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

STAFF SUMMARY REPORT (Tong Yin)
MEETING DATE: October 8, 2008

ITEMS **8a and 8b**

SUBJECT: **Sonoma Valley County Sanitation District, Wastewater Treatment Plant, Sonoma, Sonoma County -** Reissuance of NPDES Permit (Item 8a) and Issuance of Cease and Desist Order (CDO) (Item 8b)

CHRONOLOGY: March 2002 – Permit reissued

DISCUSSION: The Revised Tentative Order (Appendix A) would reissue the NPDES permit for the Sonoma Valley County Sanitation District (District). The Revised Tentative CDO (Appendix B) would require specific actions to comply with new and more stringent copper effluent limits to be imposed through the reissued permit.

The District owns a wastewater treatment plant that serves a population of approximately 36,000. It has an average dry weather flow design capacity of 3.0 million gallons per day (mgd) and can treat up to 16 mgd during wet weather peak flows. From November through April, when natural runoff provides dilution, treated wastewater is discharged to Schell Slough and Hudeman Slough. From May through October, treated wastewater is reclaimed for agricultural irrigation and wetland enhancement.

The District and the Bay Area Clean Water Agencies (BACWA) submitted comments (Appendix C) on a draft permit and draft CDO. Appendix D contains our responses to the comments we received. We have resolved most of the concerns. The remaining significant concerns relate to dioxins and ammonia limits. The dioxin comments are similar to those the Board has considered at previous permit hearings. In addition, the District requests to use Bioaccumulation Equivalency Factors (BEFs) when reporting dioxins for compliance purposes. We are working cooperatively with BACWA to evaluate the potential use of BEFs in the near future. When we better understand their basis and the implications of routinely incorporating them into NPDES permits, we may propose them with future permits. As for the ammonia effluent limits, the District and BACWA both request the same dilution credit approved for cyanide with the recently approved cyanide site-specific objectives. We do not believe existing information is sufficient to support the use of the same dilution credit for ammonia at this time.

RECOMMEN-DATION: Adopt the Revised Tentative Order and Revised Tentative CDO.

FILE NUMBER: Case File 2149.4009; WDID 2 494009001
CIWQS Place ID: 257754

APPENDICES:
A. Revised Tentative Order
B. Revised Tentative CDO
C. Comment Letters
D. Response to Comments

APPENDIX A

REVISED TENTATIVE ORDER

California Regional Water Quality Control Board

Linda S. Adams
Secretary of Environmental Protection

San Francisco Bay Region

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

Arnold Schwarzenegger
Governor

ORDER NO. R2-2008-XXXX
NPDES NO. CA0037800

WASTE DISCHARGE REQUIREMENTS FOR THE SONOMA VALLEY COUNTY SANITATION DISTRICT

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

Table 1. Discharger Information

Discharger	Sonoma Valley County Sanitation District
Name of Facility	Sonoma Valley County Sanitation District Wastewater Treatment Plant and its sewage collection system
Facility Address	22675 8th Street East
	Sonoma, CA 95476
	Sonoma County
The U.S. Environmental Protection Agency and the Regional Water Quality Control Board have classified this discharge as a major discharge.	

The discharge by the Sonoma Valley County Sanitation District from the discharge points identified below is subject to waste discharge requirements as set forth in this Order:

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Secondary-treated	38°14' 14" N	122°25' 51" W	Schell Slough
002	Tertiary-treated	38°13' 09" N	122°23' 13" W	Hudeman Slough
003	Tertiary-treated	38°13' 21" N	122°24' 06" W	Ringstrom Bay
004	Tertiary-treated	38°13' 06" N	122°22' 60" W	Management Unit 3
005	Tertiary-treated	38°13' 08" N	122°23' 25" W	Management Unit 1
006 (to be constructed)	Tertiary-treated	38°12' 13" N	122°19' 54" W	Fly Bay and Napa Sonoma Salt Marsh

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	XXXX, 2008
This Order shall become effective on:	XXXX, 2008
This Order shall expire on:	XXXX, 2013
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 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 XXXX, 2008.

_____

Bruce H. Wolfe, Executive Officer

Table of Contents

I. Facility Information 1
II. Findings 1
III. Discharge Prohibitions 9
IV. Effluent Limitations and Discharge Specifications 10
A. Effluent Limitations for Conventional and Non-Conventional Pollutants 10
B. Final Effluent Limitations for Toxics Substances 13
C. Interim Effluent Limit for Heptachlor 15
D. Land Discharge Specifications 15
E. Reclamation Specifications 15
V. Receiving Water Limitations 15
A. Surface Water Limitation 15
B. Groundwater Limitations 17
VI. Wetlands Enhancement Project Specifications 17
VII. Provisions 17
A. Standard Provisions 17
B. MRP Requirements 17
C. Special Provisions 18
1. Reopener Provisions 18
2. Special Studies, Technical Reports and Additional Monitoring Requirements 18
3. Best Management Practices and Pollution Prevention (P2) 20
4. Action Plan for Cyanide 22
5. Action Plan for Copper 23
6. Compliance Schedule and Compliance with Final Effluent Limits 24
7. Construction, Operation and Maintenance Specifications 26
8. Special Provisions for POTWs 27
VIII. Compliance Determination 29

List of Tables

Table 1. Discharger Information i
Table 2. Discharge Locations i
Table 3. Administrative Information ii
Table 4. Facility Information 1
Table 5. Basin Plan Beneficial Uses and Potential Beneficial Uses 5
Table 6. Effluent Limitations for Conventional and Non-Conventional Pollutants 10
Table 7. Final Effluent Limitations for Toxic Pollutants 13
Table 8. Interim Effluent Limitation for Heptachlor 15

List of Attachments

Attachment A – Definitions A-1
Attachment B – Location Maps B-1
Attachment C – Flow Schematic C-1
Attachment D – Standard Provisions D-1
Attachment E – Monitoring and Reporting Program E-1
Attachment F – Fact Sheet F-1
Attachment G – The following documents are part of this Permit, but are not physically attached due to volume. They are available on the internet at http://www.waterboards.ca.gov/sanfranciscobay/publications_forms/avail_doc.shtml
- Standard Provisions and Reporting Requirements, August 1993
- Self-Monitoring Program, Part A, adopted August 1993
- Regional Water Board Resolution 74-10
- August 6, 2001 Staff Letter: Requirement for Priority Pollutant Monitoring in Receiving Water and Wastewater Discharges
- Resolution 74-10: Policy Regarding Waste Discharger's Responsibilities to Develop and Implement Contingency Plans

I. FACILITY INFORMATION

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

Table 4. Facility Information

Discharger	Sonoma Valley County Sanitation District
Operator	Sonoma County Water Agency
Name of Facility	Sonoma Valley County Sanitation District Wastewater Treatment Plant and its sewage collection system
Facility Address	22675 8th Street East
	Sonoma, CA 95476
	Sonoma County
Facility Contact, Title, and Phone	Hody Wilson, Water Agency Coordinator, (707) 521-1843
Mailing Address	P.O. Box 11628, Santa Rosa, CA 95406
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	3.0 million gallons per day (MGD)
Facility Wet Weather Capacity	11 MGD (maximum discharge flow at Outfall 001) 16 MGD (peak wet weather design capacity)
Service Areas	Sonoma, unincorporated areas of Glen Ellen, Boyes Hot Springs, El Verano, and Agua Caliente
Population Served	36,000
Reclamation (Yes)	Regional Water Board Order No. 92-067

II. FINDINGS

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

A. Background

The Sonoma Valley County Sanitation District (hereinafter the Discharger) is currently discharging pursuant to Order Nos. R2-2002-0046 and R2-2005-0009 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA 0037800. The Discharger submitted a Report of Waste Discharge (ROWD), dated September 7, 2006, and supplementals on October 31, 2007 and April 4, 2008, and applied for an NPDES permit renewal to discharge up to 3.0 million gallons per day (MGD) of treated wastewater from the Discharger's wastewater treatment plant.

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 Locations

1. Facility Description

The Discharger owns and Sonoma County Water Agency operates the wastewater treatment plant and collection systems (hereinafter Facility). The plant provides secondary treatment to the wastewater collected from the City of Sonoma, unincorporated areas of Glen Ellen, Boyes Hot Springs, El Verano, and Agua Caliente. Treatment processes consist of flow equalization; pretreatment by screening and grit removal; extended aeration activated sludge treatment; secondary sedimentation; and effluent disinfection by chlorination and dechlorination.

The Discharger has also constructed new cloth disk media filters and put these filters online in December 2007. The filters can provide tertiary filtration to all dry weather flows and may also treat all secondary effluent flows during the wet season.

The treatment plant has a dry weather design capacity of 3 MGD and can treat up to 16 MGD during the wet season. But the discharge flow is limited to 11 MGD by effluent pump and discharge pipeline capacity. In addition, there are four lined equalization basins (total volume equal to 35 million gallons) that provide temporary storage for excess wet weather flows.

The Discharger's wastewater collection system includes 134.5 miles of gravity-flow sanitary sewer lines ranging in diameter from 6 to 42 inches and two pump stations.

2. Discharge Locations

There are six discharge points (001-006), as indicated in Table 2 on the cover page.

During the wet season from November 1 through April 30, wastewater is discharged from Discharge Point 001 to Schell Slough, a water of the State and the United States, and a tributary to Sonoma Creek within the San Pablo Basin. Discharge from 001 can occur directly from the wastewater treatment plant, or from reclamation reservoirs R1, R2, R4, or a combination of reservoirs.

Discharge Point 002 is available to drain reclamation reservoirs (R1 and R2) directly to Hudeman Slough, also a tributary to Sonoma Creek, during the wet season, but has not been used since 2000/2001. However, the Discharger wants to keep this discharge point in the permit to allow operational flexibility to use the outfall if the need arises. Discharge Point 002 can receive recycled water from R1, R2, or a combination of both reservoirs.

During the dry season from May 1 through October 31, discharge into Schell Slough is prohibited. Treated effluent is discharged to four reclamation reservoirs (R1 through R4) and is used for irrigation and wetland enhancement. The wetland areas are Management Units 1 and 3 (MU1 and MU3) and Ringstrom Bay, which are waters of the State. Ringstrom Bay (Discharge Point 003) can receive recycled

water directly from the treatment plant effluent line, R1, R2, R4, or a combination of the reservoirs. MU3 (Discharge Point 004) can receive recycled water directly from the treatment plant effluent line, R1, R2, R4, or a combination of the reservoirs. MU1 (Discharge Point 005) can only receive recycled water directly from the drainage gate of R1. Discharges from reclamation reservoirs to wetlands can also occur during other times of the year.

At the beginning of the wet season, treated wastewater remaining in the reservoirs is released through MU1 and MU3 to Hudeman Slough, and through Ringstrom Bay to Schell Slough through tidal and canal gates.

The Discharger is working on a project to restore the Napa-Sonoma salt marsh using reclaimed water. That discharge will occur at Discharge Point 006 to Fly Bay, which may be constructed and become operational during this permit term. Discharge Point 006 is expected to receive recycled water directly from the treatment plant effluent line, R1, R2, R4, or a combination of the reservoirs. The requirements for Outfall 006 will not be in effect until the outfall is constructed and operational.

Attachment B provides a map of the area around the Facility, including discharge and receiving water monitoring locations. **Attachment C** provides a flow schematic of the Facility.

In addition, the Discharger needs to extract groundwater under R4 to keep the reservoir's liners in place when the reservoir is fully drained. Currently, approximately 20 million gallons of recycled water needs to be kept in the reservoir to counteract buoyancy forces created by high groundwater levels. Consequently, 20% of the reservoir's capacity is currently unavailable. The Discharger will apply for coverage under the Regional Water Board's general permit for extracted groundwater, NPDES Permit No. CAG912004, adopted through Order No. R2-2007-0033. Once coverage is granted, the Discharger will be able to pump groundwater to restore capacity in R4.

A more detailed description of the wetland enhancement and discharge practices is in the attached Fact Sheet (**Attachment F**).

C. Legal Authorities

This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California Water Code (hereinafter Water Code, 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 Water Code (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 this Order's requirements, is hereby incorporated into this Order and constitutes part of the Findings for this Order. **Attachments A through G** 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 title 40 of the Code of Federal Regulations (40 CFR) section 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. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 CFR 133 and/or Best Professional Judgment (BPJ) in accordance with 40 CFR 125.3. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet (**Attachment F**).

G. Water Quality-Based Effluent Limitations

CWA sections 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, water quality-based effluent limitations (WQBELs) must be established using (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).

H. Water Quality Control Plan

The Regional Water Board adopted a Water Quality Control Plan for the San Francisco Bay Region (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives (WQOs), and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. The Basin Plan is

the Regional Water Board's master water quality control planning document. The Basin Plan was duly adopted by the Regional Water Board and approved by the State Water Resources Control Board (hereinafter State Water Board), Office of Administrative Law (OAL) and the USEPA, where required. Requirements of this Order implement the Basin Plan.

The Basin Plan at Chapter 2 states that the beneficial uses of any specifically identified water body generally apply to its tributary streams. The Basin Plan does not specifically identify beneficial uses for Schell Slough or Hudeman Slough, but does identify present beneficial uses for Sonoma Creek, to which Schell and Hudeman Sloughs, via the Second Napa Slough, are tributaries. Therefore, the beneficial uses designated to Sonoma Creek also apply to these two sloughs. In addition, 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 (MUN). Because Shell and Hudeman Sloughs are both tidally influenced, total dissolved solids levels in these sloughs are around several thousand milligrams per liter (mg/L), thereby meeting an exception to Resolution No. 88-63. The MUN designation is therefore not applicable to Schell or Hudeman Slough.

MU1, MU3, and Ringstrom Bay are wetland areas that are tidally connected during part of the year with either Schell Slough or Hudeman Slough. Fly Bay and Napa-Sonoma Marsh is either tidally connected with Napa River or San Pablo Bay. The Basin Plan has not designated beneficial uses for these wetland areas; however, it establishes potential beneficial uses for wetlands in general. These potential beneficial uses are listed in the table below. However, because of their remote location, many of these beneficial uses are significantly limited.

These beneficial uses are listed in Table 5 below.

Table 5. Basin Plan Beneficial Uses and Potential Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001 and 002	Schell Slough and Hudeman Slough	Cold Water Habitat (COLD) Fish Migration (MIGR) Preservation of Rare and Endangered Species (RARE) Water Contact Recreation (REC1) Non-contact Water Recreation (REC2) Fish Spawning (SPWN) Warm Water Habitat (WARM) Wildlife Habitat (WILD)
003, 004, 005, 006	MU1, MU3, Ringstrom Bay, Fly Bay, Napa-Sonoma Marsh	Wildlife Habitat (WILD) Preservation of Rare and Endangered Species (RARE) Estuarine Habitat (EST) Water Contact Recreation (REC1) Non-contact Water Recreation (REC2) Fish Migration (MIGR) Fish Spawning (SPWN) Ocean Commercial and Sport Fishing (COMM) Shellfish Harvesting (SHELL) Marine Habitat (MAR)

I. Receiving Water TMDLs

The Regional Water Board adopted the Sonoma Creek Pathogen TMDL on June 14, 2006, and the State Water Board approved this TMDL in September 2007. The total coliform effluent limits in this Order are no less stringent than the Waste Load Allocation (WLA) for the Discharger in this TMDL; therefore, they are consistent with the TMDL. In addition, the San Francisco Bay mercury TMDL addresses mercury in San Pablo Bay. The discharge of mercury from the Facility to San Pablo Bay is regulated under a watershed permit, NPDES Permit No. CA0038849, adopted through Order No. R2-2007-0077.

J. National Toxics Rule (NTR) and California Toxics Rule (CTR)

The USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About forty criteria in the NTR applied in California. On May 18, 2000, the USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority pollutants.

K. State Implementation Policy

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

L. Compliance Schedules and Interim Requirements

Section 2.1 of the SIP provides that, based on a discharger's request and demonstration that it is infeasible for an existing discharger to achieve immediate compliance with an effluent limitation derived from a CTR criterion, compliance schedules may be allowed in an NPDES permit. Unless an exception has been granted under section 5.3 of the SIP, a compliance schedule may not exceed 5 years from the date that the permit is issued or reissued, nor may it extend beyond 10 years from the effective date of the SIP (or May 18, 2010) to establish and comply with CTR criterion-based effluent limitations. Where a compliance schedule for a final effluent limitation exceeds 1 year, the order must include interim numeric limitations for that constituent or parameter. The Basin Plan allows compliance schedules and interim effluent limitations or discharge specifications to allow time to implement a new or revised water quality objective.

The State Water Board adopted Resolution No. 2008-0025 on April 15, 2008, titled "Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits", which includes compliance schedule policies for pollutants that are not addressed by the SIP. This policy will become effective after USEPA and OAL's approval, when it will supersede the Basin Plan's compliance schedule policy.

This Order includes a compliance schedule and an interim effluent limitation for heptachlor as allowed by the SIP. This Order grants a compliance schedule for dioxin-TEQ as allowed by the Basin Plan, consistent with the State Water Board's new policy, except an interim limit is not included for dioxin-TEQ at this time because of insufficient effluent data. A detailed discussion of the basis for the compliance schedules and interim effluent limitations is included in the Fact Sheet.

M. Alaska Rule

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

N. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on biochemical oxygen demand (BOD), total suspended solids (TSS), pH, oil and grease, total coliform, and total chlorine residual. Restrictions on these pollutants are specified in federal regulations and are no more stringent than required by the CWA. WQBELs have been derived to implement WQOs that protect beneficial uses. Both the beneficial uses and the WQOs have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR 131.38. The procedures for calculating the individual WQBELs are based on the SIP. Most beneficial uses and WQOs contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any WQOs and beneficial uses submitted to the USEPA prior to May 30, 2000, but not approved by the USEPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to 40 CFR 131.21(c)(1). The remaining WQOs and beneficial uses implemented by this Order [arsenic, cadmium, chromium (VI), copper (fresh water), lead, nickel, silver (1-hour), and zinc] were approved by the USEPA on January 5, 2005, and are applicable water quality standards pursuant to 40 CFR 131.21(c)(2). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the CWA and the applicable water quality standards for purposes of the CWA.

O. Antidegradation Policy

40 CFR 131.12 requires that the 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. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. As discussed in detail in the Fact Sheet (**Attachment F**), the permitted discharge is consistent with the antidegradation provision of 40 CFR 131.12 and State Water Board Resolution No. 68-16.

P. Anti-Backsliding Requirements

Sections 402(o)(2) and 303(d)(4) of the CWA and 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous permit.

Q. 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 the applicable Endangered Species Act.

R. Monitoring and Reporting Program (MRP, Attachment E)

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

S. Standard and Special Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in **Attachment D**. The Discharger must comply with all standard provisions and any additional conditions specified under

40 CFR 122.42. The Regional Water Board has also included in this Order special provisions applicable to the Discharger. A rationale for the special provisions contained in this Order is provided in the Fact Sheet (**Attachment F**).

T. Provisions and Requirements Implementing State Law

No provisions or requirements in this Order are included to implement state law only. All provisions and requirements are required or authorized under the federal CWA; consequently, violations of these provisions and requirements are subject to the enforcement remedies that are available for NPDES violations.

U. Notification of Interested Parties

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided them with an opportunity to submit written comments and recommendations. Details of notification are provided in the Fact Sheet (**Attachment F**).

V. Consideration of Public Comment

The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet (**Attachment F**).

THEREFORE, IT IS HEREBY ORDERED, that Order Nos. R2-2002-0046 and R2-2005-0009 are rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in Division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

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

B. Discharge to Schell Slough or Hudeman Slough is prohibited during the dry season each year, from May 1 through October 31, unless the Discharger submits a report to the Executive Officer and the Executive Officer approves it. This report must fully explain the need for the discharges and the calculated dilution the discharge will receive during this period (e.g., discharges to Schell Slough and Hudeman Slough may be allowed when high flows occur related to late spring or early fall storm events, and reclamation is not feasible).

C. The average dry weather flow as measured at monitoring station EFF-001 or EFF-001B as described in the attached MRP (**Attachment E**), shall not exceed 3.0 MGD. Actual average dry weather flow shall be determined for compliance with this prohibition over three consecutive dry weather months each year.

D. The bypass of untreated or partially treated wastewater to waters of the United States is prohibited, except as provided for section I.G.2 of **Attachment D** of this Order.

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

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations for Conventional and Non-Conventional Pollutants

1. Effluent Limitations for BOD_5, TSS, pH, Oil and Grease, and Total Chlorine Residual at Discharge Points 001 through 006

The Discharger shall maintain compliance with the following effluent limitations for discharges at Discharge Points 001 through 006. (1) Compliance for discharges to Schell Slough via Discharge Point 001 is measured at Monitoring Location EFF-001; (2) compliance for the discharge to sloughs or wetlands via Discharge Points 002 through 006 (from reclamation reservoirs R1, R2, and R4) is measured at Monitoring Location EFF-001B, except the compliance with total chlorine residual for discharges from R1, R2, or R4 shall be measured at Monitoring Location EFF-003, EFF-004, EFF-005, or EFF-006. The MRP (**Attachment E**) includes descriptions of all monitoring locations.

Table 6. Effluent Limitations for Conventional and Non-Conventional Pollutants

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
BOD 5-day@ 20°C (BOD_5)	mg/L	30	45	--	--	--
TSS	mg/L	30	45	--	--	--
BOD_5 and TSS percent removal[1]	%	85 (minimum)	--	--	--	--
pH[2]	standard units	--	--	--	6.5	8.5
Oil and Grease	mg/L	10	--	20	--	--
Total Chlorine residual[3]	mg/L	--	--	--	--	0.0

Footnotes for Table 6:

[1] The average monthly percent removal of BOD_5 and TSS, by concentration, shall not be less than 85 percent of the arithmetic mean of the respective values for influent samples collected at approximately the same times.

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

[3] This requirement is defined as below the limit of detection in standard test methods as defined in the latest edition of *Standard Methods for the Examination of Water and Wastewater.* The Discharger

may elect to use a continuous on-line monitoring system for measuring flows, chlorine residual and sodium bisulfite (or other dechlorinating chemical) dosage and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Regional Water Board staff may conclude that these false positive chlorine residual exceedances are not violations of this limitation.

2. Total Coliform Effluent Limits of Discharge Points 001 through 006

The Discharger shall comply with the following total coliform effluent limits, (1) for the discharge to Schell Slough via Discharge Point 001 with compliance measured at Monitoring Location EFF-001, and (2) for the discharge to sloughs or wetlands via Discharge Points 002 through 006 (from reclamation reservoirs R1, R2, and R4), with compliance measured at Monitoring Location EFF-001B as described in the attached MRP (**Attachment E**):

(1) The moving median value for the Most Probable Number (MPN) of total coliform bacteria in any five (5) consecutive samples shall not exceed 23 MPN/100 mL; and

(2) Any single sample shall not exceed 240 MPN/100 mL.

3. Whole Effluent Acute Toxicity

a. Representative samples of all discharges (001 through 006) shall meet the following limits for acute toxicity. Compliance for discharges to Schell Slough via Discharge Point 001 shall be measured at Monitoring Location EFF-001. Compliance for discharges to sloughs or wetlands via Discharge Points 002 through 006 (from reclamation reservoirs R1, R2, and R4) shall be measured at Monitoring Location EFF-003, EFF-004, EFF-005, or EFF-006 as described in the attached MRP (**Attachment E**).

Compliance with these effluent limits shall be achieved in accordance with Section V.A of the MRP (**Attachment E**). Test results for Discharge Point 001 and Discharge Points 002 through 006 shall comply with these effluent limits separately.

(1) The survival of bioassay test organisms in 96-hour flow-through at EFF-001 and 96-hour static non-renewal bioassays at EFF-003, EFF-004, EFF-005, or EFF-006 of undiluted effluent shall be:

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

ii. An eleven (11)-sample 90th percentile value of not less than 70 percent survival.

(2) These acute toxicity limits are further defined as follows:

i. 11-sample median limit:

Any bioassay test showing survival of 90 percent or greater is not a violation of this limit. A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit if five or more of the past ten or fewer bioassay tests also show less than 90 percent survival.

ii. 90th percentile limit:

Any bioassay test showing survival of 70 percent or greater is not a violation of this limit. A bioassay test showing survival of less than 70 percent represents a violation of this effluent limit if one or more of the past ten or fewer bioassay tests also show less than 70 percent survival.

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

4. Whole Effluent Chronic Toxicity of Discharge Point 001

a. Compliance with the Basin Plan narrative chronic toxicity objective shall be demonstrated according to the following tiered requirements based on results from representative samples of discharges to Schell Slough via Discharge Point 001 with compliance measured at Monitoring Location EFF-001 as described in the attached MRP (**Attachment E**).

(1) Conduct routine monitoring;

(2) Accelerate monitoring to monthly after exceeding a three sample median value of 1 chronic toxicity unit (TUc[1]) or a single sample maximum of 2 TUc or greater.

(3) Return to routine monitoring if accelerated monitoring does not exceed either "trigger" in (2);

(4) If accelerated monitoring confirms consistent toxicity above either the "trigger" in (2), above, initiate toxicity identification evaluation/toxicity reduction evaluation (TIE/TRE) in accordance with a workplan submitted in accordance with Section V.B of the MRP (**Attachment E**), incorporating any and all comments from the Executive Officer;

[1] A TUc equals 100 divided by the no observable effect level (NOEL). The NOEL is determined from IC, EC, or NOEC values. These terms, their usage, and other chronic toxicity monitoring program requirements are defined in more detail in the MRP (**Attachment E**). Monitoring and TRE requirements may be modified by the Executive Officer in response to the degree of toxicity detected in the effluent or in ambient waters related to the discharge.

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

b. **Test Species and Methods.** The Discharger shall conduct routine monitoring with the most sensitive species determined during the most recent chronic toxicity screening performed by the Discharger as approved by the Executive Officer. Chronic Toxicity Monitoring Screening Phase Requirements, Critical Life Stage Toxicity Tests and definitions of terms used in the chronic toxicity monitoring are identified in **Appendices E-1 and E-2** of the MRP (**Attachment E**). In addition, bioassays shall be conducted in compliance with the most recently promulgated test methods, "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms," currently fourth Edition (EPA-821-R-02-013), with exceptions granted by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

c. Compliance with the criteria in (a) above shall be achieved in accordance with Section V.B of the MRP (**Attachment E**). Failure to conduct the required toxicity tests or a TRE within a designated period will result in the establishment of effluent limitations for chronic toxicity.

B. Final Effluent Limitations for Toxics Substances

The Discharger shall comply with the following toxic pollutant effluent limits, (1) for the discharge to Schell Slough via Discharge Point 001 with compliance measured at Monitoring Location EFF-001 as described in the attached MRP (**Attachment E**); and (2) for the discharge to sloughs or wetlands via Discharge Points 002 through 006 (from reclamation reservoirs R1, R2, and R4), with compliance measured at Monitoring Location EFF-001B as described in the attached MRP (**Attachment E**):

Table 7. Final Effluent Limitations for Toxic Pollutants

Constituent	Units	Final Effluent Limitations[1,2]	
		Average Monthly (AMEL)	Maximum Daily (MDEL)
Copper[3]	µg/L	8.1	13
Lead	µg/L	3.2	6.1
Nickel	µg/L	6.8	13
Cyanide[4]	µg/L	6.7	15
Dioxin-TEQ[5]	µg/L	1.4×10^{-8}	2.8×10^{-8}
Heptachlor[6]	µg/L	0.00021	0.00042
Total Ammonia	mg/L as Nitrogen	2.1	11

Footnotes for Table 7:

[1] a. All analyses shall be performed using current USEPA methods, or equivalent methods approved in writing by the Executive Officer.

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

c. All metal limitations are expressed as total recoverable metal.

[2] A daily maximum or average monthly value for a given constituent shall be considered noncompliant with the effluent limitations only if it exceeds the effluent limitation and the Reporting Level for that constituent. As outlined in Section 2.4.5 of the SIP, the table below indicates the Minimum Level (ML) upon which the Reporting Level is based for compliance determination purposes. A Minimum Level 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.

Constituent	**ML**	**Units**
Copper	2	µg/L
Lead	0.5	µg/L
Nickel	1	µg/L
Cyanide	5	µg/L
Heptachlor	0.01	µg/L
Total Ammonia	0.2	mg/L
Dioxin-TEQ	As specified below	
2,3,7,8-TetraCDD	5	pg/L
1,2,3,7,8-PentaCDD	25	pg/L
1,2,3,4,7,8-HexaCDD	25	pg/L
1,2,3,6,7,8-HexaCDD	25	pg/L
1,2,3,7,8,9-HexaCDD	25	pg/L
1,2,3,4,6,7,8-HeptaCDD	25	pg/L
OctaCDD	50	pg/L
2,3,7,8-TetraCDF	5	pg/L
1,2,3,7,8-PentaCDF	25	pg/L
2,3,4,7,8-PentaCDF	25	pg/L
1,2,3,4,7,8-HexaCDF	25	pg/L
1,2,3,6,7,8-HexaCDF	25	pg/L
1,2,3,7,8,9-HexaCDF	25	pg/L
2,3,4,6,7,8-HexaCDF	25	pg/L
1,2,3,4,6,7,8-HeptaCDF	25	pg/L
1,2,3,4,7,8,9-HeptaCDF	25	pg/L
OctaCDF	50	pg/L

[3] Alternate Effluent Limits for Copper:

a. If a copper SSO for the receiving water becomes legally effective, resulting in adjusted saltwater chronic objective of 6.0 µg/L and acute objective of 9.4 µg/L contained in the Basin Plan Amendment, Resolution No. R2-2007-0042 and its supporting documentation, upon its effective date, the following limitations shall supersede those copper limitations listed in Table 6 (the rationale for these effluent limitations can be found in the Fact Sheet [**Attachment F**]).

MDEL of 11 µg/L and AMEL of 6.6 µg/L.

b. If a different copper SSO for the receiving water is adopted, the alternate WQBELs based on the SSO will be determined after the SSO effective date.

[4] Cyanide: Compliance may be demonstrated by measuring weak acid dissociable cyanide.

[5] Dioxin-TEQ: Final effluent limits for dioxin-TEQ shall become effective on December 1, 2018. The Regional Water Board may amend these final effluent limitations prior to this date in accordance with TMDLs that become effective subsequent to the effective date of this Order.

[6] Heptachlor: Final effluent limits for heptachlor shall become effective on May 18, 2010.

C. Interim Effluent Limits

The Discharger shall comply with the following interim limits in Table 8, (1) for the discharge to Schell Slough via Discharge Point 001 with compliance measured at Monitoring Location EFF-001; and (2) for the discharge to sloughs or wetlands via Discharge Points 002 through 006 (from reclamation reservoirs R1, R2, and R4), with compliance measured at Monitoring Location EFF-001B as described in the attached MRP (**Attachment E**). The interim limit for heptachlor shall remain in effect until May 17, 2010; the interim limit for dioxin-TEQ shall remain in effect until November 30, 2018. Starting May 18, 2010, for heptachlor and December 1, 2018, for dioxin-TEQ, the final effluent limits in Table 7 shall become effective.

Table 8. Interim Effluent Limitation for Heptachlor

Pollutant	Monthly Average Effluent limit (μg/L)
Heptachlor	0.01
Dioxin-TEQ	5.35×10^{-5}

D. Land Discharge Specifications

Not applicable.

E. Reclamation Specifications

These requirements are currently included in an individual reclamation permit, Regional Water Board Order No. 92-067. The Discharger is seeking coverage under the Regional Water Board's general reclamation permit Order No. 96-011.

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitation

Receiving water limitations are based on WQOs contained in the Basin Plan and are a required part of this Order. The discharge shall not cause the following in Schell Slough, Hudeman Slough, MU1, MU3, Ringstrom Bay and all other receiving water bodies:

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 foam;

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 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:	7.0 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, then the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.
b. Dissolved Sulfide:	0.1 mg/L, maximum.
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.

3. The discharge shall not cause a violation of any 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, or amendments thereto, the Regional Water Board may revise and modify this Order in accordance with such more stringent standards.

