating Reasonable Potential by Trigger 1.

(c) Calculated WQBELs. WQBELs calculated using a CV of 0.60 and a dilution ratio of 3.25:1 (D = 2.25) are an AMEL of 7.7 µg/L and an MDEL of 15 µg/L.

(d) Anti-backsliding. The previous Order, as amended by Order No. R2-2010-0056, established an AMEL of 6.7 µg/L and an MDEL of 15 µg/L, and the Dischargers have been able to comply with these more stringent limits. This Order retains the more stringent limitations to avoid backsliding.

(3) Nickel

(a) Water Quality Objectives. The most stringent water quality objectives are the Basin Plan's chronic and acute saltwater water quality objectives for the protection of aquatic life, expressed as dissolved metal. These water quality objectives were converted to total recoverable metal using site-specific translators of 0.53 (chronic) and 0.88 (acute) and a hardness value of 400 mg/L as $CaCO_3$. This results in a chronic water quality criterion of 16 µg/L and an acute water quality criterion of 84 µg/L.

(b) RPA Results. This Order establishes effluent limitations for nickel because the MEC (21 µg/L) exceeds the most stringent water quality objective for this pollutant (16 µg/L), demonstrating Reasonable Potential by Trigger 1.

(c) Calculated WQBELs. WQBELs calculated using a CV of 0.21 and a dilution credit D = 0.5 are an AMEL of 20 µg/L and an MDEL of 27 µg/L.

(d) Anti-backsliding. This Order satisfies anti-backsliding requirements even though the new WQBELs are less stringent than those established in the previous Order (AMEL of 14 µg/L and an MDEL of 22 µg/L). Backsliding is allowed pursuant to CWA section 402(o)(2)(B)(i) because the mixing zone study provides new information about dilution within the receiving waters. This new information was unavailable when the previous Order was adopted. Also, backsliding is permissible under CWA sections 402(o)(1) and 303(d)(4) because this Order complies with antidegradation policies (see Fact Sheet section IV.E) and the receiving water is in attainment with nickel WQOs (the receiving water basins contain only water from San Francisco Bay, which based on RMP monitoring data are in attainment of the nickel water quality objectives, and treatment basin discharges, which contained nickel concentrations below water quality objectives in 17 or 18 samples collected from June 2006 to October 2010).

(4) Ammonia

(a) Water Quality Objectives. The Basin Plan contains water quality objectives for un-ionized ammonia of 0.025 mg/L as an annual median and 0.4 mg/L as a maximum south of the San Francisco Bay Bridge. These water quality objectives were translated from un-ionized ammonia concentrations to equivalent total ammonia concentrations (as nitrogen) for the purpose of establishing effluent limitations since (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 receiving water. To translate the Basin Plan un-ionized ammonia objective, pH,

salinity, and temperature data were used from 1994 through 2001 from the nearest RMP station to the outfall that had sufficient data, the San Bruno Shoal RMP Station (BB15). The following equations were used to determine the fraction of total ammonia that would exist in the toxic un-ionized form in the estuarine receiving water (USEPA, 1989, Ambient Water Quality Criteria for Ammonia (Saltwater)–1989, EPA Publication 440/5-88-004):

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

Where:

$$pK = 9.245 + 0.116(I) + 0.0324(298 - T) + \frac{0.0415(P)}{(T)}$$

$$I = \text{Molal ionic strength of saltwater} = \frac{19.9273(S)}{(1{,}000 - 1.005109[S])}$$

S = Salinity (parts per thousand)

T = Temperature in degrees Kelvin

P = Pressure (one atmosphere)

The 90th percentile and median un-ionized ammonia fractions from 1994 to 2001 were then used to express the acute and chronic un-ionized ammonia water quality objectives as total ammonia concentrations. This approach is consistent with USEPA guidance on translating dissolved metal water quality objectives to total recoverable metal water quality objectives (USEPA, 1996, *The Metals Translator: Guidance for Calculating a Total Recoverable Limit from a Dissolved Criterion,* EPA Publication 823-B-96-007). The equivalent total ammonia acute and chronic water quality objectives are 11 mg/L and 0.92 mg/L, respectively.

(b) RPA Results. This Order establishes effluent limitations for total ammonia because the MEC (42 mg/L) exceeds the translated water quality objective for this pollutant (0.92 mg/L), calculated in (a) above, demonstrating Reasonable Potential by Trigger 1.

(c) Ammonia WQBELs. Basin Plan section 4.5.5.2 indicates that WQBELs for toxic pollutants are to be calculated according to the SIP methodology. Basin Plan section 3.3.20 refers to ammonia as a toxic pollutant; therefore, it is consistent with the Basin Plan to use the SIP methodology to establish ammonia effluent limitations. WQBELs calculated according to SIP procedures with a CV of 0.89 and a dilution ratio of 36:1 (D=35) are an AMEL of 34 mg/L and an MDEL of 120 mg/L.

