Linda S. Adams
Acting Secretary for
Environmental Protection

California Regional Water Quality Control Board

San Francisco Bay Region

1515 Clay Street, Suite 1400, Oakland CA 94612
(510) 622-2300 • Fax (510) 622-2460
http://www.waterboards.ca.gov/sanfranciscobay

Edmund G. Brown, Jr.
Governor

ORDER NO. R2-2011-XXXX
NPDES NO. CA0030201

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

Table 1. Discharger Information

Discharger	California Department of Fish and Game U.S. Army Corps of Engineers
Name of Facility	Napa River Salt Marsh Restoration Project, Ponds 7, 7A and 8
Facility Address	South of Buchli Station Road, Unincorporated Napa County, CA
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 Napa River Salt Pond Restoration Project Ponds 7, 7A, and 8 at the discharge point identified below are subject to waste discharge requirements as set forth in this Order.

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Diluted bittern	38º 11’ 36” N	122º 19’ 48” W	Napa Slough

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	
This Order shall become effective on:	January 1, 2012
This Order shall expire on:	December 31, 2016
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	180 days prior to the Order expiration date

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

_____

Bruce H. Wolfe**,** Executive Officer

Table of Contents

Tables

Attachments

I. FACILITY INFORMATION

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

Table 4. Facility Information

Discharger	California Department of Fish and Game U.S. Army Corps of Engineers
Name of Facility	Napa River Salt Pond Restoration Project, Ponds 7, 7A and 8
Facility Address	South of Buchli Station Road, Unincorporated Napa County, CA
Facility Contact, Title, and Phone	Larry Wyckoff, Habitat Conservation Supervisor, (707) 944-5542
Mailing Address	7329 Silverado Trail, Napa, CA 94558
Type of Facility	Wetlands Habitat Restoration
Facility Design Flow	NA
Proposed Design Flow	Approximately 0.12 million gallons per day (mgd, based on original bittern concentration) – may increase if conditions in Provision VI.C.4 are satisfied
Proposed Average Daily Flow	12.3 mgd (including ambient water)
Proposed Peak Daily Flow	23.3 mgd (including ambient water)
Proposed Discharge Start Date	October 1, 2012
Service Area	NA
Service Population	NA

II. FINDINGS

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

A. Background. The California Department of Fish and Game (Fish and Game) and U.S. Army Corps of Engineers (Army Corps) (hereinafter collectively the Discharger) submitted a Report of Waste Discharge dated October 15, 2010, and applied for an NPDES permit to discharge wastewater from the Napa River Salt Pond Restoration Project, Ponds 7, 7A, and 8, to waters of the State and the United States.

Restoring Ponds 7, 7A, and 8 is part of a larger 9,460-acre Napa-Sonoma Marsh Restoration Project/Napa River Salt Marsh Restoration Project (hereinafter Restoration Project), which is the second-largest habitat restoration project in the San Francisco Bay Area. Restoring Ponds 7, 7A, and 8 is integral to the Restoration Project and will provide for better management of Ponds 7, 7A, and 8 to support populations of fish and wildlife, including endangered species, migratory waterfowl, and shorebirds.

Historically, the Restoration Project areas were predominantly tidal marsh in the floodplain of the Napa River. Around the turn of the century, embankments were constructed around the islands to facilitate agriculture. Commercial salt production by solar and wind evaporation began in the early 1950s and continued into the early 1990s. Water from San Pablo Bay was conveyed successively through the numbered ponds (Ponds 1, 1A, 2, 2A, 3, 4, 5, 6, 6A, 7, 7A, and 8) increasing the salt concentration in each pond. After reaching Pond 8, the saline concentrate was pumped to the east side of the Napa River to be further processed.

The Discharger is in the process of restoring these former salt evaporator (concentrator) ponds to a mosaic of habitats, including tidal habitats and managed ponds, with the potential installation of a recycled water pipeline to support restoration effort. Ponds 1, 1A, 2, 2A, 3, 4, and 5 were restored in 2006. The next phase of work will consist of restoring the remaining five ponds: Ponds 6, 6A, 7, 7A, and 8. The Regional Water Board issued Order No. R2-2004-0063 (amended by Order No. R2-2007-0045) that allows for restoration of Ponds 6 and 6A. For Ponds 7, 7A, and 8, an integral step in their restoration involves the discharge of diluted bittern from Pond 7 currently scheduled to begin in 2012 after the Discharger secures necessary funding. This Order regulates and permits this discharge. The Regional Water Board also plans to issue a separate order in the near future to regulate restoration management of Pond 7, 7A, and 8.

The Army Corps will restore Ponds 7, 7A, and 8. It will construct and start up the proposed system as described below, will conduct monitoring, and may implement adaptive management actions, if needed. The California State Coastal Conservancy (Coastal Conservancy) and Fish and Game are cost-sharing partners and supporting agencies. Fish and Game owns the land.

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

B. Facility Description and Discharge Description and Location

1. **Facility Description.** The facility includes Ponds 7, 7A, and 8; several water control structures; a mixing chamber; a 0.75-mile-long Pond 7 discharge canal; and a Pond 8 canal. Attachment B provides a map of the area around the Facility. Attachment C provides a map of the facility.

    a. **Ponds 7, 7A, and 8.** As shown in Attachment B, Ponds 7, 7A, and 8 are located north of Napa Slough, and are referred to as the Upper Ponds. Pond 7 is 302 acres, Pond 7A is 290 acres, and Pond 8 is 102 acres, for a total area of approximately 695 acres. Pond 7 contains bittern, a by-product of the former salt production process. Bittern is composed of a variety of mineral salts derived from seawater. The salinity in Pond 7 is very high and approaches 300 parts per thousand (ppt) when the pond is full, based on measurements made in April 2002. Pond 7 is currently isolated to protect adjacent ponds and waterways from potential bittern contamination. Pond 7A has a relatively low salinity, ranging between 30 and 90 parts per thousand (ppt). Pond 8 has been desalted and is currently at ambient salinity. Water quality in Pond 8 already approximates ambient conditions in the sloughs and is not expected to change as a result of the discharge. Ponds 7A and 8 are currently maintained for wildlife habitat; however, lack of a direct water source for Pond 7A makes it difficult to optimize water levels in the pond, and relatively low embankments around Pond 8 limit the Discharger's ability to optimize water levels in Pond 8.

    b. **Mixing Chamber.** The release of bittern into the receiving waters of Napa Slough requires that the bittern in Pond 7 be significantly diluted to avoid potential harmful effects to wildlife. The most practical way to accomplish effective dilution is to mix bittern with Napa Slough water from Pond 7A and Mud Slough water from Pond 8 (water from the Napa River system is considered "ambient water"). The objective of the mixing chamber (modified Pond 7/7A "donut") and associated structures is to facilitate mixing of

ambient water with bittern at a predetermined ratio, and discharge the diluted bittern to the Pond 7 canal, which discharges to Napa Slough. Over time, this process will reduce the bittern concentration in Pond 7. The mixing chamber design includes an air bubbler and baffle system to ensure that discharge to Napa Slough is fully mixed, with no stratification of bittern.

c. **Water Control Structures.** The facility includes water control structures to move water from adjacent sloughs through the ponds and then return it to the sloughs (there are three existing water control structures and there will be seven new ones). Water flows from Napa Slough through Pond 7A, and then to the mixing chamber, where it dilutes the bittern from Pond 7. In addition, water from Pond 7A is used as make-up water for Pond 7 to keep Pond 7 wet year-round, so bittern removal can proceed as expeditiously as possible. Water from Pond 8 also flows into the mixing chamber and dilutes the bittern from Pond 7. The water control structures consist of high density polyethylene pipe with various types of stainless steel gates. Culverts will be constructed under pond embankments and will be fitted with closure gates (slide, flat, or combination gates).

d. **Automatic Flow Control System.** The project design includes an automated electronic control system to monitor and control the relative flows from Ponds 7, 7A, and 8 (via the Pond 8 canal).

2. **Discharge Description.** The discharge will be diluted bittern from the mixing chamber and is designated Discharge 001 for the purposes of this Order. Because the majority of the sodium chloride has been removed from the bittern, its ion balance is different than the ion balance in sea water, and concentrated bittern can have toxic effects to aquatic organisms. Bittern from Pond 7 will be diluted in the mixing chamber at a ratio of 1:99 (bittern:ambient or 1% bittern) with ambient water from Napa and Mud Sloughs via Ponds 7A and 8.. Toxicity tests in 1993 showed that bittern toxicity was eliminated when the bittern was diluted to this level. Toxicity tests in 2002 showed less dilution was necessary to eliminate toxicity. However, as a factor of safety for receiving waters, the discharge will be managed at the 1:99 dilution ratio. The Pond 7, 7A, and 8 hydraulics system will be designed to allow up to 13,700 acre-feet per year (afy) (or 4500 million gallons) of tidal water from Ponds 7A and 8 into the mixing chamber. Approximately 71% of the ambient water will come from Pond 7A and 29% from Pond 8. The bittern to ambient water dilution ratio of 1:99 will be mass-based. The mass-based ratio will allow discharge of the same quantity of bittern salts present in 1% of the original strength bittern while the actual concentration of bittern in Pond 7 decreases over time as ambient Pond 7A water is introduced to maintain Pond 7 water levels (i.e., a higher volume will be released as the bittern concentration in Pond 7 decreases). This approach will decrease the time required to remove bittern from Pond 7 from an estimated 35-50 years to 8-10 years. Under the 1:99 dilution ratio, the allowable bittern discharge rate at initiation of discharge will be 1% of the total flow from Ponds 7A, and 8. Using a model, the Discharger calculated the flow volume to be removed from Pond 7 will start at 140 acre-feet per year (afy) in Year 1 and increase to 900 afy in Year 7. In Year 8, Pond 7 is projected to be flushed with ambient water to reach ambient salinity.

Release of bittern to the mixing chamber will be controlled using flow sensors and actuators on closure gates. The inflow of bittern will be adjusted as a function of inflow from Ponds 7A and 8 by opening or closing closure gates on the mixing chamber inlets. The system will offer

the flexibility to adjust the bittern-to-ambient water ratio as needed. Inflow of ambient water to the mixing chamber will be driven by the tides and will generally be highest at high tide. Outflows or discharge from the mixing chamber will be slightly delayed and generally highest shortly after high tide. The discharge from the mixing chamber will be year-round. Average daily discharge will range from 34.5 acre-feet per day (ac-ft/day) or 11.2 million gallons per day (mgd) in the summer (May to July) to 42.1 ac-ft/day or 13.7 mgd in the winter (November to January). The maximum daily discharge flow is projected to be as high as 23.3 mgd in the winter. Because the discharge will only contain 1% of the original bittern concentration from Pond 7, the rest will be ambient water, the bittern flow will be only approximately 0.12 mgd; therefore, this discharge is considered as a minor discharge.

3. **Discharge Location.** Diluted bittern will be discharged via a 0.75-mile discharge canal to Napa Slough at latitude 38º 11' 36" and longitude 122º 19' 48" as shown in Attachment C.

C. 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 California Water Code (CWC) (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to CWC article 4, chapter 4, division 7 (commencing with section 13260).

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

E. California Environmental Quality Act (CEQA). Under Water Code 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 40 CFR 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. Further discussion of the technology-based effluent limitation development is included in the Fact Sheet (Attachment F).

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

such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).

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

The Basin Plan does not specifically identify present and potential beneficial uses for Napa Slough, but does identify beneficial uses for Napa River, to which Napa Slough is a tributary. The Basin Plan states that the beneficial uses of any specifically identified water body generally apply to all its tributaries. The Basin Plan beneficial uses for the Napa River, and hence the Napa Slough, are listed in the table below.

Table 5. Beneficial Uses

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

State Water Board Resolution No. 88-63 establishes State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Because of the marine influence on the Napa Slough in the discharge vicinity, Napa Slough qualifies for an exception to State Water Board Resolution No. 88-63. The MUN designation therefore does not apply.

The Regional Water Board adopted Resolution No. 2010-0100 on July 14, 2010, amending Basin Plan Table 2-1. This Basin Plan amendment adds nearly 275 surface water bodies to Table 2-1 and designates beneficial uses for the newly added and some existing water bodies. The Basin Plan amendment lists the tidal portion of the Napa River as a water body distinct from the rest of the Napa River and designates its beneficial uses. They include all those listed above, except AGR, COLD, and WARM. The State Water Board and USEPA have yet to consider this Basin Plan amendment.

I. National Toxics Rule (NTR) and California Toxics Rule (CTR). USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995, and November 9, 1999. About 40 criteria in the NTR apply in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted

NTR criteria that applied in the State. The CTR was amended on February 13, 2001. These rules contain WQC for priority pollutants.

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

K. 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 water quality-based effluent limitations (WQBELs) for individual pollutants. WQBELs have been derived to implement WQOs that protect beneficial uses. Both the beneficial uses and the WQOs have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR 131.38. The procedures for calculating individual WQBELs for priority pollutants are based on the SIP, which was approved by USEPA on May 18, 2000. All beneficial uses and WQOs contained in the Basin Plan were approved under State law and submitted to USEPA prior to May 30, 2000. Any WQOs and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for the purposes of the CWA" pursuant to 40 CFR 131.21(c)(1).

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 in 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 quality of waters be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies.

N. Anti-Backsliding Requirements. CWA sections 402(o)(2) and 303(d)(4) and 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous Order, with some exceptions where limitations may be relaxed. Because this is a new permit for a new discharge, the limits in this Order do not backslide from the limits in any previous Order.

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

P. 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.

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

R. Provisions and Requirements Implementing State Law. No requirements in this Order implement State Law only.

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

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

IT IS HEREBY ORDERED, that in order to meet the provisions contained in CWC Division 7 (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITION

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

B. Discharge of bittern at original 2002 concentration with less than 1:99 dilution with Ponds 7A and 8 water is prohibited. Compliance with this prohibition shall be demonstrated as described in Provision VI.C.5 of this Order.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

In this section, the term "effluent" refers to the diluted bittern from the Discharger's facility, as discharged to the Napa Slough.

A. Effluent Limitations for Toxic Substances – Discharge Point 001

1. Water Quality-Based Effluent Limitations for Toxic Substances

The Discharger shall comply with the following effluent limitations at Discharge Point 001 with compliance determined at Monitoring Location EFF-001, as described in the attached MRP (Attachment E).

Table 6. Toxic Pollutant Effluent Limitations – Discharge Point 001

Constituent	Units	Effluent Limitations[1]	
		Average Monthly (AMEL)	Maximum Daily (MDEL)
Arsenic	µg/L	30	59
Nickel [2]	µg/L	6.8	14

Unit Abbreviations for Table 6:
µg/L = micrograms per liter

Footnotes to Table 7:

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

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

[2] See IV.A.2, Intake Water Credits for nickel below.

2. Intake Water Credits

An effluent sample nickel concentration measured at Monitoring Location EFF-001 as defined in the MRP shall only be subject to the nickel limitations in section IV.A.1, Table 6, if it also exceeds 38 µg/L. Concentrations above 38 µg/L are statistically greater than ambient concentrations in Mud Slough and Napa Slough and thus do not qualify for intake water credits.

B. Whole Effluent Toxicity

1. Whole Effluent Acute Toxicity

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

(1) An three (3) – sample median value of not less than 90 percent survival; and

(2) A single sample maximum value of not less than 70 percent survival.

b. The 3-sample acute toxicity limitation is further defined as follows:

3-sample median. A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit, if one or more of the past three or less bioassay tests show less than 90 percent survival.