B. Groundwater Limitations

N/A

VI. WETLANDS ENHANCEMENT PROJECT SPECIFICATIONS

A. The beneficial uses of Hudeman Slough shall not be degraded as a result of the wetlands enhancement project.

B. The salt marsh habitat located in the area designated as MU2 in the report titled "Hudeman Slough Wetland Enhancement Plan" shall not be degraded as a result of the wetlands enhancement project.

C. If reclaimed wastewater is sent to MU1 or MU3 and subsequently to Hudeman Slough, the Discharger shall implement applicable elements of the "Hudeman Slough Discharge Management Plan," dated June 1995, including both the monitoring program and the contingency plan unless an alternate regime is developed after consultation with the DFG.

VII. PROVISIONS

A. Standard Provisions

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

2. The Discharger shall comply with the following provisions:

The Discharger shall comply with all applicable items of the attached *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993* (Regional Water Board Standard Provisions, **Attachment G**) and any amendment thereto. Where provisions or reporting requirements specified in this Order are different from equivalent or related provisions or reporting requirements given in the Regional Water Board Standard Provisions (**Attachment G**), the specifications of this Order shall apply. Duplicative requirements in the federal Standard Provisions (**Attachment D**) and the Regional Water Board Standard Provisions (**Attachment G**) are not separate requirements. A violation of a duplicative requirement does not constitute two separate violations.

B. MRP Requirements

The Discharger shall comply with the MRP and future revisions thereto, in **Attachment E**. The Discharger shall also comply with the requirements contained in the *Self-Monitoring Program, Part A, August 1993* (**Attachment G)**.

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 TMDLs come into effect for the receiving waters (whether statewide, regional, or site-specific). In such cases, effluent limitations in this Order will be modified as necessary to reflect updated WQOs and WLAs 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(s) should be modified.

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

e. Or as otherwise authorized by law.

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

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. Effluent Monitoring

The Discharger shall continue to monitor and evaluate the discharge as measured at EFF-001 or EFF-001B for the constituents listed in Enclosure A of the Regional Water Board's August 6, 2001 Letter (Requirements for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy, **Attachment G**) according to the sampling frequency specified in the attached MRP **(Attachment E)**. Compliance with this requirement shall be achieved in accordance with the specifications stated in the August 6, 2001 Letter under Effluent Monitoring for Major Dischargers.

The Discharger shall evaluate on an annual basis if concentrations of any constituent increase over past performance. The Discharger shall investigate the cause of the increase. The investigation may include, but need not be limited to, an increase in the effluent monitoring frequency, monitoring of internal process

streams, and monitoring of influent sources. This may be satisfied through identification of these constituents as "Pollutants of Concern" in the Discharger's Pollutant Minimization Program as described in Provision C.3.b, below. A summary of the annual evaluation of data and source investigation activities shall also be reported in the annual self-monitoring report.

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

b. Ambient Background Receiving Water Monitoring

The Discharger shall continue to collect or participate in collecting background ambient receiving water monitoring data for priority pollutants for which a reasonable potential analysis is required. These requirements are specified in the MRP (**Attachment E**). This Order may be reopened, as appropriate, to incorporate effluent limits or other requirements based on Regional Water Board review of these data.

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

c. Optional Wetland Discharge Characterization Study

This study will generate data to examine whether effluent quality has substantially changed after it is stored in the reclamation reservoirs during dry seasons. It may also be used to justify whether it is appropriate to move the receiving water compliance locations to the reclamation reservoirs. If the Discharger opts to conduct the study, the Discharger shall comply with the following requirements:

Task	Deadline
(1) Prepare a study plan, acceptable to the Executive Officer, which proposes a sampling period (for a minimum of two dry seasons), sampling frequency, sampling locations, and protocols for sample collection, analysis, and reporting.	At a time at the Discharger's discretion.
(2) Commence data collection.	First dry season after submitting the study plan or within 45 days after submitting the study plan, when discharges to wetlands occur.
(3) Submit monitoring data.	Monthly with self-monitoring reports (covering samples collected during the previous calendar month).
(4) Submit a final study report, summarizing monitoring data; comparing monitoring data with wetland receiving water monitoring data to examine whether the data collected under this study can represent the conditions in the wetlands.	Within 90 days after final data collection.

During the study period, the data collected will not be used to determine compliance with the effluent limits in Tables 6 and 7 for discharges via Discharge Points 002 through 006.

d. Optional Mass Offset

If the Discharger can demonstrate that further net reductions of the total mass loadings of 303(d)-listed pollutants to the receiving water cannot be achieved through economically feasible measures such as aggressive source control, wastewater reuse, and treatment plant optimization, but only through a mass offset program, the Discharger may submit to the Regional Water Board for approval a mass offset plan to reduce 303(d)-listed pollutants to the same watershed or drainage basin. The Regional Water Board may modify this Order to allow an approved mass offset program.

3. Best Management Practices and Pollution Prevention (P2)

a. Pollutant Minimization Program (PMP)

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

b. Annual P2 Report

The Discharger shall submit an annual report, acceptable to the Executive Officer, no later than February 28 of each calendar year. The annual report shall cover January through December of the preceding year. For those agencies choosing to submit earlier in the year, the report shall cover the preceding 12 months two months, prior to the submittal date. As an example, a report submitted on June 30, shall cover the preceding 12 months ending in April. Each annual report shall include at least the following information:

(1) **A brief description of its treatment plant, treatment plant processes and service area.**

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

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

(4) **Identification of tasks to reduce the sources of the pollutants of concern.** This discussion shall identify and prioritize tasks to address the

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

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

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

(7) **Discussion of criteria used to measure the program's and tasks' effectiveness.** The Discharger shall establish criteria to evaluate the effectiveness of its Pollution Minimization Program. This shall also include a discussion of the specific criteria used to measure the effectiveness of each of the tasks in items b(3)(4)(5)(6).

(8) **Documentation of efforts and progress.** This discussion shall detail all of the Discharger's activities in the PMP during the reporting year.

(9) **Evaluation of program's and tasks' effectiveness.** The Discharger shall use the criteria established in (b)(6) to evaluate the program's and tasks' effectiveness.

(10) **Identification of Specific Tasks and Time Schedules for Future Efforts.** Based on the evaluation, the Discharger shall detail how it intends to continue or change its tasks in order to more effectively reduce the amount of pollutants to the treatment plant, and subsequently in its effluent.

c. PMP for Pollutants with Effluent Limitations

The Discharger shall develop and conduct a PMP as further described below when there is evidence (e.g., sample results reported as DNQ when the effluent limitation is less than the MDL, sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent

toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either:

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

(2) A sample result is reported as ND and the effluent limitation is less than the MDL, using definitions described in the SIP.

d. If triggered by the reasons in c. above, the Discharger's PMP shall include, but not be limited to, the following actions and submittals acceptable to the Regional Water Board:

(1) An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling, or alternative measures approved by the Executive Officer when it is demonstrated that source monitoring is unlikely to produce useful analytical data;

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

(3) Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;

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

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

i. All PMP monitoring results for the previous year,

ii. A list of potential sources of the reportable priority pollutant(s),

iii. A summary of all actions undertaken pursuant to the control strategy, and

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

4. Action Plan for Cyanide

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

Any similar activities the Discharger undertakes pursuant to a cease and desist order may substitute for and fulfill these requirements.

Task	Compliance Date
a. Review Potential Cyanide Contributors The Discharger shall submit an inventory of potential contributors of cyanide to the treatment plant (e.g., metal plating operations, hazardous waste recycling, etc.). If no contributors of cyanide are identified, Tasks b and c are not required, unless the Discharger receives a request to discharge detectable levels of cyanide to the sanitary sewer. If so, the Discharger shall notify the Executive Officer and implement Tasks b and c.	Within 90 days after permit effective date
b. Implement Cyanide Control Program The Discharger shall submit a plan for, and begin implementation of, a program to minimize cyanide discharges to the sanitary sewer system consisting, at a minimum, of the following elements: (1) Inspect each potential contributor to assess the need to include that contributing source in the control program. (2) Inspect contributing sources included in the control program annually. Inspection elements may be based on USEPA guidance, such as Industrial User Inspection and Sampling Manual for POTWs (EPA 831-B-94-01). (3) Develop and distribute educational materials to contributing sources and potential contributing sources regarding the need to prevent cyanide discharges. (4) Prepare an emergency monitoring and response plan to be implemented if a significant cyanide discharge occurs. (5) If ambient monitoring shows cyanide concentrations of 1.0 µg/L or higher in the main body of San Francisco Bay, undertake actions to identify and abate cyanide sources responsible for the elevated ambient concentrations.	With annual P2 reports due on or immediately following the end of a 90-day period after completing Task a
c. Report Status of Cyanide Control Program Submit a report to the Regional Water Board documenting implementation of the cyanide control program.	Annually, with P2 reports due February 28.

5. Action Plan for Copper

The Discharger shall implement pretreatment, source control, and pollution prevention for copper in accordance with the following tasks and time schedule. Any similar activities the Discharger undertakes pursuant to a cease and desist order may substitute for and fulfill these requirements.

Task	Compliance Date
a. Review Potential Copper Sources The Discharger shall submit an inventory of all potential copper sources to the treatment plant.	Within 90 days of the date on which the copper SSOs become effective (Discharger may include with the SMR due on or immediately after the end of the 90 day period)
b. Implement Copper Control Program The Discharger shall submit a plan for and begin implementation of a program to reduce copper discharges identified in Task a consisting, at a minimum, of the following elements: (1) Provide education and outreach to the public (e.g., focus on proper pool and spa maintenance and plumbers' roles in reducing corrosion). (2) If corrosion is determined to be a significant copper source, work cooperatively with local water purveyors to reduce and control water corrosivity, as appropriate, and ensure that local plumbing contractors implement best management practices to reduce corrosion in pipes. (3) Educate plumbers, designers, and maintenance contractors for pools and spas to encourage best management practices that minimize copper discharge.	With the annual P2 report due on or immediately following the end of a 90 day period after completing Task a
c. Implement Additional Measures If the three-year rolling mean copper concentration of San Pablo Bay exceeds 3.0 µg/L, evaluate the effluent copper concentration trend, and if it is increasing, develop and implement additional measures to control copper discharges.	Within 90 days of exceedance
d. Report Status of Copper Control Program Submit a report to the Regional Water Board documenting implementation of the copper control program.	Annually, with P2 reports due February 28

6. Compliance Schedule and Compliance with Final Effluent Limits

The Discharger shall comply with the following tasks and time schedule for heptachlor and dioxin-TEQ:

Task	Deadline
a. Investigate sample collection, sample handling, and analytical laboratory quality assurance and quality control practices to ensure that analytical results for heptachlor and dioxin-TEQ are accurately determined and reported. Submit a report by the deadline describing the results of the investigation and any changes in quality assurance and quality control practices implemented.	April 1, 2009

Task	Deadline
b. If dioxin-TEQ or heptachlor effluent monitoring data show that the Discharger is out of compliance, as described in Section 2.4.5, Compliance Determination, of the SIP, the Discharger shall submit a plan to identify all dioxin-TEQ or heptachlor sources to the discharge and identify source control measures to reduce concentrations of dioxin-TEQ or heptachlor to the treatment plant, and therefore to receiving waters.	No later than 12 months after a detection of dioxin-TEQ or no later than 2 months after a detection of heptachlor that is out of compliance with the final effluent limits
c. Implement the plan developed in Task b, including both pollutant source identification and source control.	Within 30 days of the deadline for Task b
d. Submit a report that contains an inventory of the pollutant sources.	No later than four months after the deadline for Task b
e. Submit a report documenting development and initial implementation of a program to reduce and prevent the pollutants of concern in the discharge. The program shall consist, at a minimum, of the following elements: (1) Maintain a list of sources of pollutants of concern. (2) Investigate each source to assess the need to include it in the program. (3) Identify and implement targeted actions to reduce or eliminate (4) Develop and distribute, as appropriate, educational materials regarding the need to prevent sources to the sewer system.	No later than six months after the deadline for Task b
f. Continue to implement the program described in Task “e” and submit annual status reports that evaluate its effectiveness and summarize planned changes. Report whether the program has successfully brought the discharge into compliance with the effluent limits in this Order.	Annually each February 28 in P2 reports as required by Provision VII.C.3
g. In the event that source control measures are insufficient for meeting final WQBELs specified in Effluent Limitations and Discharge Specifications IV.B for heptachlor or dioxin-TEQ, the Discharger shall submit a schedule for implementation of additional actions to reduce the concentrations of these pollutants.	No later than 4 months after the most recent annual P2 report that identifies that additional actions are needed
h. The Discharger shall commence implementation of the identified additional actions in accordance with the schedule submitted in Task g.	Within 45 days after the deadline for Task g
i. Full Compliance with IV.B Effluent Limitations and Discharger Specifications for heptachlor.	May 18, 2010
j. Full Compliance with IV.B Effluent Limitations and Discharger Specifications for dioxin-TEQ. Alternatively, the Discharger may comply with the limits through implementation of a mass offset strategy for dioxin-TEQ in accordance with policies in effect at that time.	December 1, 2018

7. Construction, Operation and Maintenance Specifications

a. Wastewater Facilities, Review and Evaluation, and Status Reports

(1) The Discharger shall operate and maintain its wastewater collection, treatment, and disposal facilities in a manner to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary, in order 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.

(2) The Discharger shall regularly review and evaluate its wastewater facilities and operation practices in accordance with section a.1 above. Reviews and evaluations shall be conducted as an ongoing component of the Discharger's administration of its wastewater facilities.

(3) The Discharger shall provide the Executive Officer, upon request, a report describing the current status of its wastewater facilities and operation practices, including any recommended or planned actions and an estimated time schedule for these actions. The Discharger shall also include, in each annual self-monitoring report, a description or summary of review and evaluation procedures, and applicable wastewater facility programs or capital improvement projects.

b. Operations and Maintenance Manual (O&M), Review and Status Reports

(1) The Discharger shall maintain an O&M Manual as described in the findings of this Order for the Discharger's wastewater facilities. The O&M Manual shall be maintained in usable condition and be available for reference and use by all applicable personnel.

(2) The Discharger shall regularly review, revise, or update, as necessary, the O&M Manual so that the documents may remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and revisions or updates shall be completed as necessary. For any significant changes in treatment facility equipment or operation practices, applicable revisions shall be completed within 90 days of completion of such changes.

(3) The Discharger shall provide the Executive Officer, upon request, a report describing the current status of its O&M manual, including any recommended or planned actions and an estimated time schedule for these actions. The Discharger shall also include, in each annual self-monitoring report, a description or summary of review and evaluation procedures and applicable changes to its operations and maintenance manual.

c. Contingency Plan, Review and Status Reports

(1) The Discharger shall maintain a Contingency Plan as required by Regional Water Board Resolution 74-10 (**Attachment G**) and as prudent in accordance with current municipal facility emergency planning. The discharge of pollutants in violation of this Order where the Discharger has failed to develop or adequately implement a Contingency Plan will be the basis for considering such discharge a willful and negligent violation of this Order pursuant to section 13387 of the Water Code.

(2) The Discharger shall regularly review and update, as necessary, the Contingency Plan so that the plan may remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and updates shall be completed as necessary.

(3) The Discharger shall provide the Executive Officer, upon request, a report describing the current status of its Contingency Plan review and update. The Discharger shall also include, in each annual self-monitoring report, a description or summary of review and evaluation procedures and applicable changes to its Contingency Plan.

8. Special Provisions for POTWs

a. Sludge Management Practices Requirements

(1) All sludge generated by the Discharger must be disposed of in a municipal solid waste landfill, reused by land application, or disposed of in a sludge-only landfill in accordance with 40 CFR 503. If the Discharger desires to dispose of sludge by a different method, a request for permit modification must be submitted to USEPA 180 days before start-up of the alternative disposal practice. All the requirements in 40 CFR 503 are enforceable by USEPA whether or not they are stated in an NPDES permit or other permit issued to the Discharger. The Regional Water Board should be copied on relevant correspondence and reports forwarded to USEPA regarding sludge management practices.

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

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

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

(5) The sludge treatment and storage site shall have facilities adequate to divert surface runoff from adjacent areas, to protect boundaries of the site from erosion, and to prevent any conditions that would cause drainage from the materials in the temporary storage site. Adequate protection is defined as protection from at least a 100-year storm and protection from the highest possible tidal stage that may occur.

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

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

(8) Permanent on-site sludge storage or disposal activities are not authorized by this Order. A ROWD shall be filed and the site brought into compliance with all applicable regulations prior to commencement of any such activity by the Discharger.

(9) Sludge Monitoring and Reporting Provisions of the Regional Water Board's Standard Provisions (**Attachment G**) apply to sludge handling, disposal and reporting practices.

(10) The Regional Water Board may amend this Order prior to expiration if changes occur in applicable state and federal sludge regulations.

b. Sanitary Sewer Overflows and Sewer System Management Plan

The Discharger's collection system is part of the Facility that is subject to this Order. As such, the Discharger must properly operate and maintain its collection system (**Attachment D**, Standard Provisions - Permit Compliance, subsection I.D). The Discharger must report any noncompliance (**Attachment D**, Standard Provision - Reporting, subsections V.E.1 and V.E.2), and mitigate any discharge from the Discharger's collection system in violation of this Order (**Attachment D**, Standard Provisions - Permit Compliance, subsection I.C). The General Waste Discharge Requirements for Collection System Agencies (General Collection System WDR, Order No. 2006-0003 DWQ) has requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. While the Discharger must comply with both the General Collection System WDR and this Order, the General Collection System WDR more clearly and specifically stipulates requirements for operation and maintenance and for reporting and mitigating sanitary sewer overflows.

Implementation of the General Collection System WDR requirements for proper operation and maintenance and mitigation of spills will satisfy the corresponding federal NPDES requirements specified in this Order. Following reporting requirements in the General Collection System WDR will satisfy NPDES reporting requirements for sewage spills. Furthermore, the Discharger shall comply with the schedule for development of sewer system management plans (SSMPs) as indicated in the letter issued by the Regional Water Board on July 7, 2005, pursuant to Water Code section 13267. The Discharger has completed all required SSMP elements by August 31, 2008. The Discharger shall report sanitary sewer overflows electronically using the State Water Board's state-wide online reporting system.

Additionally, the State Water Board amended the General Collection System WDR on February 20, 2008, in Order No. WQ 2008-0002-EXEC, to strengthen the notification and reporting requirements for sanitary sewer overflows. The Regional Water Board issued a 13267 letter on May 1, 2008, requiring dischargers to comply with the new notification requirements and to comply with similar notification and reporting requirements for spills from wastewater treatment facilities. This Order incorporates these notification and reporting requirements as requirements of this Order.

VIII.COMPLIANCE DETERMINATION

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

A. General

Compliance with effluent limitations for reportable pollutants shall be determined using sample reporting protocols defined in the MRP and **Attachment A** of this Order. 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 reportable pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported Minimum Level (ML).

B. Multiple Sample Data

When determining compliance with a measure of central tendency (arithmetic mean, geometric mean, median, etc.) of multiple sample analyses and the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND), the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

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

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

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

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

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 the permit), 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 the 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 included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in 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 which are 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 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 Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State or Regional Water Board.

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

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

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

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

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

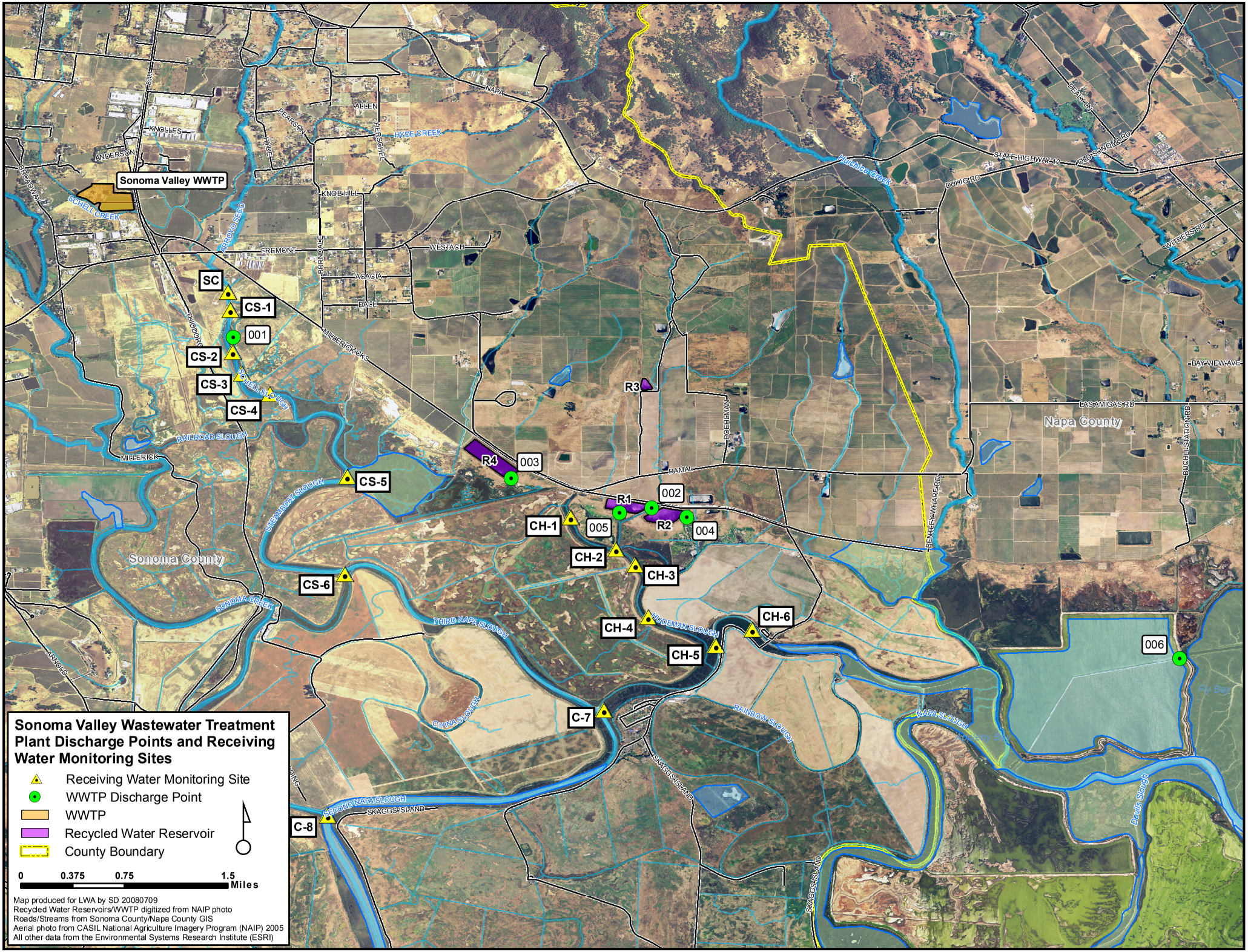
where:
x is the observed value;
μ is the arithmetic mean of the observed values; and

n is the number of samples.

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

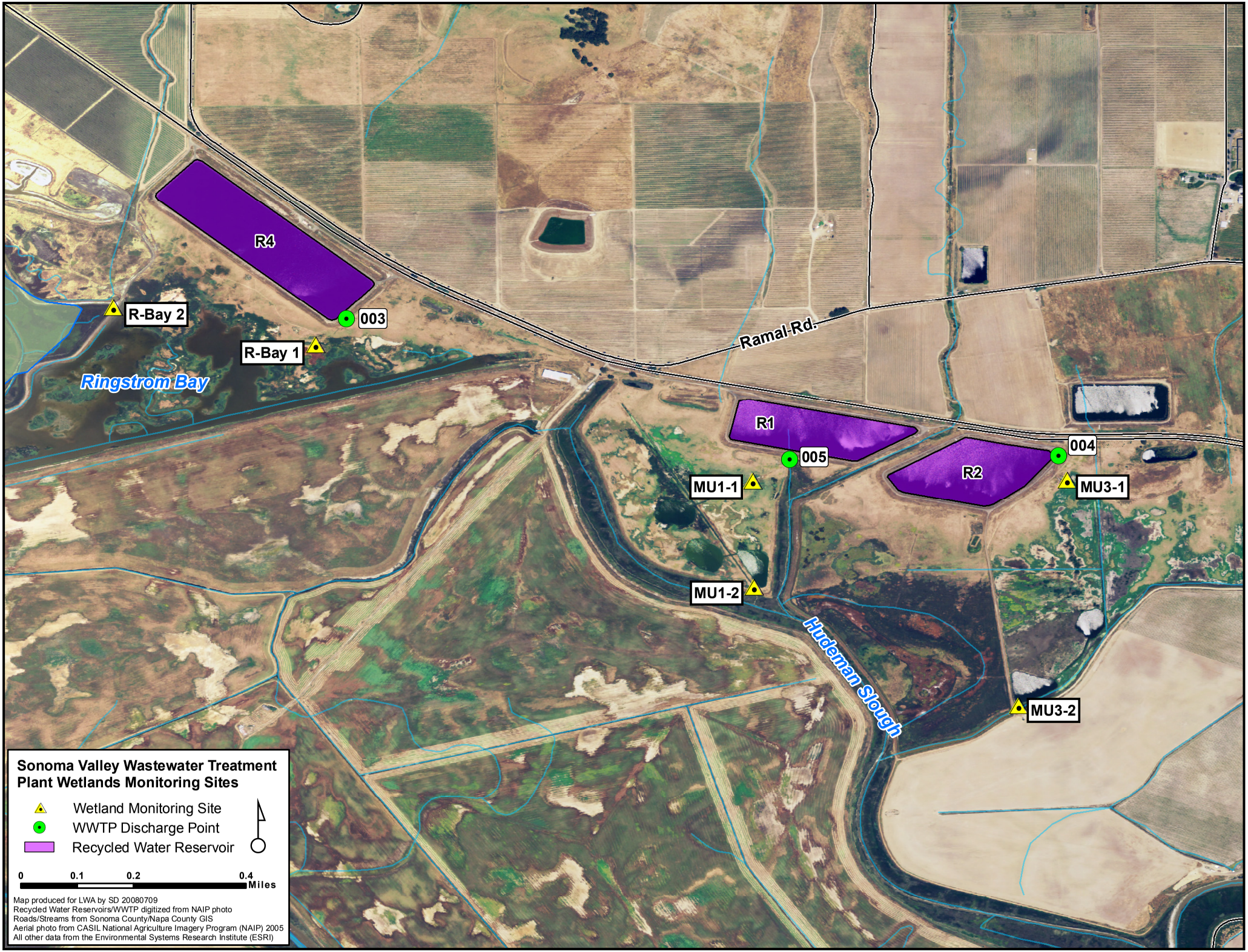
ATTACHMENT B(1)

LOCATION MAP OF THE PLANT, DISCHARGE OUTFALLS AND SLOUGH RECEIVING WATER MONITORING STATIONS


Sonoma Valley Wastewater Treatment Plant Discharge Points and Receiving Water Monitoring Sites
Receiving Water Monitoring Site
WWTP Discharge Point
WWTP
Recycled Water Reservoir
County Boundary
0
0.375
0.75
1.5
Miles
Map produced for LWA by SD 20080709
Recycled Water Reservoirs/WWTP digitized from NAIP photo
Roads/Streams from Sonoma County/Napa County GIS
Aerial photo from CASIL National Agriculture Imagery Program (NAIP) 2005
All other data from the Environmental Systems Research Institute (ESRI)
Sonoma Valley WWTP
SC
CS-1
CS-2
CS-3
CS-4
CS-5
CS-6
001
002
003
004
005
006
R1
R2
R3
R4
CH-1
CH-2
CH-3
CH-4
CH-5
CH-6
C-7
C-8
Sonoma County
Napa County
SCHELL CREEK
ARROYO SECO
HYDE CREEK
NAPA
Huichica Creek
SCHELL SLOUGH
RAILROAD SLOUGH
STEAMBOAT SLOUGH
SONOMA CREEK
THIRD NAPA SLOUGH
HUDEMAN SLOUGH
RAINBOW SLOUGH
NAPA SLOUGH
CHINA SLOUGH
SECOND NAPA SLOUGH
Devils Slough
Fly Bay
Tolay Bay
KNOLLES
ANDERSON
ALLEN
KNOB HILL
FREMONT
WESTACH
ACACIA
DALE
MILLERICK
RAMAL
POEHLMAN
BENTLEY WHARF RD
STATE HIGHWAY 12
OLD SONOMA RD
DUHIG RD
WITHERS RD
BAY VIEW AVE
LAS AMIGAS RD
BUCHLI STATION RD
SKAGGS ISLAND

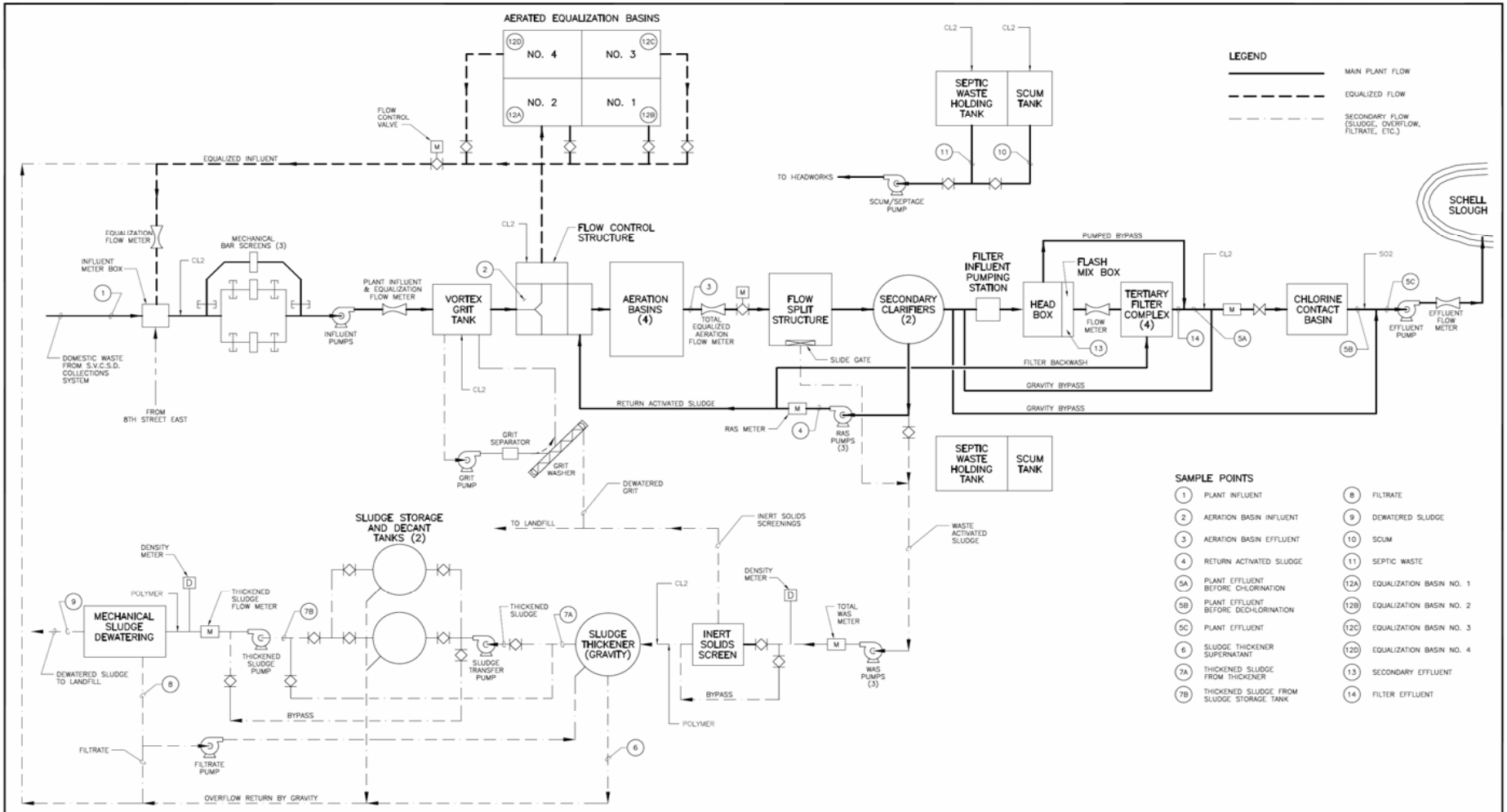
ATTACHMENT B(2)

LOCATION MAP OF WETLAND DISCHARG OUTFALLS AND RECEIVING WATER STATIONS


R4
R-Bay 2
003
R-Bay 1
Ringstrom Bay
Ramal Rd.
R1
005
004
R2
MU1-1
MU3-1
MU1-2
Hudeman Slough
MU3-2
Sonoma Valley Wastewater Treatment Plant Wetlands Monitoring Sites
Wetland Monitoring Site
WWTP Discharge Point
Recycled Water Reservoir
0
0.1
0.2
0.4
Miles
Map produced for LWA by SD 20080709
Recycled Water Reservoirs/WWTP digitized from NAIP photo
Roads/Streams from Sonoma County/Napa County GIS
Aerial photo from CASIL National Agriculture Imagery Program (NAIP) 2005
All other data from the Environmental Systems Research Institute (ESRI)

ATTACHMENT C

FLOW SCHEMATIC



HDR

PLANT FLOW SCHEMATIC

SONOMA VALLEY COUNTY SANITATION DISTRICT

DATE: APRIL 2008

FIGURE: 1–2

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 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 the 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 40 CFR §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 which are subject neither to effluent limitations in this Order nor to notification requirements under 40 CFR Part 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1) [*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

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

A. The CWA provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed $25,000 per day for each violation. The CWA provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the Clean Water Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions [*40 CFR §122.41(a)(2)*] [*CWC 13385 and 13387*].