To calculate these total ammonia WQBELs, some statistical adjustments were made because the Basin Plan's chronic water quality objective for un-ionized ammonia is based on an annual median, while chronic criteria are usually based

on a 4-day average. The SIP also assumes a monthly sampling frequency of 4 days per month to calculate effluent limitations based on chronic criteria. To use the SIP methodology to calculate WQBELs for a Basin Plan water quality objective that is based on an annual median, an averaging period of 365 days and a monitoring frequency of 30 days per month (the maximum daily sampling frequency in a month since the averaging period for a chronic criterion is longer than 30 days) were used. These statistical adjustments are supported by USEPA's *Water Quality Criteria; Notice of Availability; 1999 Update of Ambient Water Quality Criteria for Ammonia*; published on December 22, 1999, in the Federal Register.

Following the SIP methodology as guidance, the maximum ambient background total ammonia concentration was used to calculate the WQBELs based on the acute criterion, and the median background total ammonia concentration was used to calculate WQBELs based on the chronic criterion. Because the Basin Plan's chronic un-ionized ammonia objective is an annual median, the median background concentration is more representative of ambient conditions than a daily maximum.

(d) Anti-backsliding. Anti-backsliding requirements are satisfied because the previous permit did not include ammonia WQBELs.

(5) Benzo(a)anthracene

(a) Water Quality Objective. The most stringent water quality objective is the CTR human health objective (organisms only) of 0.049 µg/L.

(b) RPA Results. This Order establishes effluent limitations for benzo(a)anthracene because the MEC (0.14 µg/L) exceeds the most stringent water quality objective for this pollutant (0.049 µg/L), demonstrating Reasonable Potential by Trigger 1.

(c) Calculated WQBELs. WQBELs calculated using a default CV of 0.60 and no dilution credit are an AMEL of 0.049 µg/L and an MDEL of 0.098 µg/L.

(d) Feasibility of Compliance. Because effluent data are insufficient to determine the distribution of the effluent data set or to calculate a mean and standard deviation, feasibility to comply with effluent limitations is determined by directly comparing the maximum same-day average sample results from effluent points 2AE and 2BE (0.070 µg/L) to the AMEL (0.049 µg/L) and MDEL (0.098 µg/L). The maximum results exceed the AMEL; however, this is based on one estimated (DNQ) detection at 2AE, and one non-detect collected at 2BE on August 18, 2009. All other benzo(a)anthracene results were non-detect. A DNQ does not indicate non-compliance (SIP section 2.4.5), and the ML for this pollutant is 5 ug/L, two orders of magnitude above the AMEL and highest monthly average, and one order of magnitude above the MEC. Thus, the Dischargers are expected to be able to comply with the benzo(a)anthrachene WQBELs.

(e) Anti-backsliding. Anti-backsliding requirements are satisfied because the previous Order did not have WQBELs for benzo(a)anthracene.

(6) Benzo(b)fluoranthene

(a) Water Quality Objective. The most stringent water quality objective is the CTR human health objective (organisms only) of 0.049 µg/L.

(b) RPA Results. This Order establishes effluent limitations for benzo(b)fluoranthene because the MEC (0.078 µg/L) exceeds the most stringent water quality objective for this pollutant (0.049 µg/L), demonstrating Reasonable Potential by Trigger 1.

(c) Calculated WQBELs. WQBELs calculated using a default CV of 0.60 and no dilution credit are an AMEL of 0.049 µg/L and an MDEL of 0.098 µg/L.

(d) Feasibility of Compliance. Because effluent data are insufficient to determine the distribution of the effluent data set or to calculate a mean and standard deviation, feasibility to comply with effluent limitations is determined by directly comparing the maximum same-day average sample results from effluent points 2AE and 2BE (0.039 µg/L) to the AMEL (0.049 µg/L) and MDEL (0.098 µg/L). Thus, the Dischargers are expected to be able to comply with the benzo(b)fluoranthene WQBELs.

(e) Anti-backsliding. Anti-backsliding requirements are satisfied because the previous Order did not have WQBELs for benzo(b)fluoranthene.

(7) Benzo(k)fluoranthene

(a) Water Quality Objective. The most stringent water quality objective is the CTR human health objective (organisms only) of 0.049 µg/L.

(b) RPA Results. This Order establishes effluent limitations for benzo(k)fluoranthene because the MEC (0.071 µg/L) exceeds the most stringent water quality objective for this pollutant (0.049 µg/L), demonstrating Reasonable Potential by Trigger 1.

(c) Calculated WQBELs. WQBELs calculated using a default CV of 0.60 and no dilution credit are an AMEL of 0.049 µg/L and an MDEL of 0.098 µg/L.

(d) Feasibility of Compliance. Because effluent data are insufficient to determine the distribution of the effluent data set or to calculate a mean and standard deviation, feasibility to comply with effluent limitations is determined by directly comparing the maximum same-day average sample results from effluent points 2AE and 2BE (0.036 µg/L) to the AMEL (0.049 µg/L) and MDEL (0.098 µg/L). Thus, the Dischargers are expected to be able to comply with the benzo(k)fluoranthene WQBELs.