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

2. Whole Effluent Chronic Toxicity

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

V. RECEIVING WATER LIMITATIONS

Receiving water limitations are based on WQOs contained in the Basin Plan and are a required part of this Order. The discharges shall not cause the following in the receiving water:

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

   a. Floating, suspended, or deposited macroscopic particulate matter or foams;

   b. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;

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

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

   e. Toxic or other deleterious substances to be present in concentrations or quantities that cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or that render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.

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

a. Dissolved Oxygen	5.0 mg/L, minimum. Furthermore, the median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.
b. Dissolved Sulfide	Natural background levels
c. pH	The pH shall not be depressed below 6.5 or raised above 8.5. The discharge shall not cause changes greater than 0.5 pH units in normal ambient pH levels.
d. Nutrients	Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
e. Un-ionized ammonia	Annual Median 0.025 mg/L as N Maximum, 0.16 mg/L as N

3. The discharge shall not cause a violation of any particular water quality standard for receiving waters adopted by the Regional Water Board or the State Water Board as required by the CWA and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to CWA section 303, or amendments thereto, the Regional Water Board may revise and modify this Order in accordance with such more stringent standards.

VI. PROVISIONS

A. Standard Provisions

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

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

B. MRP Requirements

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

C. Special Provisions

1. Reopener Provisions

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

a. If present or future investigations demonstrate that the discharges governed by this Order have or will have a reasonable potential to cause or contribute to, or will cease to have, adverse impacts on water quality or beneficial uses of the receiving waters.

b. If new or revised WQOs or total maximum daily loads (TMDLs) come into effect for the San Francisco Bay Estuary and contiguous water bodies (whether statewide, regional, or site-specific). In such cases, effluent limitations in this Order will be modified as necessary to reflect updated WQOs and waste load allocations in TMDLs. Adoption of effluent limitations contained in this Order is not intended to restrict in any way future modifications based on legally adopted WQOs or TMDLs, or as otherwise permitted under federal regulations governing NPDES permit modifications.

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

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

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

f. Or as otherwise authorized by law.

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

2. Notification of Initiation of Discharge

The Discharger shall provide notice to the Regional Water Board at least 60 days prior to initiating the discharge. Discharge is currently planned to begin in October 2012.

3. Effluent Data Evaluation

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

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

increase. The Discharger shall provide a summary of the annual evaluation in the annual self-monitoring report due February 1 each year.

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

4. Operation and Maintenance Specifications

The Discharger shall comply with the following tasks and submit an annual status report with the annual self-monitoring report due February 1 that documents compliance with these tasks.

a. Management of Water Control Structures
The Discharger shall inspect the water control structures monthly or more frequently, adjust them as necessary, and schedule necessary repairs when needs are identified. The Discharger shall adjust the water control structures to maintain sufficient water volumes for the mixing chamber and necessary dilution.

b. Embankment Maintenance.
The Discharger shall maintain the Pond 7, 7A, and 8 embankments at the design elevation, including the gravel levee-top pathways. The Discharger shall protect all embankment from erosion and washout, and ensure a minimum of 1-foot free board in Ponds 7 and 7A.

c. Bittern Discharge Ratio Control
The Discharger shall provide an automated electronic control system to monitor and control the relative flows from Ponds 7, 7A, and 8 (via the Pond 8 canal). The Discharger shall regularly ensure that the flow control system is in proper working order. The Discharger shall also respond to any alarms from the system.

5. Bittern Discharge Dilution Ratio Compliance Assurance

The Discharger shall provide in the annual self-monitoring report due February 1 a report demonstrating compliance with Prohibition I.B. (no less than 1:99 bittern to ambient dilution) of this Order. This demonstration shall include, at a minimum, calculations showing that the bittern strength in the discharge is no greater than 1% by mass relative to the bittern strength in Pond 7 as characterized by 300 ppt. This demonstration may be based, at least in part, on updated monitoring data and flow and salinity modeling. The Discharger shall use actual measured values in the calculations when such values are available. This calculated compliance demonstration is intended to allow the Discharger to accelerate restoration of Pond 7 by increasing the portion of flow from Pond 7 relative to flows into the mixing chamber from Ponds 7A and 8. This is in place of fixed flow limits based on 1:99, which would not allow for this flexibility. The required 1:99 bittern to ambient ratio can be maintained even with higher flows from Pond 7 because the bittern salts in Pond 7 will decrease overtime from Pond 7A ambient water added to maintain levels in Pond 7.

VII.COMPLIANCE DETERMINATION

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

ATTACHMENT A – DEFINITIONS

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

Arithmetic mean = $\mu = \Sigma x / n$ where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

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

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

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

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

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

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

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

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

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

Dilution Credit

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

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

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

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

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

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

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

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

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

of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

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

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

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

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

Not Detected (ND)
Sample results less than the laboratory's MDL.

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

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

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

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

Reporting Level (RL)
RL is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

Sanitary Sewer Overflow
Any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system. Sanitary sewer overflows include: (1) overflows or releases of untreated or partially treated wastewater that reach waters of the United States; (2) overflows or releases of untreated or partially treated wastewater that do not reach waters of the Unites States; and (3) wastewater backups into buildings and on private property that are caused by blockages or flow conditions within the publically owned portion of a sanitary sewer system.

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

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

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

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

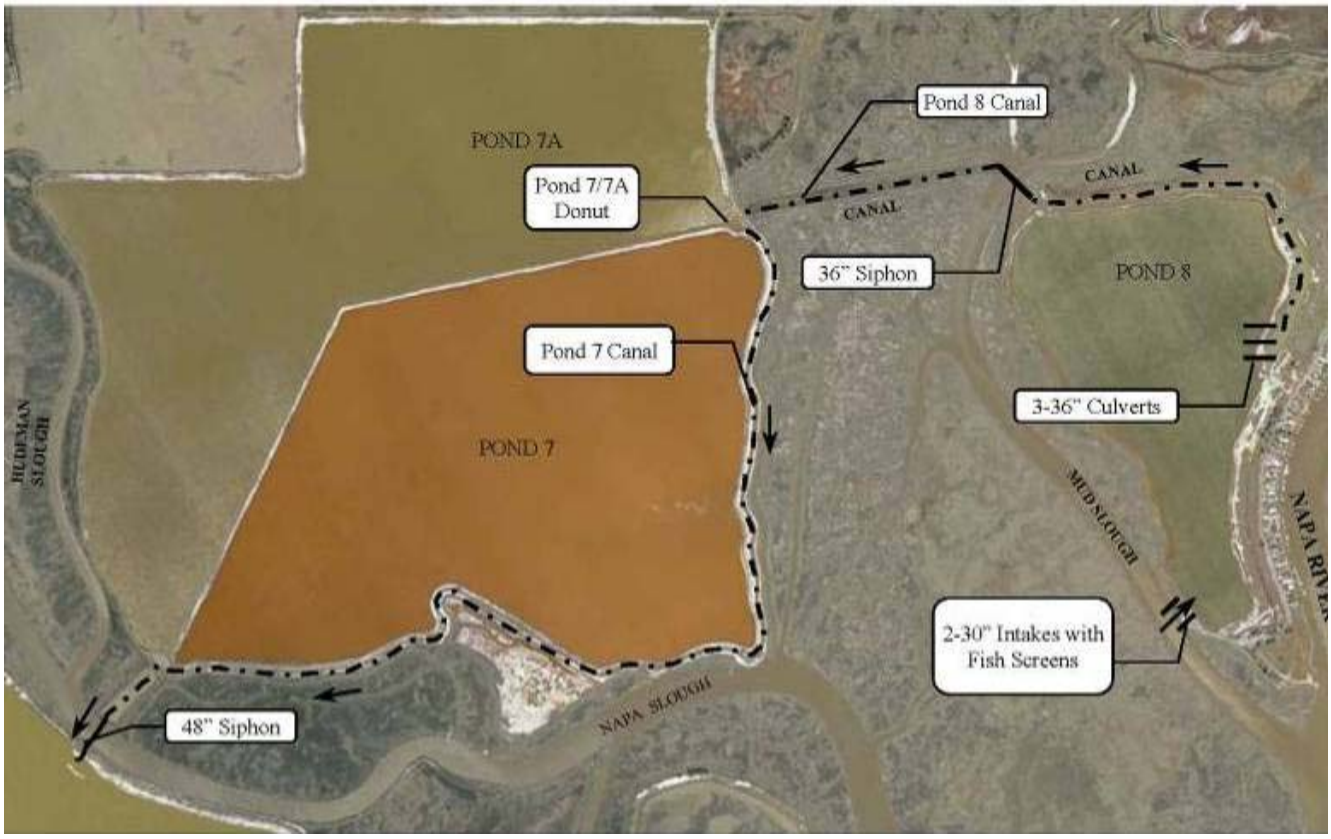
where:
x is the observed value;
μ is the arithmetic mean of the observed values; and
n is the number of samples.

Toxicity Reduction Evaluation (TRE)

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

ATTACHMENT B – LOCATION MAP

ATTACHMENT C – FACILITY MAP



ATTACHMENT D –STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 CFR 122.41(a)).

2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 CFR 122.41(a)(1)).

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

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

2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 CFR 122.5(c).)

F. Inspection and Entry

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

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (40 CFR 122.41(i)(1));

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (40 CFR 122.41(i)(2));

3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (40 CFR 122.41(i)(3)); and

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (40 CFR 122.41(i)(4).)

G. Bypass

1. Definitions

   a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 CFR 122.41(m)(1)(i).)

   b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 CFR 122.41(m)(1)(ii).)

2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 CFR 122.41(m)(2).)

3. Prohibition of bypass. Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless (40 CFR 122.41(m)(4)(i)):

   a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 CFR 122.41(m)(4)(i)(A));

   b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment

should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 CFR 122.41(m)(4)(i)(B)); and

c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 CFR 122.41(m)(4)(i)(C).)

4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 CFR 122.41(m)(4)(ii).)

5. Notice

a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 CFR 122.41(m)(3)(i).)

b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 CFR 122.41(m)(3)(ii).)

H. Upset

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

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 CFR 122.41(n)(2).).

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 CFR 122.41(n)(3)):

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

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

c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 CFR 122.41(n)(3)(iii)); and

d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 CFR 122.41(n)(3)(iv).)

3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 CFR 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

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

III. STANDARD PROVISIONS – MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 CFR 122.41(j)(1).)

B. Monitoring results must be conducted according to test procedures under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503 unless other test procedures have been specified in this Order. (40 CFR 122.41(j)(4); 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

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

B. Records of monitoring information shall include:

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

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

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

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

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

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

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

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

2. Permit applications and attachments, permits and effluent data. (40 CFR 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

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

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 CFR 122.41(k).)

2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA). (40 CFR 122.22(a)(3).).

3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 CFR 122.22(b)(1));

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of 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 Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 CFR 122.41(l)(4)(ii).)

4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 CFR 122.41(l)(4)(iii).)

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 CFR 122.41(l)(6)(i).)

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

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

   b. Any upset that exceeds any effluent limitation in this Order. (40 CFR 122.41(l)(6)(ii)(B).)

3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 CFR 122.41(l)(6)(iii).)

F. Planned Changes

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

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 CFR 122.41(l)(1)(i)); or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 CFR 122.41(l)(1)(ii).)

3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 CFR 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

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

H. Other Noncompliance

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

I. Other Information

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

VI. STANDARD PROVISIONS – ENFORCEMENT

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

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Regional Water Board of the following (40 CFR 122.42(b)):

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to sections 301 or 306 of the CWA if it were directly discharging those pollutants (40 CFR 122.42(b)(1)); and

2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of this Order. (40 CFR 122.42(b)(2).)

3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 CFR 122.42(b)(3).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Table of Contents

Tables

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

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

I. GENERAL MONITORING PROVISIONS

A. The Discharger shall comply with this MRP. The Executive Officer may amend this MRP pursuant to 40 CFR 122.62, 122.63, and 124.5. If any discrepancies exist between the MRP and Regional Standard Provisions (Attachment G), the MRP prevails.

B. The Discharger shall conduct all monitoring in accordance with Attachment D, section III, as supplemented by Attachment G of this Order. Equivalent test methods must be more sensitive than those specified in 40 CFR 136, must be specified in the permit.

II. MONITORING LOCATIONS

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

Table E-1. Monitoring Station Locations

Type of Sampling Location	Monitoring Location Name	Monitoring Location Description
Inflow or Influent	INF-07A	In Pond 7A, at a location no greater than 5 meters from the outlet to the mixing chamber.
Inflow or Influent	INF-008	In Pond 8 or in the Pond 8 canal, at a location no greater than 5 meters from the outlet to the mixing chamber.
Inflow or Influent	INF-007	In Pond 7, at a location no greater than 5 meters from the outlet to the mixing chamber.
Effluent	EFF-001	At the end of the Pond 7 discharge canal before discharge to the Napa Slough.
Receiving Water	RSW-001	In Napa Slough, at the discharge outfall.
Receiving Water (Intake)	RSW-002	In the Napa Slough, at a location no greater than 5 meters from the Pond 7A water intake structure.
Receiving Water (Intake)	RSW-003	In the Mud Slough, at a location no greater than 5 meters from the Pond 8 water intake structure.

III. INFLUENT MONITORING REQUIREMENTS

The Discharger shall monitor influent/inflow at Monitoring Locations INF-07A, INF-007, and INF-008 while discharging to Napa Slough, as shown in the table below.

Table E-2. Influent Monitoring – INF-07A, INF-007, and INF-008

Parameter	Units	Sample Type	Minimum Sampling Frequency
All Influent Stations			
Flow[1]	mgd/MG	Continuous	Continuous/D
Salinity	ppt	Grab	1/month

Legend for Table E-2
Unit Abbreviations:
MG = million gallons
mgd = million gallons per day
ppt = parts per thousand

Sample Type:
Continuous/D = measured continuously, and recorded and reported daily

Sampling Frequency:
1/month = once per month

Footnotes for Table E-2

[1] Flow shall be monitored continuously, and the following information shall be reported in self-monitoring reports for each month:
- Daily average flow (mgd)
- Total daily flow volume (MG)
- Monthly average flow (mgd)
- Total monthly flow volume (MG)

IV. EFFLUENT MONITORING REQUIREMENTS

A. Effluent Monitoring –EFF-001

The Discharger shall monitor the discharge to the Napa Slough at EFF-001 as shown in the table below.

Table E-3. Effluent Monitoring – EFF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow [1]	mgd/MG	Continuous	Continuous/D
pH[2]	s.u.	Continuous/ Grab	1/month
Temperature	°C	Grab	1/month
Salinity	ppt	Grab	1/month
Dissolved Oxygen (D.O.)	mg/L	Grab	1/month
	% Saturation	Grab	1/month
Sulfides (if D.O. < 2.0 mg/L)	mg/L	Grab	1/month
Acute Toxicity[3]	% Survival	Grab	1/quarter
Chronic Toxicity[4]	TUc	Grab	2/year
Arsenic	µg/L	Grab	1/month
Nickel	µg/L	Grab	1/month
Other CTR metals: Cadmium, Chromium, Copper, Lead,	µg/L	Grab	1/year

Parameter	Units	Sample Type	Minimum Sampling Frequency
Mercury, Selenium, Silver, Zinc			
Remaining priority pollutants (except dioxin-TEQ) including total and un-ionized ammonia[5]	[5]	[5]	1/5 year (see Section VII.B, below)
Standard Observations[6]	---	---	1/month

Legend to Table E-3:

Unit Abbreviations:

mgd = million gallons per day
MG = million gallons
s.u. = standard units
mg/L = milligrams per liter
°C = degrees Celsius
µg/L = micrograms per liter
% percent
ml/L-hr = milligrams per liter per hour

Sample Type:

C-24 = 24-hour composite
Continuous/H = measured continuously, and recorded and reported hourly

Sampling Frequency:

Continuous/D = measured continuously, and recorded and reported daily
1/Month = once per month
1/quarter = once per quarter
2/year = twice per year
1/Year = once per year
1/5 year = once every five years

Footnotes to Table E-3:

[1] Flow Monitoring. Flow shall be monitored continuously, and the following information shall be reported in self-monitoring reports for each month:
- Daily average flow (mgd)
- Total daily flow volume (mg)
- Monthly average flow (mgd)
- Total monthly flow volume (mg)

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

[3] Acute toxicity. Acute bioassay tests shall be performed in accordance with section V.A of this MRP. Upon the Discharger's request, the Executive Officer may reduce the sampling frequency to twice per year if two years of monitoring show no acute toxicity.