B. Any person may be assessed an administrative penalty by the Regional Water Board for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000 [*40 CFR §122.41(a)(3)*].

C. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by

imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both [*40 CFR §122.41(j)(5)*].

D. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this Order, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six months per violation, or by both [*40 CFR §122.41(k)(2)*].

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

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

A. 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

B. 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 the Order. (40 CFR 122.42(b)(2).)

C. 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

I. General Monitoring Provisions E-1
II. Monitoring Locations E-2
III. Influent Monitoring Requirements E-5
IV. Effluent Monitoring Requirements E-5
V. Whole Effluent Toxicity Testing Requirements E-9
VI. Land Discharge Monitoring Requirements E-12
VII. Reclamation Monitoring Requirements E-13
VIII. Receiving Water Monitoring Requirements – Surface Water and Groundwater E-13
IX. Groundwater Monitoring E-13
X. Modifications to Part A of Self-Monitoring Program (Attachment G) E-14
XI. Other Monitoring Requirements E-15
XII. Reporting Requirements E-15

List of Tables

Table E-1. Test Methods and Minimum Levels for Pollutants with Effluent Limits E-2
Table E-2. Monitoring Locations E-2
Table E-3. Influent Monitoring E-5
Table E-4. Effluent Monitoring at EFF-001 or EFF-001B E-6
Table E-5. Effluent Monitoring at EFF-003, EFF-004, EFF-005, and EFF-006 ..... E-8
Table E-6. Receiving Water Monitoring Requirements E-13
Table E-7. Monitoring Periods E-16

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

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

I. GENERAL MONITORING PROVISIONS

A. The Discharger shall comply with the MRP for this Order as adopted by the Regional Water Board, and with all of the requirements contained in Self-Monitoring Program, Part A, dated August 1993 (SMP, **Attachment G**). The MRP and SMP may be amended by the Executive Officer pursuant to 40 CFR 122.62, 122.63, and 124.5. If any discrepancies exist between the MRP and SMP, the MRP prevails.

B. All analyses shall be conducted using current USEPA methods, or methods that have been approved by the USEPA Regional Administrator pursuant to 40 CFR 136.4 and 40 CFR 136.5, or equivalent methods that are commercially and reasonably available and that provide quantification of sampling parameters and constituents sufficient to evaluate compliance with applicable effluent limits and to perform reasonable potential analysis. Equivalent methods must be more sensitive than those specified in 40 CFR 136, must be specified in the permit, and must be approved for use by the Executive Officer, following consultation with the State Water Board's Quality Assurance Program.

C. Sampling and analysis of additional constituents is required pursuant to Table 1 of the Regional Water Board's August 6, 2001, Letter titled *Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy* (**Attachment G**).

D. Laboratories analyzing monitoring samples shall be certified by the Department of Health Services, in accordance with Water Code section 13176, and must include quality assurance/quality control data with their reports.

E. For compliance and reasonable potential monitoring, analyses shall be conducted using commercially available and reasonably achievable detection levels that are lower than the WQOs/WQC or the effluent limitations, whichever are lower. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to the Minimum Levels (MLs) given below. Table E-1 lists the test methods the Discharger may use for compliance and reasonable potential monitoring for the toxic pollutants with effluent limits.

Table E-1. Test Methods and Minimum Levels for Pollutants with Effluent Limits

CTR #	Constituent	Types of Analytical Methods[1] Minimum Levels (µg/L)											
		GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYDRIDE	CVAA	DCP
6	Copper								0.5	2			
7	Lead								0.5	2			
9	Nickel						5		1	5			
14	Cyanide				5								
16-TEQ	Dioxin-TEQ[2]												
117	Heptachlor		0.01										
--	Total Ammonia	0.2 mg/L (as N) using titration method											

Footnotes for Table E-1:

[1] Analytical Methods / 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., EPA 200.9)
HYDRIDE - Gaseous Hydride Atomic Absorption
CVAA - Cold Vapor Atomic Absorption
DCP - Direct Current Plasma

[2] The Discharger shall achieve MLs for Dioxin-TEQ equal to ½ the MLs specified in U.S. EPA Method 1613.

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-2. Monitoring Locations

Discharge Point Name or Receiving Water Body	Monitoring Location Name	Monitoring Location Description (include Latitude and Longitude when available)
Influent	INF-001	At any point in the treatment facilities headworks at which all waste tributary to the system is present, and prior to biological treatment.
001 (Schell Slough)	EFF-001 when discharge is from plant effluent line	At any point in the effluent from the treatment facilities at which treatment of the wastewater is complete (after chlorination and dechlorination), between the point of discharge (outfall) and the point at which all flow tributary to that outfall is present. *Monitoring at this location is required for compliance determination with applicable effluent limits (IV.A.1, IV.A.2, IV.A.3.a, IV.A.4, IV.B., and IV.C.) in accordance with section IV of Effluent Limitations and Discharge Specifications.

Discharge Point Name or Receiving Water Body	Monitoring Location Name	Monitoring Location Description (include Latitude and Longitude when available)
002 (Hudeman Slough) 003 (Ringstrom Bay) 004 (MU3) 005 (MU1) 006 (Fly Bay and Napa-Sonoma Marsh)	EFF-001B (when discharging from plant to reservoirs R1, R2, and R4)	At any point in the effluent from the treatment facility, downstream of the disinfection facilities (but prior to dechlorination), at which point adequate contact with the disinfectant is assured.) * Monitoring at this location is required all the time when discharging chlorinated effluent to reclamation reservoirs and then to slough or wetlands for compliance determination with applicable effluent limits IV.A.1 (except chlorine residual), IV.A.2, IV.B., and IV.C in accordance with section IV of Effluent Limitations and Discharger Specifications.
002 (Hudeman Slough) 003 (Ringstrom Bay) 004 (MU3) 005 (MU1) 006 (Fly Bay and Napa-Sonoma Marsh)	For monitoring at EFF-003, EFF-004, EFF-005, and EFF-006, sampling is only required at one representative monitoring location based on longest detention time or largest volume of active source water discharged to this point, even thought discharges to sloughs or wetlands may occur at different locations at the same time. Monitoring at these locations is used to determine compliance with Effluent Limitations and Discharge Specifications IV.A.1 (chlorine residual only) and IV.A.3.b	
	EFF-003 (when pumping from R4 to sloughs or wetlands)	At a sample tap on reservoir R4 irrigation pumps
	EFF-004 (when pumping from R2 to sloughs or wetlands)	At or near the access ramp inside reservoir R2
	EFF-005 (when pumping from R1 to sloughs or wetlands)	At or near the access ramp inside reservoir R1
006 (Fly Bay and Napa-Sonoma Marsh)	EFF-006 (when pumping from Fly Bay to Napa-Sonoma Marsh)	Location to be determined by Executive Officer once outfall to the Napa-Sonoma Salt Marsh is constructed
Surface water—Schell Slough	RSW-001 (SC)	At a point located in Schell Creek immediately upstream of the tide gate between Schell Creek and Schell Slough.
Surface water—Schell Slough	RSW-002 (CS-1)	At a point in Schell Slough located at the tide gates upstream from the point of discharge.
Surface water—Schell Slough	RSW-003 (CS-2)	At a point in Schell Slough located within twenty (20) feet downstream of the discharge.
Surface water—Schell Slough	RSW-004 (CS-3)	At a point in Schell Slough located within five hundred (500) feet downstream of CS-2.
Surface water—Schell Slough	RSW-005 (CS-4)	At a point in Schell Slough located midway between its confluence with Steamboat Slough and the point of discharge.

Discharge Point Name or Receiving Water Body	Monitoring Location Name	Monitoring Location Description (include Latitude and Longitude when available)
Surface water— Schell Slough	RSW-006 (CS-5)	At a point located at the confluence of Schell Slough, Steamboat Slough and Railroad Slough.
Surface water— Schell Slough	RSW-007 (CS-6)	At a point located at the confluence of Steamboat Slough, Third Napa Slough and Sonoma Creek.
Surface water— Hudeman Slough	RSW-008 (CH-1)	At a point in Hudeman Slough located upstream from the tide gate of MU1.
Surface water— Hudeman Slough	RSW-009 (CH-2)	At a point in Hudeman Slough located within twenty (20) feet downstream of the discharge.
Surface water— Hudeman Slough	RSW-010 (CH-3)	At a point in Hudeman Slough located five hundred (500) feet downstream of the discharge.
Surface water— Hudeman Slough	RSW-011 (CH-4)	At a point in Hudeman Slough located midway between its confluence with Second Napa Slough and the point of discharge
Surface water— Hudeman Slough	RSW-012 (CH-5)	At a point in Hudeman Slough located at its point of confluence with Second Napa Slough.
Surface water— Hudeman Slough	RSW-013 (CH-6)	At a point in Hudeman Slough located five hundred (500) feet east from CH-5.
Surface water— Second Napa Slough	RSW-014 (C-7)	At a point in Second Napa Slough located at its confluence with Third Napa Slough.
Surface water— Sonoma Creek & Second Napa Slough	RSW-015 (C-8)	At a point in Sonoma Creek located at its confluence with Second Napa Slough.
Wetlands— Ringstrom Bay	RSW-016 (RBay-1)	Located at a point in Ringstrom Bay within 200 ft of R4 outfall (Discharge Point 003). This is the closest accessible location where some mixing of discharge and ambient water occurs.
Wetlands— Ringstrom Bay	RSW-017 (RBay-2)	Located at a point in Ringstrom Bay 1400 ft west of R4 outfall adjacent to the access road and discharge gates.
Wetlands—MU1	RSW-018 (MU1-1)	Located in MU1 within 100 ft of R1 outfall (Discharge Point 005). This is the closest accessible location where some mixing of discharge and ambient water occurs.
Wetlands—MU1	RSW-019 (MU1-2)	Located in MU1 approx. 1,000 ft southwest of R1 outfall (Discharge Point 005), adjacent to the tide gate connection to Hudeman Slough. This is the consistently accessible location where water leaves MU1 and enters the slough.
Wetlands— MU3	RSW-020 (MU3-1)	Located in MU3 within 50 ft of R2 outfall (Discharge Point 004). This is the closest accessible location where some mixing of discharge and ambient water occurs.
Wetlands— MU3	RSW-021 (MU3-2)	Located in MU3 approx. 2,100 ft south of R2 outfall (Discharge Point 004), adjacent to the Management Unit effluent gate. This is the consistently accessible location where water leaves MU3 and flows toward the slough.

Discharge Point Name or Receiving Water Body	Monitoring Location Name	Monitoring Location Description (include Latitude and Longitude when available)
Land Observations	P-1 through P-'n'	Located at the corner and midpoints of the perimeter fenceline surrounding the treatment facilities. (A sketch showing the locations of these stations will accompany each annual report).

Attachment B of the Order shows the locations of the above receiving water monitoring stations from RSW-001 through RSW-021.

III. INFLUENT MONITORING REQUIREMENTS

The Discharger shall monitor influent to the facility at INF-001 as follows:

Table E-3. Influent Monitoring

Parameter	Units[1]	Sample Type	Minimum Sampling Frequency
Flow[2]	MGD and MG	Continuous	1/day
BOD_5	mg/L	C-24	3/week
TSS	mg/L	C-24	3/week
Cyanide	μg/L	Grab	1/month

Footnotes for Table E-3:

[1] Unit Abbreviations
MGD = million gallons per day
MG = million gallons
mg/L = milligrams per liter

[2] Flows shall be monitored continuously and the following shall be reported in monthly self-monitoring reports:
a. Daily average flow rate (MGD).
b. Daily total flow volume (MG).
c. Monthly average flow rate (MGD).
d. Monthly total flow volume (MG).
e. Average daily maximum and average daily minimum flow rates (MGD) in a month.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001 (or EFF-001B)

The Discharger shall monitor discharges at EFF-001 to Schell Slough or discharges to reclamation reservoirs (R1, R2, R4) at EFF-001B as follows. Monitoring at EFF-001 or EFF-001B is required all year round. For the effluent limits that apply to both monitoring locations, the Discharger may sample at only one location (EFF-001 or EFF-001B) to satisfy the following requirements.

Table E-4. Effluent Monitoring at EFF-001 or EFF-001B

Parameter	Units[1]	Sample Type[2]	Minimum Sampling Frequency
Flow[3]	MGD/MG	Continuous	1/day
BOD_5	mg/L and kg/d	C-24	3/week
TSS	mg/L and kg/d	C-24	3/week
BOD_5 and TSS removal[4]	Percent (%)	Calculate	1/month
Oil and Grease[5]	mg/L and kg/d	Grab	1/month
Total Coliform	MPN/100ml	Grab	5/week at EFF-001 7/week at EFF-001B
pH[6]	s.u.	Grab or continuous	1/day
Total Chlorine residual[7]	mg/L	Continuous (at EFF-001 only)	1/hour
Acute Toxicity[8]	% survival	Flow through (at EFF-001 only)	1/month
Chronic Toxicity[9]	TUc	C-24 (at EFF-001 only)	1/quarter
Total Ammonia as N	mg/L	Grab	1/month
Unionized-Ammonia as N	mg/L	Calculate	1/month
Nitrate as N	mg/L	Grab	1/month
Total Organic Nitrogen	mg/L	Grab	1/month
Turbidity	NTU	Grab	1/week
Temperature	°C	Grab	1/day
Dissolved Oxygen	mg/L	Grab	1/day
Sulfides, total and dissolved (if D.O. is lower than 2 mg/L)	mg/L	Grab	1/day
Copper	µg/L	C-24	1/month
Lead	µg/L	C-24	1/month
Nickel	µg/L	C-24	1/month
Cyanide[10]	µg/L	Grab	1/month
Dioxin-TEQ[11]	µg/L	Grab	2/year
Heptachlor[12]	µg/L	Grab	2/year
All other priority inorganic pollutants	µg/L	[13]	2/year
All other priority organic pollutants	µg/L	[13]	1/year
All Applicable Standard Observations	--	Visual observation	1/day

Footnotes for Table E-4:

[1] Unit Abbreviations

°C	=	degrees Celsius
µg/L	=	micrograms per liter
MPN/100 mL	=	most probable number per 100 milliliters
cfu/100mL	=	colony-forming units per 100 millimeters
kg/d	=	kilograms per day
TUc	=	chronic toxic units

[2] Sample Type Abbreviations
Continuous = measured continuously, and recorded and reported daily
C-24 = 24-hour composite
Flow through = continuously pumped sample during duration of toxicity test

[3] Flow Monitoring.
Flows shall be monitored continuously and the following shall be reported in monthly self-monitoring reports:
a. Daily average flow rate (MGD),
b. Daily total flow volume (MG),
c. Monthly average flow rate (MGD),
d. Monthly total flow volume (MG), and
e. Average daily maximum and average daily minimum flow rates (MGD) in a month.

[4] BOD_5 and TSS. The percent removal for BOD_5 and TSS shall be reported for each calendar month in accordance with Effluent Limitation IV.A.1.

[5] Oil & Grease. Each oil & grease sampling event shall consist of a composite sample comprised of three grab samples taken at equal intervals during the sampling date, with each grab sample being collected in a glass container. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent rinsings as soon as possible after use, and the solvent rinsings shall be added to the composite sample for extraction and analysis.

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

[7] Chlorine residual. Monitoring for zero chlorine residual is required at EFF-001 only. Effluent chlorine concentrations shall be monitored continuously for EFF-001 discharges. Chlorine residual concentrations shall be monitored and reported for sampling points both before and after dechlorination. The Discharger shall report the maximum residual chlorine concentration observed following dechlorination on a daily basis. Total chlorine dosage (kg/day) shall be recorded on a daily basis.

Instead, the Discharger may evaluate compliance with this requirement by recording discrete readings from continuous monitoring equipment every hour on the hour or by collecting grab samples every hour, for a total of 24 readings or samples per day, if the following conditions are met: (1) The Discharger shall retain continuous monitoring readings for at least three years; (2) The Discharger shall acknowledge in writing that the Regional Water Board reserves the right to use all other continuous monitoring data for discretionary enforcement; (3)The Discharger must provide in writing the brand name(s), model number(s), and serial number(s) of the equipment used to continuously monitor dechlorinated final effluent chlorine residual. If the identified equipment is replaced, the Discharger shall provide the Regional Water Board in writing, within 72 hours of the successful startup of the new equipment, the new equipment's brand name, model number, and serial number. The written notification identified in items 1 through 3 shall be in the form of a letter addressed to the Regional Water Board's Executive Officer with a certification statement as listed in the October 19, 2004, Regional Water Board letter re: *Chlorine Compliance Strategy for Dischargers Using Continuous Monitoring Devices***.**

[8] Acute Bioassay. Test shall be performed and reported in accordance with the Acute Toxicity Requirements specified in Section V.A of this MRP at EFF-001. Monitoring at EFF-001B for acute toxicity is not required when discharging to reclamation reservoirs (see Table E-5 for wetland discharge acute toxicity monitoring requirement).

[9] Chronic Toxicity. Test shall be performed and reported in accordance with the Chronic Toxicity Requirements specified in Section V.B of this MRP at EFF-001. Monitoring at EFF-001B for chronic toxicity is not required when discharging to reclamation reservoirs (see Table E-5 for wetland discharge chronic toxicity monitoring requirement).

[10] Cyanide. Compliance may be demonstrated by measurement of weak acid dissociable cyanide.

[11] Dioxin-TEQ. Chlorinated dibenzodioxins and chlorinated dibenzofurans shall be analyzed using the latest version of USEPA Method 1613; the analysis shall be capable of achieving the MLs listed previously in this Order. Alternative methods of analysis must be approved by the Executive Officer. In addition to reporting results for each of the 17 congeners, the dioxin-TEQ shall be calculated and reported using 1998 USEPA Toxicity Equivalency Factors (TEFs) for dioxin and furan congeners.

[12] Monitoring for heptachlor is required only once per year if all values are non-detect by May 18, 2010.

[13] The sample type and analytical method should be as described in the August 6, 2001, letter (**Attachment G**).

B. Monitoring Locations EFF-003 through EFF-006

The Discharger shall monitor discharges to MU1, MU3, Ringstrom Bay, Hudeman Slough, Schell Slough, and Napa-Sonoma Salt Marsh (Discharge Points 002 through 006) at EFF-003, EFF-004, EFF-005, or EFF-006 (depending on where discharge is occurring) as follows:

Table E-5. Effluent Monitoring at EFF-003, EFF-004, EFF-005, and EFF-006

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow[1]	MG	Estimate	Each occurrence
Total Chlorine residual[2]	mg/L	Grab	1/week
Acute Toxicity[3]	% survival	Static from grab samples	Monthly (or during each discharge event, whichever occurs less frequently) from only one, representative location while discharging from reservoirs to wetlands
Hexavalent chromium[4]	µg/L	Grab	1/dry season from only one representative location
Total chromium[4]	µg/L	Grab	1/dry season from only one representative location
Arsenic[4]	µg/L	Grab	1/dry season from only one representative location
Cadmium[4]	µg/L	Grab	1/dry season from only one representative location
Lead[4]	µg/L	Grab	1/dry season from only one representative location
Mercury[4]	µg/L	Grab	1/dry season from only one representative location
Benzidine[4]	µg/L	Grab	1/dry season from only one representative location

Footnotes for Table E-5:

[1] Flow. If no flow meters are installed, the Discharger shall developing written procedures for estimating flow volume, and use that procedure to estimate the flow volume at each discharge location and report the value in monthly self-monitoring reports.

[2] Chlorine residual. The Discharger shall sample weekly for chlorine residual in the discharge source when there is discharge to reservoirs any time that Hudeman Slough, Schell Slough, the Management Units, Ringstrom Bay, or Napa-Sonoma Marsh is receiving discharges from a recycled water storage reservoir. Reservoir sampling shall begin at the commencement and cessation of each reservoir discharge event and once per week throughout said discharge event. Weekly reservoir chlorine residual monitoring may be discontinued when the source reservoir does not receive additional treatment plant effluent flow and two consecutive weekly chlorine residual samples are

zero. Weekly reservoir chlorine residual monitoring shall resume on the day that plant effluent discharge to the reservoir is resumed.

[3] Acute Toxicity. If discharges occur at different locations within the same month or at multiple times within the same month, test is required at only one location most representative of the discharge (where the discharge volume is the largest or where the water has been stored for the longest time). The Discharger must identify the sampling location in the self-monitoring report. The Discharger shall perform the test and report the results in accordance with the Acute Toxicity Requirements specified in Section V.A of this MRP.

[4] These pollutants potentially exist in the Aquashade Dye that the Discharger applies in the reservoir water to control algae growth, but at low concentrations. If discharges occur at different locations within the same month or at multiple times within the same month, test is required at only one location most representative of the discharge (where the discharge volume is the largest or where the water has been stored for the longest time); preferably at the end of the dry season when the remaining water is discharged through wetlands to sloughs. The monitoring results will not be used to determine compliance with effluent limits (such as lead) unless the Regional Water Board amends the permit to include this requirement or new effluent limits, if necessary.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Whole Effluent Acute Toxicity

Compliance with whole effluent acute toxicity requirements of this Order shall be achieved in accordance with the following:

1. Acute toxicity of effluent limits shall be evaluated by measuring survival of test organisms exposed to 96-hour continuous flow through bioassays when discharging directly from the wastewater treatment plant to Discharge Point 001, or 96-hour static bioassays during use of Discharge Points 001 through 006 when supplied by the reclamation reservoirs.

2. Test species shall be fathead minnow (*Pimephales promelas*) unless specified otherwise in writing by the Executive Officer.

3. All bioassays shall be performed according to 40 CFR 136, currently the “Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms,” 5th Edition. Exceptions may be granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

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. Effluent used for fish bioassays must be dechlorinated prior to testing (or contain zero chlorine residual). 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 the fish survival rate in the effluent is less than 70 percent or if the control fish survival rate is

less than 90 percent, the bioassay test shall be restarted with new batches of fish and shall continue back to back until compliance is demonstrated (i.e., the fish survival rate in the effluent is no less than 70 percent or if the control fish survival rate is no less than 90 percent).

B. Whole Effluent Chronic Toxicity

1. Chronic Toxicity Monitoring Requirements

a. **Sampling.** When discharging directly from the wastewater treatment plant to Discharge Point 001, the Discharger shall collect 24-hour composite samples of the treatment facility's effluent at the compliance point specified in Table E-2 of the MRP for critical life stage toxicity testing as indicated below. For toxicity tests requiring renewals, 24-hour composite samples collected on consecutive days are required.

b. **Test Species.** Chronic toxicity shall be monitored using two species: *Mysidopsis bahia* (mysid) and *Pimephales promelas* (fathead minnow) for the test.

After at least twelve test rounds, the Discharger may request the Executive Officer to decrease the required frequency of testing, and/or to reduce the number of compliance species to one. Such a request may be made only if toxicity exceeding the TUc values specified in the effluent limitations was never observed using that test species.

The Discharger shall complete a screening phase study to identify the most sensitive species in accordance with Appendix E-1 by March 31, 2009 and submit the final report by May 15, 2009. For the next permit reissuance, the Discharger has the option of completing the screening phase test on its own or in conjunction with other local dischargers subject to Regional Water Board Executive Officer's approval.

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

d. **Methodology.** Sample collection, handling and preservation shall be in accordance with USEPA protocols. The test methodology used shall be in accordance with the references cited in the Order, or as approved by the Executive Officer. A concurrent reference toxicant test shall be performed for each test.

e. **Dilution Series.** The Discharger shall conduct tests at 100%, 50%, 25%, 10%, and 5%. The "%" represents percent effluent as discharged.

2. Chronic Toxicity Reporting Requirements

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

(1) Sample date(s)

(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 value(s) in percent effluent

(6) Inhibition Concentration (IC) values at IC_{15}, IC_{25}, IC_{40}, and IC_{50} values (or Effective Concentration (EC) values at EC_{15}, EC_{25} ... etc.) in 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

(9) NOEC and Lowest Observed Effect Concentration (LOEC) values for reference toxicant test(s)

(10) IC50 or EC50 value(s) for reference toxicant test(s)

(11) Available water quality measurements for each test (i.e., pH, D.O., temperature, conductivity, hardness, salinity, ammonia)

b. **Compliance Summary.** The results of the chronic toxicity testing shall be provided in the most recent self monitoring report and shall include a summary table of chronic toxicity data from at least three of the most recent samples.

3. Chronic Toxicity Reduction Evaluation (TRE)

a. **Generic TRE Work Plan.** To be prepared for responding to toxicity events, the Discharger shall prepare a generic TRE work plan within 90 days of the effective date of this Order. The Discharger shall review and update the work plan as necessary to remain current and applicable to the discharge and discharge facilities.

b. **Specific TRE Work Plan.** Within 30 days of exceeding either trigger for accelerated monitoring, the Discharge 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. **Initiate TRE.** Within 30 days of the date of completion of the accelerated monitoring tests observed to exceed either trigger, the Discharger shall initiate a

TRE in accordance with a TRE work plan that incorporates any and all comments from the Executive Officer.

d. 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. The TRE may be ended at any stage if monitoring finds there is no longer consistent toxicity (complying with Effluent Limitations Section IV.A.4).

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

g. As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the 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. Many recommended TRE elements parallel required or recommended efforts of source control, pollution prevention and storm water control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements or recommended efforts of such programs may be acceptable to comply with TRE requirements.

i. 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. LAND DISCHARGE MONITORING REQUIREMENTS

Not applicable.

VII. RECLAMATION MONITORING REQUIREMENTS

The Discharger is currently covered under Order No. 92-067, for its reclamation monitoring and reporting activities.

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER

The Discharger shall monitor Schell Slough, Hudeman Slough, MU1, MU3, and Ringstrom Bay (while these water bodies receiving discharges) at RSW-001 through RSW-021 as follows:

Table E-6. Receiving Water Monitoring Requirements[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency for Sloughs	Minimum Sampling Frequency for Wetlands
pH	s.u.	Grab	1/month	1/month
Temperature	°C	Grab	1/month	1/month
Dissolved Oxygen (DO)	mg/L	Grab	1/month	1/month
Sulfide (if DO<2 mg/L)	mg/L	Grab	1/month	1/month
Total Ammonia as N	mg/L	Grab	1/month	1/month
Unionized Ammonia as N	mg/L	Grab	1/month	1/month
Hardness	mg/L	Grab	1/month	Not applicbale
Salinity	ppt	Grab	1/month	Not applicbale
All applicable standard observations	--	Visual observations	1/month	1/week
All priority pollutants[2]	--	According to the August 6, 2001, Letter	1/5 years	Not applicbale

Footnotes for Table E-6:

[1] Sampling is only required while discharging to the receiving water occurs. If discharges to receiving water occur less than once per month (such as discharges to wetlands and Hudeman Slough), then the minimum sampling frequency is once per discharge event (whichever occurs less frequently). Receiving water samples shall be taken in a timely manner such that receiving water impacts of the discharge can be monitored. Receiving water monitoring in the sloughs (RSW-001 through RSW-015) is to be done by high slack tide sampling.

[2] Monitoring for priority pollutants is required once during the permit term. The sampling locations and methods should be those in the Regional Water Board's August 6, 2001 letter **(Attachment G)** and in the Discharger's approved sampling plan under the August 6, 2001 letter. Based on the approved sampling plan, RSW-014 is the only location required for priority pollutant monitoring.

IX. GROUNDWATER MONITORING

The monitoring for any extracted groundwater under R4 will be covered under the Regional Water Board's general permit for extracted groundwater, Order No. R2-2007-0033.

X. MODIFICATIONS TO PART A OF SELF-MONITORING PROGRAM (ATTACHMENT G)

Modify Section F.4 as follows:

Self-Monitoring Reports

[Add the following to the beginning of the first paragraph:]

For each calendar month, a self-monitoring report (SMR) shall be submitted to the Regional Water Board in accordance with the requirements listed in Self-Monitoring Program, Part A. The purpose of the report is to document treatment performance, effluent quality and compliance with waste discharge requirements prescribed by this Order, as demonstrated by the monitoring program data and the Discharger's operation practices.

[And add at the end of Section F.4 the following:]

g. If the Discharger wishes to invalidate any measurement, the letter of transmittal shall include identification of the measurement suspected to be invalid and notification of intent to submit, within 60 days, a formal request to invalidate the measurement. This formal request shall include the original measurement in question, the reason for invalidating the measurement, all relevant documentation that supports the 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.

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 the process approved by the Executive Officer in a letter dated December 17, 1999, Official Implementation of Electronic Reporting System (ERS) and in the Progress Report letter dated December 17, 2000, or in a subsequently approved format that the Order has been modified to include.

2) **Monthly Reporting Requirements:** For each reporting month, an electronic SMR shall be submitted to the Regional Water Board in accordance with Section F.4 of SMP, Part A. However, until USEPA approves the electronic signature or other signature technologies, Dischargers that are using the ERS must submit a hard copy of the original transmittal letter, an ERS printout of the data sheet, a violation report, and a receipt of the electronic transmittal.

3) **Annual Reporting Requirements:** Dischargers who have submitted data using the ERS for at least one calendar year are exempt from submitting an annual report electronically, but a hard copy of the annual report shall be submitted according to Section F.5 of SMP, Part A.

XI. OTHER MONITORING REQUIREMENTS

The Discharger has committed to continue to participate in the Regional Monitoring Program (RMP), which involves collection of data on pollutants and toxicity in water, sediment and biota of the Estuary.

XII. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

The Discharger shall comply with SMP Part A (**Attachment G**), the federal Standard Provisions (**Attachment D)** and the Regional Water Board's Standard Provisions **(Attachment G**) related to monitoring, reporting, and recordkeeping.

B. Self Monitoring Reports (SMRs)

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

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

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

Table E-7. Monitoring Periods

Sampling Frequency		Monitoring Period Begins On…	Monitoring Period
Continuous	--	Permit effective date	All
1/hour	Once per hour	Permit effective date	Every hour on the hour
1/day	Once per day	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.
1/week	Once per week	Permit effective date	Sunday through Saturday
3/week	Three times per week	Permit effective date	Sunday through Saturday
5/week	Five times per week	Permit effective date	Sunday through Saturday
7/week	Seven times per week	Permit effective date	Sunday through Saturday
5/month	Five times per month	Permit effective date	Approximately equally spaced during a calendar month
1/month	Once per month	Permit effective date	First day of calendar month through last day of calendar month
1/quarter	Once per quarter	Permit effective date	November 1 through January 31 February 1 through April 30 May 1 through July 31 August 1 through October 31
1/dry season	Once per dry season	Permit effective date	Once during dry season (after discharges to reclamation reservoirs starts, typically May 1 through October 31)
2/year	Twice per year	Permit effective date	Once during wet season (typically November 1 through April 30), once during dry season (typically May 1 through October 31)
1/year	Once per year	Permit effective date	Alternate between once during November 1 through April 30 (one year), and once during May 1 through October 31 (the next year)
1/5 years	Once every five years	Permit effective date	5 years after permit effective date

3. 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 Part 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 reported 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 (+ 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. Compliance Determination.

e. Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined above, **Attachment A**, and Table E-1, priority pollutant MLs of this Order. 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).

f. When determining compliance with an AMEL (or AWEL) for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

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

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

5. The Discharger shall submit SMRs in accordance with the following requirements:

The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When

electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.