(e) Anti-backsliding. Anti-backsliding requirements are satisfied because the previous Order did not have WQBELs for benzo(k)fluoranthene.

d. Effluent Limitation Calculations

The following table shows the WQBEL calculations for copper, nickel, cyanide, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, and ammonia. These WQBELs apply at Discharge Point Nos. 2AE and 2BE (average concentration between the two discharge points) because the effluent is discharged to the receiving water at these locations.

Table F-9. WQBEL Calculations

PRIORITY POLLUTANTS	Copper	Nickel	Cyanide	Total Ammonia (chronic)	Total Ammonia (acute)	Benzo (a)anth-racene	Benzo (b)fluor-anthene	Benzo (k)fluor-anthene
Units	**µg/L**	**µg/L**	**µg/L**	**mg/L N**	**mg/L N**	**µg/L**	**µg/L**	**µg/L**
Basis and Criteria type	Basin Plan Site Specific Objective	Basin Plan and CTR Saltwater Aquatic Life	Basin Plan Site Specific Objective	Basin Plan Aquatic Life	Basin Plan Aquatic Life	CTR Human Health	CTR Human Health	CTR Human Health
Criteria -Acute	-----	74	-----	-----	11	-----	-----	-----
Criteria -Chronic	-----	8.2	-----	0.92	-----	-----	-----	-----
Site Specific Objective Criteria -Acute	11	-----	9.4	-----	-----	-----	-----	-----
Site Specific Objective Criteria -Chronic	6.9	-----	2.9	-----	-----	-----	-----	-----
Water Effects ratio (WER)	1	1	1	1	1	1	1	1
Lowest Water Quality Objective	12	16	2.9	0.92	11	0.049	0.049	0.049
Site Specific Translator - MDEL	0.94	0.88	-----	-----	-----	-----	-----	-----
Site Specific Translator - AMEL	0.60	0.53	-----	-----	-----	-----	-----	-----
Dilution Factor (D) (if applicable)	1.5	0.5	2.25	35	35	0	0	0
No. of samples per month	4	4	4	30		4	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	Y	Y	N	N	N
HH criteria analysis required? (Y/N)	N	N	N	N	N	Y	Y	Y
Applicable Acute Water Quality Objective	12	84	9.4	-----	11			
Applicable Chronic Water Quality Objective	12	16	2.9	0.92	-----			
HH criteria	1,300	610	700	-----	-----	0.049	0.049	0.049
Background (Maximum Conc for Aquatic Life calc)	2.5	3.7	ND	0.095	0.19			
Background (Average Conc for Human Health calc)	1.8	2.2	ND	-----	-----	0.0053	0.0046	0.0018
Is the pollutant on the 303d list and/or bioaccumulative (Y/N)?	N	N	N	N	N	N	N	N
ECA acute	25	124	31	-----	403			
ECA chronic	25	21	9.4	30	-----			
ECA HH	-----	-----	-----	-----	-----	0.049	0.049	0.049

PRIORITY POLLUTANTS	Copper	Nickel	Cyanide	Total Ammonia (chronic)	Total Ammonia (acute)	Benzo (a)anth-racene	Benzo (b)fluor-anthene	Benzo (k)fluor-anthene
Units	**µg/L**	**µg/L**	**µg/L**	**mg/L N**	**mg/L N**	**µg/L**	**µg/L**	**µg/L**
No. of data points <10 or at least 80 percent of data reported non-detect? (Y/N)	N	N	Y	N	N	Y	Y	Y
Avg of effluent data points	6.4	11	1.7	13	13	0.022	0.021	0.017
Std Dev of effluent data points	4.0	2.4	0.85	11	11	0.032	0.012	0.013
CV calculated	0.62	0.21	N/A	0.89	0.89	N/A	N/A	N/A
CV (Selected) – Final	0.62	0.21	0.60	0.89	0.89	0.60	0.60	0.60
ECA acute mult99	0.31	0.63	0.32	-----	0.23			
ECA chronic mult99	0.52	0.78	0.53	0.90	-----			
LTA acute	7.8	77	9.8	-----	92			
LTA chronic	13	17	5.0	27	-----			
minimum of LTAs	7.8	17	5.0	27	92			
AMEL mult95	1.6	1.2	1.6	1.3	1.8	1.6	1.6	1.6
MDEL mult99	3.2	1.6	3.1	4.4	4.4	3.1	3.1	3.1
AMEL (aq life)	12	20	7.7	34	168			
MDEL(aq life)	25	27	16	118	403			
MDEL/AMEL Multiplier	2.0	1.3	2.0	3.4	2.40	2.0	2.0	2.0
AMEL (human hlth)	-----	-----	-----	-----	-----	0.049	0.049	0.049
MDEL (human hlth)	-----	-----	-----	-----	-----	0.098	0.098	0.098
minimum of AMEL for Aq. life vs HH	12	20	7.7	34	168	0.049	0.049	0.049
minimum of MDEL for Aq. Life vs HH	25	27	16	118	403	0.098	0.098	0.098
Current limit in permit (30-day average)	12	14	6.7	-----	-----	-----	-----	-----
Current limit in permit (daily)	20	22	15	-----	-----	-----	-----	-----
Final limit – AMEL	12	20	6.7	34	170	0.049	0.049	0.049
Final limit – MDEL	20	27	15	120	400	0.098	0.098	0.098