[4] Chronic toxicity. Critical life stage toxicity tests shall be performed and reported in accordance with the Chronic Toxicity Requirements of specified in section V.B of this MRP.

[5] Other CTR metals and remaining priority pollutants. The sample type and analytical method should be as described in the Regional Standard Provisions (Attachment G) or as amended and subsequently approved by the Executive Officer.

[6] Standard observations. Standard Observations are specified in the Regional Standard Provisions (Attachment G).

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

The Discharger shall monitor whole effluent toxicity at Monitoring Location EFF-001, as follows.

A. Whole Effluent Acute Toxicity

1. Compliance with the acute toxicity effluent limitations of this Order shall be evaluated by measuring survival of test organisms exposed to 96-hour static bioassays at Monitoring

Location EFF-001. The Discharger shall collect one grab sample and renew it with this sample during the testing period.

2. Test organisms shall be mysid shrimp (*Americamysis bahia*) and inland silverside (*Menidia beryllina*) tested concurrently. After 12 months, the Discharger may put a request to the Executive Officer to use the more sensitive species of the two, or ether of them if neither shows toxicity.

3. All bioassays shall be performed according to the most up-to-date protocols in 40 CFR 136, currently in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms,* 5th Edition.

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

5. Monitoring of the bioassay water shall include, on a daily basis, the following parameters: pH, dissolved oxygen, ammonia (if toxicity is observed), temperature, hardness, and alkalinity. These results shall be reported. If a violation of acute toxicity requirements occurs, the bioassay test shall be repeated with new fish as soon as practical and shall be repeated until a test fish survival rate of 90 percent or greater is observed. If the control fish survival rate is less than 90 percent, the bioassay test shall be restarted with new fish and shall continue as soon as practical until an acceptable test is completed (i.e., control fish survival rate is 90 percent or greater).

B. Whole Effluent Chronic Toxicity

1. Chronic Toxicity Monitoring Requirements

a. Sampling. The Discharger shall collect one grab sample of the effluent at monitoring location EFF-001 for critical life stage toxicity testing as indicated below, and use this one sample for renewals during the testing period.

b. Test Species. The test organism shall be mysid shrimp (*Americamysis bahia*). The Executive Officer may change to another test species if data suggest that another test species is more sensitive to the discharge. The Discharger is not required to do a screening test prior to submitting its application for permit reissuance.

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

(1) Routine Monitoring: twice per year, once in the dry season, once in the wet season.

(2) Accelerated Monitoring: Monthly

The Discharger shall accelerate monitoring to monthly after exceeding a three-sample median of 1 TUc[1] or a single sample maximum of 2 TUc. The Executive Officer may specify a different frequency for accelerated monitoring based on the TUc results.

(3) Return to Routine Monitoring if accelerated monitoring does not exceed either "trigger" in (2), above.

(4) If accelerated monitoring confirms consistent toxicity in excess of either "trigger" in (2), above, continue with accelerated monitoring, and initiate toxicity reduction evaluation (TRE) procedures in accordance with subsection B.3, below.

(5) Return to routine monitoring after appropriate elements of the TRE are implemented and either the toxicity drops below both "trigger" levels in (2), above, or based on the results of the TRE, the Executive Officer authorizes a return to routine monitoring.

Monitoring conducted pursuant to a TIE/TRE effort shall satisfy the requirements for routine and accelerated monitoring while the TIE/TRE investigation is underway.

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

e. Dilution Series. The Discharger shall conduct tests with a control and five effluent concentrations (including 100% effluent) and using the following dilution series: 100%, 50%, 25%, 12.5%, 6.25%, 0%. Test sample pH in each dilution in the series may be controlled to the level of the effluent sample as received prior to being salted up.

2. Chronic Toxicity Reporting Requirements

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

(1) Sample dates

(2) Test initiation date

(3) Test species

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

(5) NOEC values in percent effluent

[1] A TUc equals 100 divided by the no observable effect level (NOEL). The NOEL is determined from IC_{25}, EC_{25}, or NOEC values. These terms, their usage, and other chronic toxicity monitoring program requirements are defined in more detail in the MRP (Attachment E).

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

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

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

(9) NOEC and LOEC values for reference toxicant tests

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

(11) Available water quality measurements for each test (pH, dissolved oxygen, temperature, conductivity, hardness, salinity, ammonia)

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

3. Chronic Toxicity Reduction Evaluation (TRE)

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

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

c. **Initiation of TRE.** Within 30 days of the date of completion of two accelerated monitoring tests that verify exceedance of either "trigger," the Discharger shall initiate a TRE in accordance with the TRE work plan submitted under 3.b., above, that incorporates any and all comments from the Executive Officer. (The two accelerated tests plus the most recent routine test shall be used for comparison with the 3-sample trigger.)

d. **Tiered Evaluation Process.** The TRE shall be specific to the discharge and be in accordance with current technical guidance and reference materials, including USEPA guidance materials. The TRE shall be conducted as a tiered evaluation process, such as summarized below:

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

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

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

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

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

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

e. **Ending the TRE.** The TRE may be ended at any stage if monitoring finds there is no longer consistent toxicity (i.e., there is compliance with requirements of section IV.B.2 of the Order).

f. **Objectives of TIE.** The objective of the TIE shall be to identify the substance or combination of substances causing the observed toxicity. All reasonable efforts using currently available TIE methodologies shall be employed.

g. **Reduction of Toxicity.** As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the source(s) and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with chronic toxicity evaluation parameters.

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

VI. RECEIVING WATER MONITORING REQUIREMENTS

The Discharger shall monitor ambient receiving water conditions in Napa Slough and Mud Slough at Monitoring Locations RSW-001, RSW-002, and RSW-003 as specified in the table below.

Table E-4. Receiving Water Monitoring – RSW-001, RSW-07A, RSW-008

Parameter	Units	Sample Type	Minimum Sampling Frequency
RSW-001, RSW-002, and RSW-003			
pH	s.u.	Grab	1/Month
Temperature	°C	Grab	1/Month
Salinity	ppt	Grab	1/month
Hardness	mg/L as $CaCO_3$	Grab	1/Month
Dissolved Oxygen (D.O.)	mg/L	Grab	1/Month
	% Saturation	Grab	1/Month
Sulfides (when D.O. < 2.0 mg/L)	mg/L	Grab	1/Month
Standard Observations[1]	--	--	1/Month
RSW-001 Only			
Remaining priority pollutants including total	[2]	Grab	1/5 year

Parameter	Units	Sample Type	Minimum Sampling Frequency
and un-ionized ammonia			
RSW-002 and RSW-003 Only			
Arsenic, total	µg/L	Grab	2/year
Nickel, total	µg/L	Grab	2/year

Legend to Table E-4:

Unit Abbreviations:

NTU = nephelometric turbidity units
s.u. = standard units
°C = degrees Celsius
mg/L = milligrams per liter
% = percent
ppt = parts per thousand
µg/L = micrograms per liter

Sampling Frequency:

1/month = once per month
2/year = twice per year
1/5 years = once every five years

Footnotes to Table E-4:

[1] Standard observations. Standard Observations are specified in the Regional Standard Provisions (Attachment G).

[2] Remaining priority pollutants. The sample type and analytical method should be as described in the Regional Standard Provisions (Attachment G) or as amended and subsequently approved by the Executive Officer.

VII. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

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

B. Self Monitoring Reports (SMRs)

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

2. **SMR Due Dates and Contents.** The Discharger shall submit SMRs by the due dates specifed below:

   a. **Monthly SMR —** 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.

   b. **Annual SMR** — Annual SMRs shall be due February 1 of 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.3 (Effluent Data Evaluation), VI.C.4 (Operation and Maintenance Specifications), and VI.C.5 (Bittern Discharge Dilution Ratio Compliance Assurance) of the Order for requirements to submit reports with the annual SMR that demonstrate compliance with those provisions.

3. **Monitoring Periods.** Monitoring periods for all required monitoring shall be completed according to the following schedule when discharges to Napa Slough occur:

Table E-5. Monitoring Periods

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period
Continuous	Permit effective date	All
1/month	Permit effective date	First day of calendar month through last day of calendar month
1/quarter	Permit effective date	Once during January-March, once during April - June,, once during July - September, once during October - December.
2/year	Permit effective date	Once during the wet season (typically November 1 – April 30) and once during the dry season (typically May 1 through October 31)
1/year	Permit effective date	Alternate between one year in the dry season (typically May 1 – October 31), the next year in the wet season (typically November 1 – April 30)
1/5 years	Permit effective date	Once during the permit term within 12 months prior to application for permit reissuance.

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

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

   b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

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

   c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

d. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve.

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

C. Discharge Monitoring Reports (DMRs)

1. As described in section X.B.1 above, at any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of DMRs. Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.

2. Once notified by the State or Regional Water Board, the Discharger shall submit hard copy DMRs. DMRs must be signed and certified as required by the Standard Provisions (Attachment D). The Discharger shall submit the original DMR and one copy of the DMR to one of the addresses listed below:

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

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

APPENDIX E-1
CHRONIC TOXICITY
DEFINITION OF TERMS AND SCREENING PHASE REQUIREMENTS

I. Definition of Terms

A. No observed effect level (NOEL) for compliance determination is equal to IC_{25} or EC_{25}. If the IC_{25} or EC_{25} cannot be statistically determined, the NOEL shall be equal to the NOEC derived using hypothesis testing.

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

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

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

II. Chronic Toxicity Screening Phase Requirements

A. The Discharger shall perform screening phase monitoring:

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

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

B. Design of the screening phase shall, at a minimum, consist of the following elements:

1. Use of test species specified in Appendix E-2, attached, and use of the protocols referenced in those tables, or as approved by the Executive Officer.

2. Two stages:

a. Stage 1 shall consist of a minimum of one battery of tests conducted concurrently. Selection of the type of test species and minimum number of tests shall be based on Appendix E-2 (attached).
b. Stage 2 shall consist of a minimum of two test batteries conducted at a monthly frequency using the three most sensitive species based on the Stage 1 test results and as approved by the Executive Officer.

3. Appropriate controls.

4. Concurrent reference toxicant tests.

5. Dilution series of 100%, 50%, 25%, 12.5%, 6.25%, and 0 %, where "%" is percent effluent as discharged, or as otherwise approved the Executive Officer.

C. The Discharger shall submit a screening phase proposal acceptable to the Executive Officer. The proposal shall address each of the elements listed above. If within 30 days, the Executive Officer does not comment, the Discharger shall commence with screening phase monitoring.

APPENDIX E-2
SUMMARY OF TOXICITY TEST SPECIES REQUIREMENTS

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

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

Toxicity Test References:

1. American Society for Testing Materials (ASTM). 1990. Standard Guide for Conducting Static 96-Hour Toxicity Tests with Microalgae. Procedure E 1218-90. ASTM, Philadelphia, PA.

2. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine and Estuarine Organisms. EPA/600/R-95/136. August 1995.

3. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to Marine and Estuarine Organisms. EPA/600/4-90/003. July 1994.

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

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

Toxicity Test Reference:

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

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

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

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

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

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

[2] The freshwater species may be substituted with marine species if:

(a) The salinity of the effluent is above 1 ppt greater than 95 percent of the time, or

(b) The ionic strength (TDS or conductivity) of the effluent at the test concentration used to determine compliance is documented to be toxic to the test species.

ATTACHMENT F - FACT SHEET

Table of Contents

List of Tables

ATTACHMENT F – FACT SHEET

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

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

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Napa Salt Marsh Restoration Project, Ponds 7, 7A and 8.

Table F-1. Facility Information

CIWQS Place ID	654284
Discharger	California Department of Fish and Game U.S. Army Corps of Engineers
Name of Facility	Napa River Salt Marsh Restoration Project, Ponds 7, 7A and 8
Facility Address	South of Buchli Station Road
	Unincorporated Napa County
Facility Contact, Title, Phone	Larry Wyckoff, Habitat Conservation Supervisor, (707) 944-5542 Allison Bremner, United States Army Corps of Engineers, CESPN-ET-PA, 1455 Market Street, 16th Floor, San Francisco, CA 94102
Authorized Person to Sign and Submit Reports	Larry Wyckoff
Mailing Address	7329 Silverado Trail, Napa, CA 94558
Billing Address	Karen Rippey, United States Army Corps of Engineers, CESPN-ET-PA, 1455 Market Street, 16th Floor, San Francisco, CA 94102
Type of Facility	Salt Marsh Habitat Restoration Site
Major or Minor Facility	Minor
Threat to Water Quality	3
Complexity	C
Pretreatment Program	No
Reclamation Requirements	No
Proposed Design Flow	Approximately 0.12 mgd (based on bittern at its original strength) – may increase if conditions in Provision VI.C.4 are satisfied
Proposed Average Daily Flow	12.3 mgd (including ambient water)
Proposed Peak Daily Flow	23.3 mgd (including ambient water)
Proposed Discharge Start Date	10/1/2012
Watershed	Napa River/San Pablo Bay Watershed
Receiving Water	Napa Slough
Receiving Water Type	Estuarine
Service Area	NA
Service Area Population	NA

A. The California Department of Fish and Game (Fish and Game) and U.S. Army Corps of Engineers (Army Corps) (hereinafter collectively the Discharger) submitted a Report of Waste Discharge, dated October 15, 2010, and applied for an NPDES permit to discharge wastewater from the Napa River Salt Pond Restoration Project, Ponds 7, 7A and 8, to waters of the State and the United States. Ponds 7, 7A and 8 are located 0.5 mile south of a parking lot at the end of Buchli Station Road in unincorporated Napa County. The Fish and Game is the owner and operator of Ponds 7, 7A and 8. The Army Corps will construct and start up the proposed system as described under "Restoration Project and Facility Description," below, to restore these ponds to wetland habitat, and the Army Corps will conduct monitoring and may implement adaptive management actions, if needed.

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

B. This Order regulates the discharge of diluted bittern from a mixing chamber that mixes bittern from Pond 7 and ambient water taken from Napa Slough (via Pond 7A) and Mud Slough (via Pond 8) to the Napa Slough, a water of the State and the United States.

II. RESTORATION PROJECT AND FACILITY DESCRIPTION

A. Restoration Project Description

The discharge addressed by this Order is part of the Napa-Sonoma Marsh Restoration Project/Napa River Salt Marsh Restoration Project (Restoration Project), which is the second-largest habitat restoration project in the San Francisco Bay Area. The Restoration Project is located on the western side of the Napa River, north of San Pablo Bay, in the counties of Napa, Sonoma, and Solano. It consists of 12 former salt evaporator ponds and comprises approximately 9,460 acres Fish and Game purchased from Cargill Corporation in 1994.