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

SMRs must be submitted to the Regional Water Board, signed and certified as required by the Standard Provisions (**Attachment D**), to the address listed below:

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

C. Discharge Monitoring Reports (DMRs)

1. As described in Section XI.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 Discharge Monitoring Reports (DMRs). Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.

2. DMRs must be signed and certified as required by the Standard Provisions (**Attachment D**). The Discharger shall submit the original DMR and one copy of the DMR to the address listed below:

STANDARD MAIL	FEDEX/UPS/ OTHER PRIVATE CARRIERS
State Water Resources Control Board Division of Water Quality c/o DMR Processing Center PO Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15th Floor Sacramento, CA 95814

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

D. Other Reports

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

respective due date. The Discharger shall include a report of progress towards meeting compliance schedules established by section VII.C.2 of this Order in the annual SMR.

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 100%, 50%, 25%, 10%, 5%, 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 Discharge shall commence with screening phase monitoring.

Appendix E-2

SUMMARY OF TOXICITY TEST SPECIES REQUIREMENTS

Critical Life Stage Toxicity Tests for Estuarine Waters

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

Toxicity Test References:

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

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

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

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)*	Cell division rate	4 days	4

Toxicity Test Reference:

4. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, third edition. EPA/600/4-91/002. July 1994.

Toxicity Test Requirements for Stage One Screening Phase

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

[1] The freshwater species may be substituted with marine species if:
(a) The salinity of the effluent is above 1 part per thousand (ppt) greater than 95 percent of the time, or
(b) The ionic strength (TDS or conductivity) of the effluent at the test concentration used to determine compliance is documented to be toxic to the test species.

[2] (a) Marine/Estuarine refers to receiving water salinities greater than 1 ppt at least 95 percent of the time during a normal water year.
(b) Fresh refers to receiving water with salinities less than 1 ppt at least 95 percent of the time during a normal water year.

ATTACHMENT F – FACT SHEET

Table of Contents

I. Permit Information F-1
II. Facility Description F-2
A. Description of Wastewater and Biosolids Treatment or Controls F-2
B. Discharge Points and Receiving Waters F-6
C. Reclamation Activities F-7
D. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data F-11
E. Compliance Summary F-12
F. Planned Changes F-14
III. Applicable Plans, Policies, and Regulations F-14
A. Legal Authorities F-14
B. California Environmental Quality Act (CEQA) F-14
C. State and Federal Regulations, Policies, and Plans F-15
D. Impaired Water Bodies on CWA 303(d) List F-17
IV. Rationale For Effluent Limitations and Discharge Specifications F-18
A. Discharge Prohibitions F-18
B. Shallow Water Discharge and Basin Plan Prohibition 1 ..... F-19
C. Technology-Based Effluent Limitations F-21
D. Whole Effluent Toxicity (WET) Requirements F-25
E. WQBELs F-26
F. Interim Effluent Limitations F-47
G. Land Discharge Specifications F-49
H. Reclamation Specifications F-49
V. Rationale for Receiving Water Limitations F-49
A. Surface Water F-49
B. Groundwater F-49
VI. Rational for Wetland Enhancement Proejct specifications F-49
VII. Rationale for Monitoring and Reporting Requirements F-49
A. Influent Monitoring F-50
B. Effluent Monitoring F-50
C. Receiving Water Monitoring F-51
D. Other Monitoring Requirements F-51
VIII. Rationale for Provisions F-51
A. Standard Provisions F-51
B. MRP Requirements F-52
C. Special Provisions F-52
IX. Public Participation F-55
A. Notification of Interested Parties F-55
B. Written Comments F-55
C. Public Hearing F-55
D. Waste Discharge Requirements Petitions F-56
E. Information and Copying F-56
F. Register of Interested Persons F-56
G. Additional Information F-56
X. Appendix F-56

List of Tables

Table F-1. Facility Information F-1
Table F-2(a). Historic Effluent Limitations and Monitoring Data (Conventional and Non-Conventional Pollutants) F-11
Table F-2(b). Historic Effluent Limitations and Monitoring Data (Toxic Pollutants) F-12
Table F-3. Effluent Limitation Violations Statistics (January 2005–March 2008) F-13
Table F-4. Basin Plan Beneficial Uses and Potential Beneficial Uses F-15
Table F-5. Summary of Technology-based Effluent Limitations F-22
Table F-6. Copper and Zinc SSTs F-30
Table F-7. RPA Summary F-32
Table F-8. WQOs/WQC for Toxic Pollutants with Reasonable Potential F-35
Table F-9. WQBELs Calculation F-36
Table F-10. Summary of WQBELs F-47

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" are fully applicable to this Discharger.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

Table F-1. Facility Information

WDID	2 494009001
CIWQS Place ID	257754
Discharger	Sonoma Valley County Sanitation District
Name of Facility	Sonoma Valley County Sanitation District Wastewater Treatment Plant and its sewage collection systems
Facility Address	22675 8th Street East
	Sonoma, CA 9476
	Sonoma County
Facility Contact, Title and Phone	Pam Jeane, Deputy Chief Engineer, Sonoma County Water Agency, (707) 521-1864
Authorized Person to Sign and Submit Reports	Hody Wilson, Water Agency Coordinator, (707) 521-1843
Mailing Address	P.O. Box 11628, Santa Rosa, CA 95406
Billing Address	Same as mailing address
Type of Facility	POTW
Major or Minor Facility	Major
Threat to Water Quality	3
Complexity	A
Pretreatment Program	N
Reclamation Requirements	Order No. 92-067
Facility Permitted Flow	3.0 million gallons per day (MGD) – average dry weather flow design capacity (ADWF)
Facility Design Flow	3.0 MGD (ADWF) 11 MGD (maximum discharge flow at Outfall 001) 16 MGD (peak wet weather design capacity)
Watershed	San Pablo
Receiving Water	Schell Slough, MU1, MU3, Ringstrom Bay, Hudeman Slough, Fly Bay, Napa-Sonoma Marsh
Receiving Water Type	Inland surface water and wetlands
Service Areas	Sonoma, unincorporated areas of Glen Ellen, Boyes Hot Springs, El Verano, and Agua Caliente
Population Served	36,000

A. The Sonoma Valley County Sanitation District (hereinafter Discharger) is the owner of the Wastewater Treatment Plant, a POTW (hereinafter Facility), and the Sonoma County Water Agency is the operator. The Discharger owns the property at 22675 8th Street East, Sonoma, CA, on which the Facility is located. The Facility currently provides secondary level treatment for domestic and light commercial wastewater collected from its service areas as indicated in Table F-1. The Discharger's service area currently has a population of approximately 36,000. The Discharger has completed a Tertiary Upgrade Project and plans to provide tertiary filtered water for dry season reclamation and for future wet season discharge.

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

B. The discharges of treated wastewater from the Facility to surface waters have previously been regulated by Order No. R2-2002-0046 and R2-2005-0009 (previous permit), which were adopted on March 20, 2002 and April 20, 2005, respectively. Both expired on February 28, 2007, and both were administratively extended.

C. The Discharger filed a report of waste discharge (ROWD) and submitted an application for reissuance of its Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit on September 7, 2006. The Discharger provided supplemental information on October 30, 2007, and April 4, 2008.

II. FACILITY DESCRIPTION

A. Description of Wastewater and Biosolids Treatment or Controls

1. Wastewater Treatment Processes

The Facility provides secondary treatment to the wastewater collected from its service areas. Treatment processes consist of flow equalization; pretreatment by screenings washing and grit removal; extended aeration activated sludge treatment; secondary sedimentation; and effluent disinfection by chlorination and dechlorination. The Discharger has also constructed new cloth disk media filters and these filters were put online in December 2007. The filters can provide tertiary filtration to all dry weather flows, and may also treat all wet weather flows up to 16 MGD.

The treatment plant has a dry weather design capacity of 3 MGD and can treat up to 16 MGD during the wet season. But the discharge flow is limited to 11 MGD by effluent pump and discharge pipeline capacity. In addition, there are four lined equalization basins (total capacity of 35 million gallons) that provide temporary storage for excess wet weather flows.

2. Dry Weather Capacity

The Facility has a permitted ADWF of 3.0 MGD. In 2005, 2006, and 2007, effluent flows measured during three consecutive dry weather months were 2.85 MGD, 2.52 MGD, and 2.54 MGD, respectively. The previous permit requires the Discharger to perform a dry weather capacity study because its dry weather effluent flows had been near the design capacity. In the study submitted to the Regional Water Board on March 31, 2004, the Discharger reported that the Facility can actually handle up to 4.4 MGD during the dry season ("Technical Memorandum – Dry Weather Flow Capacity Analysis," dated March 29, 2004). The observed dry weather flows were less than 70% of the rated treatment capacity of 4.4 MGD. Therefore, the Discharger does not plan to seek an increase in its permitted capacity at this time because it has completed many upgrades at the treatment plant, including an addition of tertiary filters, which provide filtration to all dry weather flows; therefore, producing effluent with better water quality.

The treatment plant used to have numerous effluent limit violations during the past several years. The effluent limit violations were mainly for conventional pollutants, such as oil and grease, pH, and total coliform. These violations may have been related to capacity issues. Because the Discharger has upgraded the Facility and more upgrades are planned (see Section 5 below and as shown in Appendix F-1), it does not seem necessary to issue a cease and desist order (CDO) at this time to require correction of the problem. In addition, since the new tertiary filters were put online in December 2007, there have not been conventional pollutant limit violations. Therefore, it suggests that the Facility's performance has improved. However, if effluent limit violations occur in the future, the Regional Water Board may require the Discharger to take necessary actions to achieve compliance.

3. Wet Weather Flow Handling

The wet weather flow capacity is currently 11 MGD and is limited by effluent pumping. The treatment plant can treat a wet weather flow of 16 MGD, however, replacement of the effluent pumps and transmission line will be needed before the Facility can discharge at 16 MGD.

During wet seasons, rainwater entering the collection system could cause dramatic increases of flows to the treatment system. The treatment plant is designed to handle inflows up to 36 MGD. All flows are screened to remove rags and other material greater than 1.5 millimeters (5/8") in size and pumped from the headworks through the grit chamber to the flow distribution structure near the aeration basins. Flows in excess of 20 MGD are designed to be diverted around the grit removal system before reaching the flow distribution structure. However, this 20 MGD hydraulic limitation does not dictate the overall wet season capacity of the treatment plant, because diverting a portion of the peak wet season flow around the grit removal system is not expected to significantly impact overall effluent quality as the inflow contains a large amount of rain water and groundwater.

To moderate flows during storm events, influent flows in excess of the plant treatment capacity are diverted from the flow distribution structure to the four equalization basins to even out the influent flow rate to the plant. The equalization basins have a total capacity of 35 MG. The first two basins are approximately 2.5 MG each and have surface aerators. The last two equalization basins are unaerated. Their capacities are approximately 15 MG each.

Current operation during extreme storm flow events is to first maximize plant treatment to the current effluent transmission capacity of 11 MGD, then utilize the equalization basins (35 million gallons total capacity) to retain preliminary treated wastewater until it can be returned to the headworks for complete treatment. However, when the 35 MG capacity is exceeded, Equalization Basin 4 overflows to Schell Creek. The most recent overflow incident (approximately 5 MG) occurred in early January 2006 when the area experienced severe storms during that period.

Plant bypasses to waters of the state and the United States are prohibited according to Standard Provisions section G (**Attachment D**) of this Order, unless under certain circumstances.

4. Collection System

The Discharger's wastewater collection system includes 134.5 miles of gravity-flow sanitary sewer lines and 2 pump stations. The Discharger is in the process of completing a Sanitary Sewer Management Plan in accordance with a July 7, 2005, 13267 letter from the Regional Water Board and the Statewide General Waste Discharge Requirements for Collection System Agencies (General Collection System WDRs, Order No. 2006-0003-DWQ). By August 31, 2008, the Discharger has completed all required SSMP elements as specified in the 13267 letter.

Collection System Improvements Since 2002 NPDES Permit. In 2005, the Discharger completed the Fifth Street West Trunk Main Replacement, which rehabilitated a portion of the Discharger's trunk main system. The project included the construction of approximately 8,800 feet of various diameter pipes.

In 2006, the Discharger completed the Leveroni to Watmaugh Road Trunk Main Replacement, which included construction of approximately 5,500 feet of 30-inch main, 1,400 feet of 9-inch sewer main, and appurtenances.

Collection System Planned Improvements. The Discharger is in the process of improving its collection system between Watmuagh Road East to the treatment plant. The project is in the 90% design phase and will replace approximately 5,500 feet of pipe. The Discharger has identified approximately $14 million in Capital Improvement Projects for main sewer trunk repair to be implemented over the next ten years.

5. Plant Improvements since 2002 NPDES Permit

In 2003, the Discharger implemented the Aeration Automation Phase III project. This project included retrofitting the five aeration blowers with inlet control valves and new individual blower filters, rebuilding the four aeration basin headers with new control valves and mass flow meters, and installing control systems to maintain set point dissolved oxygen levels. In 2004, the Discharger completed the Emergency Gas Scrubbing System Project and the Electrical Upgrade and Generator Replacement Project. The gas scrubbing project involved installation of a Purafil brand dry chemical scrubbing system to abate potential accidental releases of chlorine or sulphur dioxide gas. The electrical upgrade included replacement of the existing 1.2-megawatt generator with a 2-megawatt generator, switching the plant's PG&E service to high-side metering, replacing the main service conductors, and creating two separate 12kV services within the plant. In 2007, the Discharger completed installation of a photovoltaic power generation system on a five-acre site at the northeast corner of treatment plant. The project consists of 5,496 solar modules generating 190 watts per module and yielding a total of 1,044 kWp.

The Discharger has recently completed a capital improvement project to add tertiary filters to the treatment plant. The Tertiary Treatment Upgrade Project includes Aqua-Aerobics' AquaDisk cloth disk media filters as well as significant improvements to disinfection and dechlorination control and automation, chemical dosing, and sampling and control systems for plant effluent pH adjustment. The filters were put online in December 2007.

The Discharger is in the planning process for an effluent pumping and transmission line project, which will increase wet weather discharge volume from 11 MGD to 16 MGD.

6. Biosolids Handling

Wastewater solids removed during the treatment process are directed to a small circular clarifier used to thicken the sludge. After thickening, the sludge is dewatered by a belt filter press. Dewatered biosolids are hauled away for off-site disposal at either the Novato Redwood Landfill in Marin County or Altamont Landfill in Alameda County.

The Discharger has completed a preliminary design report for improvements to its solids processing at the treatment plant. The report recommends proceeding with capital replacement of the existing dewatering facility, including rehabilitation of the sludge thickener, and the use of more efficient screw-press technology for dewatering. The Discharger has commenced preliminary design of the recommended project. The Discharger has conducted pilot tests of four screw-press models to validate the favored dewatering technology and to compare competitive equipment features and performance.

7. Storm Water

The U. S. Environmental Protection Agency (USEP) promulgated federal regulations for storm water discharges on November 19, 1990. The code of federal regulations [40 CFR 122, 123, and 124] require specific categories of industrial activity to obtain an NPDES permit and to implement Best Available Technology Economically Available (BAT) and Best Conventional Pollutant Control Technology (BCT) to control pollutants in industrial storm water discharges.

The State Water Board adopted a statewide NPDES permit for stormwater discharges associated with industrial activities (NPDES General Permit CAS000001, adopted November 19, 1991, amended September 17, 1992, and reissued April 17, 1997). The Discharger is not required to be covered under the General Permit because all of the storm water captured within the wastewater treatment plant storm drain system is directed to the headworks of the plant and treated to the standards contained in this Order.

B. Discharge Points and Receiving Waters

Outfall 001. During the wet season period from November 1 through April 30, secondary treated wastewater is discharged into Schell Slough at 38°14′14″N and 122°25′51″W (Outfall 001), a tributary to Sonoma Creek. Schell Slough is a tidal estuary that receives freshwater flow from Schell Creek during the wet weather months. During the dry season months, Schell Slough is a dead end slough and is flushed only by limited tidal actions. Schell Slough flows into Steamboat Slough, which is a tributary to Sonoma Creek by way of Third Napa Slough and Second Napa Slough.

Outfalls 002. Outfall 002 is a metered outfall located at 38°13′9″N and 122°23′13″W. This outfall is available to pump from recycle water reservoirs R1 and R2 directly to Hudeman Slough, a tributary of Sonoma Creek by way of Second Napa Slough. It has not been used since 2000/2001. However, the Discharger wants to keep this discharge point in the permit to allow operational flexibility and use of the outfall if the need arises.

Outfall 003. Recycled water stored in R4 can be discharged to a wetland area known as Ringstrom Bay. Ringstrom Bay is owned and operated by the California Department of Fish and Game (DFG). Discharge from R4 to Ringstrom Bay occurs from the end of an open channel located at 38°13′21″ N and 122°24′6″ W (Outfall 003). The channel can receive water from the treatment plant effluent line, from a recycled water line conveying water from R1, R2, R4, a combination of reservoirs, or from a slide gate that drains R4. Waters from Ringstrom Bay flow to Schell Slough when the tide gates are opened by the Discharger in cooperation with DFG after November 1.

Outfalls 004 and 005. During the dry season, recycled water stored in reservoirs is released into Wetland Management Units 1 and 3 (MU1 and MU3) for enhancement purposes. Discharge to MU1 from R1 occurs from a slide gate located at 38°13′8″N and 122°23′25″W (Outfall 005) and can only be supplied by a slide gate that drains R1. Discharge to MU3 is located at 38°13′6”N and 122°22′60”W (Outfall 004) and can be

supplied directly from a slide gate that drains R2 or from a pipe conveying water from the treatment plant effluent line, or from R1, R2, R4, or a combination of reservoirs. Waters from MU1 and MU3 flow to Hudeman Slough after the tide gates are opened by the Discharger in cooperation with DFG after November 1.

Outfalls 006. The Discharger may build a separate outfall that will convey reclaimed water from in Fly Bay for Napa-Sonoma Salt Marsh restoration use during the permit term. The discharge outfall will be located at 38°12' 13" N and 122°19' 54" W and is expected to receive water from the treatment plant effluent line, from R1, R2, and R4, or a combination of these reservoirs. The Discharger plans to discharge recycled water through Outfall 006 to Fly Bay, a large diked pond. In that pond, the Discharger's recycled water will be mixed with recycled water from Napa Sanitation District. After discharge, the DFG will operate the pond and use the stored water for wetlands rehabilitation. The water will be released (as needed) to the Napa-Sonoma Salt Ponds to slowly dilute and flush the bittern pond water and return the ponds to salt marsh habitat. There is no firm timeline for when the Sonoma pipeline and Outfall 006 will be constructed.

C. Reclamation Activities

1. Recycled Water for Irrigation

During the dry season, May 1 through October 31, effluent is treated to recycled water standards and conveyed to the reclamation reservoirs (R1, R2, R3, and R4). From R1, R2, and R4, recycled water can be delivered for vineyard irrigation or used for wetlands enhancement. Water from R3 is only delivered to recycled water users.

The Discharger operates a recycled water program under Regional Water Board's Order No. 92-067 and delivers disinfected recycled water to agricultural sites for vineyard and pasture irrigation. Currently the Discharger has twelve reclaimed water customers that take reclaimed water for pasture and vineyard irrigation under individual agreements with the Discharger, and the Discharger seeks additional reclaimed water users. The Discharger will seek coverage for operating under the Regional Water Board's General Water Reuse Permit (Order No. 96-011) because the tertiary filters are in place now. At that point, the Discharger will be supplying disinfected tertiary recycled water to the recycled water users.

Current recycled water deliveries are approximately 1,200 acre-ft per year. The Discharger plans to expand the recycled water program to deliver an additional 2,700 acre-ft per year. Use of recycled water in this area will help preserve groundwater levels; enhance ephemeral stream flows; offset potable water use; provide a high quality, reliable source of water for agriculture; and provide a source of water to enhance wetlands.

2. Recycled Water for Wetland Enhancement

The Discharger began to enhance and create wetlands along the upland edge of San Pablo Bay in 1990. The project involved enhancement of diked subsaline seasonal wetlands, as well as muted tidal marsh, and creation of seasonal wetlands and perennial freshwater marsh ponds using treated wastewater. Since the project completion, the Hudeman Slough Enhancement Wetlands have attracted thousands of overwintering and migrating waterbirds. In 1999, the Discharger launched a study to evaluate the ecological health and status of the project due to concerns about the effect of using secondary-level treated wastewater on wetlands ecosystems. A two-year monitoring study was designed to evaluate the effects of reclaimed water use within the Hudeman Slough Enhancement Wetlands using other hydrologically managed and unmanaged wetlands as reference areas. The study concluded with "in designing or managing wetlands enhancement, or creation projects, consideration and management of hydrologic regime appears to be as important, if not more important than water source" (The Use of Reclaimed Water for Enhancing and Creating Wetlands and Wildlife Habitat: Efficacy and Effects, Hudeman Slough Mitigation and Enhancement Wetlands Case Study, April 2003, Lorraine Parsons and Jessica Martini-Lamb).

Management Units and Upland Ponds Enhancement Project. This Order allows use of recycled water to enhance freshwater wetlands operated by the Discharger in cooperation with DFG.

There are three wetland enhancement areas, referred to MU1, MU2, and MU3, and eleven upland ponds, all located in the vicinity of Hudeman Slough, southeast of Schell Slough, approximately three miles from the treatment plant. The upland ponds are located just above the management units and provide open water habitat for waterfowl. MU1 and MU3 are freshwater wetlands enhanced by reclaimed water. MU2 is a diked bayland marsh that is periodically flushed with saline water during summer high tides.

Historically, these wetland enhancement areas were tidal wetlands, prior to the period between 1940 and 1970 when agriculture and levee construction for flood control modified these areas. Before the enhancement project began, the areas were predominantly pasture or fields, although the surrounding ecosystem did and continues to include coastal brackish marsh and salt marsh communities. The specific objectives for MU1 and MU3 are to increase seasonal wetland habitat and to create permanent freshwater ponds for use by migratory waterfowl and shorebirds. The specific objectives for MU2 are to increase the area of pickleweed salt marsh to provide habitat for the endangered salt marsh harvest mouse (*Reithrodontomys raviventris*).

Reclaimed water is released into MU1 and MU3 via Discharge Points 004 or 005 in accordance with the Mitigation Plan for Impacts to Wetlands: Sonoma Valley County Sanitation District Wastewater Reclamation Project and Hudeman Slough Wetland

Enhancement Project (1989). DFG provides oversight and guidance for management of the wetlands enhancement project.

According to the Mitigation Plan, R1 and R2 supply reclaimed water to the management units in order to maintain habitat for migratory waterfowl. Water is supplied to the Management Units primarily during the months from August through October, but supply may also occur from November through February if rainfall is insufficient to maintain water levels.

Beginning on or around November 1 of each year, the reclaimed water remaining in the management units is released to Hudeman Slough through tidal and canal gates, which then remain open during the wet season months. There are no discharges from MU1 and MU3 unless the tide gates are open. Conversely, there is no tidal influence within these units unless the tide gates are open (overtopping of the tide gates does not occur). The tide gates at both units are closed on April 30 and not opened again until November 1. As such, tidal connection within the management units can only occur between November 1 and April 30.

At the beginning of the wet season, the Discharger also has the physical capability of pumping this remaining water back to its Schell Slough discharge point, although this is not the Discharger's current practice. Starting in 1999, the Discharger made repairs to R1 and R2 that included redirecting local drainage around R1, thereby eliminating the need to drain R1 rapidly at the onset of the wet weather season and eliminating the need for the Discharger to pump remaining water back to its Schell Slough discharge point.

As recommended by Sonoma County Mosquito Abatement and DFG, water is released in small quantities, as needed, to keep the ponds and channels full for mosquito fish survival. In September (typically September 15 to November 1), MU1 and MU3 are slowly flooded to a depth of 6 to 8 inches with recycled water from R1 and R2 and are maintained at that level. Flooding the management units during this time provides important foraging and resting habitat for waterfowl and shorebirds during fall migration and for overwintering waterfowl. Breeding waterfowl also benefit from the wetland vegetation and open water for nesting habitat and raising of young. In addition, the flooded management units and adjacent public access trail provide important non-contact recreational opportunities for bird watchers and the general public in the north San Pablo Bay area.

Use of reclaimed water in the management units and upland ponds has provided several benefits to the enhancement wetlands. Wetland values have been restored to lands previously diked and converted to agricultural use without requiring use of potable water sources.

Seasonal wetlands, diked bayland marsh, freshwater ponds, drainage ditches, and annual grasslands within the management units provide habitat for a diverse assemblage of birds, particularly migratory water birds. During the five years of monitoring (1991-1996) following implementation of the wetland enhancement

project, water bird abundance within the management units increased dramatically. Recent monitoring from 1999 through 2001 showed that large numbers of water birds continue to use the habitats within the management units, particularly during the fall migration and in winter months (over 12,000 birds were counted during monitoring in 2000). The diversity of plant species comprising the seasonal wetlands, diked baylands, freshwater ponds, and annual grasslands within the management units provide food and cover for numerous wildlife species. In addition to birds, habitats in the management units provide suitable breeding, foraging, and cover habitat for various mammals and reptiles.

In addition to the discharge of treated effluent, surface water enters the wetland enhancement areas from the surrounding watershed. The enhancement areas lie within the 100-year floodplain of Sonoma Creek and are generally isolated from tidal influence by the levees along Hudeman Slough.

3. Use of Ringstrom Bay to Store Reclaimed Water

If the Discharger's storage capacity is inadequate during times when use of Discharge Point 001 is prohibited (e.g., wet weather events occurring in late or early season), the Discharger discharges from the recycled water system to Ringstrom Bay (Discharge Point 003). Ringstrom Bay is not a managed wetland unit like MU1 and MU3. It is an open tidal unit controlled by DFG through gates located at 38°13'11.06"N, 122°24'39.85"W and 38°13'33.40"N, 122°24'56.19"W.

Reclaimed water is discharged from the recycled water system to an isolated area of Ringstrom Bay at the request of the Discharger in mid to late summer when the storage reservoirs are at their capacity. This isolated area, south of R4, is isolated by closing a southern set of DFG gates and a set of the Discharger's gates on culverts located at 38°13'22.56"N and 122°24'26.84"W. Once the gates are closed, there is a large shallow volume available for recycled water storage. Treated wastewater is stored in Ringstrom Bay until discharge to Schell Slough is allowed. Other than that, Ringstrom Bay is managed as a muted tidal wetland with brackish water entering and leaving the wetland at the tidal sequence through a tide gate controlled by DFG. Normal wet season discharges occur from the recycled water system in November and December. Stored water is emptied through Discharge Point 003 and the water flows through Ringstrom Bay to Schell Slough. Early spring discharges may also occur if the Discharger maintains stored water in R-4 over the winter.

The use of Ringstrom Bay for recycled water storage is coordinated with DFG and the Regional Water Board and maintained as isolated storage until November 1. At this time, the gates are opened and stored water is released to the Schell Slough.

4. Other Reclamation Projects and Future Projects

The Discharger completed the R4 Reservoir project in 2003. This project included construction of a 268 acre-foot reservoir and pump station at the existing Overland Flow site for reclaimed water storage and irrigation. Testing of the reservoir and all

equipment was conducted in the spring of 2003 and the facility was vital throughout the 2003 recycled water season. In 2006, a recycled water pipeline was installed to Manzoni Ranch. The project involved installation of approximately 3,600 linear feet of 12-inch diameter recycled water main and appurtenances for the purpose of supplying recycled water for irrigation.

Groundwater Dewatering at R4. Groundwater dewatering is required periodically to protect the liners at R4. To keep the liners in place, the Discharger must either pump groundwater from underneath the reservoir (then discharge to wetlands in Ringstrom Bay) or keep water in the pond. The Discharger sampled the groundwater near R4 to identify whether the groundwater contains pollutants at levels of concern. The sampling results indicate a slightly elevated nickel concentration (but lower than the applicable water quality objective). The Discharger will pursue coverage under the Regional Water Board's general permit for extracted groundwater (Order No. R2-2007-0033). If continued monitoring does not show any pollutants exceeding the trigger levels in the general permit, the Discharger may request to stop general permit coverage. The groundwater will be considered clean and its discharge not subject to waste discharge requirements.

Future Projects. The Discharger plans to participate in additional recycled water projects, including the Sonoma Valley Recycled Water project, the North San Pablo Bay Restoration and Reuse Project, the Napa-Sonoma Salt Marsh Restoration Project, the upland ponds rehabilitation, rehabilitation of R3, and the addition of a third supply pump at R4.

D. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

Effluent limitations contained in the previous permit for discharges from 001 (Monitoring Locations EFF-001 and EFF-001B) and representative monitoring data from the term of the previous permit are as follows. The statistics are based on effluent data collected from January 2005 to December 2007 for conventional and non-conventional pollutants, from May 2004 to April 2007 for most inorganic priority pollutants, and from 2002 to 2004 for organic priority pollutants.

Table F-2(a). Historic Effluent Limitations and Monitoring Data (Conventional and Non-Conventional Pollutants)

Parameter	Units	Effluent Limitation				Monitoring Data		
		Average Monthly	Average Weekly	Maximum Daily	Instant-aneous	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
BOD_5	mg/L	30	45	--	--	8	18.7	22
TSS	mg/L	30	45	--	--	8.8	29.4	41
BOD_5 percent removal	%	85 (minimum)	--	--	--	93 (lowest)	--	--
TSS percent removal	%	85 (minimum)	--	--	--	93 (lowest)	--	--
Oil and grease	mg/L	10	--	20	--	95.1	116.6	337.5
pH (minimum)	s.u.	--	--	--	6.5	--	--	6.2

Parameter	Units	Effluent Limitation				Monitoring Data		
		Average Monthly	Average Weekly	Maximum Daily	Instant-aneous	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
pH (maximum)	s.u.	--	--	--	8.5	--	--	7.5
Total chlorine residual (maximum)	mg/L	--	--	--	0.0	--	--	0.25
Flow rate	MGD	--	--	--	--	8.05	--	11.63
Temperature (winter)	Degree C	--	--	--	--	17.5	--	8.8 (lowest)
Temperature (summer)	Degree C	--	--	--	--	24.6	--	26.9
DO	mg/L					7.0(lowest)	--	4.9 (lowest)
Total ammonia-N	mg/L					2.42	8.6	8.6
Nitrate as N	mg/L	--	--	--	--	26	34	34
Total coliform	mpn/100 mL	--	23 as 7-sample median	240 as Single maximum	--	--	300	≥1600
Acute Toxicity	% survival	11-sample median 90% 11-sample 90th percentile 70%				--	20 (lowest)	--

Table F-2(b). Historic Effluent Limitations and Monitoring Data (Toxic Pollutants)

Toxic Pollutants	Units	Average Monthly	Average Weekly	Maximum Daily	Instant-aneous	# of Data points	Long term average	Highest
Copper	µg/L	0.18	--	--	--	159	8.0	25
Mercury	µg/L	0.087	--	1.0	--	157	0.0037	0.0238
Nickel	µg/L	No limit	--	--	--	38	2.1	5.3
Lead	µg/L	No limit	--	--	--	32	0.55	1.4
Zinc (prior to April 21, 2005)	µg/L	92	--	140	--	129 (Nov 02-Apr 05)	57	87
Zinc (after April 21, 2005)	µg/L	91	--	130	--	24	58.3	87
Cyanide	µg/L	10.1	--	--	--	37	1.61	8.0
Heptachlor	µg/L	No limit	--	--	--	6	All ND except one	0.006 (DNQ)
Tributyltin	µg/L	0.013	--	--	--	6	All ND except one	0.00553
Chrysene	µg/L	0.098	--	0.049	--	--	All ND	--
Dieldrin	µg/L	0.00028	--	0.00014	--	--	All ND	---
4,4-DDE	µg/L	0.00118	--	0.00059	--	--	All ND	--

E. Compliance Summary

1. Summary of Effluent Limit Violations

There have been 29 violations since March 2006. Most of the violations were for pH and total coliform effluent limits violations. The table below summarizes the number of violations for each pollutant.