5. Fecal Coliform Bacteria

This Order retains the fecal coliform effluent limitations from the previous Order to protect non-contact recreation beneficial uses (REC-2). These effluent limitations (5-sample geometric mean <500 MPN/100ml; 11-sample 90th percentile <1,100 MPN/100ml) are more stringent then the fecal coliform water quality objectives for non-contact water recreation contained in Basin Plan Table 3-1 (30-day mean <2,000 MPN/100ml; 30-day 90th percentile <4,000 MPN/100ml). Although the previous permit did not specify that the 90th percentile limit is to be based on the most recent 11 samples, that is how the 90th percentile limit has been implemented for may years. This Order clarifies the 90th percentile limit.

The fecal coliform limits in this Order are based on California Department of Public Health (CDPH) recommendations. Basin Plan section 4.16, Water Recycling, encourages coordination between the State Water Board, Regional Water Boards, and CDPH in implementing water recycling, and states in section 4.16.2, Interagency Water Recycling Program and Coordination, "The Water Board seeks cooperation and participation of professionals from the water recycling industry and the water, health, and regulatory agencies to assure the development of criteria that are both attainable and appropriate." In 1990, CDPH (then the California Department of Health Services) recommended fecal coliform bacteria levels for Limited Water Contact Recreation (REC-2) of a geometric mean of 500 MPN/100 ml and a 90th percentile of 1,100 MPN/100 ml. A receiving water monitoring study the Dischargers conducted in 1994 and 1995 (*Justification for Fecal Coliform Effluent Limitation)* concluded that these fecal coliform limits would protect Hayward Marsh beneficial uses. A more recent bacteriological monitoring study, required by Provision VI.C.14 of the previous Order, reported bacteria levels in San Francisco Bay near the Hayward Marsh discharge. The Dischargers implemented the study during the summer of 2008, sampling the receiving waters five times between July 25 and August 22 for total coliform, fecal coliform, and enterococci. On November 25, 2008, the Dischargers submitted the results, which indicate that all receiving water monitoring data collected in San Francisco Bay near Hayward Marsh were within applicable Basin Plan objectives for REC-2 for indicator bacteria.

6. Whole Effluent Toxicity

The Basin Plan requires dischargers to either conduct flow-through effluent toxicity tests or perform static renewal bioassays (Chapter 4, section 4.5.5.3.1) to measure the toxicity of wastewaters and to assess negative impacts upon water quality and beneficial uses caused by the aggregate toxic effect of the discharge of pollutants. Since the Dischargers do not alter the reclaimed wastewater once it enters Hayward Marsh, and because Order No. R2-2006-0053 governing discharges from the EBDA deepwater outfall already requires that the toxicity of this effluent be tested, the Dischargers are already fulfilling the Basin Plan requirement. Therefore, consistent with the previous Order, this Order does not require additional whole effluent toxicity testing.

E. Anti-backsliding and Antidegradation

As stated in Fact Sheet section III.C.5, Antidegradation, there will be no lowering of receiving water quality beyond the current level authorized in the previous Order; therefore findings justifying degradation are unnecessary. Similarly, as discussed in Fact Sheet section III.C.6, all effluent limitations in this Order are consistent with anti-backsliding requirements. In most cases, this Order retains effluent limitations from the previous Order, imposes more stringent limitations, or imposes new limitations.

In a few instances (regarding mercury, 4,4'-DDD, heptachlor, and heptachlor epoxide), this Order removes effluent limitations that were in the previous Order. It does not retain the mercury effluent limitations because Hayward Marsh mercury discharges are now regulated through Order No. R2-2007-0077, which implements the San Francisco Bay Mercury and PCB TMDLs. As for the 4,4'-DDD, heptachlor, and heptachlor epoxide effluent limitations, because the RPA showed no Reasonable Potential for these pollutants to cause or contribute to exceedances of

water quality criteria, this Order does not retain the limitations. This is consistent with the anti-backsliding provisions of State Water Board Order WQ 2001-16. This is also consistent with antidegradation requirements of 40 CFR 131.12 because degradation is not expected since more recent representative data show that these pollutants are not present in the discharge.

This Order contains less stringent nickel effluent limitations than those in the previous Order. As explained below, these less stringent limits are consistent with antidegradation policies. State Water Board Administrative Procedures Update No. 90-004 sets forth how the Regional Water Board is to assess antidegradation when reissuing or revising an NPDES permit. It specifies that, if the Regional Water Board determines there is no reason to believe existing water quality will be reduced, then little analysis is necessary. 90-004 states a "simple analysis" may be performed if:

- the water quality reduction would be spatially localized or limited;
- the water quality reduction would be temporary and would not result in long-term deleterious effects;
- the proposed action would produce only minor effects, not significant water quality reduction; or
- the proposed action is covered in an environmental impact report (EIR) consistent with the California Environmental Quality Act (CEQA).