The Restoration Project is in the process of restoring former salt evaporator (concentrator) ponds to a mosaic of habitats, including tidal habitats and managed ponds. Historically, the Restoration Project areas were predominantly tidal marsh in the floodplain of the Napa River. An 1856 United States Coastal Survey topographic map depicts a landscape dominated by tidal marsh with complex drainage networks. Around the turn of the century, embankments were constructed around the islands to facilitate agriculture. Commercial salt production by solar and wind evaporation began in the early 1950s and continued into the early 1990s. Water from San Pablo Bay was conveyed successively through the numbered ponds (Pond 1 and 1A, Pond 2, Pond 2A, Pond 3, etc.), increasing the salt concentration in each pond. After reaching Pond 8, the saline concentrate was pumped to the east side of the Napa River to be further processed.

The Restoration Project consists of habitat restoration at 12 ponds (Ponds 1, 1A, 2, 2A, 3, 4, 5, 6, 6A, 7, 7A, and 8) and the potential installation of a recycled water pipeline to support the restoration effort. Restoration construction has been completed at Ponds 1 – 5. The next phase of work will consist of restoring the remaining five ponds: Ponds 6, 6A, 7, 7A, and 8. The Regional Water Board issued Waste Discharger Requirements (WDRs) Order No. R2-2004-0063 (amended by R2-2005-0075) for the restoration of Ponds 6 and 6A. Ponds 7, 7A, and 8 will be restored to managed ponds to provide improved habitat for migratory waterfowl and shorebirds. In the near-term (approximately the first 10 years), they will also be managed for desalination of

the bittern in Pond 7. The Regional Water Board plans to issue waste discharger requirements (WDRs) to regulate the management of Ponds 7, 7A, and 8.

Ponds 7, 7A, and 8 are located within the northern portion of the Restoration Project area. Pond 7 was formerly used as a bittern pond, a repository of concentrated soluble salts other than sodium chloride. Because the majority of the sodium chloride has been removed from the bittern, its ion balance is different than the ion balance in sea water, and concentrated bittern can have toxic effects to aquatic organisms. The Restoration Project will provide for better management of Ponds 7, 7A, and 8 to support populations of fish and wildlife, including endangered species, migratory waterfowl, and shorebirds. Other important benefits of the project include improved water quality, removal of bittern, the potential use of recycled water, and enhanced public open space and wildlife-compatible recreation opportunities. The long-term goal is to produce a managed pond habitat that can adjust to naturally occurring changes in physical processes with minimum ongoing intervention.

The Restoration Project is one of multiple other habitat restorations projects in the area, including the Napa Plant Site Project, American Canyon Wetlands Restoration Project, White Slough Wetlands Restoration Project, Cullinan Ranch Project, and more.

B. Site Modifications

The Discharger intends to take the following actions as important elements of the project to remove bittern from Pond 7, improve habitat for wildlife and improve its ability to manage water levels in Ponds 7, 7A, and 8:

1. Install seven water control structures to facilitate the water management among the ponds and between the ponds and the adjacent sloughs. Fish screens are proposed for installation at the Pond 7A intake to prevent fish from potentially entering hypersaline areas.

2. Modify the Pond 7/7A "donut" to create a Mixing Chamber, where bittern from Pond 7 will be mixed with ambient water from Ponds 7A and 8 to dilute it to safe levels for discharge to the Napa Slough.

3. Improve internal and perimeter earthen embankments to facilitate water control and pond habitat management, allow for better public access, and maintain their integrity in the long-term.

C. Facility and Wastewater Discharge Description

1. Facility Description. The facility includes Ponds 7, 7A, and 8; several water control structures; a mixing chamber; a 0.75-mile long Pond 7 discharge canal; and a Pond 8 canal.

a. Ponds 7, 7A, and 8. As shown in Attachment B, Ponds 7, 7A, and 8 are located north of Napa Slough, and are referred to as the Upper Ponds. Pond 7 is 302 acres, Pond 7A is 290 acres, and Pond 8 is 102 acres, for a total area of approximately 695 acres. Pond 7 contains bittern, a by-product of the former salt production process. Bittern is composed of a variety of mineral salts derived from seawater. The salinity in Pond 7 is very high and approaches 300 parts per thousands (ppt) when the pond is full, based on

measurements made in April 2002. Pond 7 is currently isolated to protect adjacent ponds and waterways from potential bittern contamination. Pond 7A has a relatively low salinity, ranging between 30 and 90 parts per thousand (ppt). Pond 8 has been desalted and is currently at ambient salinity. Water quality in Pond 8 already approximates ambient conditions in the sloughs and is not expected to change as a result of the discharge. Ponds 7A and 8 are currently maintained for wildlife habitat; however, lack of a direct water source for Pond 7A makes it difficult to optimize water levels in the pond, and relatively low embankments around Pond 8 limit the Discharger's ability to optimize water levels in Pond 8.

b. Water Control Structures. The release of bittern into the receiving waters of Napa Slough requires that the bittern be significantly diluted to avoid potential harmful effects to wildlife. The most practical way to accomplish effective dilution is to mix bittern with Napa Slough water from Pond 7A and Mud Slough water from Pond 8 (water derived from the Napa River system is considered "ambient water"). The facility includes water control structures to move water from adjacent sloughs through the ponds and then return it to the sloughs. Water will flow from Napa Slough through Pond 7A, and then to the mixing chamber (discussed below), where it will dilute the bittern water from Pond 7. In addition, water from Pond 7A will be used as make-up water for Pond 7 to keep Pond 7 wet year-round, so bittern removal can proceed as expeditiously as possible. Water from Pond 8 will also flow into the mixing chamber and dilute the bittern water from Pond 7.

Tidal flows currently enter the system from Mud Slough into Pond 8 through two 30-inch diameter culverts equipped with fish screens. The water is conveyed from Pond 8 through three 36-inch diameter culverts to the Pond 8 canal, which routes flow north and west to a siphon under Mud Slough, and eventually to the Pond 7/7A donut (which will be modified to serve as a mixing chamber). The Pond 7/7A donut receives water from Pond 8 and periodic storm water inflow from Pond 7A. The flow is then conveyed south and west via a canal to a siphon that discharges to Pond 6A. This siphon to Pond 6A will be abandoned.

There will be several new water control structures:

- A new intake from Napa Slough will provide an independent water source for Pond 7A. Fish screens will be installed at this intake.
- A water control structure from Pond 7A to Pond 7 will provide make-up water to Pond 7 to compensate for bittern discharge and summer evaporative losses.
- New (replacement) outlet water control structures for Ponds 7/7A and the Pond 8 Canal will allow increased water discharge to the mixing chamber, with improved control over the discharge rate.
- A new (replacement) water control structure will discharge from the mixing chamber to the Pond 7 canal.
- A new water control structure will discharge from the Pond 7 canal to Napa Slough.

The water control structures will consist of high density polyethylene pipe with various types of stainless steel gates. Culverts will be constructed under pond embankments and will be fitted with closure gates (slide, flat, or combination gates).

c. **Mixing Chamber.** The mixing chamber (modified Pond 7/7A "donut") and associated structures will facilitate mixing ambient water (from Ponds 8 and 7A) with bittern (from Pond 7) at a predetermined ratio, and discharge of the diluted bittern to the Pond 7 canal and then the Napa Slough. Over time, this process will reduce the overall bittern concentration in Pond 7. The mixing chamber design includes an air bubbler and baffle system to ensure that discharge to Napa Slough is fully mixed, with no stratification of bittern. The mixing chamber inlets and associated control structures will be capable of adjusting the inflow of bittern as a function of the inflows from Ponds 7A and 8, and the ratio of inflows will be able to be adjusted as needed. The mixing chamber is designed to prevent the accidental release of more concentrated bittern. The mixing chamber will be equipped with an automated control system that will ensure that the proper dilution ratio is maintained, and that will respond to any upsets by shutting off the flow of bittern,

d. **Automatic Flow Control System.** The project design includes an automated electronic control system to monitor and control the relative flows from Ponds 7, 7A, and 8 (via the Pond 8 canal).

2. **Discharge Description.** The discharge will be diluted bittern from the mixing chamber. At first, bittern from Pond 7 will be diluted in the mixing chamber with ambient water from Napa and Mud Sloughs at a ratio of 1:99 (bittern:ambient). Outflows from the mixing chamber will not be treated.

   The Pond 7, 7A and 8 hydraulics system will be designed to allow up to 13,700 acre-feet per year (afy) (or 4500 million gallons) of tidal water from Ponds 7A and 8 into the mixing chamber. Approximately 71% of the ambient water will come from Pond 7A and 29% from Pond 8. The bittern to ambient water dilution ratio of 1:99 will be mass-based, and based on the current salt strength in Pond 7. The mass-based ratio will be designed to release the same quantity of bittern salts present in 1% of the original strength bittern in a more dilute solution (i.e., a higher volume will be released as the bittern concentration in Pond 7 decreases). This approach will decrease the time required to remove bittern from Pond 7 from an estimated 35 to 50 years to 8 to 10 years.

   The allowable bittern liquid discharge rate at the starting bittern concentration will be 1% of the total flow from the Upper Ponds. Using a model, the Discharger calculated the flow volume to be removed from Pond 7 will start at 140 acre-feet per year (afy) in Year 1 and increase to 900 afy in Year 7. In Year 8, Pond 7 will be flushed with ambient water to reach ambient salinity. Table F-2 below lists the modeled bittern discharge flow volume, discharge salinity, and salinity change in Pond 7.

Table F-2. Estimate of Bittern Discharge Time and Pond 7 Salinity

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Starting Salinity -- Bittern	300	260.1	218.4	175.4	130.0	82.0	30.3	
Starting Salinity -- Salt	0	9.7	18.8	26.9	33.2	36.6	34.1	
Total Liquid Volume Removed (afy)	140.3	165.6	202.1	258.4	359	588.5	899	
Bittern Salinity at Year End	260.1	218.4	175.4	130.0	82.0	30.3	0.0	
Salt Salinity at Year End	9.7	18.8	26.9	33.2	36.6	34.1	26.3	Flush Pond 7 in Year 8 to achieve ambient salinity
Total Salinity at Year End	269.8	236.9	201.6	162.4	117.7	63.7	26.3	
Estimated Salinity of Discharge – summer conditions (ppt)	28	28	28	28	29	29	27	
Estimated Salinity of Receiving Water – summer conditions (ppt)	25	25	25	25	25	25	25	
Estimated Salinity of Discharge – winter conditions (ppt)	8	8	8	9	9	10	9	
Estimated Salinity of Receiving Water – winter conditions (ppt)	5	5	5	5	5	5	5	

Units abbreviation:
afy – acre-feet per year

Release of bittern to the mixing chamber will be controlled using flow sensors and actuators on closure gates. The inflow of bittern will be adjusted as a function of inflow from Ponds 7A and 8 by opening or closing closure gates on the mixing chamber inlets. The system offers the flexibility to adjust the bittern-to-ambient water ratio as needed. Inflow of ambient water to the mixing chamber will be driven by the tides and will generally be highest at high tide. Outflows from the mixing chamber will be slightly delayed and generally highest shortly after high tide. The discharge from the mixing chamber will be year-round. Average daily outflows will range from 34.5 acre-feet per day (ac-ft/day) in the summer (May to July) to 42.1 ac-ft/day in the winter (November to January).

The Discharger conducted seven-day chronic toxicity tests in 2002 using *Americamysis bahia* (mysid). The Discharger collected Pond 7 bittern and Pond 8 samples on May 14, 2002. Toxicity tests were evaluated for both survival and growth endpoints. Testing showed no adverse ecological effects at a bittern water concentration of 1% or less, and bittern water concentrations as high as 2.5% may also be non-toxic. Because water quality in Pond 7, 7A, and 8 has improved since 2002 (Pond 8 water now approaches ambient conditions), and Pond 7 bittern will continue to become more dilute with Pond 7A water as restoration progresses, a higher Pond 7 bittern to ambient water dilution ratio than 1:99 may be protective of water quality. To shorten the time necessary to complete the restoration, this Order allows the Discharger to increase the portion of Pond 7 bittern that flows to the mixing chamber as long as the nominal quantity of bittern salts remains below the original 1%, or 1:99 bittern to ambient ratio.

The Discharger anticipates the following discharge flow rates.

Table F-3. Daily Average and Maximum Discharge Flows

Season	Units for Average daily flow and minimum flow	Average Daily Flow	Minimum Flow	Units for Maximum Flow	Maximum Flow
Spring (Feb-Apr)	ac-ft/day	36.3	0.53	cfs	33.7
	mgd	11.8	0.34	mgd	21.8

Season	Units for Average daily flow and minimum flow	Average Daily Flow	Minimum Flow	Units for Maximum Flow	Maximum Flow
Summer (May-Jul)	ac-ft/day	34.5	0.49	cfs	32.8
	mgd	11.2	0.32	mgd	21.2
Fall (Aug-Oct)	ac-ft/day	37.2	0.53	cfs	32.8
	mgd	12.1	0.34	mgd	21.2
Winter (Nov-Jan)	ac-ft/day	42.1	0.53	cfs	36.0
	mgd	13.7	0.34	mgd	23.3

Units abbreviation:
ac-ft/day = acre feet per day
mgd – million gallons per day
cfs – cubit feet per second

4. **Future Integration of Recycled Water.** In the future, recycled (tertiary treated) waste water from Sonoma County Valley Sanitation District and Napa Sanitation District have indicated interest in discharging to the mixing chamber to increase the volume of water available for dilution and accelerate the removal of the bittern. The mixing chamber design provides a location for the recycled water pipeline to enter on the north side of the mixing chamber; the capacity of the mixing chamber was designed to accommodate the additional flow from the recycled water pipeline if it is built. The primary factor in successful integration of the recycled water pipeline will be the ability to integrate the recycled water flow into the overall control system for the mixing chamber. The automated control system would be reprogrammed and expanded to include electronic control of the recycled water flow. In addition, the flow from the pipeline would also be subject to control from the waste water treatment plants to shut off the flow in the event of a treatment upset. Should there be a temporary interruption in the flow of recycled water, the mixing chamber would continue to operate (at a lower bittern flow rate) using ambient water only. Similarly, should it be necessary to shut off the flow of ambient water, the mixing chamber could continue to operate, albeit at a low flow rate, using only recycled water. The 90% design for the portion of the recycled water pipeline leading from the Buchli Station parking lot north of Ponds 7 and 7A south to the mixing chamber was completed by the Sonoma County Water Agency in 2009. Further action on the recycled water pipeline will dependent on the availability of federal funding. Prior to discharge of recycle water into and from the mixing chamber, the appropriate dischargers must file applications and obtain approval for such discharges through an amendment of this Order or a separate permit from the Regional Water Board.

D. Discharge Point and Receiving Waters

The location of the discharge point and the receiving water are shown in Table F-4 below. The diluted bittern will be discharged via the 0.75-mile discharge canal to Napa Slough as shown in Attachment C. Napa Slough is located within the San Pablo Basin watershed. The discharge to Napa Slough will be a shallow water discharge because the discharge will not always receive 10:1 initial dilution as it enters the receiving water.

Table F-4. Outfall Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Diluted bittern	38º 11' 36" N	122º 19' 48" W	Napa Slough

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

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

B. California Environmental Quality Act (CEQA)

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

   The Basin Plan does not specifically identify present and potential beneficial uses for Napa Slough, but does identify beneficial uses for Napa River, to which Napa Slough is a tributary. The Basin Plan states that the beneficial uses of any specifically identified water body generally apply to all its tributaries. The Basin Plan beneficial uses for the Napa River, and hence the Napa Slough, are listed in the table below.

Table F-5. Beneficial Uses

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

State Water Board Resolution No. 88-63 establishes State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Because of the marine influence on the Napa Slough in the vicinity of the discharge, Napa Slough qualifies for an exception to State Water Board Resolution No. 88-63. The MUN designation therefore does not apply.