Table F-3. Effluent Limitation Violations Statistics (January 2005–March 2008)

Parameter	No. of violations	Notes
pH	9	Exceeded the instantaneous minimum limit of 6.5
Oil and grease	3	Exceeded daily maximum and monthly average limit
Total chlorine residual	1	Exceeded instantaneous limit of 0.0 mg/L
Total coliform	14	Exceeding the daily maximum and 7-sample median limits
Acute toxicity	2	Exceeded the 11-sample 90th percentile limit

pH violations: The Discharger claims most of the pH violations were caused by low influent alkalinity related to high inflow and infiltration. Therefore, the influent lacks buffer capacity against pH changes during treatment processes. Furthermore, the extended aeration activated sludge treatment process destroys alkalinity while entraining atmospheric carbon dioxide (CO_2) through fine bubble aeration diffusers, which then combines with the CO_2 respired by the biomass. By January 2007, the Discharger had installed continuous pH monitoring and automatic chemical adjustment devices. There have been no pH violations since then.

Total coliform violations: Some of the violations are related to TSS and turbidity in the effluent. Many of the violations occurred in November, when the ambient temperature suddenly dropped and the bacteria did not respond to the change in a timely manner, resulting in higher turbidity. However, under some cases, the Discharger could not determine the cause of the violations. The new tertiary filters have been online since December 2007, and the plant is now producing effluent low in TSS and turbidity. There have been no total coliform effluent limit violations since December 2007.

2. Enforcement Actions for Effluent Limit Violations

The Regional Water Board has taken enforcement actions on the Discharger's violations of effluent limits. The most recent enforcement action was a minimum mandatory penalty (MMP) in Order No. 2006-0013 for 21 violations that occurred from November 2002 through February 2006; the total fine amount was $39,000. The State Water Board's expedited MMP action has addressed the 29 new violations that have occurred since the last MMP.

3. Status of Special Studies Required by the Previous Permit

The previous permit required the following special studies. The Discharger's compliance with these requirements is summarized below.

a. Provision F.2. (Cyanide Study and Schedule). This provision requires the Discharger to participate in developing a site-specific objective for cyanide. The Discharger has complied with this requirement by submitting annual progress reports by February 28 each year.

b. Provision F.3. (Effluent Characterization for Selected Constituents). The Discharger has completed the study and submitted the final report.

c. Provision F.4. (Ambient Background Receiving Water Study). The Discharger has completed the study and submitted the final report.

d. Provision F.5. (Pollutant Minimization Program). The Discharger has complied with this requirement by submitting annual Pollution Prevention reports by February 28 each year.

e. Provision F.6. (Dry Weather Flow Capacity Analysis). The Discharger has completed the study and submitted the report on March 31, 2004.

f. Provision F.8. (Whole Effluent Chronic Toxicity). The Discharger failed to conduct a chronic toxicity screening phase study as required by the permit for this permit reissuance. The Discharger is in the process preparing a screening phase study plan. This Order requires the Discharger to complete a screening phase study by March 31, 2009.

g. Provision F.10 (Mercury Mass Loading Reduction). The mercury mass trigger has never been exceeded; therefore, the Discharger is not required to take additional actions beyond what is being done under the pollutant minimization program.

F. Planned Changes

The Discharger has planned many other upgrades, as described in the previous sections.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as WDRs pursuant to article 4, chapter 4, division 7 of the California Water Code (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 Regional Water Board adopted a Water Quality Control Plan for the San Francisco Bay Region (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives (WQOs), and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. The Basin Plan is the Regional Water Board's master water quality control planning document. The Basin Plan was duly adopted by the Regional Water Board and approved by the State Water Board, Office of Administrative Law (OAL) and the USEPA, where required. Requirements of this Order implement the Basin Plan.

   The Basin Plan at Chapter 2 states that the beneficial uses of any specifically identified water body generally apply to its tributary streams. The Basin Plan does not specifically identify beneficial uses for Schell Slough or Hudeman Slough, but does identify present beneficial uses for Sonoma Creek, to which Schell and Hudeman Sloughs, via the Second Napa Slough, are tributaries. Therefore, the beneficial uses designated to Sonoma Creek also apply to these two sloughs. In addition, 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 (MUN). Because Schell and Hudeman Sloughs are both tidally influenced, total dissolved solids levels in these sloughs are around several thousand milligrams per liter (mg/L), thereby meeting an exception to Resolution No. 88-63. The MUN designation is therefore not applicable to Schell or Hudeman Slough.

   MU1, MU3, and Ringstrom Bay are wetland areas that are tidally connected during part of the year with either Schell Slough or Hudeman Slough. Fly Bay and Napa-Sonoma Marsh is either tidally connected with Napa River or San Pablo Bay. The Basin Plan has not designated beneficial uses for these wetland areas; however, it establishes potential beneficial uses for wetlands in general. These potential beneficial uses are listed in the table below. However, because of their remote location, many of these beneficial uses are significantly limited. The Discharger may provide beneficial use survey results to the Regional Water Board when it considers beneficial use designations for these wetland areas.

   The beneficial uses are listed in Table F-4 below.

Table F-4. Basin Plan Beneficial Uses and Potential Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001 and 002	Schell Slough and Hudeman Slough	Cold Water Habitat (COLD) Fish Migration (MIGR) Preservation of Rare and Endangered Species (RARE) Water Contact Recreation (REC1) Non-contact Water Recreation (REC2) Fish Spawning (SPWN) Warm Water Habitat (WARM)

Discharge Point	Receiving Water Name	Beneficial Use(s)
		Wildlife Habitat (WILD)
003, 004, 005, 006	MU1, MU3, Ringstrom Bay, Fly Bay, Napa-Sonoma Marsh	Wildlife Habitat (WILD) Preservation of Rare and Endangered Species (RARE) Estuarine Habitat (EST) Water Contact Recreation (REC1) Non-contact Water Recreation (REC2) Fish Migration (MIGR) Fish Spawning (SPWN) Ocean Commercial and Sport Fishing (COMN) Shellfish Harvesting (SHELL) Marine Habitat (MAR)

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

3. **State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (hereinafter State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria promulgated by the USEPA 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, the USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes [40 CFR 131.21, 65 Fed. Reg. 24641 (April 27, 2000)). Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to the USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by the USEPA.

5. **Antidegradation Policy**. 40 CFR 131.12 requires that the 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 No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires

that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of 40 CFR 131.12 and State Water Board Resolution No. 68-16.

6. **Anti-Backsliding Requirements.** 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.

7. **Impaired Water Bodies on CWA 303(d) List.** Sonoma Creek is listed as impaired for pathogens, nutrients, and sedimentation/siltation. The Discharger's receiving waters are tributaries to Sonoma Creek. The Regional Water Board has developed a pathogen TMDL for Sonoma Creek and incorporation into the Basin Plan. The State Water Board adopted this Basin Plan amendment in September 2007. It is now waiting for the USEPA's and OAL's approval. The Regional Water Board's adoption of the nutrients and sedimentation TMDL is scheduled for 2008.

   This Order includes bacterial effluent limits that are consistent with the wasteload allocations (WLAs) contained in the Regional Water Board's adopted Sonoma Creek pathogen TMDL.

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

In November 2006, the USEPA approved a revised list of impaired water bodies prepared by the state (the 303(d) list), prepared pursuant to provisions of CWA section 303(d), which requires identification of specific water bodies where it is expected that WQS will not be met after implementation of technology-based effluent limitations on point sources. San Pablo Bay is listed as an impaired waterbody for chlordane, DDT, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, nickel, PCBs, dioxin-like PCBs, and selenium. Sonoma Creek is listed as impaired by pathogens, sediment/siltration, and nutrients. The SIP requires final effluent limitations for all 303(d)-listed pollutants to be consistent with total maximum daily loads (TMDLs) and associated waste load allocations (WLAs).

The Regional Water Board plans to adopt TMDLs for pollutants on the 303(d) list in San Pablo Bay within the next ten years (a TMDL for mercury was approved by USEPA on February 12, 2008). The Sonoma Creek pathogen TMDL was adopted on June 14, 2006, and the Regional Water Board plans to adopt a Sonoma Creek nutrients and sediment TMDL by 2010.

TMDLs will establish WLAs for point sources and load allocations (LAs) for non-point sources, and will be established to achieve the WQS for impaired waterbodies. The discharge of mercury from the plant is regulated by Regional Water Board Order No. R2-2007-0077, which implements the adopted mercury TMDL and contains monitoring and reporting requirements.

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 the 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 40 CFR: section 122.44(a) requires that permits include applicable technology-based limitations and standards; and section 122.44(d) requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative WQC to protect the beneficial uses of the receiving water. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established.

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

A. Discharge Prohibitions

1. **Prohibitions III.A (The discharge of treated wastewater at a location or in a manner different from that described in this Order is prohibited):** This prohibition is in the previous permit and is based on CWC section 13260, which requires filing a ROWD before discharges can occur. Discharges not described in the ROWD, and subsequently in this Order, are prohibited.

2. **Prohibition III.B (Discharge to Shell or Hudeman Slough is prohibited from May 1 to October 31):** This prohibition is based on the Basin Plan (and is in the previous permit). The Basin Plan prohibits discharges not receiving a minimum 10:1 initial dilution or to dead-end sloughs (Chapter 4, Discharge Prohibition No. 1). Schell and Hudeman Slough are dead-end sloughs, which are only flushed by limited tides during the dry season. However, an exception may be authorized by the Executive Officer under certain emergency situations such as a prolonged wet season that prohibits normal reclamation. Under this circumstance, the Discharger will need to demonstrate that the Facility is running out of its storage capacity for treated wastewater. This exception is continued from the previous permit and is intended to protect the treatment facility from being flooded or occurrence of uncontrolled spills.

3. **Prohibition III. C (average dry weather flows greater than 3.0 MGD is prohibited):** This prohibition is based on the previous permit. Exceedance of the treatment plant's average dry weather flow design capacity may result in lowering the reliability of achieving compliance with water quality requirements.

4. **Prohibition III. D (No bypasses of untreated wastewater, except under the conditions at 40 CFR 122.41(m)(4)):** This prohibition is based on 40 CFR 122.41(m)(4) (see Federal Standard Provisions, section G, **Attachment D**), and is retained from the previous permit.

5. **Discharge Prohibition III.E (No sanitary sewer overflows (SSO) to waters of the United States)**: The purpose of this provision is to explain this Order's requirements as they relate to the Discharger's conveyance system and to promote consistency with the State Water Board-adopted Statewide General Waste Discharge Requirements for Sanitary Sewer Overflow (SSO WDRs) and a related Monitoring and Reporting Program (Order No. 2006-0003-DWQ).

B. Shallow Water Discharge and Basin Plan Prohibition 1

The Basin Plan prohibits discharges not receiving a minimum 10:1 initial dilution or to dead-end sloughs (Chapter 4, Discharge Prohibition No. 1). In accordance with the Basin Plan, the Regional Water Board has granted an exception to the discharge prohibition for discharges to the receiving waters as described below.

1. 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, such as an alternative discharge site, a higher level of treatment, and/or improved treatment reliability; or

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

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

   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."

2. The Regional Water Board finds that the water reuse program implemented by the Discharger qualifies for an exception to Basin Plan Prohibition 1. The Regional Water Board has historically granted an exception to Prohibition 1 from November 1 through April 30 for discharges to Schell and Hudeman Sloughs, and all year discharges to the wetland areas (MU1, MU3, and Ringstrom Bay), provided that the discharges affords a net environmental benefit and the Discharger complies with the requirements of its permit as identified below.

   - Continue to operate all treatment facilities to ensure high reliability and redundancy.

   - Continue to implement a source control program for any regulated pollutants that are measured at levels in violation of permit effluent limitations: The Discharger

maintains a best management practices and pollution prevention program as required by the permit.

- Continue to implement measures to maintain, repair, and upgrade the existing wastewater facilities so as to ensure continued operation and treatment capability in conformance with permit requirements and to protect beneficial uses of the receiving water bodies in the vicinity of the discharge: The Discharger has completed numerous treatment plant upgrades since 1997 (see Appendix F-1 for the completed upgrades and timelines). The most recent improvement was to add tertiary filters and pH control devices. Since their completion in December 2007, there have been no effluent limit violations for pH or total coliform. Effluent quality has also improved.

- Continue progress towards construction of new or repair of leaky sanitary sewer systems to reduce sanitary sewer overflows: The Discharger has completed and plans more construction to upgrade its collection systems as described in a section above.

- Continue to promote and encourage beneficial reuse of treated wastewater: The Discharger maintains a reclamation program. During the 2007 reclamation season, the effluent flow sent to the four reclamation reservoirs was 573 MG (the 2007 total annual effluent flow was 1112 MG). At the end of the dry season, about 100 MG of effluent were discharged to the sloughs via the wetlands. The effluent flow used for wetland enhancement has been about 12-15 million gallons per year. All other flows have been used for irrigation (or lost by evaporation). Based on the information submitted by the Discharger, the reclamation project resulted in a net environmental benefit.

3. The Regional Water Board finds that the Discharger's efforts comply with the exception provision of the Basin Plan. The Regional Water Board continues to grant an exception to Prohibition 1 for wet season discharge to the Schell Slough and Hudeman Slough from November 1 to April 30, and (2) for the discharge of reclaimed water to MU1, MU3, Ringstrom Bay, and Napa-Sonoma Salt Marsh. This exception is subject to the conditions specified in the Discharge Prohibition III.B of the permit.

4. Discharges to Schell Slough and Hudeman Slough is prohibited from May 1 to October 31. However, an exception may be authorized by the Executive Officer under certain emergency situations such as a prolonged wet season that prohibits normal reclamation. Under this circumstance, the Discharger will need to demonstrate that the Facility is running out of its storage capacity for treated wastewater. This exception is continued from the previous permit and is intended to protect the treatment facility from being flooded or occurrence of uncontrolled spills.

C. Technology-Based Effluent Limitations

1. Scope and Authority

Regulations promulgated in 40 CFR 125.3(a)(1) require technology-based effluent limitations for municipal dischargers to be placed in NPDES permits based on Secondary Treatment Standards or Equivalent to Secondary Treatment Standards.

The CWA established the minimum performance requirements for POTWs [defined in section 304(d)(1)]. Section 301(b)(1)(B) requires that such treatment works must, at a minimum, meet effluent limitations based on secondary treatment as defined by the USEPA. Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in 40 CFR 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of biochemical oxygen demand (BOD_5), total suspended solids (TSS), and pH.

2. Applicable Technology-Based Effluent Limitations

Permit effluent limitations for conventional pollutants are technology-based. Technology-based effluent limits are put in place to ensure that full secondary treatment is achieved by the wastewater treatment facility, as required under 40 CFR 133.102. Effluent limits for the following conventional pollutants are defined by the Basin Plan.

- BOD_5,
- BOD_5 percent removal,
- TSS,
- TSS percent removal,
- pH,
- Oil and grease,
- Total chlorine residual, and
- Total coliform organisms.

3. Summary of Technology-based Effluent Limitations

Technology-based effluent limitations for discharges to Schell Slough, Hudeman Slough, and wetlands are summarized in Table F-5 below.

Table F-5. Summary of Technology-based Effluent Limitations

Parameter	Unit	Effluent Limitations				
		Average monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
BOD_5	mg/L	30	45	---	---	---
TSS	mg/L	30	45	---	---	---
BOD_5 and TSS Percent removal	%	85 (minimum)	---	---	---	---
pH	standard unit	---	---	---	6.5	8.5
Oil and Grease	mg/L	10	---	20	---	---
Total Chlorine Residual	mg/L	---	---	---	---	0.0
Total Coliform	See f. below					

a. The effluent limitations for BOD_5 and TSS are technology-based limitations representative of, and intended to ensure, adequate and reliable secondary level wastewater treatment. These limitations are unchanged from the previous permit and are based on Basin Plan Table 4-2. Effluent data show the Discharger can comply with these effluent limits.

b. The effluent limitations for BOD_5 and TSS monthly removal are technology-based. They are unchanged from the previous permit and are based on Basin Plan requirements, derived from federal requirements (40 CFR 133.102; definition in section 133.101). Effluent data show the Discharger can comply with these effluent limits.

c. The effluent limitations for pH are technology-based and are unchanged from the previous permit. These limitations are based on Basin Plan Table 4-2 for shallow water discharges, which are derived from federal requirements (40 CFR 133.102). The Discharger may elect to use continuous on-line monitoring systems to measure pH. In this case, 40 CFR 401.17 (pH Effluent Limitations under Continuous Monitoring) is the basis for the compliance provisions for pH limitations. Excursions of the pH effluent limitations are permitted, provided that both of the following conditions are satisfied (1) the total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and (2) no individual excursion from the range of pH values exceed 60 minutes. Effluent data show the Discharger used to have difficulty complying with these limits before December 2006. However, the Discharger has installed new devices to address the non-compliance, and there have been no pH effluent limit violations since January 2007.

d. The effluent limitations for oil and grease are technology-based and are unchanged from the previous permit. These limitations are based on Basin Plan Table 4-2 for shallow water dischargers. There have been three oil and grease effluent limit violations. The Discharger's new tertiary filters are expected to address this non-compliance.

e. The effluent limitation for total chlorine residual is based on Basin Plan Table 4-2. Effluent chlorine concentrations are required to be monitored continuously for EFF-001 discharges. Chlorine residual concentrations will be monitored and reported for sampling points both before and after dechlorination. Total chlorine dosage (kg/day) need to be recorded on a daily basis. The Discharger may use a continuous on-line monitoring systems to measure flow, chlorine, and sodium bisulfite concentration and dosage to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Regional Water Board staff may conclude that these false positives of chlorine residual exceedances are not violations of the limitation.

   The Discharger will need to report the maximum residual chlorine concentration observed following dechlorination on a daily basis unless the Discharger requests to use the chlorine residual reporting strategy as allowed in the Regional Water Board's October 19, 2004, letter and the Discharger complies with the conditions listed in the letter as detailed below. The Discharger may evaluate compliance with this effluent limit by recording discrete readings from continuous monitoring equipment every hour on the hour or by collecting grab samples every hour, for a total of 24 readings or samples per day, if the following conditions are met: (1) The Discharger shall retain continuous monitoring readings for at least three years; (2) The Discharger shall acknowledge in writing that Regional Water Board reserves the right to use all other continuous monitoring data for discretionary enforcement; (3) The Discharger must provide in writing the brand name(s), model number(s), and serial number(s) of the equipment used to continuously monitor dechlorinated final effluent chlorine residual. If the identified equipment is replaced, the Discharger shall provide the Regional Water Board in writing, within 72 hours of the successful startup of the new equipment, the new equipment's brand name, model number, and serial number. The written notification identified in items 1 through 3 shall be in the form of a letter addressed to the Regional Water Board's Executive Officer with a certification statement as listed in the October 19, 2004, Regional Water Board letter re*: Chlorine Compliance Strategy for Dischargers Using Continuous Monitoring Devices*.

f. The purpose of total coliform effluent limitations is to ensure adequate disinfection of the discharge in order to protect beneficial uses of the receiving waters. The total coliform limitations for discharges of chlorinated and dechlorinated treated effluent to sloughs or wetlands directly from the plant effluent pipeline with compliance measured at EFF-001 or EFF-001B (as described in **Attachment E**), require that the moving median value for the total coliform bacteria in any five consecutive samples not to exceed 23 MPN/100mL and any single sample not to exceed 240 MPN/100mL. These limitations are based on Basin Plan Table 4-2 for shallow water dischargers (footnote e). Although the Basin Plan requires the Discharger to demonstrate that an exception to Table 4-2 total coliform effluent limits for shallow water dischargers will not compromise the beneficial uses for the receiving water to get the footnote

(e) effluent limits, Regional Water Board staff believes it is not necessary to require a study to continue its existing limits because Basin Plan Table 4-2 total coliform effluent limits may be redone when the Regional Water Board plans to consider adopting new bacteriological objectives in the near future. Based on the Discharger's receiving water (no shellfish harvesting), bacteriological effluent limits will be most likely based on enterococcus or *e. col.* In addition, the adopted Sonoma Creek Pathogen TMDL contains WLAs for the Discharger for total coliform, which are a five-sample median of 240 MPN/100ml and a single sample maximum of 10,000 MPN/100ml. The existing permit effluent limits are much more stringent than the TMDL WLA. Therefore, the current limits are protective of the beneficial uses.

This Order changes the previous 7-sample median to 5-sample median to be consistent with the Basin Plan. The Regional Water Board staff believes the 7-sample median was a typographical error started in Order No. 98-111 and it was carried over to the previous permit. There have been no total coliform effluent limit violations since December 2007 after the tertiary filters were put online. It is expected that the Discharger will be able to comply with these effluent limits.

The total coliform effluent limits for discharges to wetlands or sloughs from reclamation reservoirs R1, R2, and R4 are the same as above. The Discharger plans to filter all dry season effluent to reclamation reservoirs and is seeking coverage under the general reclamation order for tertiary recycled water use, the discharges to the reclamation reservoirs used for wetland enhancements are of the same quality as those for irrigation. The Discharger will need to comply with slightly more stringent total coliform limits for its discharges to reservoirs for irrigation use. Therefore, Regional Water Board staff believes the Discharger will be able to meet these limits.

g. Compliance with the above effluent limits (except for total chlorine residual) for discharges to wetlands is to be determined at EFF-001B (after all treatment processes but before dechlorination). The previous permit specified a different way to determine compliance. That method was very complicated and did not yield results that represented the water quality of wetland discharges. Even though EFF-001B reflects the discharge quality to the reclamation reservoirs, after water flows into the reservoirs, water quality change is mostly subject to natural processes, such as evaporation, bird dropping, etc. These changes are out of the Discharger's control. However, to ensure the discharge to wetlands from reclamation reservoirs is not toxic to aquatic life, this Order requires compliance with the total chlorine residual effluent limit and acute toxicity effluent limits (see below) as determined at the reclamation reservoirs where discharges to wetlands occur.

In addition, the Discharger applies Aquashade[1] in the reservoirs to control algae growth. Aquashade may contain some trace toxic pollutants at very low concentrations. This is the only chemical addition that may change the water quality in the reservoirs; therefore, this permit requires routine monitoring for these pollutants to ensure the discharges from reservoirs do not contain pollutants at concentrations toxic to aquatic life. If monitoring results show reasonable potential for those pollutants, the permit may be reopened to include effluent limits for the pollutants with reasonable potential.

D. Whole Effluent Toxicity (WET) Requirements

1. Whole Effluent Acute Toxicity

a. **Permit Requirements.** This Order includes effluent limits for whole-effluent acute toxicity that are based on Basin Plan Table 4-3 and are unchanged from the previous permit for Discharge Point 001. These effluent limits also apply to water samples taken directly from the reclamation reservoirs for Discharge Points 002 through 006. All bioassays are to be performed according to the USEPA approved method in 40 CFR 136, currently "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 5th Edition." The current test species is fathead minnow.

b. **Compliance History.** The Discharger's acute toxicity monitoring data show that there have been two tests with lower than 70% survival (20% and 55%) during 2005-2008 for fathead minnow. The Discharger identified the cause of the 20% survival test as excessive sulfur dioxide dosing, but the cause of the 55% survival was undermined. The failed tests both occurred after the tertiary filters were put online. In accordance with the Order, the Discharger will need to conduct a special study to identify causes in the future if violations continue to occur.

2. Whole Effluent Chronic Toxicity

a. **Permit Requirements.** This permit includes requirements for chronic toxicity monitoring based on the Basin Plan narrative toxicity objective. This permit includes the Basin Plan narrative toxicity objective as the applicable effluent limit, implemented via monitoring with numeric values as a "trigger" to initiate accelerated monitoring and to initiate a chronic toxicity reduction evaluation (TRE) as necessary. While this permit covers other discharge points, they are tertiary treated discharges of a higher quality. As such, the requirements for Discharge 001 are adequately predictive and protective for these other discharges while avoiding additional monitoring burden on the Discharger. These permit requirements for chronic toxicity are also consistent with CTR and SIP requirements.

[1] Aquashade is composed of two dyes that have food grade counterparts that FDA regulates. The Acid Blue 9 dye is the same dye as FD&C Blue 1. The yellow dye is the same as FD&C Yellow 5. FDA has set guidelines on the amounts of trace metals that can be present in these dyes.

b. **Chronic Toxicity Triggers.** This Order includes triggers for discharges via Discharge Point 001, which are a three-sample median of 1 TUc and a single sample maximum of 2 TUc. These triggers are based on Basin Plan Table 4-5.

c. **Monitoring History.** The Discharger performed chronic toxicity tests using two test species: *Mysidopsis bahia* and *Pimephales promelas*. There was no exceedance of permit triggers between January 2005 and March 2008.

d. **Screening Phase Study.** The Discharger failed to perform a screening phase test during the previous permit term. However, since the discharge quality has changed after the tertiary filters were put online in December 2007. The Regional Water Board will allow some additional time for the Discharger to perform a screening phase study after the upgraded plant operations are optimized. This Order requires the Discharger to complete a screening phase study by March 31, 2009.

e. **Permit Reopener.** The Regional Water Board will consider amending this permit to include numeric toxicity limits if the Discharger fails to aggressively implement all reasonable control measures (e.g., those in its approved TRE workplan) following detection of consistent significant non-artifactual toxicity.

E. WQBELs

WQBELs have been derived to implement WQOs that protect beneficial uses. Both the beneficial uses and the WQOs have been approved pursuant to federal law. The procedures for calculating individual WQBELs are based on the SIP, which was approved by the USEPA prior to May 1, 2001, or Basin Plan provisions approved by the USEPA on May 29, 2000. Most beneficial uses and WQOs contained in the Basin Plan were approved under State law and submitted to and approved by the USEPA prior to May 30, 2000. Any WQOs and beneficial uses submitted to the USEPA prior to May 30, 2000, but not approved by the USEPA before that date, are nonetheless “applicable WQS for purposes of the [Clean Water] Act” pursuant to 40 CFR 131.21(c)(1). Other WQOs and beneficial uses implemented by this Order (specifically arsenic, copper, lead, mercury, nickel, and zinc) were approved by the USEPA on January 5, 2005, and are applicable WQS pursuant to 40 CFR 131.21(c)(2). Collectively, this Order’s restrictions on individual pollutants are no more stringent than the applicable WQS for purposes of the CWA.

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

The process for determining "reasonable potential" and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable WQOs/WQC that are 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 at 40 CFR Part 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) The SIP (page 8, Section 1.4) requires WQBELs to be expressed as MDELs and average monthly effluent limitations (AMELs).

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

2. Applicable Beneficial Uses and WQOs/WQC

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

a. **Applicable Beneficial Uses.** Beneficial uses applicable to the Discharger's receiving water bodies (Schell Slough, Hudeman Slough, Ringstrom Bay, Management Units 1 and 3) are in Section III of this Fact Sheet.

b. **WQOs and WQC.** The WQC and WQOs applicable to the receiving waters for this discharge are from the Basin Plan, the CTR, and the NTR.

(1) **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 freshwater, lead, mercury, nickel, silver, zinc, and cyanide (see also c., below). The narrative toxicity objective states in part "[a]ll waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms." The bioaccumulation objective states in part "[c]ontrollable 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. The Basin Plan also includes receiving water objectives for un-ionized ammonia. The Regional Water Board converts these objectives to total ammonia for the Discharger's receiving water based on receiving water monitoring results for total ammonia, pH, salinity and temperature at Sonoma Creek.

(2) **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 inland surface waters and enclosed bays and estuaries, except that where the Basin Plan's Tables 3-3 and 3-4 specify numeric objectives for certain of these priority toxic pollutants, the Basin Plan's numeric objectives apply over the CTR.

(3) **NTR.** The NTR established numeric aquatic life criteria for selenium, numeric aquatic life and human health criteria for cyanide, and numeric human health criteria for 34 toxic organic pollutants for waters of San Francisco Bay upstream to, and including, Suisun Bay and the Sacramento-San Joaquin Delta. This includes the receiving waters for this Discharger.

c. **Narrative Objectives for Water Quality-Based Toxics Controls.** Where numeric objectives have not been established or updated in the Basin Plan, NPDES regulations at 40 CFR 122.44(d) require that WQBELs be established based on USEPA criteria, supplemented where necessary by other relevant information, to attain and maintain narrative WQOs to fully protect designated beneficial uses.

To determine the need for and establish WQBELs, when necessary, the Regional Water Board staff has followed the requirements of applicable NPDES regulations, including 40 CFR 122 and 131, as well as guidance and requirements established by the Basin Plan; USEPA's Technical Support *Document for Water Quality-Based Toxics Control* (the TSD, EPA/505/2-90-001, 1991); and the SIP.

d. **Basin Plan and CTR Receiving Water Salinity Policy.** The Basin Plan and CTR state that the salinity characteristics (i.e., freshwater versus saltwater) of the receiving water shall be considered in determining the applicable WQOs/WQC. Freshwater criteria shall apply to discharges to waters with salinities equal to or

less than 1 ppt at least 95 percent of the time. Saltwater criteria shall 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 waters with salinities in between these two categories, or tidally influenced fresh waters that support estuarine beneficial uses, the criteria shall be the lower of the salt- or freshwater criteria (the freshwater criteria for some metals are calculated based on ambient hardness) for each substance.

The receiving waters for the subject discharge are the waters of Schell Slough and Hudeman Slough, which are tributaries to Sonoma Creek; the receiving waters also include Ringstrom Bay and two management wetland areas. The Discharger has collected salinity data for Schell Slough and Hudeman Slough while there were discharges into these sloughs. The data suggest that both sloughs are estuarine. The previous permit did not require the Discharger to sample the wetland areas. During the dry season, these wetlands only receive freshwater discharge from the storage reservoirs; during the wet season, after the tidal gates are opened, the wetlands are subject to tidal inputs. Therefore, the wetlands can be also classified as estuarine. Therefore, this Order's effluent limitations are based on the lower of the marine and fresh water WQOs/WQC. This basis is also consistent with the previous permit.

e. **Receiving Water Hardness.** Ambient hardness values are used to calculate freshwater WQOs/WQC that are hardness dependent. In determining the WQOs/WQC for this Order, Regional Water Board staff used a hardness value of 115 mg/L as $CaCO_3$, which is the adjusted geometric mean of 109 hardness values obtained from the Discharger's monitoring of the Schell Slough, during the period of January 2003 through April 2006, while there were discharges to the Schell Slough. The adjusted geometric mean represents the value that 30% of the data points fall below. The hardness data set was reduced from 137 data points to 109 data points to eliminate hardness values above 400 mg/L and to eliminate hardness values obtained when the receiving water salinity was above 1.0 ppt. The hardness value was calculated based on this censored data set.

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

In 2000, the Discharger completed a study to develop SSTs for zinc and copper. The amendment Order No. R2-2005-0009 includes recalculated effluent limitations for zinc using a SST based on that study. The amended permit also required that the Discharger expand its study to verify the results and the SST.

The Discharger collected additional data for determining total metal and dissolved fractions of copper and zinc in the receiving water at various monitoring locations between November 2005 and April 2006; a final report (August 2006) suggested the use of chronic translators of 0.45 and 0.44 for copper and zinc, respectively. These figures represent the median dissolved fractions for both metals, across four monitoring locations located between 500 feet and 2800 feet downstream of the outfall. The Regional Water Board has determined that a spatial gradient of dissolved fraction values exists between monitoring locations, and therefore, in accordance with Section 1.4.1 of the SIP, has used the highest translator value developed using the data at CS-3 (located in Schell Slough approximately 500 feet downstream discharge) for both metals. For each metal the highest translator value was observed at the first monitoring location immediately downstream of the outfall.

SSTs, as determined by Regional Water Board staff using data generated by the Discharger between 2000 and 2006, are presented in Table F-6, below.