In this case, less stringent nickel limits will not lower water quality because there will be no change in the level of treatment provided. Less stringent nickel limits are proposed only because the discharge is for wastewater reclamation, and current daily discharge performance (MEC of 21 µg/L) is very close to the previous permit limit (MDEL of 22 µg/L) such that analytical variability may trigger violations without a real change in the level of treatment or treatment performance. Treatment performance is not expected to change because the passive treatment of the treatment ponds will remain unchanged. Likewise, Alvarado Wastewater Treatment Plant operations will be unchanged because these operations are driven primarily by requirements set forth in the EBDA NPDES permit. The Hayward Marsh discharge is only a relatively small diversion of secondary treated effluent from the EBDA discharge. USD does not provide any additional treatment at the Alvarado Wastewater Treatment Plant to meet the specific requirements of the Hayward Marsh discharge permit beyond the treatment necessary to comply with the EBDA permit. Because this Order does not affect the EBDA permit, treatment will not be reduced. Hence, receiving water quality will not be degraded, and a finding authorizing degradation is unnecessary. Even if there could be degradation from the less stringent nickel limits, the effects would be minor and limited just to the small area of the mixing zone. Because this discharge is for a wastewater reclamation project, and the project has demonstrated net environmental benefits, such minor degradation (if any) is in the maximum benefit of the people of the State.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

The receiving water limitations are based on the Basin Plan's numeric and narrative water quality objectives for surface waters and are a required part of this Order. The previous Order established receiving water limitations for Lower San Francisco Bay. This permit also establishes receiving water limitations for Hayward Marsh Receiving Water Basins 3A and 3B.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

The principal purposes of a monitoring program by a discharger are to:

- document compliance with waste discharge requirements and prohibitions established by the Regional Water Board;
- facilitate self-policing by dischargers 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 (Attachment E) 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 Regional Water Board policies. The MRP also defines the sampling stations and frequency, the pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are specified. Monitoring for additional constituents, for which no effluent limitations are established, is also required to provide data for future completion of RPAs.

A. Hayward Marsh Influent Monitoring Requirements

Hayward Marsh influent monitoring is necessary to evaluate long-term trends and performance of the marsh treatment system, and to determine compliance with effluent limitations for CBOD, TSS, pH, and fecal coliform. The MRP retains most marsh influent monitoring requirements from the previous Order. Changes in marsh influent monitoring at Monitoring Location E-1 (defined in the MRP) are summarized as follows:

- The MRP increases the fecal coliform monitoring frequency to twice weekly.
- The MRP eliminates annual monitoring for 4,4'-DDD, heptachlor, and heptachlor epoxide because the data no longer show Reasonable Potential for these pollutants.
- The MRP eliminates the requirement to monitor total phosphorus monthly for a year. Phosphorus was monitored for one year during the term of the previous permit to determine the treatment marshes' effectiveness at removing phosphorus, and to investigate the feasibility of controlling algae through vegetation management. The results of this study were reported in the

May 9, 2007, Hayward Marsh Management Plan, and no further phosphorus monitoring is needed.

- The MRP eliminates monitoring requirements for mercury; Order No. R2-2007-0077 contains mercury monitoring requirements.

B. Treatment Basins Monitoring Requirements

1. Treatment Basin 1 Discharge to Treatment Basins 2A and 2B

Monitoring of the Treatment Basin 1 discharge to Treatment Basins 2A and 2B at Monitoring Location E-1-D is necessary to evaluate long-term trends and performance of the marsh treatment system, and to determine compliance with the total residual chlorine effluent limitation. The MRP retains all monitoring requirements at Monitoring Location E-1-D from the previous Order.

2. Treatment Basins 2A and 2B

Monitoring Treatment Basins 2A and 2B at Monitoring Locations C-2A and C-2B is necessary to evaluate long-term trends and performance of the marsh treatment system. The MRP retains most of the monitoring requirements for Treatment Basins 2A and 2B at Monitoring Locations C-2A and C-2B from the previous Order. The MRP removes total phosphorus monitoring. The rationale is the same as that stated in Fact Sheet Section VI.A, above.

C. Effluent Monitoring Requirements

Effluent monitoring at Monitoring Locations C-2AE and C-2BE is necessary to evaluate long-term trends and performance of the marsh treatment system, and to determine compliance with WQBELs. The MRP retains most effluent monitoring requirements at Monitoring Locations C-2AE and C-2BE from the previous Order. The MRP eliminates total phosphorus monitoring; eliminates annual monitoring for 4,4'-DDD, heptachlor, and heptachlor epoxide; and eliminates mercury monitoring at these locations. The MRP adds monitoring for benzo(a)anthracene, benzo(b)fluoranthene, and benzo(k)fluoranthene, because this Order establishes new effluent limits for them. The rationales are the same as those stated in Fact Sheet Sections VI.A, above.

D. Receiving Water Basins Monitoring Requirements

Receiving water basins monitoring at Monitoring Locations C-3A and C-3B is necessary to evaluate receiving water quality. The MRP retains most Receiving Water Basins monitoring requirements at Monitoring Locations C-3A and C-3B from the previous Order. The MRP changes the total phosphorus monitoring at these locations to be the same as the marsh influent monitoring requirements. The rationale is the same as that stated in Fact Sheet Section VI.A, above.