The Regional Water Board adopted Resolution No. 2010-0100 on July 14, 2010, amending Basin Plan Table 2-1. This Basin Plan amendment adds nearly 275 surface water bodies to Table 2-1 and designates beneficial uses for the newly added and some existing water bodies. The Basin Plan amendment lists the tidal portion of the Napa River as a water body distinct from the rest of the Napa River and designates its beneficial uses. They include all those listed above, except AGR, COLD, and WARM. The State Water Board and USEPA have yet to consider this Basin Plan amendment.

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

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

4. **Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) 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.

5. **Antidegradation Policy.** 40 CFR 131.12 requires that state WQS 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 the federal policy applies under federal law and requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies.

6. **Anti-Backsliding Requirements.** CWA sections 402(o)(2) and 303(d)(4) and 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous Order, with some exceptions in which limitations may be relaxed. Because this is a new permit for a new discharge, the limits in this Order do not backslide from the limits in any previous Order.

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

In November 2006, USEPA approved a revised list of impaired water bodies (the 303[d] list) prepared by the State pursuant to CWA section 303(d), which requires identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. Where it has not done so already, the Regional Water Board plans to adopt total maximum daily loads (TMDLs) for pollutants on the 303(d) list. TMDLs establish wasteload allocations for point sources and load allocations for non-point sources, and are established to achieve the water quality standards for the impaired waterbodies. The SIP requires that final effluent limitations for all 303(d)-listed pollutants be consistent with the TMDLs and associated wasteload allocations. Currently, there are no TMDLs for the Napa Slough.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the NPDES regulations: 40 CFR section 122.44(a) requires that permits include applicable technology-based limitations and standards, and section 122.44(d) requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative WQC to protect the beneficial uses of the receiving water.

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

A. Discharge Prohibitions

1. Prohibition I.A (no discharges other than as described in this Order). This prohibition is based on 40 CFR 122.21(a), duty to apply, and CWC section 13260, which requires filing a permit 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 this Order, are prohibited.

2. Prohibition I.B (no bittern discharge with less than 1:99 bittern to ambient ratio). This prohibition is based on past worst case toxicity test results that show toxicity at bittern concentrations greater than 1% bittern. However, because the strength of bittern in Pond 7 has lessened since the tests were conducted, and will continue to lessen as Pond 7A ambient water is added to maintain Pond 7 levels, the Order allows compliance with this prohibition to be demonstrated using calculations and models of the amount of actual bittern (at original strength) that is in the discharge, as opposed to fixing the flow ratio between Pond 7 bittern, and Ponds 7A and 8 ambient water.

B. Exception to Basin Plan Discharge Prohibition 1

Basin Plan Discharge Prohibition 1 (Basin Plan Table 4-1) prohibits discharges not receiving a minimum 10:1 initial dilution or to dead-end sloughs. The discharge prohibition relates to discharges of treated sewage and other discharges where the treatment process is subject to upset and contains particular characteristics of concern. The dilution requirement is to provide a contingency in the event of temporary treatment plant malfunction and to minimize public contact with undiluted waste. The Basin Plan states, "This prohibition will....[p]rovide a buffer against the effects of abnormal discharges caused by temporary plant upsets or malfunctions...." However, this discharge does not contain treated sewage and does not contain wastewater from a treatment process subject to upset. Therefore, the prohibition does not apply. Nevertheless, if the prohibition were to apply, the discharge would qualify for an exception because it is a key mechanism to remove bittern from Pond 7 and thus restore this pond for wetland habitat. The basis for such an exception is described below.

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

- An inordinate burden would be placed on the discharger relative to the beneficial uses protected and an equivalent level of environmental protection can be achieved by alternate means;

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

- It can be determined that the discharge provides net environmental benefits.

This discharge will provide many environmental benefits, including benefits that will continue long after there is no longer a need to discharge. The discharge will provide for better management of Ponds 7, 7A, and 8 to support populations of fish and wildlife, including endangered species, migratory waterfowl, and shorebirds. Other important benefits include improved water quality, removal of bittern, and enhanced public open space and wildlife-compatible recreation opportunities. The long-term goal is to produce a managed pond habitat that can adjust to naturally occurring changes in physical processes with minimum ongoing

intervention. Restoring tidal wetlands, including tidal marsh, within the Napa River Unit would benefit the natural environment by creating the following:

- large area of contiguous tidal marsh for a diversity of fish and wildlife, including threatened and endangered species (e.g., salt marsh harvest mouse, California clapper rail, and black rail);

- greater variety of slough channel sizes, large increase in slough habitat, and greater connections among San Pablo Bay, the Napa River, and the tidal salt marsh, which will benefit estuarine fish, including listed species (e.g., Delta smelt, splittail, steelhead trout, and chinook salmon) and other aquatic species, such as the Dungeness crab;

- natural, self-sustaining system that can adjust to naturally occurring changes in physical processes, with minimum ongoing intervention;

- large tracts of tidal marsh that extend up the Napa River and allow fish and wildlife species to adjust to changes in salinity that occur seasonally and over longer periods because of variations in precipitation;

- increased tidal prism that will scour slough channels, eventually creating large tidal channels, benefiting fish and diving waterfowl;

- improved tidal circulation throughout the system, improving water quality; and greatly increased production of organic detritus by tidal marshes, increasing the ecological productivity of San Pablo Bay.

The Basin Plan further states:

> Significant factors to be considered by the Regional Water Board in reviewing requests for exceptions will be the reliability of the discharger's system in preventing inadequately treated wastewater from being discharged to the receiving water and the environmental consequences of such discharges.

The proposed components of the project include embankment repair, installation of new water control structures, and monitoring of the discharge and receiving water. The embankment construction will prevent catastrophic breaching and resulting uncontrolled release of bittern during storm surges. The water control structures will help achieve desired water movement among different ponds and dilute the bittern at a predetermined ratio that will not cause adverse impact to the receiving water. The necessary monitoring will also provide data to ensure compliance with permit requirements for both the discharge and the receiving water.

Because of the net environmental benefits described above, this discharge qualifies for an exception to Basin Plan Discharge Prohibition 1.

C. Technology-Based Effluent Limitations

CWA section 301(b) and 40 CFR 122.44 require that permits include conditions meeting technology-based requirements at a minimum and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order is

not from a wastewater treatment facility; there is no treatment process. Therefore, no effluent limitation guidelines apply to this type of discharge and no technology-based effluent limitations are warranted.

D. Water Quality-Based Effluent Limitations (WQBELs)

WQBELs have been derived to implement WQOs that protect beneficial uses. Both the beneficial uses and the WQOs have been approved pursuant to federal law. The procedures for calculating individual WQBELs are based on the SIP and Basin Plan. Most Basin Plan beneficial uses and WQOs were approved under State law and submitted to and approved by USEPA prior to May 30, 2000. Any WQOs and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the [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 by CWA water quality standards.

1. Scope and Authority

a. 40 CFR 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an excursion of a WQS, including numeric and narrative objectives within a standard. As specified in 40 CFR 122.44(d)(1)(i), permits are required to include WQBELs for all pollutants "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard."

   The process for determining "reasonable potential" and calculating WQBELs when necessary is intended to protect the designated beneficial uses of the receiving water as specified in the Basin Plan, and achieve applicable WQOs contained in other state plans and policies, and applicable WQC contained in the CTR and NTR.

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

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

   (2) SIP. SIP section 1.4 requires WQBELs to be expressed as MDELs and average monthly effluent limitations (AMELs).

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

2. Applicable Beneficial Uses and WQOs

The WQOs applicable to the receiving water for this discharge are from the Basin Plan; the CTR, established by USEPA at 40 CFR 131.38; and the NTR, established by USEPA at

40 CFR 131.36. Some pollutants have WQOs established by more than one of these three sources.

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

b. CTR. The CTR specifies numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to all inland surface waters and enclosed bays and estuaries of San Francisco Bay Region, although Basin Plan Tables 3-3 and 3-4 include numeric objectives for certain of these priority toxic pollutants that supersede CTR criteria (except in the South Bay south of the Dumbarton Bridge). Human health criteria are further identified as "water and organisms" and "organisms only." The CTR criteria applicable to "organisms only" were used for the reasonable potential analysis (RPA) because the receiving water is not a source of drinking water.

c. NTR. The NTR establishes numeric aquatic life criteria for selenium and numeric human health criteria for 33 toxic organic pollutants for waters of San Francisco Bay upstream to and including Suisun Bay and the Sacramento River-San Joaquin River Delta. These NTR criteria apply to San Pablo Bay, to which the Napa River, the receiving water for this Discharger, is tributary.

d. Basin Plan Receiving Water Salinity Policy. The Basin Plan (like the CTR and the NTR) states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water are to be considered in determining the applicable WQC. Freshwater criteria apply to discharges to waters with salinities equal to or less than one part per thousand (ppt) at least 95 percent of the time. Saltwater criteria apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to water with salinities in between these two categories, or tidally influenced freshwaters that support estuarine beneficial uses, the criteria are the lower of the salt or freshwater criteria (the latter calculated based on ambient hardness) for each substance.

The receiving water for this discharge is the Napa Slough. In 2009, the Discharger collected monthly salinity measurements in Napa Slough approximately 0.6 miles downstream (towards Napa River) of the proposed project discharge point. Salinities ranged from 2.4 ppt in February 2009 to 22.9 ppt in September 2009 and were below 10 ppt only in February and March. Therefore, the receiving water is estuarine.

Applicable water quality objectives are the more stringent of the freshwater and saltwater objectives.

f. Receiving Water Hardness. All available ambient hardness values were used to calculate hardness dependent freshwater WQOs. The Discharger collected some hardness data in 2008 and 2010 near the proposed discharge location and near the proposed intake structure in Napa Slough. All values were above 400 mg/L. The equations to calculate hardness dependent freshwater WQOs work best for hardness values between 25-400 mg/L. To be conservative, this Order used a hardness value of 400 mg/L for WQO calculations.

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

In this Order, no site-specific translators were applied. Default translators set forth at 40 CFR 131.38(b)(2), Table 2, were used for all metals. The Discharger may conduct a translator study during the permit term. The permit may be re-opened or, during the permit reissuance, the permit may be revised to incorporate any available site-specific translators.

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.

a. Reasonable Potential Methodology

For priority pollutants and most other toxic pollutants, the RPA identifies the observed maximum effluent concentration (MEC) for each pollutant based on effluent concentration data. There are three triggers in determining Reasonable Potential according to SIP section 1.3.

(1) The first trigger (Trigger 1) is activated if the MEC is greater than or equal to the lowest applicable WQO (MEC $\geq$ WQO), which has been adjusted, if appropriate, for pH, hardness, and translator data. If the MEC is greater than or equal to the adjusted WQO, then that pollutant has Reasonable Potential, and a WQBEL is required.

(2) The second trigger (Trigger 2) is activated if the observed maximum ambient background concentration (B) is greater than the adjusted WQO (B > WQO), and the pollutant is detected in any of the effluent samples.

(3) The third trigger (Trigger 3) is activated if a review of other information determines that a WQBEL is required to protect beneficial uses, even though both MEC and B are less than the WQO.

b. Effluent Data

Because this permit covers a discharge that has not yet occurred, effluent quality is simulated using calculated values from samples of pond and slough water. In June and October 2008, Fish and Game sampled water at four locations, namely the existing Pond 8 intake on Mud Slough, the proposed Pond 7A intake area in Napa Slough, the proposed Pond 7 discharge location in Napa Slough; and Pond 7 (when wet). A subset of the 126 priority pollutants, including pesticides and PCBs, volatile organics, semi-volatile organics, total and dissolved metals, mercury, and hexavalent chromium were sampled. These results were used to simulate the discharge water quality.

c. Ambient Background Data

Besides the June and October 2008 data, the Discharger collected additional receiving water data in 2003 and 2010 in the Napa Slough. These data were also used in the RPA.

d. RPA Determination for Priority Pollutants

During the 2008 sampling events, the Discharger only sampled for metals in Pond 7. The RPA for these metals is summarized in the table below. The Discharger analyzed a subset of the 126 priority pollutants in the Napa Slough and Mud Slough source waters, but was unable to project effluent concentrations for these remaining priority pollutants. Therefore, the RPA for these remaining priority pollutants is inconclusive . However, the results for source waters were either non-detect or concentrations were lower than WQOs.

The MECs, most stringent applicable WQC, and background concentrations used in the RPA are presented in the following table, along with the RPA results (yes or no) for each pollutant analyzed. Reasonable Potential was not determined for all pollutants because there are not WQC for all pollutants, and monitoring data are not available for others. Based on a review of the projected discharge, the pollutants that exhibit Reasonable Potential are arsenic and nickel by Trigger 1. There is no Reasonable Potential for ammonia since the discharge does not involve human waste or any industrial ammonia source.

Table F-6. Reasonable Potential Analysis

CTR #	Priority Pollutants	Governing WQO/WQC (µg/L)	MEC or Minimum DL [1][2] (µg/L)	Maximum Background or Minimum DL [1][2] (µg/L)	RPA Results [3]
1	Antimony	4300	<0.6	0.4	No
2	Arsenic	36	40	26	**Yes**

CTR #	Priority Pollutants	Governing WQO/WQC (µg/L)	MEC or Minimum DL [1][2] (µg/L)	Maximum Background or Minimum DL [1][2] (µg/L)	RPA Results [3]
3	Beryllium	No Criteria	<2.1	<0.5	Ud
4	Cadmium	3.4	<2.1	0.2	No
5a	Chromium (III)	644	4.4	5.0	No
5b	Chromium (VI)	11	<2.1	<10	No
6	**Copper**	7.2	5.8	6.8	No
7	Lead	8.5	<2.1	0.29	No
8	Mercury (303d listed)	0.025	NA	0.011	Ud
9	**Nickel (303d listed)**	8.3	17	38	**Yes**
10	Selenium (303d listed)	5.0	NA	0.14	Ud
11	Silver	2.2	<2.1	<0.4	No
12	Thallium	6.3	<2.1	0.5	No
13	Zinc	86	13	9	No
14	Cyanide	2.9	NA	NA	Ud

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

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

i. **Pollutants with No Reasonable Potential.** WQBELs are not included in this Order for constituents that do not demonstrate Reasonable Potential; however, monitoring for those pollutants is still required. If concentrations of these constituents are found to have increased significantly, the Discharger will be required to investigate the sources of the increases. Remedial measures are required if the increases pose a threat to receiving water quality.

4. WQBEL Calculations

a. **Pollutants with Reasonable Potential.** WQBELs were developed for the toxic and priority pollutants determined to have Reasonable Potential to cause or contribute to exceedances of the WQOs. The WQBELs were calculated based on WQOs and SIP section 1.4 procedures. The WQOs for each pollutant with Reasonable Potential are discussed below.

b. **Shallow/Deep Water Discharge.** The discharge does not achieve 10:1 initial dilution at all times and is therefore considered a shallow water discharge.

c. Development of WQBELs for Specific Pollutants

(1) Arsenic

i. **Arsenic WQC.** The Basin Plan contains numeric arsenic saltwater WQOs, which are 36 µg/L for chronic protection and 69 µg/L for acute protection, expressed as dissolved metal. These WQC were converted to total recoverable metal using the CTR default translator of 1 for both chronic and acute objectives. The resulting chronic WQC is 36 µg/L and acute WQC is 69 µg/L.

ii. **RPA Results.** This Order establishes effluent limitations for arsenic because the simulated MEC (40 µg/L) exceeds the governing WQC (36 µg/L), demonstrating Reasonable Potential by Trigger 1.

iii. **Arsenic WQBELs.** WQBELs for aresenic, calculated according to SIP procedures with a default coefficient of variation of 0.6 and no credit for dilution, are an AMEL of 30 µg/L and an MDEL of 59 µg/L.

iv. **Compliance Feasibility.** There are not enough effluent data to perform a meaningful statistical analysis to determine compliance feasibility. Although the simulated arsenic MEC is higher than the AMEL, it is lower than the MDEL. If one sample exceeds the AMEL, the Discharger may take more than one sample within a month to lower the average concentration. The Discharger believes the bittern water sample with the highest arsenic concentration was collected while Pond 7 was almost empty (due to evaporation). All other samples collected when there was more water in Pond 7 have much lower concentrations. Therefore, the actual discharge will likely contain lower concentrations and compliance appears feasible.