Table F-6. Copper and Zinc SSTs

Site Specific Translators	Copper		Zinc	
	Chronic	**Acute**	**Chronic**	**Acute**
	0.64	0.87	0.75	0.98

g. **Available Dilution or Mixing Zone(s).** The discharges to Schell and Hudeman Sloughs are into a dead-end slough that is subject to tidal actions. They receive limited freshwater flows upstream during the wet season. Essentially no water flows in the channels at other times except tidal flushes. The wetlands also only receive the discharge during the dry season. Therefore these discharges are classified as shallow water discharges. No dilution credit is provided for most of the toxic pollutants (an exception is cyanide, see section 4(c)(4)(iv) below).

3. Determining the Need for WQBELs

Assessing whether a pollutant has Reasonable Potential is the fundamental step in determining whether or not a WQBEL is required. Using the methods prescribed in Section 1.3 of the SIP, Regional Water Board staff analyzed the effluent data to determine if the discharge demonstrates Reasonable Potential. The Reasonable Potential Analysis (RPA) compares the effluent data with numeric and narrative WQOs in the Basin Plan and numeric WQC in the NTR and the CTR. The governing Basin Plan objectives and CTR criteria are shown in Table F-7. Some freshwater criteria are hardness dependent. For the RPA, a hardness of 115 mg/L as $CaCO_3$ was used.

a. **RPA Methodology.** The RPA identifies the observed MEC in the effluent for each pollutant based on effluent concentration data. There are three triggers in determining Reasonable Potential according to Section 1.3 of the SIP.

- The first trigger (Trigger 1) is activated if the maximum effluent concentration (MEC) is greater than or equal to the lowest applicable WQO/WQC (MEC ≥ WQO/WQC), which has been adjusted, if appropriate, for pH, hardness, and translators. If the MEC is greater than or equal to the adjusted WQO or WQC, then that pollutant has reasonable potential, and a WQBEL is required.

- The second trigger (Trigger 2) is activated if the observed maximum ambient background concentration (B) is greater than the adjusted WQO/WQC (B>WQO/WQC1) and the pollutant was detected in any of the effluent samples.

- The third trigger (Trigger 3) is activated if a review of other information determines that a WQBEL is necessary to protect beneficial uses, even though both MEC and B are less than the WQO/WQC. A limitation may be required under certain circumstances to protect beneficial uses.

b. **Effluent Data.** The Regional Water Board's August 6, 2001, letter titled "Requirements for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy" (hereinafter referred to as the August 6, 2001 Letter - available online; see Standard Language and Other References Available Online, below), formally required the Discharger (pursuant to CWC Section 13267) to initiate or continue to monitor for the priority pollutants using analytical methods that provide the best detection limits reasonably feasible. Regional Water Board staff analyzed the effluent data and the nature of the local receiving water quality to determine if the discharge has Reasonable Potential. The RPA is based on the effluent monitoring data from May 2004 through April 2007 for most metals and inorganic priority pollutants, and from 2002 through 2004 for organic priority pollutants.

c. **Ambient Background Data.** Ambient background values are used in the RPA and in the calculation of effluent limitations (for total ammonia WQBELs calculation only). To determine reasonable potential, ambient background concentrations are the observed maximum detected water column concentrations. In accordance with the SIP, to calculate WQBELs, ambient background concentrations are either the observed maximum ambient water column concentrations when limits are based on protection of aquatic life, or, when limits are based on criteria intended to protect human health from carcinogenic effects, the arithmetic mean of observed ambient water concentrations is used in determination of WQBELs.

The Discharger has collected priority pollutant data at monitoring location C-7 located in Second Napa Slough at its confluence with Third Napa Slough,

approximately 2800 feet downstream of Schell Slough (see **Attachment B** of the Order for the location of the receiving water monitoring stations) from January 2003 through October 2004 for all priority pollutants, plus tributyltin, to be representative of background water quality.

d. **RPA Determination.** Using the method prescribed in Section 1.3 of the SIP, Regional Water Board staff compared the effluent data and ambient background data with numeric and narrative WQOs in the Basin Plan and numeric WQC from USEPA, the NTR, and the CTR. The MECs, WQOs/WQC, bases for the WQOs/WQC, background concentrations used, and Reasonable Potential conclusions from the RPAs are listed in the following tables for all constituents analyzed. Some of the constituents in the CTR were not fully considered because of the lack of an objective/criteria. Based on the RPA methodology in the SIP, some constituents did not demonstrate Reasonable Potential. The RPA results are shown below in Table F-7. The pollutants that exhibit Reasonable Potential are copper, lead, mercury, nickel, cyanide, dioxin-TEQ, heptachlor, and ammonia.

Table F-7. RPA Summary

CTR #	Priority Pollutants (µg/L)	Governing WQO/WQC (µg/L)	MEC or Minimum DL (µg/L)	Maximum Background or Minimum DL[1, 2] (µg/L)	RPA Results[3]
1	Antimony	4300	**1.9**	**1.6**	No
2	Arsenic	36	**2**	**2.8**	No
3	Beryllium	No Criteria	**0.3**	**0.35**	Undetermined
4	Cadmium	1.3	**0.55**	**0.6**	No
5a	Chromium (III)	232	**2.8**	**12**	No
5b	Chromium (VI)	11	**6.9**	5	No
6	**Copper**	4.8	**25**	**16**	**Yes**
7	**Lead**	3.8	**1.4**	**11**	**Yes**
8	**Mercury**	0.025	**0.0238**	**0.0482**	**Yes**
9	**Nickel**	6.8	**5.3**	**130**	**Yes**
10	Selenium	5.0	**1.2**	0.44	No
11	Silver	2.2	**0.59**	**0.46**	No
12	Thallium	6.3	**0.94**	**4.2**	No
13	Zinc	92	**87**	**52**	No
14	**Cyanide**	1.0	**8**	2	**Yes**
15	Asbestos	No Criteria	0.021	**0.104**	Undetermined
16	2,3,7,8-TCDD (Dioxin)	1.4E-08	1.74E-06	1.32E-06	No
	Dioxin-TEQ	1.4E-08	**1.5E-09**	**1.45E-07**	**Yes**
17	Acrolein	780	0.17	0.17	No
18	Acrylonitrile	0.66	0.14	2	No
19	Benzene	71	0.08	0.3	No
20	Bromoform	360	0.079	0.079	No
21	Carbon Tetrachloride	4.4	**0.73**	0.11	No
22	Chlorobenzene	21000	0.075	0.075	No
23	Chlorodibromomethane	34	**1.8**	0.11	No
24	Chloroethane	No Criteria	0.25	0.28	Undetermined
25	2-Chloroethylvinyl Ether	No Criteria	0.074	0.074	Undetermined
26	Chloroform	No Criteria	**110**	**1.2**	Undetermined
27	Dichlorobromomethane	46	**19**	0.1	No

CTR #	Priority Pollutants (µg/L)	Governing WQO/WQC (µg/L)	MEC or Minimum DL (µg/L)	Maximum Background or Minimum DL[1, 2] (µg/L)	RPA Results[3]
28	1,1-Dichloroethane	No Criteria	0.14	0.14	Undetermined
29	1,2-Dichloroethane	99	0.21	0.21	No
30	1,1-Dichloroethylene	3.2	0.19	0.19	No
31	1,2-Dichloropropane	39	0.11	0.11	No
32	1,3-Dichloropropylene	1700	0.12	0.12	No
33	Ethylbenzene	29000	0.11	0.11	No
34	Methyl Bromide	4000	0.2	0.2	No
35	Methyl Chloride	No Criteria	0.14	0.14	Undetermined
36	Methylene Chloride	1600	0.1	0.14	No
37	1,1,2,2-Tetrachloroethane	11	0.057	0.057	No
38	Tetrachloroethylene	8.85	**0.48**	0.16	No
39	Toluene	200000	**0.37**	0.3	No
40	1,2-Trans-Dichloroethylene	140000	0.16	0.16	No
41	1,1,1-Trichloroethane	No Criteria	0.12	0.12	Undetermined
42	1,1,2-Trichloroethane	42	0.11	0.11	No
43	Trichloroethylene	81	0.13	0.13	No
44	Vinyl Chloride	525	0.17	0.17	No
45	Chlorophenol	400	0.36	0.36	No
46	2,4-Dichlorophenol	790	0.49	0.49	No
47	2,4-Dimethylphenol	2300	0.25	0.25	No
48	2-Methyl-4,6-Dinitrophenol	765	0.4	0.4	No
49	2,4-Dinitrophenol	14000	0.7	0.7	No
50	2-Nitrophenol	No Criteria	0.43	0.43	Undetermined
51	4-Nitrophenol	No Criteria	1.3	1.3	Undetermined
52	3-Methyl-4-Chlorophenol	No Criteria	0.48	0.48	Undetermined
53	Pentachlorophenol	4.80352489	0.52	0.52	No
54	Phenol	4600000	**1.1**	0.067	No
55	2,4,6-Trichlorophenol	6.5	0.37	0..37	No
56	Acenaphthene	2700	0.5	0.5	No
57	Acenephthylene	No Criteria	0.2	0.2	Undetermined
58	Anthracene	110000	2	2	No
59	Benzidine	0.00054	2.3	2.3	No
60	Benzo(a)Anthracene	0.049	0.1	1	No
61	Benzo(a)Pyrene	0.049	0.1	0.1	No
62	Benzo(b)Fluoranthene	0.049	10	10	No
63	Benzo(ghi)Perylene	No Criteria	0.1	0.1	Undetermined
64	Benzo(k)Fluoranthene	0.049	2	2	No
65	Bis(2-Chloroethoxy)Methane	No Criteria	0.31	0.31	Undetermined
66	Bis(2-Chloroethyl)Ether	1.4	0.28	0.28	No
67	Bis(2-Chloroisopropyl)Ether	170000	0.33	0.33	No
68	Bis(2-Ethylhexyl)Phthalate	5.9	1.3	1.3	No
69	4-Bromophenyl Phenyl Ether	No Criteria	0.38	0.38	Undetermined
70	Butylbenzyl Phthalate	5200	0.77	0.77	No
71	2-Chloronaphthalene	4300	0.27	0.27	No
72	4-Chlorophenyl Phenyl Ether	No Criteria	0.3	0.3	Undetermined
73	Chrysene	0.049	0.34	0.34	No
74	Dibenzo(a,h)Anthracene	0.049	0.1	0.1	No
75	1,2-Dichlorobenzene	17000	0.077	0.077	No
76	1,3-Dichlorobenzene	2600	0.11	0.11	No
77	1,4-Dichlorobenzene	2600	0.081	0.081	No
78	3,3-Dichlorobenzidine	0.077	4.9	4.9	No

CTR #	Priority Pollutants (µg/L)	Governing WQO/WQC (µg/L)	MEC or Minimum DL (µg/L)	Maximum Background or Minimum DL[1, 2] (µg/L)	RPA Results[3]
79	Diethyl Phthalate	120000	0.5	0.5	No
80	Dimethyl Phthalate	2900000	0.4	0.4	No
81	Di-n-Butyl Phthalate	12000	0.69	0.69	No
82	2,4-Dinitrotoluene	9.1	0.54	0.54	No
83	2,6-Dinitrotoluene	No Criteria	0.54	0.54	Undetermined
84	Di-n-Octyl Phthalate	No Criteria	0.66	0.66	Undetermined
85	1,2-Diphenylhydrazine	0.54	0.33	0.33	No
86	Fluoranthene	370	**0.056**	**0.086**	No
87	Fluorene	14000	0.1	0.1	No
88	Hexachlorobenzene	0.00077	0.3	0.3	No
89	Hexachlorobutadiene	50	0.25	0.25	No
90	Hexachlorocyclopentadiene	17000	1.2	1.2	No
91	Hexachloroethane	8.9	0.28	0.28	No
92	Indeno(1,2,3-cd) Pyrene	0.049	0.05	0.05	No
93	Isophorone	600	0.29	0.29	No
94	Naphthalene	No Criteria	0.31	0.31	Undetermined
95	Nitrobenzene	1900	0.34	0.34	No
96	N-Nitrosodimethylamine	8.1	1	1	No
97	N-Nitrosodi-n-Propylamine	1.4	0.25	0.25	No
98	N-Nitrosodiphenylamine	16	0.38	0.38	No
99	Phenanthrene	No Criteria	0.35	0.35	Undetermined
100	Pyrene	11000	0.05	**0.12**	No
101	1,2,4-Trichlorobenzene	No Criteria	0.27	0.27	Undetermined
102	Aldrin	0.00014	0.0026	0.0038	No
103	alpha-BHC	0.013	0.0022	0.0043	No
104	beta-BHC	0.046	0.0027	0.0027	No
105	gamma-BHC	0.063	0.0023	0.0041	No
106	delta-BHC	No Criteria	0.0021	0.005	Undetermined
107	Chlordane	0.00059	0.035	0.035	No
108	4,4-DDT	0.00059	0.0045	0.0045	No
109	4,4-DDE	0.00059	0.0032	0.0033	No
110	4,4-DDD	0.00084	0.0048	0.0045	No
111	Dieldrin	0.00014	0.002	0.0033	No
112	alpha-Endosulfan	0.0087	0.0011	0.0028	No
113	beta-Endosulfan	0.0087	0.0033	0.0033	No
114	Endosulfan Sulfate	240	0.0035	0.007	No
115	Endrin	0.0023	0.0047	0.0047	No
116	Endrin Aldehyde	0.81	0.0095	0.008	Undetermined
117	**Heptachlor**	0.00021	**0.006**	0.003	**Yes**
118	Heptachlor Epoxide	0.00011	0.0025	0.003	No
119-125	PCBs sum	0.00017	0.19	0.19	No
126	Toxaphene	0.0002	0.21	0.21	Undetermined
	Tributyltin	0.0074	**0.00553**	**0.00262**	No
	Total PAHs	15	**0.056**	**0.206**	No
	Ammonia	6.5	**8.6**	**1.8**	**Yes**

[1] Concentrations in bold are the actual detected maximum concentrations, otherwise the concentrations shown are the maximum detection level.

[2] RPA Results = Yes, if MEC ≥ WQO/WQC (Trigger 1), or B > WQO/WQC and pollutant is detected in effluent (Trigger 2), or based on other information (Trigger 3)
= No, if MEC or all effluent concentration non-detect < WQO/WQC,
= Undetermined, if no objective promulgated.

e. **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 (as specified in the MRP, **Attachment E**). If concentrations of these constituents are found to have increased significantly, the Dischargers will be required to investigate the source(s) of the increase(s). Remedial measures are required if the increases pose a threat to water quality in the receiving water. This requirement is included in Provision VII.C.2.

The previous permit (Order Nos. R2-2002-0046 and R2-2005-0009) included final WQBELs for zinc, chrysene, dieldrin, and 4,4-DDE. Results of the RPA presented above, however, show that the discharge no longer demonstrates a reasonable potential to cause or contribute to exceedances of applicable WQO or WQC for these pollutants; therefore, limitations from the previous permit are not retained, and new limitations are not included in this Order for these pollutants. This is consistent with State Water Board Order WQ 2001-16.

4. WQBELs Calculations

a. **Applicable WQC/WQOs for Pollutants with Reasonable Potential.** WQBELs were developed for the toxic and priority pollutants that were determined to have reasonable potential to cause or contribute to exceedances of the WQOs or WQC. The WQOs or WQC used for each pollutant with Reasonable Potential and the basis for the WQOs/WQC is indicated in the following table.

Table F-8. WQOs/WQC for Toxic Pollutants with Reasonable Potential

Pollutant	Applicable WQC or WQO (µg/L)			Basis
	Aquatic Life Chronic	Aquatic Life Acute	Human Health	
Copper	12	13	---	Basin Plan (salt water aquatic life), adjusted with a water effect ratio (WER) =2.4, SSTs for Schell Slough (0.64 for chronic and 0.87 for acute)
Copper (site specific objective or SSO)	9.4	11	--	Basin Plan SSO not yet in effect for salt water aquatic life, adjusted with WER=2.4, SSTs for Schell Slough (0.64 for chronic, and 0.87 for acute)
Lead	3.8	98	---	Basin Plan (fresh water aquatic life), hardness=115 mg/L
Nickel	8.3	75	---	Basin Plan (salt water aquatic life)
Cyanide (SSO)	2.9	9.4	---	Basin Plan SSO for salt water aquatic life
Dioxin-TEQ	--	---	1.4×10^{-8}	Basin Plan narrative for human health
Heptachlor	0.0036	0.053	0.00021	CTR salt water aquatic life and CTR Human Health
Total Ammonia	6.5 mg/L	11 mg/L	---	Basin Plan (salt water aquatic life) converted from un-ionized ammonia objectives to total ammonia objectives for Sonoma Creek based on Discharger's receiving water data

b. **Final WQBELs Calculation.** The following tables summarize the WQBELs calculated for each toxic and priority pollutants that were determined to have reasonable potential to cause or contribute to exceedances of the WQOs or WQC. The WQBELs were calculated based on appropriate WQOs/WQC and the procedures specified in Section 1.4 of the SIP, as shown in Table F-9 below.

Table F-9. WQBELs Calculation

PRIORITY POLLUTANTS	**Copper**		**Lead**	**Nickel**	**Cyanide**
Units	**µg/L**		**µg/L**	**µg/L**	**µg/L**
Basis and Criteria type	BP & CTR SW Aq Life	Proposed BP SSOs	BP & CTR FW Aq. Life	BP & CTR SW Aq. Life	Basin Plan SSOs Aq Life
CTR Criteria -Acute	4.8	--	98	75	.
CTR Criteria -Chronic	3.1	--	3.8	8.3	
SSO Criteria -Acute	--	3.9	--		9.4
SSO Criteria -Chronic	--	2.5	--		2.9
Water Effects ratio (WER)	2.4	2.4	1	1	1
Translator - MDEL	0.87	0.87	--	8.3	1
Translator - AMEL	0.64	0.64	--		
Dilution Factor (D) (if applicable)	0	0	0	0	2.25
No. of samples per month	4	4	4	0	4
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	4	Y
HH criteria analysis required? (Y/N)	N	N	N	Y	Y
Applicable Acute WQO	13	11	98	75	9.4
Applicable Chronic WQO	12	9.4	3.8	8.3	2.9
HH criteria	--	--	--	4600	22000
Background (Maximum Conc for Aquatic Life calc)	16	16	11	130	0.4
Background (Average Conc for Human Health calc)	--	--	--	51.36	0.4
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	N	N	N	N	N
ECA acute	13	11	98	75	29.7
ECA chronic	12	9	3.8	8.3	8.5
ECA HH	--	--	--	4600	71499
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	N	N	N
Avg of effluent data points	8.0	8.0	0.52	2.1	1.6
Std Dev of effluent data points	3.0	3.0	0.28	1.2	1.2
CV calculated	0.38	0.38	0.54	0.57	0.73
CV (Selected) - Final	0.38	0.38	0.54	0.57	0.73
ECA acute mult99	0.46	0.46	0.35	0.33	0.27
ECA chronic mult99	0.66	0.66	0.56	0.54	0.47
LTA acute	6.1	4.9	34	24.9	8.1
LTA chronic	7.7	6.2	2.1	4.5	4.0
minimum of LTAs	6.1	4.9	2.1	4.5	4.0
AMEL mult95	1.3	1.3	1.5	1.53	1.7
MDEL mult99	2.2	2.2	2.9	3.0	3.7
AMEL (aq life)	8	7	3.2	6.8	6.7
MDEL(aq life)	13	11	6.1	13	14.7
MDEL/AMEL Multiplier	1.63	1.63	1.92	1.96	2.19
AMEL (human hlth)	--	--	--	4600	71499

PRIORITY POLLUTANTS	Copper		Lead	Nickel	Cyanide
Units	µg/L		µg/L	µg/L	µg/L
MDEL (human hlth)	--	--	--	9037	156657
minimum of AMEL for Aq. life vs HH	8.1	6.6	3.2	6.8	6.7
minimum of MDEL for Aq. Life vs HH	13	11	6.1	13	15
Current limit in permit (30-day average)	18 (interim)	18 (interim)	None	None	10.1 (interim)
Current limit in permit (daily)	None	None	None	None	None
Final limit - AMEL	8.1	6.6	3.2	6.8	6.7
Final limit - MDEL	13	11	6.1	13	15
Max Effluent Conc. (MEC)	25	25	1.4	5.3	8.0

Table F-9(continued). WQBELs Calculation

PRIORITY POLLUTANTS	Dioxin TEQ	Heptachlor	Ammonia	
Units	ug/L	ug/L	mg/L	mg/L
Basis and Criteria type	Basin Plan Bioaccumulation narrative	CTR human health	BP SW Acute Aquatic Life	BP SW Chronic Aquatic Life
Acute Criteria	--	0.053	11	--
Chronic Criteria	--	0.0036	--	6.5
SSO Criteria -Acute (December 2004) (Diss.)	--	--	--	--
SSO Criteria -Chronic (December 2004) (Diss.)	--	--	--	--
Water Effects ratio (WER)	1	1	1	1
Lowest WQO	1.4E-08	0.00021	--	--
Translator - MDEL	--	--	--	--
Translator - AMEL	--	--	--	--
Dilution Factor (D) (if applicable)	0	0	0	0
No. of samples per month	4	4	4	30
Aquatic life criteria analysis required? (Y/N)	N	Y	Y	Y
HH criteria analysis required? (Y/N)	Y	Y	N	N
Applicable Acute WQO	--	0.053	11	--
Applicable Chronic WQO	--	0.0036	--	6.5
HH criteria	1.4E-08	0.00021	--	--
Background (Maximum Conc for Aquatic Life calc)	8.7E-06	0.003	1.8	0.24
Background (Average Conc for Human Health calc)	3.4E-06	0.003	--	--
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	Y	N	N	N
ECA acute	--	0.053	11	--
ECA chronic	--	0.0036	--	6.5
ECA HH	1.4E-08	0.00021	--	--
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	Y	Y	N	N
Avg of effluent data points	3.0E-06	0.00406667	0.30	0.30
Std Dev of effluent data points	2.9E-06	0.00451073	0.79	0.79
CV calculated	N/A	N/A	2.66	2.66
CV (Selected) - Final	0.60	0.6	2.66	2.66
ECA acute mult99	--	0.32	0.10	
ECA chronic mult99	--	0.53		0.73
LTA acute	--	0.017	1.08	

PRIORITY POLLUTANTS	Dioxin TEQ	Heptachlor	Ammonia	
Units	ug/L	ug/L	mg/L	mg/L
LTA chronic	--	0.0019		4.76
minimum of LTAs	--	0.0019	1.08	1.08
AMEL mult95	1.6	1.6	3.2	1.9
MDEL mult99	3.1	3.1	10.1	10.1
AMEL (aq life)	--	0.0029	3.4	2.1
MDEL(aq life)	--	0.0059	11.0	11.0
MDEL/AMEL Multiplier	2.01	2.0	3.21	5.29
AMEL (human hlth)	1.4E-08	0.00021	--	
MDEL (human hlth)	2.8E-08	0.00042	--	
minimum of AMEL for Aq. life vs HH	1.4E-08	0.00021	3.4	2.1
minimum of MDEL for Aq. Life vs HH	2.8E-08	0.00042	11	11
Current limit in permit (30-day average)	None	None	None	None
Current limit in permit (daily)	None	None	None	None
Final limit - AMEL	1.4E-08	0.00021	--	2.1
Final limit - MDEL	2.8E-08	0.00042	--	11
Max Effl Conc (MEC)	1.5E-09	0.0060	8.6	8.6

c. Development of Effluent Limitations for Specific Pollutants

(1) Copper

i. **Copper WQC.** The CTR includes dissolved copper criteria of 3.1 and 4.8 µg/L multiplied by a WER (40 CFR 131.38 (b) and (c)(4)(i) and (iii)). The default value for the WER is 1.0 unless a WER has been developed pursuant to USEPA's WER guidance (Interim Guidance on Determination and Use of Water Effect Ratios, USEPA Office of Water, EPA-823-B-94-001, February 1994). A WER has been developed for San Francisco Bay in accordance with this USEPA guidance as documented in *North of Dumbarton Bridge Copper and Nickel Site-Specific Objective (SSO) Derivation* (Clean Estuary Partnership December 2004) Based on the data in this report, a WER of 2.4 is appropriate for this discharge.

Using the Discharger's SSTs of 0.64 for the chronic criterion and 0.87 for the acute criterion, the resulting adjusted WQC for this discharge, 12 µg/L for chronic protection and 13 µg/L for acute protection, are used in the WQBELs calculation. However, when determining reasonable potential, a WER of 1.0 was used.

ii. **RPA Results.** The results of the RPA show that the MEC of 25 µg/L exceeds the most stringent applicable WQC (4.8 µg/L based on a WER of 1.0), demonstrating reasonable potential by Trigger 1.

iii. **Copper WQBELs.** The copper WQBELs calculated according to SIP procedures are 13 µg/L as the MDEL and 8.1 µg/L as the AMEL. This is

based on an effluent concentration coefficient of variation (CV) of 0.38. No dilution credit was incorporated into the calculation of WQBELs.

iv. **Feasibility of Compliance.** During the period from May 2004 through April 2007, the Discharger's effluent concentrations were in the range of 1.5 μg/L to 25 μg/L (158 samples). The Discharger claims that it cannot comply with these copper WQBELs immediately. Regional Water Board staff performed a statistical analysis of these effluent data and concurs with the Discharger's claim.

v. **Need for CDO.** Pursuant to State Water Board Order WQ 2007-0004, no more than five years of compliance schedules can be authorized for pollutants with CTR criteria under the SIP. The previous permit granted a five-year compliance schedule for copper, which already expired; therefore, no more compliance schedules are allowed under this Order. Because it is infeasible for the Discharger to immediately comply with final WQBELs for copper, the Discharger will likely discharge in violation of this Order. Therefore, a CDO will be adopted concurrent with this Order. The CDO is necessary to ensure that the Discharger achieves compliance. It establishes time schedules for the Discharger to complete necessary investigative, preventive, and remedial actions to address its imminent and threatened violations, and if necessary, to conduct dynamic modeling for establishing WQBELs.

vi. **Copper SSOs and Alternate WQBELs.** As described in the Regional Water Board Resolution No. R2-2007-0042, dated June 13, 2007, the Regional Water Board adopted a Basin Plan Amendment to implement SSOs for copper for marine waters in all segments of San Francisco Bay north of Dumbarton Bridge. The amendment is currently under State Water Board review. In the amendment, the proposed SSOs are 6.0 µg/L as a four-day average, and 9.4 µg/L as a one-hour average (for dissolved copper). Using the SSTs developed for Schell Slough, the WQOs in total recoverable metal applicable to this discharge are 9.4 μg/L as a four-day average and 11 μg/L as a one-hour average. Based on the Discharger's current copper data (a CV of 0.28), the alternate WQBELs for copper will be 11 μg/L as an MDEL and 6.6 μg/L as an AMEL. If these SSOs for copper are adopted, the alternate effluent limitations will become immediately effective upon the adoption date, so long as the SSOs and their current justification remain unchanged.

These alternate WQBELs are more stringent than those copper WQBELs in (iii) above. The Discharger would have difficulty complying with these alternate limits. Because there is threatened violation of these alternate WQBELs after they become effective, the Cease and Desist Order as mentioned in (v) above would continue to be in effect after these alternate effluent limits become effective.

vii. **Antibacksliding/Antidegradation.** Antibacksliding and antidegradation requirements are satisfied because the previous permit did not include final effluent limitations for copper. The final WQBELs are also more stringent than the previous interim limit for copper.

(2) Lead.

i. **Lead WQOs.** The Basin Plan contains numeric lead freshwater WQOs, which are 3.8 µg/L for chronic protection and 98 µg/L for acute protection, as total recoverable metal, based on a hardness value of 115 mg/L as $CaCO_3$.

ii. **RPA Results.** The maximum ambient background lead concentration of 11 µg/L exceeds the governing WQO of 3.8 µg/L, and lead was detected in the effluent, demonstrating reasonable potential by Trigger 2.

iii. **WQBELs.** The lead WQBELs calculated according to SIP procedures are 6.1 µg/L as the MDEL and 3.2 µg/L as the AMEL, based on an effluent concentration CV of 0.54.

iv. **Feasibility of Compliance.** During the period from May 2003 through May 2006, the Discharger's lead effluent concentrations ranged from 0.52 µg/L to 1.4 µg/L (26 samples). Because the data set includes too many non-detects, it is not possible to perform a meaningful statistical analysis to determine feasibility of compliance. The MEC is less than the AMEL, therefore, the Regional Water Board believes the Discharger can comply with the final effluent limits.

v. **Anti-backsliding/Anti-degradation.** There were no lead effluent limits in the previous permit; therefore, the anti-backsliding and anti-degradation requirements are satisfied.

(3) Nickel

i. **Nickel WQOs.** The Basin Plan contains numeric nickel saltwater WQOs which are 8.3 µg/L for chronic protection and 75 µg/L for acute protection, as total recoverable metal.

ii. **RPA Results.** The maximum ambient background nickel concentration of 130 µg/L exceeds the governing WQO of 8.3 µg/L, and nickel was detected in the effluent, demonstrating reasonable potential by Trigger 2.

iii. **WQBELs.** The nickel WQBELs calculated according to SIP procedures are 13 µg/L as the MDEL and 6.8 µg/L as the AMEL based on an effluent concentration CV of 0.57.

iv. **Feasibility of Compliance.** During the period May 2003 through May 2006, the Discharger's nickel effluent concentrations ranged from <1.3 μg/L to 5.3 μg/L (38 samples). Regional Water Board staff performed a statistical analysis of the effluent data, and it shows that the Discharger can comply with these WQBELs.

v. **Anti-backsliding/Anti-degradation.** There were no effluent limits for nickel in the previous permit; therefore, anti-backsliding and anti-degradation requirements are satisfied.

(4) Cyanide

i. **Cyanide WQOs.** The most stringent WQOs for cyanide applicable to the discharge are from the Basin Plan (SSOs for salt water aquatic life), which are 2.9 µg/L for chronic protection and 9.4 µg/L for acute protection of aquatic life.

ii. **RPA Results.** From May 2004 through April 2007, the cyanide MEC of 8.0 µg/L exceeds the most stringent applicable criterion of 2.9 µg/L, demonstrating reasonable potential by Trigger 1.

iii. **Cyanide WQBELs.** The cyanide WQBELs calculated according to SIP procedures are 15 μg/L as MDEL and 6.7 μg/L as AMEL, based on an effluent CV of 0.73.

iv. **Dilution Credit.** For cyanide, a non-persistent pollutant that quickly disperses, a dilution ratio of 3.25:1 (or D = 2.25) was used to calculate the WQBELs. Since the cyanide SSOs (Regional Water Board Resolution No. R2-2006-0086) included an antidegradation analysis, which concluded that certain effluent limitations resulting from the implementation of the SSOs would not degrade water quality, the dilution credit used here is the dilution credit that results in effluent limits no greater than those identified in the SSOs documents for the Discharger. This resultant dilution credit for cyanide is also in compliance with SIP Section 1.4.2.2, which requires that mixing zones be a small as practicable. Additionally, consistent with the SSOs, to ensure that water quality is not degraded, this Order requires a cyanide action plan with the SSOs.

v. **Feasibility of Compliance.** During the period from May 2004 through April 2007, the Discharger's effluent concentrations were in the range of <2 μg/L to 8.0 μg/L (37 samples). The data set contains too many non-detected values; therefore, it is not possible to perform a meaningful statistical analysis to determine feasibility of compliance. The feasibility to comply is determined by comparing the MEC (8.0 µg/L) to the AMEL (6.7 µg/L) and MDEL (15 µg/L). Although the MEC (8.0 µg/L) is higher than the AMEL, the Discharger believes that it can comply with these alternate WQBELs. One compliance strategy would be to sample more

than once per month to bring down effluent average monthly concentrations.

viii. **Antibacksliding.** The previous permit did not specify final WQBELs for cyanide and only contained an interim effluent limitation of 10.1 µg/L as a monthly average. Although the calculated MDEL is higher than the previous permit's cyanide interim effluent limit, the new WQBELs derived using the SIP procedures are considered to be more protective of the water quality. The AMEL will limit the discharge to a lower long-term average level than the previous interim limitation, which only limits the daily maximum concentration of the effluent. As a result, the Discharger could practically discharge an effluent with long-term average at the previous daily average level. Therefore, the alternate WQBELs are more stringent, and therefore, there will be no backsliding or degradation.