E. Hayward Marsh Discharge to Lower San Francisco Bay Monitoring Requirements

1. Discharge from Northwest Channel

The MRP retains most monitoring requirements for discharges from the northwest channel at Monitoring Location E-2 from the previous Order. The MRP eliminates total phosphorus

monitoring at this location. The rationale is the same as that stated in Fact Sheet Section VI.A, above.

2. Discharge from Earthen Discharge Channel to Lower San Francisco Bay

Monitoring at the outfall from the earthen discharge channel to Lower San Francisco Bay at Monitoring Location E-3 is necessary to evaluate long-term trends and performance of the marsh treatment system. The MRP retains most outfall monitoring requirements at Monitoring Location E-3 from the previous Order. The MRP eliminates total phosphorus monitoring at this location. The rationale is the same as that stated in Fact Sheet Section VI.A, above.

F. Lower San Francisco Bay Receiving Water Monitoring Requirements

1. San Francisco Bay Monitoring Locations.

This Order continues to require monitoring of dissolved oxygen, sulfides (if dissolved oxygen is less than 5 mg/L), and pH in Lower San Francisco Bay at Monitoring Locations C-R-B and CR. This Order retains all Lower San Francisco Bay water monitoring requirements from the previous Order.

2. Regional Monitoring Program

The Dischargers shall continue to collect or participate in collecting background ambient receiving water data with other Dischargers or through the Regional Monitoring Program (RMP) (see section VII.C.2.b of this Fact Sheet).

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions (Provision VI.A)

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

B. MRP Requirements (Provision VI.B)

The Dischargers are required to monitor the permitted discharges to evaluate compliance with permit conditions. Monitoring requirements are contained in the MRP (Attachment E), Standard Provisions (Attachment D), and Regional Standard Provisions (Attachment G). This provision requires compliance with these documents and is authorized by 40 CFR 122.41(h) and (j) and CWC sections 13267 and 13383.

C. Special Provisions (Provision VI.C)

1. Reopener Provisions

These provisions are based on 40 CFR 122.63 and allow modification of this Order and its effluent limitations as necessary in response to updated water quality objectives, regulations, or other new relevant information that may be established in the future and other circumstances allowed by law.

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 Dischargers 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 Dischargers are required to investigate the source of the increases and establish remedial measures if the increases result in Reasonable Potential to cause or contribute to an excursion above the applicable water quality objectives. This requirement may be satisfied through identification of the constituent as a "pollutant of concern" in the Dischargers' Pollutant Minimization Program, described in Provision VI.C.3 of the Order. This provision is based on SIP sections 2.3 (Monitoring Requirements) and 2.4 (Reporting Requirements).

b. **Ambient Background Receiving Water Study.** This provision is based on Basin Plan section 4.6.3 (Background Concentrations), SIP section 1.4.3 (Ambient Background Concentrations), and the Regional Standard Provisions (Attachment G). As indicated in this Order, this requirement may be met by participating in a collaborative study. This provision is necessary to provide data for future RPAs.

3. Best Management Practices and Pollution Minimization Program

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

4. Marsh Operation

This requirement is retained from the previous Order and is based on the need to operate the marsh in a manner that protects wildlife habitat beneficial uses.

5. Marsh Management Plan

This Order requires the Dischargers to implement, review, and update their Marsh Management Plan, and to notify the Regional Water Board of any modifications to this plan. This requirement is retained from the previous Order. The Marsh Management Plan requires the Dischargers to document how they will minimize the effects of un-ionized ammonia in Basins 3A and 3B, and ensure that dissolved oxygen levels are not adversely affecting aquatic life. This information is necessary because un-ionized ammonia has the potential to adversely affect aquatic life, and dissolved oxygen may exhibit significant diurnal swings. While the Dischargers only collect grab samples for dissolved oxygen, some of these samples

exhibit supersaturation, which could be caused by excessive algal growth, which could lead to a quick decline in dissolved oxygen levels in the early morning hours. Avoiding low-oxygen conditions is important to protect aquatic life beneficial uses.

6. Marsh Contingency Plan

This Order requires the Dischargers to implement, review, and update their Marsh Contingency Plan; continue to implement a program to prevent public contact recreation within the marsh; and implement a receiving water monitoring plan/program to assess impacts on near-shore biota. This provision is based on Basin Plan section 4.16.1, Water Recycling and Reuse Program, which allows the Regional Water Board to set requirements for operation, monitoring, and reporting for water recycling projects to ensure requirements of Title 22 CCR Division 4 Chapter 3 (Water Recycling Criteria) are met. It is unchanged from the previous Order.

7. Primary Responsibility of Operation

This provision is intended to specify the roles of the permittees for various aspects of marsh operation.

8. Copper Action Plan

This provision is based on Basin Plan Section 7.2.1.2. It is necessary to ensure that use of copper site-specific objectives is consistent with antidegradation policies.

9. Cyanide Action Plan

This provision is based on Basin Plan Section 4.7.2.2. It is necessary to ensure that use of cyanide site-specific objectives is consistent with antidegradation policies.