(2) Nickel

i. **Nickel WQC.** The Basin Plan contains numeric nickel saltwater WQOs, which are 8.3 µg/L for chronic protection and 75 µg/L for acute protection, expressed as dissolved metal. These WQC were converted to total recoverable metal using the CTR default translator of 0.99 for both chronic and acute objectives. The resulting chronic WQC is 8.3 µg/L and acute WQC is 75 µg/L.

ii. **RPA Results.** This Order establishes effluent limitations for nickel because the simulated MEC (17 µg/L) exceeds the governing WQC (8.3 µg/L), demonstrating Reasonable Potential by Trigger 1.

iii. **Nickel WQBELs.** WQBELs for nickel, calculated according to SIP procedures with a default coefficient of variation of 0.6 and no credit for dilution, are an AMEL of 6.8 µg/L and an MDEL of 14 µg/L.

iv. **Compliance Feasibility.** There are not enough simulated effluent data to perform a meaningful statistical analysis to determine compliance feasibility. Directly comparing the simulated MEC with the AMEL (17 µg/L vs. 6.8 µg/L) indicates that the Discharger cannot readily comply with these WQBELs. This Order

provides for intake water credits that make compliance feasible (see section f. below).

e. Effluent Limit Calculations

The following tables show the WQBEL calculations for arsenic and nickel.

Table F-7. Effluent Limitation Calculations

	Arsenic	Nickel
	µg/L	µg/L
Basis and Criteria type	BP SW	BP SW
Criteria -Acute	69	75
Criteria -Chronic	36	8.3
Water Effects ratio (WER)	1	1
Lowest WQO	36	8.3
Dilution Factor (D) (if applicable)	0	0
No. of samples per month	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y
HH criteria analysis required? (Y/N)	N	Y
Applicable Acute WQO	69	75
Applicable Chronic WQO	36	8.3
HH criteria		4600
Background (Maximum Conc for Aquatic Life calc)	26	38
Background (Average Conc for Human Health calc)	11.6	14.8
Is the pollutant on the 303d list (Y/N)?	N	N
ECA acute	69	75
ECA chronic	36	8.3
ECA HH		4600
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	Y	Y
Avg of effluent data points	28.5	13.5
Std Dev of effluent data points		
CV calculated	N/A	N/A
CV (Selected) - Final	0.60	0.60
ECA acute mult99	0.32	0.32
ECA chronic mult99	0.53	0.53
LTA acute	22.2	24.0
LTA chronic	19.0	4.4
minimum of LTAs	19.0	4.4
AMEL mult95	1.6	1.6
MDEL mult99	3.1	3.1
AMEL (aq life)	29.5	6.8
MDEL(aq life)	59	13.6
MDEL/AMEL Multiplier	2.01	2.01
AMEL (human hlth)		4600
MDEL (human hlth)		9228
Final limit - AMEL	30	6.8
Final limit - MDEL	59	14
Max Effl Conc (MEC)	40	17

f. Nickel Intake Water Credits.

SIP section 1.4.4 states that the Regional Water Board may establish effluent limitations that allow discharges to contain pollutant concentrations no greater than intake water

concentrations when specific conditions are met. This Order allows intake water credits for nickel.

a. SIP Requirements. The discharge meets the conditions for intake water credits set forth in SIP section 1.4.4. Each of the SIP considerations considered below.

i. The observed maximum ambient background concentration and the intake water concentration of the pollutant must exceed the most stringent applicable WQO for that pollutant.

The maximum observed background nickel concentration was 38 µg/L, greater than the lowest applicable nickel criterion of 8.3 µg/L.

ii. The intake water credits must be consistent with any TMDL applicable to the discharge.

No nickel TMDL has been established for Napa Slough, Napa River, or San Pablo Bay.

iii. The intake water must be from the same water body as the receiving water body.

The intake and discharge are both within the tidal portion of the Napa River watershed. Approximately 71% of the intake water is from Napa Slough, the balance of intake water comes from Mud Slough. The discharge location is about 5000 feet downstream of the intake structure in the Napa Slough and is also in the vicinity of the Mud Slough intake structure. Both sloughs are tributary to Napa River, and are flushed by the tides from Napa River, as well as San Pablo Bay.

iv. The timing and location of the discharge must not cause adverse effects on water quality and beneficial uses that would not occur if the intake water pollutant had been left in the receiving water body.

The proposed discharge will only contain 1% of bittern (or water of equivalent quality); the rest will be ambient water. Toxicity tests show the discharge will be toxic. The bittern in Pond 7 was originally withdrawn from San Pablo Bay and no additional pollutants or materials will be added. Effluent limitation guidelines for salt production at 40 CFR 415.162 allow that unused bitterns may be returned to the body of water from which the process brine was originally withdrawn, provided no additional pollutants are added during sodium chloride production. Nickel was not used in the historic salt production process. The Discharger does not alter the intake water chemically or physically in a manner that would change the intake nickel. In addition, the Order contains effluent limits and monitoring requirements to ensure that the discharge will not cause adverse effects on water quality and beneficial use.

b. Intake Water Credit. To qualify for intake water credits, discharges may contain pollutant concentrations no greater than intake water concentrations. In other words, effluent sample concentrations at Discharge Point 001 that exceed the nickel

limitations in Table 6 can, nevertheless, be considered in compliance with those limitations if the effluent nickel concentration is also no greater than the intake water nickel concentration. For this Order, intake water concentrations are characterized statistically so effluent concentrations may be evaluated to determine whether they fall within or beyond the range expected for influent concentrations. If effluent concentrations exceed the range expected for influent concentrations, the discharger does not qualify for intake water credits and the effluent limits apply. Because there are two intakes, the intake water credit was determined using pooled data from both sources.

To statistically characterize the intake water concentrations, the 99th percentile nickel concentration is used for the pooled intake water data set. This percentile represents a reasonable upper range for the variability of the intake water concentration. A higher percentile might include extreme values and mask a legitimate violation; a lower percentile might result in violations due only to sample variability. Based on the available nickel intake data, the 99th percentile intake concentration is 38 µg/L.

5. Whole Effluent Toxicity

Bittern discharges are toxic. According to a 1993 study, "*Cargill Napa Disposal Evaluation Study: First and Second Round Toxicity Tests (using Laboratory Dilution Water), Result Summaries, October 1993*," bittern concentrations greater than 250 ppt are toxic to mysid shrimp. The study suggested that Mysidopsis and Crangon shrimp species were the most sensitive with respect to acute toxicity, and Mytilus, Mysids, and Ampellisca appeared to be the most sensitive species to chronic toxicity from bittern. The similarity in acute and chronic responses suggests a quick acting toxicant, and the similarity between species suggests that a common toxicant is affecting them all, perhaps a major ion that affects osmoregulation (osmoregulation is the active regulation of the osmotic pressure of an organism's fluids to maintain the homeostasis of the organism's water content; that is it keeps the organism's fluids from becoming too diluted or too concentrated). Dilution water will be needed to abate the risks associated with discharges of such waters. Toxicity requirements are necessary to ensure that the discharges do not have acute or chronic toxicity.

a. Whole Effluent Acute Toxicity

This Order includes effluent limitations for whole effluent acute toxicity based on Basin Plan Table 4-3.

b. Whole Effluent Chronic Toxicity

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

(2). Reasonable Potential Analysis. Based on past chronic toxicity tests, there is reasonable potential if the discharge contains 1% or more bittern (1:99 bittern to ambient water ratio). Chronic (seven-day) aquatic toxicity tests were conducted in

2002 (Pacific EcoRisk, *Evaluation of the amelioration of salt pond bittern chronic toxicity to Americamysis [formerly Mysidopsis] bahia via addition of salt pond brine. Prepared for Gaia Consulting, Inc*., June, 2002) using *Americamysis bahia* (mysid), which was the most sensitive species in previous testing on Pond 7 samples conducted in 1993. Pond 7 bittern and Pond 8 samples were collected on May 14, 2002, for the study. The bittern used had a salinity of 310 ppt. Four mixtures with the following bittern and brine ratios were created: 100% bittern/0% brine, 70% bittern/30% brine, 40% bittern/60% brine, and 10% bittern/90% brine. Each of the four test mixtures was diluted to test concentrations of 0.25%, 0.5%, 1%, 2.5%, 5% and 10% with saline dilution water having 20 ppt salinity. Toxicity tests were evaluated for both survival and growth endpoints. Results from the toxicity tests with the four different mixtures showed that mysid survival rates exceeded 80% for all four of the test mixtures up to and including the 5% dilution test (i.e., a total salinity of approximately 35 to 40 ppt); survival rates for all of these tests were not significantly less than the laboratory control. Survival was 0% at the 10% dilution in all four test mixtures except the 10% bittern/90% brine mixture which had significantly lower survival than the laboratory control. At 10% dilution, the salinity in the test mixture exceeded 50 ppt for all mixtures except the 90/10 mixture; a salinity of 50 ppt in and of itself would have toxic effects on aquatic wildlife, whether or not bittern were present. Mysid biomass was also not significantly less than the control for dilutions up to and including 5%, except for the 100% bittern mixture, where the biomass was significantly less than the control at 5% dilution.

These results differ from the previous bittern testing performed for the Napa Ponds in 1993, which showed that only dilutions of 1% to 1.5% bittern had a mean survival rate that was not significantly lower than the control treatment. During previous studies, complete mortality was noted at a 5% bittern solution. The precise salinity of the bittern used in these previous studies is unknown, however, it is likely that the concentration was considerably higher (between 390 and 450 g/kg) than the 2002 testing because bittern samples were collected in the summer (July and August) rather than in the spring. GAIA Consulting reached two primary conclusions regarding the test results: (1) diluting the bittern with hypersaline brine does not appear to significantly increase the rate at which bittern could be discharged, and (2) the apparent toxicity of the bittern is lower than that found in prior studies.

(3). Permit Requirements. The Order establishes a narrative effluent limitation for chronic toxicity based on the narrative Basin Plan objective. In addition, this Order contains requirements to implement the chronic toxicity narrative objective, including numeric triggers for accelerated monitoring. These triggers are based on Basin Plan Table 4-5.

D. Antidegradation Policies

Regulations at 40 CFR 131.12 require that State water quality standards include an antidegradation policy consistent with federal policy. The State Water Board established California's antidegradation policy through State Water Board Resolution 68-16, which incorporates federal policy where federal policy applies. Resolution 68-16 requires that existing

water quality be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both State and federal antidegradation policies.

Administrative Procedures Update (APU) No. 90-004 provides guidance for implementing antidegradation requirements. It states that a simple antidegradation analysis is adequate in the following circumstances:

- a reduction in water quality would be spatially localized or limited with respect to the waterbody,
- a reduction in water quality would be temporally limited,
- a proposed action would produce minor effects that would not result in a significant reduction of water quality, or
- a proposed activity has been approved in a General Plan and has been adequately subjected to the environmental and economic analysis required in an EIR.

This new discharge requires only a simple antidegradation analysis because any water quality degradation would be temporary, any effects would be localized, and the effects would at most be minor.

The discharge could have only minor effects because it will be diluted by ambient water (initially the bittern water will be only 1% of the total flow) and will not alter receiving water quality to a noticeable degree. The discharge will reintroduce bittern pollutants to same waters these pollutants came from over the many years of salt production. This Order contains water quality-based effluent limitations to ensure that the discharge will not cause or contribute to any exceedences of WQOs intended to protect beneficial uses.

Any potential effects will be localized in the area of Napa Slough near the discharge, which is near the slough's confluence with Napa River. Napa River flows and tidal mixing will moderate any potential water quality degradation.

Any potential effects will be temporary because the discharge will only be necessary for about ten years, after which Pond 7 will reflect ambient conditions. During this time, pollutant concentrations will decrease, thereby lessening any possible water quality impacts.

Antidegradation policies allow degradation if the change is consistent with the maximum benefit to the people of the State. The minor, localized, and temporary degradation that could result from this discharge is necessary to complete the Restoration Project described in section II and thus provide the benefits to the people of California listed in section IV.A. Therefore, it is consistent with antidegradation polices.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

The receiving water limitations are based on the narrative and numeric WQOs in Basin Plan Chapter 3 and federal and State water quality standards.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

The principal purposes of a monitoring program are to:

- Document compliance with waste discharge requirements and prohibitions established by the Regional Water Board,
- Facilitate self-policing by the Discharger in the prevention and abatement of pollution arising from waste discharge,
- Develop or assist in the development of limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards, and
- Prepare water and wastewater quality inventories.

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

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

A. Influent Monitoring

Influent monitoring includes monitoring for flow and salinity at all influent stations.

B. Effluent Monitoring

Effluent monitoring includes routine monitoring for those pollutants with effluent limits, such as arsenic, nickel, and acute and chronic toxicity to determine compliance with effluent limits and permit requirements. The monitoring also includes other parameters, such as pH, temperature, dissolved oxygen, and salinity, to determine the chemical and physical characteristics of the discharge. The one time monitoring for priority pollutants and un-ionized ammonia is for future RPA need.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** This Order requires quarterly 96-hour static bioassay testing using mysid shrimp and inland silverside. These two species are used because of the salinity of the discharge would not allow use the freshwater species specified in the Basin Plan. Also, static testing with daily renewals using the same sample should be adequate as opposed to renewals with daily samples. This is because the discharge is not expected to vary day to day and past toxicity testing did not show the observed toxicity to degrade with sample storage. Moreover, because of the remoteness of the

discharge point, daily renewals with the same sample will be less burdensome for sample collection.

2. **Chronic Toxicity.** This Order requires the Discharger to conduct semiannual chronic toxicity testing using mysid shrimp. As discussed above, this species was determined in past testing to be a good indicator of toxicity for this discharge. No additional screening is determined to be necessary for this permit, because the salts in the discharge are the most likely toxicant, and these salts are not expected to have changed since except become slightly more dilute.

D. Receiving Water Monitoring

Receiving water monitoring is necessary to determine compliance with receiving water limits, such as those for pH, temperature, dissolved oxygen, and un-ionized ammonia. Receiving water monitoring for other parameters, like salinity, hardness, and priority pollutants, are necessary for future RPAs. Monitoring for nickel and arsenic at the two intake water stations are needed to justify and calculate future intake water credits.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions (Provision VI.A)

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

B. MRP Requirements (Provision VI.B)

The Discharger is required to monitor the permitted discharge to evaluate compliance with permit conditions. Monitoring requirements are contained in the MRP (Attachment E) and Regional Standard Provisions (Attachment G). This provision requires compliance with these documents and is based on 40 CFR 122.63 and CWC sections 13267, 13308.

C. Special Provisions (Provision VI.C)

1. Reopener Provisions

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

2. Effluent Data Evaluation

This Order does not include effluent limitations for priority pollutants that do not demonstrate Reasonable Potential, but this provision requires the Discharger to continue monitoring for these pollutants as described in the Regional Standard Provisions (Attachment G) and as specified in the MRP (Attachment E). If concentrations of these constituents increase significantly, the Discharger must investigate the source of the increases and establish remedial measures if the increases result in reasonable potential to cause or contribute to an excursion above the applicable WQOs. This provision is based on the SIP.