(5) Dioxin-TEQ

i. **Dioxin-TEQ WQO**

a) The Basin Plan contains a narrative WQO for bioaccumulative substances:

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

This narrative WQO applies to dioxin and furan compounds, based in part on the consensus of the scientific community that these compounds associate with particulates, accumulate in sediments, and bioaccumulate in the fatty tissue of fish and other organisms.

b) USEPA's 303(d) listing determined that the narrative objective for bioaccumulative pollutants was not met in San Francisco Bay because of the levels of dioxins and furans in fish tissue.

c) The CTR establishes a numeric human health WQC of 0.014 picogram per liter (pg/L) for 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD) based on consumption of aquatic organisms. The preamble of the CTR states that California NPDES permits should use toxicity equivalents (TEQs) where dioxin-like compounds have a reasonable potential with respect to narrative criteria. In USEPA's National Recommended WQOs, December 2002, the USEPA published the

1998 World Health Organization Toxicity Equivalence Factor (TEF)[2] scheme. Staff used TEQs to translate the narrative Basin Plan WQO to a numeric WQC for the 16 dioxin congeners.

ii. **RPA Results.** The Discharger collected data for dioxin congeners from 2002 through 2004; the maximum receiving water concentration of dioxin-TEQ was 1.45×10^{-7} µg/L. Because the maximum ambient background concentration exceeds the most stringent applicable WQO of 1.4×10^{-8} µg/L, and dioxin-TEQ is detected in the effluent, there is reasonable potential for the discharge to cause or contribute to exceedances of applicable WQO (Trigger 2).

iii. **Dioxin-TEQ WQBELs.** Final WQBELs for dioxin-TEQ, calculated according to methods presented in section 1.4 of the SIP, are 2.8×10^{-8} and 1.4×10^{-8} µg/L as MDEL and AMEL, respectively, based on an effluent CV of 0.6 (the SIP default CV for data sets with fewer than 10 data points).

iv. **Feasibility of Compliance.** During 2002 through 2004, the Discharger's effluent concentrations for dioxin-TEQ were in the range of 0 to 1.5×10^{-9} µg/L (6 samples). The Discharger submitted an Infeasibility Analysis that asserts that the Discharger cannot immediately comply with these WQBELs. Due to the uncertainty and variability of these effluent data, it is uncertain to identify feasibility. Due to the nature of these pollutants, the Regional Water Board staff concurs with the Discharger's assertion. This Order contains a compliance schedule based on the Basin Plan to allow time for the Discharger to comply with these effluent limits based on new interpretation of a narrative objective. These final effluent limits will become effective on December 1, 2018. The Regional Water Board may amend these limits based on new information or a TMDL for dioxin-TEQ.

v. **Interim Effluent Limit.** Since it is infeasible for the Discharger to comply with the final WQBELs for dioxin-TEQ, and there are not enough data to calculate an interim limit statistically, this Order establishes an interim limit based on the MLs of all congeners and their respective TEFs. The sum of the each congener's ML times its respective TEF is 6.251×10^{-5} µg/L and is established as a monthly average limit. This interim limit will remain in effect until November 30, 2018.

vi. **Antibacksliding/antidegradation.** The previous permit did not include a dioxin-TEQ effluent limit; therefore, antibacksliding and antidegradation requirements are satisfied.

[2] The 1998 WHO scheme includes TEFs for dioxin-like PCBs. Since dioxin-like PCBs are already included within "Total PCBs," for which the CTR has established a specific standard, dioxin-like PCBs are not included in this Order's version of the TEF scheme.

(6) Heptachlor

i. **Heptachlor WQC.** The CTR contains a human health criterion for heptachlor based on the consumption of organisms only, which is 0.00021 µg/L. The CTR also contains criteria for the protection of aquatic life, which are 0.053 and 0.0036 µg/L, as acute and chronic criterion, respectively.

ii. **RPA Results.** The maximum effluent heptachlor concentration of 0.006 µg/L, which is the only detected value, exceeds the governing WQC of 0.00021 µg/L, demonstrating reasonable potential by Trigger 1.

iii. **Heptachlor WQBELs.** The heptachlor WQBELs calculated according to SIP procedures are 0.00042 µg/L as the MDEL and 0.00021 µg/L as the AMEL, based on an effluent CV of 0.6 (the SIP default CV for data sets with fewer than 10 data points).

iv. **Feasibility of Compliance.** During the period from 2002 through 2004, the Discharger's heptachlor effluent concentrations ranged from <0.0028 µg/L to 0.006 µg/L (6 samples). The Discharger submitted an Infeasibility Analysis that asserts that the Discharger cannot immediately comply with these WQBELs. There are not enough data to perform a meaningful statistical analysis, and the MEC is greater than the AMEL; therefore, Regional Water Board staff concurs with the Discharger's assertion. These final effluent limits will become effective on May 18, 2010. The Regional Water Board may amend these limits based on new information.

v. **Interim Effluent Limit.** Since it is infeasible for the Discharger to comply with the final WQBELs for heptachlor, and there are not enough data to calculate an interim limit statistically. This Order establishes an interim limit based on the SIP ML, which is 0.01 µg/L, as a monthly average limit. This interim limit will remain in effect until May 17, 2010. If heptachlor is detected again in the future, which exceeds the WQBELs and the SIP ML, the Regional Water Board may issue a CDO after the compliance schedule ends.

vi. **Possible Actions needed after Compliance Schedule Ends.** Heptachlor was banned in 1988; however, due to its highly stable structure, heptachlor may persist in the environment for decades. According to the Discharger's effluent data, the only detected sample occurred in 2002, and it has not been determined whether this detection was due to an illegal dumping incident or a lab error. However, it is highly unlikely that this pollutant will be detected again in the future. In addition, even if the effluent limits are very low, actual non-compliance will be confirmed only after both the effluent limits and the SIP ML are exceeded. However, if heptachlor is detected again in the future, the Regional Water

Board may issue a CDO to address possible non-compliance with final effluent limits after the compliance schedule ends on May 17, 2010.

vii. **Anti-backsliding/Anti-degradation.** There were no effluent limits for heptachlor in the previous permit; therefore, anti-backsliding and anti-degradation requirements are satisfied.

(7) Total Ammonia

i. **Ammonia WQC**. The Basin Plan contains WQOs for un-ionized ammonia of 0.025 mg/L as an annual median, 0.16 mg/L as a maximum north of the Golden Gate Channel, and 0.4 mg/L as a maximum south of the Golden Gate Channel. The WQOs are translated from un-ionized ammonia objectives to equivalent total ammonia concentrations (as nitrogen) since sampling and lab methods are not available to analyze for un-ionized ammonia and because the fraction of total ammonia that is converted to the toxic un-ionized form depends on pH, salinity, and temperature of the receiving water.

To translate the Basin Plan un-ionized ammonia objective, the following equations for estuarine and marine waters were used to determine the percentage of total ammonia converted to the toxic un-ionized ammonia phase in receiving waters (USEPA, 1989. *Ambient Water Quality Criteria for Ammonia (Saltwater)–1989*. USEPA Publication No. 440/5-88-004).

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

Where:
pK = 9.245 + 0.116*(I) + 0.0324*(298-T) + 0.0415*(P)/(T+273)
I = the molal ionic strength of saltwater
= 19.9273*(S)/(1000-1.005109*S)
S = Salinity (parts per thousand)
T = temperature in °C
P = Pressure (one atmosphere)

The Discharger has collected receiving water data (pH, salinity, temperature, etc.) at nine receiving water stations both upstream and downstream of Discharge Point 001 during the wet season. Regional Water Board staff analyzed the data collected during 2003 through 2007. These receiving water data show a strong decreasing trend in pH downstream of the discharge. Because pH plays the most important role in determining the fraction of un-ionized ammonia, to be conservative, Regional Water Board staff chose the most downstream station (C-8, located in Sonoma Creek at the confluence with the Second Napa Slough. See **Attachment B** for a receiving water monitoring station location map) as the background station to develop the applicable total ammonia objectives for this discharge.

To convert the chronic un-ionized ammonia WQO to an equivalent total ammonia concentration, the median un-ionized ammonia fraction at C-8 was used. To convert the acute un-ionized ammonia WQO to an equivalent total ammonia concentration, the 90th percentile un-ionized ammonia fraction at C-8 station was used. Using the median and 90th percentile to translate the chronic and acute un-ionized ammonia WQOs for un-ionized ammonia to equivalent total ammonia concentrations is consistent with USEPA Guidance on translating dissolved metal WQOs to total recoverable metal WQOs (USEPA. 1996. *The Metals Translator: Guidance for Calculating a Total Recoverable Limit from a Dissolved Criterion*, EPA Publication Number 823-B-96-007). The equivalent total ammonia acute and chronic criteria are 11 mg/L and 6.5 mg/L, respectively.

ii. **RPA Results**. The SIP methodology was used to perform the RPA and to calculate effluent limitations, which is consistent with the methodology to calculate WQBELs for other toxic pollutants. To set limits for toxic pollutants, the Basin Plan (section 4.5.5.2) indicates that water WQBELs shall be calculated according to this SIP. Basin Plan section 3.3.20 refers to ammonia as a toxic pollutant; therefore, the use of the SIP to determine and establish effluent limits for ammonia is consistent with the Basin Plan. This Order establishes effluent limitations for total ammonia because the MEC of 8.6 mg/L exceeds the applicable WQO for this pollutant, demonstrating reasonable potential by Trigger 1.

iii. **WQBELs**. The total ammonia WQBELs calculated according to SIP procedures are 11 mg/L as MDEL and 2.1 mg/L as AMEL, based on an effluent concentration CV of 2.65. No dilution credit is incorporated in the calculation. The Discharger, however, has the option to conduct a special study to demonstrate an appropriate dilution credit for total ammonia. During the next permit reissuance, the Regional Water Board will consider the study results and may include a dilution credit for ammonia WQBELs calculation.

iv. **Feasibility of Compliance.** The Regional Water Board staff could not identify an appropriate probability distribution that fits the total ammonia effluent data collected over the period of May 2004 through April 2007. The Discharger has collected ammonia data on a weekly basis. The MEC is lower than the MDEL and the maximum monthly average concentration is lower than the AMEL, the Discharger believes that it can comply with the ammonia WQBELs.

v. **Anti-backsliding/Anti-degradation.** There are no effluent limits for total ammonia in the previous permit; therefore, anti-backsliding and anti-degradation requirements are satisfied.

5. Summary of WQBELs

The final WQBELs are summarized in Table F-10 below:

Table F-10. Summary of WQBELs

Pollutants	Units	AMEL	MDEL
Copper	µg/L	8.1	13
Copper (alternate Limits)	µg/L	6.6	11
Lead	µg/L	3.2	6.1
Nickel	µg/L	6.8	13
Cyanide	µg/L	6.7	15
Dioxin - TEQ	µg/L	1.4×10^{-8}	2.8×10^{-8}
Heptachlor	µg/L	0.00021	0.00042
Total Ammonia	mg/L	2.1	11

F. Interim Effluent Limitations

1. Feasibility Evaluation and Interim Effluent Limits

The Discharger submitted an Infeasibility Analysis on June 23, 2008, demonstrating that it cannot immediately comply with final WQBELs for dioxin-TEQ and heptachlor.

As stated in the previous findings in E(4)(c) for each pollutant, the Regional Water Board staff concurred with the Discharger's infeasibility assertion.

For heptachlor, there are not enough data to calculate an interim limit statistically; therefore, this Order establishes an interim limit for heptachlor as the SIP ML, which is 0.01 µg/L, expressed as a monthly average effluent limit. For dioxin-TEQ, because the previous permit did not include a final effluent limitation for dioxin-TEQ and there is insufficient data to statistically determine a performance based interim limitation, no interim limit is proposed. Further, because the dioxin-TEQ limit implements the Basin Plan's narrative bioaccumulation WQO, it is not subject to the SIP's requirement for an interim limit. Instead, this Order requires further monitoring for dioxin-TEQ in effluent to support the development of a meaningful interim limitation. This monitoring requirement will remain in effect for ten years following the effective date of this Order or until the Regional Water Board adopts a limitation based on additional data.

2. SIP and Basin Plan Compliance Schedule Requirements

The SIP and the Basin Plan authorize compliance schedules in a permit if an existing discharger cannot immediately comply with new and more stringent objectives. Compliance schedules for limitations derived from CTR WQC are based on section 2.2 of the SIP, and compliance schedules for limitations derived from Basin Plan narrative objectives are based on the Basin Plan. Both the SIP and the Basin Plan require the discharger to demonstrate the infeasibility of achieving immediate compliance with the new limitation to qualify for a compliance schedule.

The SIP and Basin Plan require the following documentation to be submitted to the Regional Water Board to justify a compliance schedule:

- Descriptions of diligent efforts the Discharger has made to quantify pollutant levels in the discharge, sources of the pollutant in the waste stream, and the results of those efforts.
- Descriptions of source control and/or pollutant minimization efforts currently under way or completed.
- A proposed schedule for additional or future source control measures, pollutant minimization, or waste treatment.
- A demonstration that the proposed schedule is as short as practicable.

The State Water Board adopted Resolution No. 2008-0025 on April 15, 2008, which includes compliance schedule policies for pollutants that are not addressed by the SIP. This Policy will become effective after the USEPA and OAL's approval. At that time, this Policy will supercede the Basin Plan's compliance policy. While this Policy is not yet effective, this Order grants a compliance schedule for dioxin-TEQ in a manner that is consistent with the Policy.

3. Compliance Schedule for Heptachlor and Dioxin-TEQ

The compliance schedules and the requirements to submit reports on further measures to reduce concentrations to ensure compliance with final limits are based on the Basin Plan section 4.7.6 for dioxin-TEQ, and SIP for heptachlor. As previously described, the Discharger submitted an Infeasibility Report, and the Regional Water Board staff confirmed their assertions. Based on this, compliance schedules are appropriate for heptachlor and dioxin-TEQ because the Discharger has made good faith and reasonable efforts towards characterizing the sources. However, time to allow additional efforts are necessary to achieve compliance.

Maximum allowable compliance schedules are granted to the Discharger for these pollutants because of the considerable uncertainty in determining effective measures (e.g., pollution prevention, treatment upgrades) that should be implemented to ensure compliance with final limits. It is appropriate to allow the Discharger sufficient time to first explore source control measures before requiring it to propose further actions, such as treatment plant upgrades, that are likely to be much more costly. This approach is supported by the Basin Plan section 4.13, which states; "In general, it is often more economical to reduce overall pollutant loadings into the treatment systems than to install complex and expensive technology at the plant.

Dioxin-TEQ WQBELs are based on Basin Plan narrative objectives for bioaccumulation; therefore, the discharge qualifies for a 10-year compliance schedule from the date this Order becomes effective, which is November 30, 2018. This Basin Plan compliance policy is consistent with the State Water Board's new compliance policy as described above except an interim limit is not included in this Order. Finally, because of the ubiquitous nature of the sources of dioxin-TEQ, this

provision allows the Discharger to address compliance with calculated WQBELs through other strategies such as mass offsets.

Heptachlor WQBELs are based on CTR criteria and the SIP provides for a 5-year compliance schedule that cannot extend past May 17, 2010. The final WQBELs will become effective on May 18, 2010. Heptachlor products are no longer registered for use in California. The Discharger's effluent data only has one detected value measured in 2002. The Discharger has not previously identified heptachlor as a constituent of concern but will need this compliance schedule to further characterize this pollutant. If heptachlor is detected in the future, the Discharger will take active measures to address its sources.

G. Land Discharge Specifications

Not applicable.

H. Reclamation Specifications

The Discharger's reclamation activities (irrigation, etc) are regulated under its individual reclamation WDRs, Order No. 92-076. The Discharger is seeking coverage under the Regional Water Board's general reclamation permit, Order No. 96-011.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

Receiving Water Limitations V.A.1 and V.A.2 are based on the narrative and numeric objectives contained in Chapter 3 of the Basin Plan. The receiving water limits for total ammonia are no longer required because there are effluent limits to ensure compliance with the receiving water limits.

Receiving Water Limitations V.A.3 is in the previous permit, requires compliance with Federal and state law, and is self-explanatory.

B. Groundwater

Not applicable.

VI. RATIONALE FOR WETLAND ENHANCEMENT PROJECT SPECIFICATIONS

These specifications are based on the previous permit and are meant to ensure proper operation of the wetlands enhancement project.

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

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

establishes monitoring and reporting requirements to implement federal and state requirements.

The principal purposes of a MRP by a discharger are to:

1. Document compliance with WDRs and prohibitions established by the Regional Water Board,

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

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

4. Prepare water and wastewater quality inventories.

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

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

A. Influent Monitoring

Flow, BOD_5 and TSS monitoring requirements are the same as in the previous permit, except the monitoring frequency for TSS is reduced to three times per week from five times per week. Recent TSS data indicate that TSS is no longer an effluent water quality concern for this discharge. The previous permit required influent monitoring of several toxic pollutants with Reasonable Potential. This Order, however, no longer requires the monitoring for these pollutants for influent concentrations because this Facility is not required to maintain a pretreatment program. This is consistent with other permits issued in this Regional Water Board.

B. Effluent Monitoring

1. Monitoring requirements for flow and conventional pollutants are the same, except the sampling frequency for TSS is reduced to three times per week; and total coliform monitoring during dry season is increased to daily to be consistent with the reclamation monitoring requirement (on the same effluent).

2. The MRP establishes routine monitoring for toxics with effluent limitations (copper, lead, nickel, cyanide, dioxin-TEQ, heptachlor, and total ammonia).

3. The MRP requires the Discharger to sample for all other priority pollutants according to the Regional Water Board's August 6, 2001, Letter twice per year for inorganics and once per year for organics.

4. The MRP requires routine monitoring for acute and chronic toxicity. This Order changes the acute toxicity compliance location for wetland discharges to the reclamation reservoirs.

C. Receiving Water Monitoring

1. Surface Water

This Order requires the same receiving water monitoring for Schell and Hudeman Sloughs as the previous permit when there are wastewater discharges to the Sloughs. This Order also requires receiving water monitoring at wetland areas (MU1, MU3, and Ringstrom Bay) to determine compliance with receiving water limits. This is a new requirement.

2. Groundwater

Groundwater monitoring at the R4 site will be covered under the general permit for extracted groundwater, Order No. R2-2007-0033.

D. Other Monitoring Requirements

Not applicable.

VIII. RATIONALE FOR PROVISIONS

A. Standard 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 **Attachments D and G**. The Discharger must comply with all standard provisions and with those additional conditions that apply under 40 CFR 122.42.

40 CFR 122.41(a)(1) and (b) through (n) establish conditions that apply to all state-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with section 123.25, this Order omits federal conditions that address enforcement authority specified in sections 122.41(j)(5) and (k)(2) because the enforcement authority under

the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. MRP Requirements

The Discharger is required to monitor the permitted discharges in order to evaluate compliance with permit conditions. Monitoring requirements are contained in the MRP (**Attachment E**), the Regional Water Board Standard Provisions, and SMP Part A (**Attachment G)** of this Order. This provision requires compliance with these documents and is based on 40 CFR 122.63.

C. Special Provisions

1. Reopener Provisions

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

2. Special Studies and Additional Monitoring Requirements

a. **Effluent Characterization for Selected Constituents.** This Order includes effluent limitations and routine monitoring requirements for toxic pollutants that are present in effluent at levels that will cause, have the reasonable potential to cause, or contribute to an excursion above any state WQS. Monitoring for other toxic pollutants is required to provide on-going characterization of the discharges from the Facility so that effluent limitations can be established, if necessary. The Discharger is required to monitor its effluent pursuant to the Regional Water Board's August 6, 2001, Letter, with the sampling frequency specified by this Order. This provision is based on the Basin Plan, the SIP and is unchanged from the previous Order.

b. **Ambient Background Monitoring.** This provision, to continue to conduct receiving water monitoring, will provide on-going characterization of the receiving water and is based on the previous permit and the Basin Plan.

c. **Optional Wetland Discharge Characterization Study.** The Discharger may perform a study to characterize the water quality at the reclamation reservoirs before discharging to the wetlands. Data generated from this study may be also used to identify whether the water quality has changed after the effluent is stored in the reservoirs for several months, and whether the reservoir monitoring will satisfy the wetland receiving water monitoring requirements.

d. **Mass offset.** This option is provided to encourage the Discharger to implement aggressive reduction of mass loads to the receiving water. If the Discharger wishes to pursue a mass offset program, it must submit a mass offset plan for reducing 303(d) listed pollutants to the same receiving water body for Regional

Water Board approval. The Regional Water Board will consider any proposed mass offset plan and amend this Order accordingly.

3. Pollution Minimization

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

Additionally, on October 15, 2003, the Regional Water Board adopted Resolution R2-2003-0096 in support of a collaborative working approach between the Regional Water Board and the Bay Area Clean Water Agencies to promote Pollution Minimization Program (PMP) development and excellence. Specifically, the resolution embodies a set of eleven guiding principles to be used to develop tools such as "P2 (pollution prevention) menus" for specific pollutants, as well as provide guidance in improving P2 program efficiency and accountability. Key principles in the resolution include promoting watershed, cross-program and cross-media approaches to pollution prevention, and jointly developing tools to assess program performance that may include peer reviews, self-audits, or other formats.

4. Action Plan for Cyanide

This provision is based on the proposed Basin Plan Amendment that will establish SSOs for cyanide for San Francisco Bay (Regional Water Board Resolution R2-2006-0086). The cyanide SSO Basin Plan amendment also requires an action plan for source control to ensure compliance with State and federal antidegradation policies. Additionally, because a dilution credit has been granted in establishing effluent limitations for cyanide, source control efforts are necessary for the continued exception to the Basin Plan prohibition regarding shallow water dischargers. The Discharger will need to comply with this provision upon the effective date of the permit. The Discharger will need to comply with this provision upon the effective date of this Order.

5. Action Plan for Copper

This provision is based on the proposed Basin Plan Amendment that will adopt the SSOs for copper for San Francisco Bay (Resolution No. R2-2007-0042). The Discharger will need to comply with this provision upon the effective date of the permit because the copper WQBELs are developed using a WER of 2.4 contained in the SSO supporting document, which yields less stringent effluent limits than those alternate WQBELs based on copper SSOs.

6. Compliance Schedules for Heptachlor and Dioxin-TEQ

This provision is based on Basin Plan (Compliance Schedules), 40 CFR 122.47(a)(3), and SIP 2.2.1. Maximum compliance schedules are allowed because of the considerable uncertainty in determining effective measures (e.g., pollution prevention, treatment upgrades) that should be implemented to ensure compliance with final limits. It is appropriate to allow the Discharger sufficient time to first explore source control measures before requiring it to propose further actions,

such as treatment plant upgrades, that are likely to be much more costly. This approach is supported by the Basin Plan (section 4.13), which states, "In general, it is often more economical to reduce overall pollutant loading into treatment systems than to install complex and expensive technology at the plant.

7. Construction, Operation, and Maintenance Specifications

a. **Wastewater Facilities, Review and Evaluation, and Status Reports**. This provision is based on the previous permit and the Basin Plan.

b. **Operations and Maintenance Manual, Review, and Status Reports.** This provision is based on the Basin Plan, the requirements of 40 CFR 122 and the previous permit.

c. **Contingency Plan, Review, and Status Reports.** This provision is based on Regional Water Board Resolution 74-10 and the previous permit.

8. Special Provisions for Municipal Facilities (POTWs Only)

a. **Sludge Management Practices Requirements.** This provision is based on the Basin Plan (Chapter 4) and 40 CFR 257 and 503.

b. **Sanitary Sewer Overflows and Sewer System Management Plan.** This provision is to explain the Order's requirements as they relate to the Discharger's collection system, and to promote consistency with the State Water Board adopted General Collection System WDRs (General Order, Order No. 2006-0003-DWQ).

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

Furthermore, the General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. Inasmuch that the Discharger's collection system is part of the system that is subject to this Order, certain standard provisions are applicable as specified in Provisions, section VI.C.5. For instance, the 24-hour reporting requirements in this Order are not included in the General Order. The Discharger must comply with both the General Order and this Order. The Discharger and public agencies that are discharging wastewater into the facility were required to obtain enrollment for regulation under the General Order by December 1, 2006.

The State Water Board amended the General Order on February 20, 2008 in Order No. WQ 2008-0002-EXEC, to strengthen the notification and reporting requirements for SSOs. The Regional Water Board issued a 13267 letter on May

1, 2008, requiring dischargers to comply with the new notification requirements for SSOs, and to comply with similar notification and reporting requirements for spills from wastewater treatment facilities.

IX. PUBLIC PARTICIPATION

The Regional Water Board is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for Sonoma Valley County Sanitation District. As a step in the WDR adoption process, the 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 waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through Sonoma Index-Tribune on August 12, 2008.

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 Office at the Regional Water Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Water Board, written comments must be received at the Regional Water Board offices by 5:00 p.m. on **September 5, 2008.**

C. Public Hearing

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

Date: October 8, 2008
Time: 9:00 a.m.
Location: Elihu Harris State Office Building
1515 Clay Street
Oakland, CA
1st floor Auditorium
Contact: Ms. Tong Yin, Phone: (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. Our Web address is *www.waterboards.ca.gov/sanfranciscobay* where you 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 (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., 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 email TYin@waterboards.ca.gov.

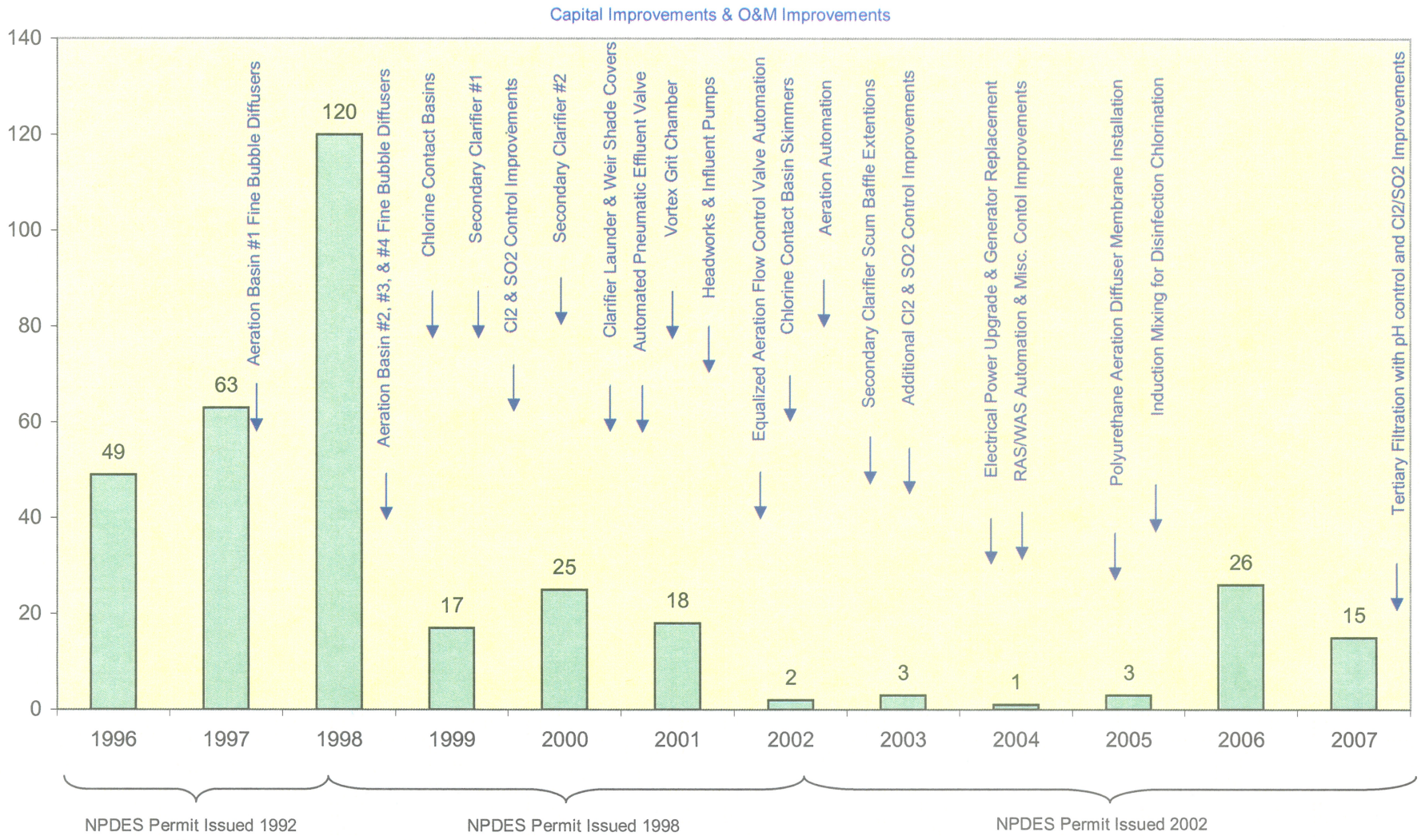
X. APPENDIX

Appendix F-1. Plant Upgrades Projects schedule (completed)

Appendix F-1

Plant Upgrades Projects schedule (completed)

SVTP Annual Compliance History



APPENDIX B

REVISED TENTATIVE
CEASE AND DESIST ORDER

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

CEASE AND DESIST ORDER NO. R2-2008-XXXX

REQUIRING THE SONOMA VALLEY COUNTY SANITATION DISTRICT TO CEASE AND DESIST DISCHARGING PARTIALLY-TREATED WASTEWATER TO WATERS OF THE STATE

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

1. The Sonoma Valley County Sanitation District (hereinafter "Discharger") owns and operates a wastewater treatment plant, located at 22675 Eighth Street East, Sonoma, Sonoma County. The plant treats domestic and commercial wastewater from the City of Sonoma and unincorporated areas of Glen Ellen, Boyes Hot Springs, El Verano, and Agua Caliente. It has a dry weather design treatment capacity of 3.0 million gallons per day.

2. The wastewater discharge from the Discharger's wastewater treatment plant was previously regulated by waste discharge requirements (WDRs) in Order Nos. R2-2002-0046 and R2-2005-0009 (amendment) (NPDES Permit No. CA0037800).

3. Concurrent with the adoption of this Cease and Desist Order (CDO), the Regional Water Board adopted Order No. R2-2008-XXXX (hereinafter "Permit"), reissuing WDRs for the Discharger. The Permit contains prohibitions, limitations, and provisions regulating the discharge. The limitations include those listed in Table 1 below, among others.

Table 1: Permit Effluent Limits

Parameter	Final Effluent Limits in Permit		Monitoring Station
	Average Monthly Effluent Limit (AMEL) (µg/L)	Maximum Daily Effluent Limit (MDEL) (µg/L)	
Copper(1)	8.1	13	EFF-001 and EFF-001B

(1) Alternate Effluent Limits for Copper:

a. If a copper SSO for the receiving water becomes legally effective, resulting in adjusted saltwater chronic objective of 6.0 µg/L and acute objective of 9.4 µg/L contained in the Basin Plan Amendment, Resolution No. R2-2007-0042 and its supporting documentation, upon its effective date, the following limitations shall supersede those copper limitations listed in Table 1.

MDEL of 11 µg/L and AMEL of 6.6 µg/L.

b. If a different copper SSO for the receiving water is adopted, the alternate WQBELs based on the SSO will be determined after the SSO effective date.

4. The Discharger submitted a feasibility study dated June 23, 2008, demonstrating that it cannot comply with the effluent limits for copper listed in Table 1. As stated in the Permit findings, the Regional Water Board concurs with the Discharger's infeasibility assertion because the mean, 95th and 99th percentiles of the data exceed the long term average (LTA), AMEL and MDEL, respectively. Since the alternate effluent limits are more stringent than the existing permit limits for copper, the Discharger will continue to have difficulty complying with the new alternate limits. The Permit does not grant a compliance schedule for this pollutant; therefore, the Discharger will discharge waste in violation of the Permit.

5. Water Code §13301 authorizes the Regional Water Board to issue a CDO when it finds that a waste discharge is taking place, or threatening to take place, in violation of Regional Water Board requirements.

6. Because the Discharger will violate or threatens to violate required effluent limits, this Order is necessary to ensure that the Discharger achieves compliance. This Order establishes time schedules for the Discharger to complete necessary investigative, preventive, and remedial actions to address its imminent and threatened violations.