10. Mixing Zone Study

This provision is based on SIP section 1.4.2.2. It is necessary to address comments received during the public comment period, and confirm and refine the conclusions of existing mixing zone studies (i.e., *2010 Amendment of Cyanide and Copper Salt Water Quality-Based Effluent Limits, Strategies for Compliance* [RMC, Inc., February 8, 2010] and *Estimation of Dilution for Hayward Marsh Discharge to San Francisco Bay* [LimnoTech, August 17, 2011]).

11. Ammonia and Nickel Pre-treatment and Source Control

This provision is based on Basin Plan Section 4.6.1.2. It is necessary to ensure that the Dischargers undertake aggressive pretreatment and source control programs, particularly for copper, nickel, and ammonia, because this Order grants mixing zones and dilution credits for these pollutants.

VIII. PUBLIC PARTICIPATION

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

A. Notification of Interested Parties

The Regional Water Board notified the Dischargers and interested agencies and persons of its intent to prescribe WDRs for the discharge and provided them with an opportunity to submit written comments and recommendations. Notification was provided through the Daily Review on July 11, 2011.

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 attention of **John Madigan** at the Regional Water Board at the address on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Water Board, written comments must be received at the Regional Water Board offices by **5:00 pm** on **August 8, 2011**.

C. Public Hearing

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

Date: **September 14, 2011**
Time: **9:00 a.m.**
Location: Elihu Harris State Office Building
1515 Clay Street, 1st Floor Auditorium
Oakland, CA 94612

Contact: **John H. Madigan, 510-622-2405**, email **jmadigan@waterboards.ca.gov**

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

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

D. Waste Discharge Requirements Petitions

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

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

E. Information and Copying

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

F. Register of Interested Persons

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

G. Additional Information

Requests for additional information or questions regarding this Order may be directed to **John Madigan** at **510-622-2405** (e-mail at **jmadigan@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 Dischargers 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 Dischargers may combine the Contingency Plan and Spill Prevention Plan into one document. Discharge in violation of the

permit where the Dischargers have 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 Dischargers 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 Dischargers.

D. Proper Operation & Maintenance

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

1. Operation and Maintenance (O&M) Manual

The Dischargers 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 the Regional Water Board.

2. Wastewater Facilities Status Report

The Dischargers shall regularly review, revise, or update, as necessary, its Wastewater Facilities Status Report. This report shall document how the Dischargers operate 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 Dischargers' service responsibilities.

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

Publicly Owned Treatment Works 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 Dischargers submit 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 Dischargers 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 Dischargers 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 Dischargers 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 Dischargers 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 Dischargers 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 Dischargers shall collect and retain samples of the discharge. In the event a bioassay test does not comply with permit limits, the Dischargers shall analyze these retained samples for pollutants that could be toxic to aquatic life and for which it has effluent limitations.

(a) The Dischargers shall perform bioassay tests on final effluent samples; when chlorine is used for disinfection, bioassay tests shall be performed on effluent after chlorination-dechlorination; and

(b) The Dischargers 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 Dischargers 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 Dischargers 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 Dischargers shall initiate a new test as soon as practical, and the Dischargers shall investigate the cause of the mortalities and report its findings in the next self-monitoring report (SMR).

(4) The Dischargers 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 Dischargers shall collect grab samples at least every 30 minutes until compliance with the limit is achieved, unless the Dischargers monitors chlorine residual continuously. In such cases, the Dischargers 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 Dischargers shall monitor flows and collect samples on a daily basis for all constituents at affected discharge points that have effluent limitations 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 Dischargers 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 Dischargers shall analyze for total suspended solids (TSS) using 24-hour composites (or more frequent increments) and for bacteria indicators with effluent limitations using grab samples. If TSS exceeds 45 mg/L in any composite sample, the Dischargers shall also analyze the retained samples for that discharge for all other constituents that have effluent limitations, except oil and grease, mercury, dioxin-TEQ, and acute and chronic toxicity. Additionally, at least once each year, the Dischargers shall analyze the retained samples for one approved bypass discharge event for all other constituents that have effluent limitations, 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 Dischargers 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 Dischargers 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 Dischargers 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 Dischargers 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 Dischargers shall maintain records in a manner and at a location (e.g., wastewater treatment plant or Dischargers offices) such that the records are accessible to the Regional Water Board. 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 Dischargers 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 Dischargers 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 limitations 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 Dischargers 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 Dischargers' 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 Dischargers 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 limitations, the number of samples taken during the monitoring period, and the number of samples that exceed applicable effluent limitations.