3. Construction, Operation, and Maintenance Specifications

This provision contains tasks necessary to ensure proper facility operations. These are based on what is reasonable and necessary.

The design life of the water control structures is 15 years. However, the structures will operated in a highly corrosive environment due to high salts. Therefore, routine inspection (monthly is required) is appropriate. Concerning levee maintenance, levees need to be maintained to ensure bittern does not escape. Also, sound levees are needed to ensure ambient water is available and can be conveyed to provide adequate dilution of bittern in the mixing chamber during discharge.

4. Bittern Discharge Dilution Ratio Change

This provision allows the Discharger to submit a request to change the bittern water to ambient water ratio from 1:99 (bittern:ambient) to a higher ratio, provided that discharge conditions remain consistent with the assumptions underlying this Order. This provision provides the Discharger with the flexibility to adjust the dilution ration to minimize the time necessary to restore Pond 7.

VIII. PUBLIC PARTICIPATION

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

A. Notification of Interested Parties

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through the Napa Register on April 13, 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

Executive Officer at the Regional Water Board at the address provided on the cover page of this Order, to the Attention of Tong Yin.

To receive full consideration and a written response, written comments must be received at the Regional Water Board offices by 5:00 p.m. on May 13, 2011.

C. Public Hearing

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

Date: June 8, 2011
Time: 9:00 am
Location: Elihu Harris State Office Building
1515 Clay Street, 1st Floor Auditorium
Oakland, CA 94612

Contact: Tong Yin, (510) 622-2418, email TYin@waterboards.ca.gov

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

Dates and venues may change. The Regional Water Board web address is http://www.waterboards.ca.gov/sanfranciscobay where one can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water 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 8:45 a.m. and 5:00 p.m., Monday through Friday. Copying of documents may be arranged by calling 510-622-2300.

F. Register of Interested Persons

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

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Tong Yin at 510-622-2418 or e-mail at TYin@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

Table of Contents

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

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

FOR

NPDES WASTEWATER DISCHARGE PERMITS

APPLICABILITY

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

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

I. STANDARD PROVISIONS - PERMIT COMPLIANCE

A. Duty to Comply

Not Supplemented

B. Need to Halt or Reduce Activity Not a Defense

Not Supplemented

C. Duty to Mitigate

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

1. Contingency Plan
   The Discharger shall maintain a Contingency Plan as originally required by Regional Water Board Resolution 74-10 and as prudent in accordance with current municipal facility emergency planning. The Contingency Plan shall describe procedures to ensure that existing facilities remain in, or are rapidly returned to, operation in the event of a process failure or emergency incident, such as employee strike, strike by suppliers of chemicals or maintenance services, power outage, vandalism, earthquake,

or fire. The Discharger may combine the Contingency Plan and Spill Prevention Plan into one document. Discharge in violation of the permit where the Discharger has failed to develop and implement a Contingency Plan as described below will be the basis for considering the discharge a willful and negligent violation of the permit pursuant to California Water Code Section 13387. The Contingency Plan shall, at a minimum, contain the provisions of a. through g. below.

a. Provision of personnel for continued operation and maintenance of sewerage facilities during employee strikes or strikes against contractors providing services.

b. Maintenance of adequate chemicals or other supplies and spare parts necessary for continued operations of sewerage facilities.

c. Provisions of emergency standby power.

d. Protection against vandalism.

e. Expeditious action to repair failures of, or damage to, equipment and sewer lines.

f. Report of spills and discharges of untreated or inadequately treated wastes, including measures taken to clean up the effects of such discharges.

g. Programs for maintenance, replacement, and surveillance of physical condition of equipment, facilities, and sewer lines.

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

a. Identify the possible sources of accidental discharge, untreated or partially treated waste bypass, and polluted drainage;

b. Evaluate the effectiveness of present facilities and procedures, and state when they became operational; and

c. Predict the effectiveness of the proposed facilities and procedures, and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

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

D. Proper Operation & Maintenance

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

1. Operation and Maintenance (O&M) Manual
   The Discharger shall maintain an O&M Manual to provide the plant and regulatory personnel with a source of information describing all equipment, recommended operational strategies, process control monitoring, and maintenance activities. To remain a useful and relevant document, the O&M Manual shall be kept updated to reflect significant changes in treatment facility equipment and operational practices. The O&M Manual shall be maintained in usable condition and be available for reference and use by all relevant personnel and the Regional Water Board.

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

3. Proper Supervision and Operation of Publicly Owned Treatment Works (POTWs)
   POTWs shall be supervised and operated by persons possessing certificates of appropriate grade pursuant to Division 4, Chapter 14, Title 23 of the California Code of Regulations.

E. Property Rights

Not Supplemented

F. Inspection and Entry

Not Supplemented

G. Bypass

Not Supplemented

H. Upset

Not Supplemented

I. Other

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

1. Neither the treatment nor the discharge of pollutants shall create pollution, contamination, or nuisance as defined by California Water Code Section 13050.

2. Collection, treatment, storage, and disposal systems shall be operated in a manner that precludes public contact with wastewater, except in cases where excluding the public

is infeasible, such as private property. If public contact with wastewater could reasonably occur on public property, warning signs shall be posted.

3. If the Discharger submits a timely and complete Report of Waste Discharge for permit reissuance, this permit continues in force and effect until a new permit is issued or the Regional Water Board rescinds the permit.

J. Storm Water

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

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

1. Storm Water Pollution Prevention Plan (SWPP Plan)
   The SWPP Plan shall be designed in accordance with good engineering practices and shall address the following objectives:

   a. To identify pollutant sources that may affect the quality of storm water discharges; and

   b. To identify, assign, and implement control measures and management practices to reduce pollutants in storm water discharges.

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

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

   a. A topographical map (or other acceptable map if a topographical map is unavailable), extending one-quarter mile beyond the property boundaries of the facility, showing the wastewater treatment facility process areas, surface water bodies (including springs and wells), and discharge point(s) where the facility's storm water discharges to a municipal storm drain system or other points of discharge to waters of the State. The requirements of this paragraph may be included in the site map required under the following paragraph if appropriate.

   b. A site map showing the following:

      (1) Storm water conveyance, drainage, and discharge structures;

      (2) An outline of the storm water drainage areas for each storm water discharge point;

(3) Paved areas and buildings;

(4) Areas of actual or potential pollutant contact with storm water or release to storm water, including but not limited to outdoor storage and process areas; material loading, unloading, and access areas; and waste treatment, storage, and disposal areas;

(5) Location of existing storm water structural control measures (i.e., berms, coverings, etc.);

(6) Surface water locations, including springs and wetlands; and

(7) Vehicle service areas.

c. A narrative description of the following:

(1) Wastewater treatment process activity areas;

(2) Materials, equipment, and vehicle management practices employed to minimize contact of significant materials of concern with storm water discharges;

(3) Material storage, loading, unloading, and access areas;

(4) Existing structural and non-structural control measures (if any) to reduce pollutants in storm water discharges; and

(5) Methods of on-site storage and disposal of significant materials.

d. A list of pollutants that have a reasonable potential to be present in storm water discharges in significant quantities.

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

a. Storm water pollution prevention personnel

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

b. Good housekeeping

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

c. Spill prevention and response

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

d. Source control

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

e. Storm water management practices

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

f. Sediment and erosion control

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

g. Employee training

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

h. Inspections

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

maintenance activities shall be documented and recorded. Inspection records shall be retained for five years.

i. Records

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

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

K. Biosolids Management

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

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

1. Exceptional quality biosolids meet the pollutant concentration limits in Table III of 40 CFR Part 503.13, Class A pathogen limits, and one of the vector attraction reduction requirements in 503.33(b)(1)-(b)(8). Such biosolids do not have to be tracked further for compliance with general requirements (503.12) and management practices (503.14).

2. Biosolids used for agricultural land, forest, or reclamation shall meet the pollutant limits in Table I (ceiling concentrations) and Table II or Table III (cumulative loadings or pollutant concentration limits) of 503.13. They shall also meet the general requirements (503.12) and management practices (503.14) (if not exceptional quality biosolids) for Class A or Class B pathogen levels with associated access restrictions (503.32) and one of the 10 vector attraction reduction requirements in 503.33(b)(1)-(b)(10).

3. Biosolids used for lawn or home gardens must meet exceptional quality biosolids limits.

4. Biosolids sold or given away in a bag or other container must meet the pollutant limits in either Table III or Table IV (pollutant concentration limits or annual pollutant loading rate limits) of 503.13. If Table IV is used, a label or information sheet must be attached to the biosolids packing that explains Table IV (see 503.14). The biosolids must also meet the Class A pathogen limits and one of the vector attraction reduction requirements in 503.33(b)(1)-(b)(8).

II. STANDARD PROVISIONS – PERMIT ACTION

Not Supplemented

III. STANDARD PROVISIONS – MONITORING

A. Sampling and Analyses

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

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

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

   For priority pollutant monitoring, when there is more than one ML value for a given substance, the Discharger may select any one of the analytical methods cited in Table C for compliance determination, or any other method described in 40 CFR part 136 or approved by USEPA (such as the 1600 series) if authorized by the Regional Water Board. However, the ML must be below the effluent limitation and water quality objective. If no ML value is below the effluent limitation and water quality objective, then the method must achieve an ML no greater than the lowest ML value indicated in Table C. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

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

   a. Timing of Sample Collection

      (1) The Discharger shall collect samples of influent on varying days selected at random and shall not include any plant recirculation or other sidestream wastes, unless otherwise stipulated by the MRP.

      (2) The Discharger shall collect samples of effluent on days coincident with influent sampling unless otherwise stipulated by the MRP or the Executive Officer. The Executive Officer may approve an alternative sampling plan if it is demonstrated to be representative of plant discharge flow and in compliance with all other permit requirements.

      (3) The Discharger shall collect grab samples of effluent during periods of day-time maximum peak effluent flows (or peak flows through secondary treatment units for facilities that recycle effluent flows).

(4) Effluent sampling for conventional pollutants shall occur on at least one day of any multiple-day bioassay test the MRP requires. During the course of the test, on at least one day, the Discharger shall collect and retain samples of the discharge. In the event a bioassay test does not comply with permit limits, the Discharger shall analyze these retained samples for pollutants that could be toxic to aquatic life and for which it has effluent limits.

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

(b) The Discharger shall analyze for total ammonia nitrogen and calculate the amount of un-ionized ammonia whenever test results fail to meet the percent survival specified in the permit.

b. Conditions Triggering Accelerated Monitoring

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

(2) If any maximum daily limit is exceeded, the Discharger shall increase its sampling frequency to daily within 24 hours after the results are received that indicate the exceedance of the maximum daily limit until two samples collected on consecutive days show compliance with the maximum daily limit.

(3) If final or intermediate results of an acute bioassay test indicate a violation or threatened violation (e.g., the percentage of surviving test organisms of any single acute bioassay test is less than 70 percent), the Discharger shall initiate a new test as soon as practical, and the Discharger shall investigate the cause of the mortalities and report its findings in the next self monitoring report (SMR).

(4) The Discharger shall calibrate chlorine residual analyzers against grab samples as frequently as necessary to maintain accurate control and reliable operation. If an effluent violation is detected, the Discharger shall collect grab samples at least every 30 minutes until compliance with the limit is achieved, unless the Discharger monitors chlorine residual continuously. In such cases, the Discharger shall continue to conduct continuous monitoring as required by its permit.

(5) When a bypass occurs (except one subject to provision III.A.3.b.6 below), the Discharger shall monitor flows and collect samples on a daily basis for all constituents at affected discharge points that have effluent limits for the

duration of the bypass (including acute toxicity using static renewals), except chronic toxicity, unless otherwise stipulated by the MRP.

(6) Unless otherwise stipulated by the MRP, when a bypass approved pursuant to Attachment D, Standard Provisions, Sections I.G.2 or I.G.4, occurs, the Discharger shall monitor flows and, using appropriate procedures as specified in the MRP, collect and retain samples for affected discharge points on a daily basis for the duration of the bypass. The Discharger shall analyze for total suspended solids (TSS) using 24-hour composites (or more frequent increments) and for bacteria indicators with effluent limits using grab samples. If TSS exceeds 45 mg/L in any composite sample, the Discharger shall also analyze the retained samples for that discharge for all other constituents that have effluent limits, except oil and grease, mercury, dioxin-TEQ, and acute and chronic toxicity. Additionally, at least once each year, the Discharger shall analyze the retained samples for one approved bypass discharge event for all other constituents that have effluent limits, except oil and grease, mercury, dioxin-TEQ, and acute and chronic toxicity. This monitoring shall be in addition to the minimum monitoring specified in the MRP.

c. Storm Water Monitoring

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

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

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

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

(3) Testing for the presence of non-storm water discharges shall be conducted no less than twice during the dry season (May 1 to September 30) at all storm

water discharge locations. Tests may include visual observations of flows, stains, sludges, odors, and other abnormal conditions; dye tests; TV line surveys; or analysis and validation of accurate piping schematics. Records shall be maintained describing the method used, date of testing, locations observed, and test results.

(4) Samples shall be collected from all locations where storm water is discharged. Samples shall represent the quality and quantity of storm water discharged from the facility. If a facility discharges storm water at multiple locations, the Discharger may sample a reduced number of locations if it establishes and documents through the monitoring program that storm water discharges from different locations are substantially identical.

(5) Records of all storm water monitoring information and copies of all reports required by the permit shall be retained for a period of at least three years from the date of sample, observation, or report.

d. Receiving Water Monitoring

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

(1) Receiving water samples shall be collected on days coincident with effluent sampling for conventional pollutants.

(2) Receiving water samples shall be collected at each station on each sampling day during the period within one hour following low slack water. Where sampling during lower slack water is impractical, sampling shall be performed during higher slack water. Samples shall be collected within the discharge plume and down current of the discharge point so as to be representative, unless otherwise stipulated in the MRP.

(3) Samples shall be collected within one foot of the surface of the receiving water, unless otherwise stipulated in the MRP.

B. Biosolids Monitoring

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

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

1. Biosolids Monitoring Frequency
Biosolids disposal must be monitored at the following frequency:

Metric tons biosolids/365 days	**Frequency**
0-290	Once per year
290-1500	Quarterly

1500-15,000	Six times per year
Over 15,000	Once per month
(Metric tons are on a dry weight basis	

2. Biosolids Pollutants to Monitor
Biosolids shall be monitored for the following constituents:

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

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

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

C. Standard Observations

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

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

a. *Floating and suspended materials* (e.g., oil, grease, algae, and other macroscopic particulate matter): presence or absence, source, and size of affected area.

b. *Discoloration and turbidity*: description of color, source, and size of affected area.

c. *Odor*: presence or absence, characterization, source, distance of travel, and wind direction.

d. *Beneficial water use*: presence of water-associated waterfowl or wildlife, fisherpeople, and other recreational activities in the vicinity of each sampling station.

e. *Hydrographic condition*: time and height of corrected high and low tides (corrected to nearest National Oceanic and Atmospheric Administration location for the sampling date and time of sample collection).

f. Weather conditions:

(1) Air temperature; and

(2) Total precipitation during the five days prior to observation.

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

   a. *Floating and suspended material of wastewater origin* (e.g., oil, grease, algae, and other macroscopic particulate matter): presence or absence.

   b. *Odor*: presence or absence, characterization, source, distance of travel, and wind direction.

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

   a. *Material of wastewater origin*: presence or absence, description of material, estimated size of affected area, and source.

   b. *Beneficial use*: estimate number of people participating in recreational water contact, non-water contact, or fishing activities.