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 Dischargers 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 Dischargers shall compute the median in place of the arithmetic mean in accordance with the following procedure:

(a) The data set shall be ranked from low to high, reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

(b). The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an

even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

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

(3) Dioxin-TEQ Reporting: The Dischargers 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 Dischargers shall report all measured values of individual congeners, including data qualifiers. When calculating dioxin-TEQ, the Dischargers shall set congener concentrations below the minimum levels (ML) to zero. The Dischargers 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

Dioxin or Furan Congener	Minimum Level (pg/L)	1998 Toxicity Equivalency Factor (TEF)	Bioaccumulation Equivalency Factor (BEF)
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 Dischargers 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 Dischargers 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 Dischargers 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 Dischargers 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 Dischargers' wastewater collection, treatment, or disposal practices.);

(3) Both tabular and graphical summaries of the monitoring data for the previous year if parameters are monitored at a frequency of monthly or greater;

(4) List of approved analyses, including the following:

(a) List of analyses for which the Dischargers are certified;

(b) List of analyses performed for the Dischargers by a separate certified laboratory (copies of reports signed by the laboratory director of that laboratory shall not be submitted but be retained onsite); and

(c) List of "waived" analyses, as approved;

(5) Plan view drawing or map showing the Dischargers' 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 Dischargers do not route all storm water to the headworks of its wastewater treatment plant); and

(7) Results of facility report reviews (The Dischargers 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 Dischargers 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 Dischargers shall complete changes to these documents to ensure they are up-to-date.).

g. Report submittal

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

(1) Reporting Method: The Dischargers 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 Dischargers 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 Dischargers). 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 Dischargers shall report by telephone to the Regional Water Board at (510) 622-2369.

b. The Dischargers 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 Dischargers shall submit a written report to the Regional Water Board within five working days following telephone notification unless directed otherwise by the Regional Water Board. A report submitted electronically is acceptable. The written report shall include the following:

(1) Date and time of spill, and duration if known;

(2) Location of spill (street address or description of location);

(3) Nature of material spilled;

(4) Quantity of material involved;

(5) Receiving water body affected, if any;

(6) Cause of spill;

(7) Estimated size of affected area;

(8) Observed impacts to receiving waters (e.g., oil sheen, fish kill, water discoloration);

(9) Corrective actions taken to contain, minimize, or clean up the spill;

(10) Future corrective actions planned to be taken to prevent recurrence, and schedule of implementation; and

(11) Persons or agencies notified.

2. Unauthorized Discharges from Municipal Wastewater Treatment 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 Dischargers 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 Dischargers 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.

b. 24-hour Certification

Within 24 hours, the Dischargers 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 Dischargers 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;

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[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) 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

Dischargers are 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

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[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.

Not supplemented

H. Other Noncompliance

Not supplemented

I. Other Information

Not supplemented

VI. STANDARD PROVISIONS – ENFORCEMENT

Not Supplemented

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

Not Supplemented

VIII. DEFINITIONS

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

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

1. Arithmetic Calculations

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

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

   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 "Qi" and "Ci" are the flow rate (MGD) and the constituent concentration (mg/L) associated with each of the "N" grab samples that may be taken in any calendar day. If a composite sample is taken, "Ci" is the concentration measured in the composite sample and "Qi" is the average flow rate

occurring during the period over which the samples are composited. The daily concentration of a constituent measured over any calendar day shall be determined from the flow-weighted average of the same constituent in the combined waste streams as follows:

C_d = 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. Publicly Owned Treatment Works removal efficiency is the ratio of pollutants removed by the treatment facilities to pollutants entering the treatment facilities (expressed as a percentage). The Dischargers 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 Dischargers 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 Dischargers shall collect depth-integrated samples in such a manner that the collected sample will be representative of the waste or water body at that sampling point.

7. Flow sample is an accurate measurement of the average daily flow volume using a properly calibrated and maintained flow measuring device.

8. Grab sample is an individual sample collected in a short period of time not exceeding 15 minutes. Grab samples represent only the condition that exists at the time the wastewater is collected.

9. Initial dilution is the process that results in the rapid and irreversible turbulent mixing of wastewater with receiving water around the point of discharge.

10. Overflow is the intentional or unintentional spilling or forcing out of untreated or partially treated wastes from a transport system (e.g., through manholes, at pump stations, and at collection points) upstream from the treatment plant headworks or from any part of a treatment plant facility.

11. Priority pollutants are those constituents referred to in 40 CFR Part 122 as promulgated in the Federal Register, Vol. 65, No. 97, Thursday, May 18, 2000, also known as the California Toxics Rule, the presence or discharge of which could reasonably be expected to interfere with maintaining designated uses.

12. Storm water means storm water runoff, snow melt runoff, and surface runoff and drainage. It excludes infiltration and runoff from agricultural land.

13. Toxic pollutant means any pollutant listed as toxic under federal Clean Water Act section 307(a)(1) or under 40 CFR 401.15.

14. Untreated waste is raw wastewater.

15. Waste, waste discharge, discharge of waste, and discharge are used interchangeably in the permit. The requirements of the permit apply to the entire volume of water, and the material therein, that is disposed of to surface and ground waters of the State of California.

Table C

List of Monitoring Parameters and Analytical Methods

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

CTR No.	Pollutant/Parameter	Analytical Method[1]	Minimum Levels[2] (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
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									
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										

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

Footnotes to Table C:

1 The suggested method is the USEPA Method unless otherwise specified (SM = Standard Methods). The Dischargers 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 Dischargers have the discretion to use any standard method.

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

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

4 The Dischargers 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).

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

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

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