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

   a. Determine the amount of freeboard at the lowest point of dikes confining liquid wastes.

   b. Report evidence of leaching liquid from area of confinement and estimated size of affected area. Show affected area on a sketch and volume of flow (e.g., gallons per minute [gpm]).

   c. Regarding odor, describe presence or absence, characterization, source, distance of travel, and wind direction.

   d. Estimate number of waterfowl and other water-associated birds in the disposal area and vicinity.

5. Periphery of Waste Treatment and/or Disposal Facilities Observations
   The requirements of this section only apply when the MRP specifies periphery standard observations. Standard observations shall include the following:

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

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

IV. STANDARD PROVISIONS – RECORDS

A. Records to be Maintained

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

The Discharger shall maintain records in a manner and at a location (e.g., wastewater treatment plant or Discharger offices) such that the records are accessible to 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 Discharger shall retain a chronological log of overflows at the treatment facility and records supporting the information provided in section V.E.2.

C. Claims of Confidentiality

Not Supplemented

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

Not Supplemented

B. Signatory and Certification Requirements

Not Supplemented

C. Monitoring Reports

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

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

   a. Transmittal letter

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

      (1) Identification of all violations of effluent limits or other waste discharge requirements found during the reporting period;

      (2) Details regarding violations: parameters, magnitude, test results, frequency, and dates;

      (3) Causes of violations;

      (4) Discussion of corrective actions taken or planned to resolve violations and prevent recurrences, and dates or time schedule of action implementation (if previous reports have been submitted that address corrective actions, reference to the earlier reports is satisfactory);

      (5) Data invalidation (Data should not be submitted in an SMR if it does not meet quality assurance/quality control standards. However, if the Discharger wishes to invalidate any measurement after it was submitted in an SMR, a letter shall identify the measurement suspected to be invalid and state the Discharger's intent to submit, within 60 days, a formal request to invalidate the measurement. This request shall include the original measurement in question, the reason for invalidating the measurement, all relevant documentation that supports invalidation [e.g., laboratory sheet, log entry, test results, etc.], and

discussion of the corrective actions taken or planned [with a time schedule for completion] to prevent recurrence of the sampling or measurement problem.);

(6) If the Discharger blends, the letter shall describe the duration of blending events and certify whether blended effluent was in compliance with the conditions for blending; and

(7) Signature (The transmittal letter shall be signed according to Section V.B of this Order, Attachment D – Standard Provisions.).

b. Compliance evaluation summary

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

c. Results of analyses and observations

(1) Tabulations of all required analyses and observations, including parameter, date, time, sample station, type of sample, test result, method detection limit, method minimum level, and method reporting level, if applicable, signed by the laboratory director or other responsible official.

(2) When determining compliance with an average monthly effluent limitation and more than one sample result is available in a month, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of detected but not quantified (DNQ) or nondetect (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

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

(b). The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

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

(3) Dioxin-TEQ Reporting: The Discharger shall report for each dioxin and furan congener the analytical results of effluent monitoring, including the quantifiable limit (reporting level), the method detection limit, and the measured concentration. The Discharger shall report all measured values of individual congeners, including data qualifiers. When calculating dioxin-TEQ, the Discharger shall set congener concentrations below the minimum levels (ML) to zero. The Discharger shall calculate and report dioxin-TEQs using the following formula, where the MLs, toxicity equivalency factors (TEFs), and bioaccumulation equivalency factors (BEFs) are as provided in Table A:

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

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

Table A

Minimum Levels, Toxicity Equivalency Factors,
and Bioaccumulation Equivalency Factors

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

d. Data reporting for results not yet available

The Discharger shall make all reasonable efforts to obtain analytical data for required parameter sampling in a timely manner. Certain analyses require

additional time to complete analytical processes and report results. For cases where required monitoring parameters require additional time to complete analytical processes and reports, and results are not available in time to be included in the SMR for the subject monitoring period, the Discharger shall describe such circumstances in the SMR and include the data for these parameters and relevant discussions of any observed exceedances in the next SMR due after the results are available.

e. Flow data

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

f. Annual self monitoring report requirements

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

(1) Annual compliance summary table of treatment plant performance, including documentation of any blending events;

(2) Comprehensive discussion of treatment plant performance and compliance with the permit (This discussion shall include any corrective actions taken or planned, such as changes to facility equipment or operation practices that may be needed to achieve compliance, and any other actions taken or planned that are intended to improve performance and reliability of the Discharger's wastewater collection, treatment, or disposal practices.);

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

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

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

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

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

(5) Plan view drawing or map showing the Discharger's facility, flow routing, and sampling and observation station locations;

(6) Results of annual facility inspection to verify that all elements of the SWPP Plan are accurate and up to date (only required if the Discharger does not route all storm water to the headworks of its wastewater treatment plant); and

(7) Results of facility report reviews (The Discharger shall regularly review, revise, and update, as necessary, the O&M Manual, the Contingency Plan, the Spill Prevention Plan, and Wastewater Facilities Status Report so that these documents remain useful and relevant to current practices. At a minimum, reviews shall be conducted annually. The Discharger shall include, in each Annual Report, a description or summary of review and evaluation procedures, recommended or planned actions, and an estimated time schedule for implementing these actions. The Discharger shall complete changes to these documents to ensure they are up-to-date.).

g. Report submittal

The Discharger shall submit SMRs to:

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

h. Reporting data in electronic format

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

(1) Reporting Method: The Discharger shall submit SMRs electronically via a process approved by the Executive Officer (see, for example, the letter dated December 17, 1999, "Official Implementation of Electronic Reporting System [ERS]" and the progress report letter dated December 17, 2000).

(2) Monthly or Quarterly Reporting Requirements: For each reporting period (monthly or quarterly as specified in the MRP), the Discharger shall submit an electronic SMR to the Regional Water Board in accordance with the provisions of Section V.C.1.a-e, except for requirements under Section V.C.1.c(1) where ERS does not have fields for dischargers to input certain information (e.g., sample time). However, until USEPA approves the electronic signature or other signature technologies, Dischargers that use ERS shall submit a hard copy of the original transmittal letter, an ERS printout of the data sheet, and a violation report (a receipt of the electronic transmittal shall be retained by the Discharger). This electronic SMR submittal suffices for the signed tabulations specified under Section V.C.1.c(1).

(3) Annual Reporting Requirements: Dischargers who have submitted data using the ERS for at least one calendar year are exempt from submitting the portion of the annual report required under Section V.C.1.f(1) and (3).

D. Compliance Schedules

Not supplemented

E. Twenty-Four Hour Reporting

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

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

   b. The Discharger shall also report such spills to the State Office of Emergency Services [telephone (800) 852-7550] only when the spills are in accordance with applicable reporting quantities for hazardous materials.

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

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

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

      (3) Nature of material spilled;

      (4) Quantity of material involved;

      (5) Receiving water body affected, if any;

      (6) Cause of spill;

      (7) Estimated size of affected area;

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

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

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

      (11) Persons or agencies notified.

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

   a. Two (2)-Hour Notification

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

      (1) Incident description and cause;

      (2) Location of threatened or involved waterway(s) or storm drains;

      (3) Date and time the unauthorized discharge started;

      (4) Estimated quantity and duration of the unauthorized discharge (to the extent known), and the estimated amount recovered;

      (5) Level of treatment prior to discharge (e.g., raw wastewater, primary treated, undisinfected secondary treated, and so on); and

      (6) Identity of the person reporting the unauthorized discharge.

   b. 24-hour Certification

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

   c. 5-Day Written Report

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

[1] 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.

(1) Methods used to delineate the geographical extent of the unauthorized discharge within receiving waters;

(2) Efforts implemented to minimize public exposure to the unauthorized discharge;

(3) Visual observations of the impacts (if any) noted in the receiving waters (e.g., fish kill, discoloration of water) and the extent of sampling if conducted;

(4) Corrective measures taken to minimize the impact of the unauthorized discharge;

(5) Measures to be taken to minimize the chances of a similar unauthorized discharge occurring in the future;

(6) Summary of Spill Prevention Plan or O&M Manual modifications to be made, if necessary, to minimize the chances of future unauthorized discharges; and

(7) Quantity and duration of the unauthorized discharge, and the amount recovered.

d. Communication Protocol

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

Table B

Summary of Communication Requirements for Unauthorized Discharges[1] from Municipal Wastewater Treatment Plants

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

[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.

F. Planned Changes

Not supplemented

G. Anticipated Noncompliance

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:

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

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. POTW removal efficiency is the ratio of pollutants removed by the treatment facilities to pollutants entering the treatment facilities (expressed as a percentage). The Discharger shall determine removal efficiencies using monthly averages (by calendar month unless otherwise specified) of pollutant concentration of influent and effluent samples collected at about the same time and using the following equation (or its equivalent):

Removal Efficiency (%) = 100 × [1-(Effluent Concentration/Influent Concentration)]

2. Biosolids means the solids, semi-liquid suspensions of solids, residues, screenings, grit, scum, and precipitates separated from or created in wastewater by the unit processes of a treatment system. It also includes, but is not limited to, all supernatant, filtrate, centrate, decantate, and thickener overflow and underflow in the solids handling parts of the wastewater treatment system.

3. Blending is the practice of recombining wastewater that has been biologically treated with wastewater that has bypassed around biological treatment units.

4. Bottom sediment sample is (1) a separate grab sample taken at each sampling station for the determination of selected physical-chemical parameters, or (2) four grab samples collected from different locations in the immediate vicinity of a sampling station while the boat is anchored and analyzed separately for macroinvertebrates.

5. Composite sample is a sample composed of individual grab samples collected manually or by an automatic sampling device on the basis of time or flow as specified in the MRP. For flow-based composites, the proportion of each grab sample included in the composite sample shall be within plus or minus five percent (+/-5%) of the representative flow rate of the waste stream being measured at the time of grab sample collection. Alternatively, equal volume grab samples may be individually analyzed with the flow-weighted average calculated by averaging flow-weighted ratios of each grab sample analytical result. Grab samples comprising time-based composite samples shall be collected at intervals not greater than those specified in the MRP. The quantity of each grab sample comprising a time-based composite sample shall be a set of flow proportional volumes as specified in the MRP. If a particular time-based or flow-based composite sampling protocol is not specified in the MRP, the Discharger shall determine and implement the most representative sampling protocol for the given parameter subject to Executive Officer approval.

6. Depth-integrated sample is defined as a water or waste sample collected by allowing a sampling device to fill during a vertical traverse in the waste or receiving water body being sampled. The Discharger shall collect depth-integrated samples in such a manner that the collected sample will be representative of the waste or water body at that sampling point.

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

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

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

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

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

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

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

14. Untreated waste is raw wastewater.

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

Table C

List of Monitoring Parameters and Analytical Methods

CTR No.	Pollutant/Parameter	Analytical Method[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	601	1.0	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
	Bromomethane													
35.	Methyl Chloride or Chloromethane	601	0.5	2										
36.	Methylene Chloride or Dichlorormethane	601	0.5	2										
37.	1,1,2,2-Tetrachloroethane	601	0.5	1										
38.	Tetrachloroethylene	601	0.5	2										
40.	1,2-Trans-Dichloroethylene	601	0.5	1										
41.	1,1,1-Trichloroethane	601	0.5	2										
42.	1,1,2-Trichloroethane	601	0.5	2										
43.	Trichloroethene	601	0.5	2										
44.	Vinyl Chloride	601	0.5	2										
45.	2-Chlorophenol	604	2	5										
46.	2,4-Dichlorophenol	604	1	5										
47.	2,4-Dimethylphenol	604	1	2										
48.	2-Methyl-4,6-Dinitrophenol or Dinitro-2-methylphenol	604	10	5										
49.	2,4-Dinitrophenol	604	5	5										
50.	2-Nitrophenol	604		10										
51.	4-Nitrophenol	604	5	10										
52.	3-Methyl-4-Chlorophenol	604	5	1										
53.	Pentachlorophenol	604	1	5										
54.	Phenol	604	1	1		50								
55.	2,4,6-Trichlorophenol	604	10	10										
56.	Acenaphthene	610 HPLC	1	1	0.5									
57.	Acenaphthylene	610 HPLC		10	0.2									
58.	Anthracene	610 HPLC		10	2									
60.	Benzo(a)Anthracene or 1,2 Benzanthracene	610 HPLC	10	5										
61.	Benzo(a)Pyrene	610 HPLC		10	2									
62.	Benzo(b)Fluoranthene or 3,4 Benzofluoranthene	610 HPLC		10	10									
63.	Benzo(ghi)Perylene	610 HPLC		5	0.1									
64.	Benzo(k)Fluoranthene	610 HPLC		10	2									
74.	Dibenzo(a,h)Anthracene	610 HPLC		10	0.1									
86.	Fluoranthene	610 HPLC	10	1	0.05									
87.	Fluorene	610 HPLC		10	0.1									
92.	Indeno(1,2,3-cd) Pyrene	610 HPLC		10	0.05									
100.	Pyrene	610 HPLC		10	0.05									
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										

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
71.	2-Chloronaphthalene	625		10										
72.	4-Chlorophenyl Phenyl Ether	625		5										
73.	Chrysene	625		10	5									
78.	3,3'-Dichlorobenzidine	625		5										
82.	2,4-Dinitrotoluene	625	10	5										
83.	2,6-Dinitrotoluene	625		5										
85.	1,2-Diphenylhydrazine (note)[7]	625		1										
88.	Hexachlorobenzene	625	5	1										
89.	Hexachlorobutadiene	625	5	1										
90.	Hexachlorocyclopentadiene	625	5	5										
91.	Hexachloroethane	625	5	1										
93.	Isophorone	625	10	1										
94.	Naphthalene	625	10	1	0.2									
95.	Nitrobenzene	625	10	1										
96.	N-Nitrosodimethylamine	625	10	5										
97.	N-Nitrosodi-n-Propylamine	625	10	5										
98.	N-Nitrosodiphenylamine	625	10	1										
99.	Phenanthrene	625		5	0.05									
101.	1,2,4-Trichlorobenzene	625	1	5										
102.	Aldrin	608	0.005											
103.	α-BHC	608	0.01											
104.	β-BHC	608	0.005											
105.	γ-BHC (Lindane)	608	0.02											
106.	δ-BHC	608	0.005											
107.	Chlordane	608	0.1											
108.	4,4'-DDT	608	0.01											
109.	4,4'-DDE	608	0.05											
110.	4,4'-DDD	608	0.05											
111.	Dieldrin	608	0.01											
112.	Endosulfan (alpha)	608	0.02											
113.	Endosulfan (beta)	608	0.01											
114.	Endosulfan Sulfate	608	0.05											
115.	Endrin	608	0.01											
116.	Endrin Aldehyde	608	0.01											
117.	Heptachlor	608	0.01											
118.	Heptachlor Epoxide	608	0.01											
119-125	PCBs: Aroclors 1016, 1221, 1232, 1242, 1248, 1254, 1260	608	0.5											
126.	Toxaphene	608	0.5											

Footnotes to Table C:

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

2 Minimum levels are from the *State Implementation Policy*. They are the concentration of the lowest calibration standard for that technique based on a survey of contract laboratories. Laboratory techniques are defined as follows: GC = Gas Chromatography; GCMS = Gas Chromatography/Mass Spectrometry; LC = High Pressure Liquid Chromatography; Color = Colorimetric; FAA = Flame Atomic Absorption; GFAA = Graphite Furnace Atomic Absorption; ICP = Inductively Coupled Plasma; ICPMS = Inductively Coupled Plasma/Mass Spectrometry; SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption (i.e., 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 Discharger shall use ultra-clean sampling (USEPA Method 1669) and ultra-clean analytical methods (USEPA Method 1631) for mercury monitoring. The minimum level for mercury is 2 ng/l (or 0.002 ug/l).

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 Discharger shall analyze for 1,2-diphenylhydrazine.