7. The time schedules in this Order are parameter-specific and intended to be as short as possible. They account for the considerable uncertainty in determining effective measures (e.g., pollution prevention and treatment plant upgrades) necessary to achieve compliance. This Order allows some time to first explore source control measures before requiring further actions, such as treatment plant upgrades, which are likely to be much more costly. The time schedules are based on reasonably expected times needed to implement source identification and upstream source control, evaluate success, identify on-site treatment alternatives if necessary, test and select from among alternatives, and construct plant upgrades. The Regional Water Board may wish to revisit these assumptions as more information becomes available.

8. As part of the time schedules to achieve compliance, this Order requires the Discharger to comply with interim effluent limits, where feasible. These interim limits are intended to ensure that the Discharger maintains at least its existing performance while completing all tasks required during the time schedules. The interim limits are based on past performance or limits in previous orders, whichever are more stringent. If based on past performance, the interim limits represent the 99.87th percentile of actual measured discharge concentrations (mean plus three standard deviations). If insufficient monitoring data exist to derive a reliable performance-based limit, and if no previous order contained a limit, then this Order does not establish an interim limit.

   For copper, the 99.87th percentile of the data set is calculated to be 24 µg/L. Since

the Discharger took multiple samples within a month, the 99.87th percentile of the monthly averages was also calculated, which is 18 µg/L (as a monthly average limit). The previous permit contained an interim effluent limit for copper of 18 µg/L as a monthly average; therefore, this Order establishes the same performance-based monthly average limit. This Order also establishes a daily maximum performance-based limit of 24 µg/L. The new pair of interim limits, taken together, is more stringent than the previous interim limit.

9. This Order is an enforcement action and, as such, is exempt from the provisions of the California Environmental Quality Act (Public Resources Code § 21000 et seq.) in accordance with 14 CCR § 15321.

10. Exceedance of the NPDES limits for copper is not subject to California Water Code §13385(h) and (i) as long as the Discharger complies with all of the requirements of the Cease and Desist Order, does not exceed the interim limits, and meets the requirements of §13385(j)(3).

11. The Regional Water Board notified the Discharger and interested persons of its intent to consider adoption of this CDO, and provided an opportunity to submit written comments and appear at a public hearing. The Regional Water Board, in a public hearing, heard and considered all comments.

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

1. Prescribed Actions. The Discharger shall comply with the required actions in Table 2 in accordance with the time schedules provided therein to comply with all effluent limits contained in the Permit. All deliverables listed in Table 2 shall be acceptable to the Executive Officer, who will review them for adequacy and compliance with the Table 2 requirements. The Discharger shall further implement all actions set forth in each deliverable, unless the Executive Officer finds the deliverable to be unacceptable.

2. Actions after Adoption of Copper Site-Specific Objectives (SSOs). The time schedules and prescribed actions for copper shall remain effective following the effective date of SSOs* for copper in San Francisco Bay. These SSOs are an adjusted saltwater chronic objective of 6.0 µg/L and acute objective of 9.4 µg/L. When these SSOs become effective, the alternate effluent limits (an AMEL of 6.6 µg/L and an MDEL of 11 µg/L) specified by the Permit will also become effective. If different SSOs are adopted, the Regional Water Board will establish revised effluent limits based on such SSOs after the effective date. At that time, the Regional Water Board will determine if the copper-related time schedules and prescribed actions in Table 2 are still necessary or if they should be rescinded. Until such time, the

* In December 2007, by Resolution No. R2-2007-0042, the Regional Water Board adopted Copper SSOs for San Francisco Bay.

Discharger shall comply with them.

3. Reporting Delays. If the Discharger is delayed, interrupted, or prevented from meeting one or more of the time schedules in Table 2 due to circumstances beyond its reasonable control, the Discharger shall promptly notify the Executive Officer, provide the reasons and justification for the delay, and propose time schedules for resolving the delay.

4. Consequences of Non-Compliance. If the Discharger fails to comply with the provisions of this Order, the Executive Officer is authorized to take further enforcement action or to request the Attorney General to take appropriate actions against the Discharger in accordance with Water Code §§ 13331, 13350, 13385, and 13386. Such actions may include injunctive and civil remedies, if appropriate, or the issuance of an Administrative Civil Liability Complaint for Regional Water Board consideration.

5. Effective Date. This Order shall be effective on the effective date of the Permit.

Table 2: Time Schedules and Prescribed Actions for Copper

Action	Deadline
a. Comply with the following interim effluent limits at Monitoring Station EFF-001 (for Schell Slough discharge) and EFF-001B (for wetland discharge): Average monthly interim limit = 18 µg/L, Daily maximum interim limit = 24 µg/L	Upon the effective date of this Order
b. Submit a plan for identifying all copper sources to the discharge. Examples of copper sources include pool and spa, plumbing corrosivity. The plan shall, at a minimum, include sampling influent waste streams to identify and quantify pollutant sources.	February 1, 2009
c. Implement the plan developed in action “b” within 30 days following the deadline for action “b,” and submit by the deadline for this action a report that contains an inventory of the pollutant sources.	June 1, 2009
d. Submit a report documenting development and initial implementation of a program to reduce and prevent the pollutants of concern in the discharge. The program shall consist, at a minimum, of the following elements: (1) Maintain a list of sources of pollutants of concern. (2) Investigate each source to assess the need to include it in the program. (3) Identify and implement targeted actions to reduce or eliminate discharges from each source in the program. (4) Develop and distribute, as appropriate, educational materials regarding the need to prevent sources to the sewer system.	August 1, 2010
e. Continue to implement the program described in action “d” and submit annual status reports that evaluate its effectiveness and	Annually each February 28 in Best Management Practices

Action	Deadline
summarize planned changes. Report whether the program has successfully brought the discharge into compliance with the effluent limits in the Permit. If not, identify and implement additional measures to further reduce discharges.	and Pollutant Minimization Reports required by Permit Provision VII.C.3
f. If by February 28, 2011, discharge data continue to show the discharge is out of compliance (as defined in 2.4.5. of the State Implementation Policy) with the Permit effluent limits, submit a report, by the deadline for this action, identifying more aggressive actions to ensure compliance. These actions shall include, but not be limited to, reviewing options for pretreatment and upgrades to the treatment plant. The report shall identify an implementation schedule for investigating these options, selecting a preferred option, and implementing the chosen option. At a minimum, the report shall plan for the following activities: (1) Bench scale testing or pilot scale testing or both (2) Development of preliminary design specifications (3) Development of final design specifications (4) Procurement of funding (5) Acquisition of necessary permits and approvals (6) Construction	June 1, 2011
g. Implement the plan required in action "f" within 45 days following the deadline for action "f," and submit annual status reports.	Annually, each February 1 in Annual Self-Monitoring Reports required by Permit Attachment E, Monitoring and Reporting Program
h. Submit documentation confirming complete plan implementation and achieve compliance with copper effluent limits specified in IV.B. of the Permit.	December 1, 2013

I, Bruce H. Wolfe, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on _____, 2008.

_____
BRUCE H. WOLFE
Executive Officer

APPENDIX C

COMMENTS RECEIVED

SONOMA COUNTY WATER AGENCY

CALIFORNIA REGIONAL WATER
SEP 05 2008
QUALITY CONTROL BOARD

File: 70-12-9 Sonoma Valley NPDES Permit

September 4, 2008

Ms. Tong Yin
California Regional Water Quality Control Board
San Francisco Bay
1515 Clay Street, Suite 1400
Oakland, CA 94612

Subject: Comments on the Tentative Order and Tentative Cease and Desist Order issued by the California Regional Water Quality Control Board, San Francisco Bay Region for NPDES Permit No. CA0037800

Dear Ms. Yin:

The Sonoma Valley County Sanitation District (District) has prepared comments on the Tentative Order and Tentative Cease and Desist Order issued for the District's Wastewater Treatment Plant on August 6, 2008. The comments are enclosed and are being submitted prior to the September 5, 2008, deadline to be considered by the San Francisco Bay Regional Water Quality Control Board for inclusion in the final adopted documents.

Thank you for your time and helpful consideration throughout this permit renewal process. Please contact me if you have any questions on the enclosed comments or if you would like to discuss them in more detail.

Sincerely,

Kevin Booker, P.E.
Water Agency Engineer

Encs: Attachment 1 – Comments Regarding Tentative Order
Attachment 2 – Comments Regarding Tentative Cease and Desist Order

c: Pam Jeane, Jim Zambenini, Ellen Simm, Hody Wilson - SCWA
Lila Tang - S.F. Bay RWQCB
Denise Conners - Larry Walker Associates

ep \\fileserver\data\CL\PINKS\week090108\SVCSD Cover Letter kbooker (final).doc

P.O. Box 11628 - Santa Rosa, CA 95406 - 404 Aviation Boulevard - Santa Rosa, CA 95403 - (707) 526-5370 - Fax (707) 544-6123

ATTACHMENT 1

CALIFORNIA REGIONAL WATER
SEP 05 2008
QUALITY CONTROL BOARD

September 4, 2008

Sonoma Valley County Sanitation District
Sonoma Valley Wastewater Treatment Plant

Comments Regarding the Reissuance of NPDES Permit No. CA0037800

The Sonoma Valley County Sanitation District (District) appreciates the opportunity to submit the following comments on the Tentative Order (TO) released for review and comment on August 6th, 2008.

The comments are organized as follows:

- Comments #1-6 are the District's significant comments on the main body of the TO
- Comment #7-13 is the District's significant comments on the Monitoring and Reporting Program (Attachment E)
- Comments #14-25 are the District's comments on the Fact Sheet (Attachment F)

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

Comments Regarding Tentative Order – Main Body

1. **The District requests the following changes be made to identify a new Facility Contact person and to accurately reflect the wet weather treatment and discharge capacity of the wastewater treatment plant. Hody Wilson will be in charge of operating the treatment plant beginning November 1, 2008. The treatment plant is designed to fully treat 16 mgd during the wet season, but can only discharge 11 mgd due to limited effluent pump and pipeline capacity.**

I. Facility Information (Table 4, page 5)

Discharger	Sonoma Valley County Sanitation District
Operator	Sonoma County Water Agency
Name of Facility	Sonoma Valley County Sanitation District and its collection system
Facility Address	22675 8th Street East, Sonoma, CA 95476 Sonoma County
Facility Contact, Title, and Phone	~~Jim Zambenini~~ Hody Wilson, Water Agency Coordinator, (707) 521-~~1849~~ 1843
Mailing Address	P.O. Box 11628, Santa Rosa, CA 95406
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	3.0 million gallons per day (MGD)
Facility Wet Weather Capacity	11 MGD (maximum discharge capacity at Outfall 001) 16 MGD (peak wet weather design capacity)
Service Areas	Sonoma, unincorporated areas of Glen Ellen, Boyes Hot Springs, El Verano, and Agua Caliente
Population Served	36,000
Reclamation (yes)	Regional Water Board Order No. 92-067

2. **The beneficial uses assigned to wetlands areas receiving District effluent have not been studied or confirmed. The assignation of these uses by the Water Board was based solely on the types of beneficial uses typically associated with estuarine wetlands. In fact, some of these wetlands areas are isolated during most of the year by tide gates that completely prevent tidal exchange. Also, fish migration in MU1 and MU3 is prohibited by the existing v-notch weirs that are in place year-round. To prevent these beneficial uses from being incorporated into future permits without scientific verification, the District requests the following language be added to the permit.**

Finding II.H. Water Quality Control Plan (page 5, Table 5)

MU1, MU3, and Ringstrom Bay are wetland areas that are tidally connected during part of the year with either Schell Slough or Hudeman Slough. Fly Bay and Napa-Sonoma Marsh is either tidally connected with Napa River or San Pablo Bay. The Basin Plan has not designated beneficial uses for these wetland areas; however, it establishes potential beneficial uses for wetlands in general. These potential beneficial uses are listed in the table below. However, because of their remote location, many of these beneficial uses are significantly limited. Wetlands surveys must be undertaken before beneficial uses are formally established for these wetland areas.

Discharge Point	Receiving Water Name	Beneficial Use
003, 004, 005, 006	MU1, MU3, Ringstrom Bay, Fly Bay, Napa-Sonoma Marsh	Potential Beneficial Uses: Wildlife Habitat (WILD) Preservation of Rare and Endangered Species (RARE) Estuarine Habitat (EST) Water Contact Recreation (REC1) Non-contact Water Recreation (REC2) Fish Migration (MIGR) Fish Spawning (SPWN) Ocean Commercial and Sport Fishing (COM~~N~~M) Shellfish Harvesting (SHELL) Marine Habitat (MAR)

3. **The District believes that the chronic limit for total coliform is overly stringent and not representative of the District's impact on receiving water quality. The District requests the option of completing a beneficial use study during the permit term to reinstate the Shallow Water Discharge Exception for total coliform when discharging to Schell Slough (Discharge Point 001). This exception is authorized in Table 4-2 of the San Francisco Bay Basin Plan when dischargers can demonstrate that beneficial uses will not be compromised by such an exception. Schell Slough receives significant runoff from non-point sources of bacteria (e.g., pastures, dairies). It is predicted that discharges from the wastewater treatment plant are not a significant factor in ambient bacteria concentrations or impacting beneficial uses of the slough. Subject to Executive Officer approval of the beneficial use study, the District requests that alternative effluent limits for total coliform of 23 MPN/100 mL (7-day moving median) be included in the permit.**

The inclusion of alternate effluent limits for total coliform would affect the following permit section:

Effluent Limitations and Discharge Specifications IV.A.2. (page 11)

[Add alternate effluent limits of 23 MPN/100 mL (7-day moving median).]

4. **The District requests the removal of final dioxin-TEQ limits from the permit because the total impacts of the dioxin in the District's discharge were not considered during the Reasonable Potential Analysis. The San Francisco Bay is listed as impaired due to high dioxin concentrations in fish tissue. The process of calculating dioxin-TEQ for this permit utilized TEF (toxicity equivalency factors) which only partially address the effects of dioxin congeners. To fully assess the effects of dioxin congeners on fish tissue, appropriate BEFs (bioaccumulation equivalency factors) must also be employed. The approach of applying both BEFs <u>and</u> TEFs to calculate the potential of a dioxin discharge to negatively impact a receiving water environment was adopted for the Great Lakes System and is included in 40 CFR Part 132, Appendix F. The authors of the BEF Technical Support Document indicate that these BEFs were conservatively developed and could be predictive of bioaccumulation in ecosystems outside of the Great Lakes. This methodology has also been endorsed by an independent expert panel convened to assist the Water Board and the USEPA in their evaluation of dioxin-TEQ permitting requirements. Inclusion of the USEPA-adopted Great Lakes BEFs therefore makes use of best available information when interpreting the Basin Plan narrative objectives.**

   Only one congener was detected in one sample of the District's wastewater (out of 6 samples analyzed). This congener (OCDD) has the lowest toxicity and the lowest bioaccumulation potential. When appropriate BEFs <u>and</u> TEFs are applied to the detected concentration, the District's wastewater no longer demonstrates a reasonable potential to harm the receiving water environment through bioaccumulation in fish.

   In addition, the Water Board has acknowledged that the primary source of dioxins and furans in the Bay Area is air emissions from combustion sources and, as such, dioxin levels in fish are likely not controllable through wastewater controls. Finally, given the infrequent detection and low levels present in the District's discharge, dioxin congener levels in effluent is beyond the District's control.

   Removal of dioxin-TEQ limits would affect the following permit sections:

   Effluent Limitations and Discharge Specifications IV.B. (Table 7, page 13)

   [Remove Final Effluent Limits and MLs for dioxin-TEQ]

   Provisions VII.C.6. (Pages 24-25)

   [Remove compliance schedule tasks related to dioxin-TEQ.]

5. **The District believes that the final effluent limits specified for total ammonia are overly protective of receiving water quality. As such, the District requests that the Water Board use the 2.25 attenuation factor approved for cyanide to re-calculate the District's ammonia effluent limits. This attenuation factor was fully approved in July 2008 as part of the Basin Plan Amendment for the Cyanide Site Specific Objective (SSO) and**

used to determine the District's cyanide effluent limits. The attenuation factor accounts for dilution and decay of cyanide levels over time. Ammonia and cyanide behave similarly in natural environments. Both compounds are non-conservative and degrade relatively quickly over distance and time. Prior to formal approval of the Cyanide SSO, actual dilution was applied to cyanide limits as well as ammonia limits in Region 2. When applying actual dilution to limits for both of these compounds, the Water Board demonstrated its understanding of the similarities between ammonia and cyanide. In the Fact Sheet for the City of Burlingame's NPDES permit (adopted in November 2007), the Water Board stated that "For cyanide, another non-persistent pollutant that quickly disperses and degrades like ammonia, the lowest actual dilution rate was used to calculate the water quality based effluent limits."

All NPDES permits adopted in Region 2 since August 2007 contain total ammonia effluent limits based on actual dilution. The 2.25 attenuation factor represents actual conditions in the District's receiving water, as it was verified through measurements in Schell Slough. Like the other dischargers, the District wants to properly account for ammonia attenuation and obtain an effluent limit that is representative of its discharge impacts.

Use of the 2.25 attenuation factor for calculating total ammonia effluent limits would affect the following permit section:

Effluent Limitations and Discharge Specifications IV.B. (Table 7, page 13)

[Recalculate total ammonia effluent limits and remove the ML.]

6. **The District is concerned about its ability to meet final heptachlor limits in 2010. Heptachlor was detected only once in the District's wastewater during the last 5 years (a DNQ value of 0.006 ug/L) in a sample collected in February, 2002. There is currently no information on heptachlor sources in the collection system and no strategies for preventing heptachlor from entering the wastewater treatment plant. Investigations will be completed as part of the compliance schedule in Provisions VII.C.6. However, in the event that source control efforts may not be successful before heptachlor final limits become effective, the District requests that heptachlor be added the Cease and Desist Order starting on May 18, 2010. Moving heptachlor compliance to the Cease and Desist Order may affect the following permit section.**

Effluent Limitations and Discharge Specifications IV.C. (page 15)

The Discharger shall comply with the following interim limit for heptachlor in Table 8, (1) for the discharge to Schell Slough via Discharge Point 001 with compliance measured at Monitoring Location EFF-001; and (2) for the discharge to sloughs or wetlands via Discharge Points 002 through 006 (from reclamation reservoirs R1, R2, and R4), with compliance measured at Monitoring Location EFF-001B as described in the attached MRP (**Attachment E**). The interim limit for heptachlor shall remain in effect until May 17, 2010. Starting May 18, 2010, the final effluent limits in Table 7 shall become effective. <u>If full compliance is not attainable by that date, the Discharger will be required to follow activities detailed in the concurrently issued Cease and Desist Order.</u>

7. **The District requests that monitoring for enterococci bacteria be reduced to once per month at EFF-001, instead of five times per month. Enterococci monitoring has never been conducted by the District and, until a new analytical technique is employed by the District, will have to be completed by an outside, contract laboratory. Sample collection techniques, sample hold/pickup/delivery times, and analytical costs are all unknown at this point. Monitoring five times per month may place an inordinate burden on the District. No other discharger in Region 2 has been asked to complete these analyses unless required to show compliance with effluent limits. Also, wasteload allocations in the Sonoma Creek Pathogen TMDL will eventually be based on fecal coliform concentrations. It is expected that the District will also be required to monitor fecal coliform in addition to enterococci at some point in the future. To simplify inclusion of the enterococci monitoring requirement, the District requests approval to use the IDEXX Enterolert method.**

   The requested changes in enterococci monitoring will affect the following MRP provisions:

   Effluent Monitoring Requirements IV.A. (Table E-4, page E-5)

   [Change monitoring frequency for enterococci bacteria from 5/month to 1/month.]

   Effluent Monitoring Requirements IV.A. (footnote to Table E-4, page E-7)

   [6] Enterococci Bacteria. This monitoring is required to aid in identifying any issues with compliance with USEPA promulgated water contact criteria for enterococci. These standards may be established some time in the future as water quality objectives for the receiving water, so this information is necessary. The Discharger may monitor for Enterococci using EPA-approved methods, including the IDEXX Enterolert method.

8. **The District requests that changes made pursuant to Comment #4 (removal of dioxin-TEQ limits) be incorporated in the effluent monitoring requirements in Table E-4. If dioxin-TEQ no longer demonstrates reasonable potential, the effluent monitoring frequency should be reduced from two times per year to once per year in accordance with the schedule prescribed for "all other priority organic pollutants."**

   Effluent Monitoring Requirements IV.A. (Table E-4, page E-6)

   [Change the monitoring frequency for dioxin-TEQ from 2/year to 1/year.]

9. **The District requests that the Water Board return to the chlorine compliance strategy agreed upon with BACWA in October 2004. In that agreement, dischargers with continuous chlorine monitors are expected to report chlorine residual on the hour every hour. Only those hourly values would then be held to a compliance evaluation by the Water Board. Suggested permit changes are indicated below:**

Effluent Monitoring Requirements IV.A. (footnote [8] to Table E-4, page E-7)

[8] Chlorine residual. Monitoring for zero chlorine residual is required at EFF-001 only. The Discharger may record discrete readings from the continuous monitoring every hour on the hour, and report on a daily basis, the maximum hourly concentration observed following dechlorination. Total chlorine dosage (kg/day) shall be recorded on a daily basis. ~~However, any confirmed chlorine residual incident occurring at any time during the day is a effluent limit violation and must be reported in accordance with SMP Part A and Standard Provisions.~~

10. The District suggests that reporting of dioxin-TEQ concentrations reflect best available information by including bioaccumulative equivalency factors (BEFs) as approved in 40 CFR Part 132, Appendix F. The following change is suggested:

Effluent Monitoring Requirements IV.A. (footnote [12] to Table E-4, page E-7)

[12] Dioxin-TEQ. Chlorinated dibenzodioxins and chlorinated dibenzofurans shall be analyzed using the latest version of USEPA Method 1613; the analysis shall be capable of achieving the MLs listed previously in the Order. Alternative methods of analysis must be approved by the Executive Officer. In addition to reporting results for each of the 17 congeners, the dioxin-TEQ shall be calculated and reported using 1998 USEPA Toxicity Equivalent Factors for dioxin and furan congeners as well as bioaccumulative equivalency factors as noted in 40 CFR Part 132, Appendix F as multipliers.

11. The District requests that monitoring for chlorine residual in the reclamation ponds be limited to times when effluent is delivered to the ponds or effluent is discharged from the ponds. As currently written, the District must monitor the ponds weekly even if no effluent has been delivered to the ponds from the wastewater treatment plant. It has been observed over the years that residual chlorine in the ponds is almost always zero, unless measured within a day or two of receiving effluent from the treatment plant. The chlorine concentration is rapidly degraded by sunlight and the predominantly warm air temperatures. As such, weekly monitoring during times when effluent is not being delivered to the ponds is unnecessary. The following changes are suggested:

Effluent Monitoring Requirements IV.B. (footnote to Table E-5, page E-8)

[2] Chlorine Residual. The Discharger shall sample weekly for chlorine residual in the discharge sources when there is discharge to reservoirs any time that Hudeman Slough, Schell Slough, the Management Units, Ringstrom Bay, or Napa-Sonoma Marsh is receiving discharges from a recycled water storage reservoir. Reservoir sampling shall be at the commencement and cessation of each reservoir discharge event and once per week throughout said discharge event. Weekly reservoir chlorine residual monitoring may be discontinued when the source reservoir does not receive additional treatment plant effluent flow and two consecutive weekly chlorine residual samples are zero. Weekly reservoir chlorine residual monitoring shall resume on the day that plant effluent discharge to the reservoir is resumed.

12. The District requests a change in the procedures specified to correct errors in data reporting. Human errors can occur when reporting data and it is sometimes difficult to promptly identify and correct those errors. The District requests the following changes to facilitate the data invalidation process:

Modifications to Part A of Self-Monitoring Program X. (Self-Monitoring Reports, item g, page E-13)

If the Discharger wishes to invalidate any measurement, the letter of transmittal ~~will~~ should include identification of the measurement suspected to be invalid and notification of intent to submit, within a specified schedule ~~60 days~~, a formal request to invalidate the measurement. Th~~is~~e formal request will ~~must~~ include the original measurement~~,~~ in question, the reason for invalidating the measurement, all relevant documentation that supports the 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. ~~The invalidation of a measurement requires the approval of Water Board staff and will be based solely on the documentation submitted at that time.~~

13. The District requests the option of completing the next Chronic Toxicity Screening Phase in conjunction with another Discharger. The chronic screening test is costly and a large expense for small dischargers. Teaming up with another local discharger to share costs and screening results would be a significant cost savings for the District. The suggested permit change is included below:

Appendix E-1. Chronic Toxicity Definition of Terms and Screening Phase Requirements (II.A.2, page E-19)

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. The Discharger has the option of completing the screening phase monitoring on its own or in conjunction with other local dischargers.

14. The District requests that the changes indicated in Comment #1 (wet weather treatment capacity and new plant operator) also be applied to the Table F-1 (page F-1).

15. The District requests the following language be included in the Facility Description to fully explain the District's approach for addressing dry weather capacity issues at the wastewater treatment plant.

Facility Description II.A.2. (page F-3).

The Facility has a permitted ADWF of 3.0 MGD. In 2005, 2006, and 2007, effluent flows measured during three consecutive dry weather months were 2.85 MGD, 2.52 MGD, and 2.54 MGD, respectively. The previous permit requires the Discharger to perform a dry weather capacity study because its dry weather effluent flows had been near the design capacity. In the study submitted to the Regional Water Board on March 31, 2004, the Discharger reported that the Facility can actually handle up to 4.4 MGD during the dry season ("Technical Memorandum – Dry Weather Flow Capacity Analysis," dated March 29, 2004). The observed dry weather flows were less than 70% of the rated treatment capacity of 4.4 MGD. Therefore, the Discharger does not plan to seek an increase in its permitted capacity at this time because it has completed many upgrades at the treatment plant, including an addition of tertiary filters, which provide filtration to all dry weather flows; therefore, producing effluent with better water quality. It is also expected that all inflows greater than 3.0 MGD (ADWF) will be reclaimed for landscape and agricultural irrigation, not discharged to surface waters.

16. The District requests that the wet weather flow handling description be revised as indicated below to accurately reflect the District's operational procedures.

Facility Description II.A.3. (page F-4).

Current operation during extreme storm flow events is to first maximize ~~the~~ plant treatment ~~capacity~~ to the current effluent transmission capacity of 11MGD, then utilize the equalization basins (35 million gallons total capacity) to retain the preliminary treated wastewater until it can be returned to the headworks for complete treatment…

17. The District requests that the changes indicated in Comment #2 (potential beneficial uses) also be applied to the text in Applicable Plans, Policies, and Regulations III.C.1. and Table F-4 (page F-15).

18. The District requests that the changes indicated in Comment #9 (chlorine residual compliance) also be applied to the Rationale for Effluent Limitations and Discharge Specifications IV.C.3.e. (page F-22).

19. The District requests the following language be incorporated into the discussion of whole effluent acute toxicity testing to clarify the District's record on acute toxicity compliance.

Rationale for Effluent Limitations and Discharge Specifications IV.D.1.b. (page F-24).

Compliance History. The Discharger's acute toxicity monitoring data show that there have been two ~~three~~ tests with lower than 70% survival (20%~~, 40%,~~ and 55%) during 2005-2008 for fathead minnow. The Discharger ~~has not~~ identified the causes of the 20% survival test as excessive sulfur dioxide dosing, but the

cause of the 55% survival was undetermined. ~~t~~The failed tests all occurred after the tertiary filters were put online. In accordance ~~to~~ with the Order, the Discharger will need to conduct a special study to identify causes in the future if violations continue to occur.

20. The District requests the option of performing a dynamic model to calculate copper effluent limitations for the next permit term. As stated in Section 1.4 of the State Implementation Policy (SIP), effluent limits can be developed using either a steady state model or a dynamic model, as approved by the Regional Water Board. Dynamic models are used to calculate effluent limits that predict the effects of receiving water and effluent flow and of concentration variability. The outputs of dynamic models can be used to base effluent limitations on probability estimates of receiving water concentrations rather than critical conditions (which are used in the steady-state model). Dynamic model results were used by the Central Valley Regional Water Quality Control Board to derive copper and ammonia effluent limits in the 2007 NPDES Permit adopted for the City of Yuba City Wastewater Treatment Facility (R5-2007-0134). Suggest modifications to Fact Sheet text are included below.

Rationale for Effluent Limitations and Discharge Specifications IV.E.4.c.(1)v. (page F-38).

Need for CDO. Pursuant to State Water Board Order WQ 2007-0004, no more than five years of compliance schedules can be authorized for pollutants with CTR criteria under the SIP. The previous permit granted a five-year compliance schedule for copper, which already expired; therefore, no more compliance schedule is allowed under this Order. Because it is infeasible for the Discharger to immediately comply with final WQBELs for copper, the Discharger will likely discharge in violation of this Order. Therefore, a CDO will be adopted concurrent with this Order. The CDO is necessary to ensure that the Discharger achieves compliance. It establishes time schedules for the Discharger to conduct dynamic modeling and complete necessary investigative, preventive, and remedial actions to address its imminent and threatened violations.

21. The District requests that the changes indicated in Comment #4 (removal of dioxin limits) also be applied to the following Fact Sheet sections. Suggested modifications are indicated below.

Rationale for Effluent Limitations and Discharge Specifications IV.E.3.d. (Table F-7, page F-31) and IV.E.4.c.(5) (page F-41).

[Remove the determination and discussion of Reasonable Potential for dioxin-TEQ.]

Rationale for Effluent Limitations and Discharge Specifications IV.F.3. (page F-46)

[Remove the discussion of compliance schedule and infeasibility for dioxin-TEQ.]

22. The District requests that the changes requested in Comment #6 (including heptachlor in the Cease and Desist Order) also be applied to the Fact Sheet. The following changes are suggested.

Rationale for Effluent Limitations and Discharge Specifications IV.E.4.c.(6)v. (page F-43).

Interim Effluent Limit. Since it is infeasible for the Discharger to comply with the final WQBELs for heptachlor, and there are not enough data to calculate an interim limit statistically. This Order establishes an interim limit based on the SIP ML, which is 0.01 µg/L, as a monthly average limit. This interim limit will

remain in effect until May 17, 2010. ~~If heptachlor is detected again in the future, which exceeds the WQBELs and the SIP ML,~~. Starting May 18, 2010, the Regional Water Board heptachlor was included in the concurrently adopted CDO. ~~after the compliance schedule ends.~~

23. The District requests that the changes requested in Comment #5 (use of the 2.25 attenuation factor for ammonia) also be applied to the Rationale for Effluent Limitations and Discharge Specifications IV.E.4.c.(7) (page F-43).

24. If the changes indicated in Comment #5 (use of the 2.25 attenuation factor for ammonia) are not incorporated, the District requests the following language be included in the discussion of total ammonia WQBELs. This language is requested to ensure that a dilution study or an attenuation analysis submitted for the next permit term will be perceived as "new information" and the adopted ammonia effluent limits will be exempt from the Anti-Backsliding Rule.

Rationale for Effluent Limitations and Discharge Specifications IV.E.4.c.(7)iii. (page F-45).

WQBELs. The total ammonia WQBELs calculated according to SIP procedures are 11 mg/L as MDEL and 2.1 mg/L as AMEL, based on an effluent concentration CV of 2.65. No dilution credit is incorporated in the calculation. The Discharger, however, has the option to conduct a special study to demonstrate an appropriate dilution credit or attenuation factor for total ammonia. During the next permit reissuance, the Regional Water Board will consider the study results as new information and may include a dilution credit or attenuation factor for ammonia WQBELs calculation~~.~~ that is not subject to Anti-Backsliding review.

25. The District requests that the changes indicated in Comment #3 (alternate effluent limits for total coliform) also be applied to Rationale for Effluent Limitations and Discharge Specifications IV.C.3.f. (page F-23). The requested changes are indicated below:

The purpose of total coliform effluent limitations is to ensure adequate disinfection of the discharge in order to protect beneficial uses of the receiving waters. The total coliform limitations for discharges of chlorinated and dechlorinated treated effluent to sloughs or wetlands directly form the plant effluent pipeline with compliance measured at EFF-001 (as described in **Attachment E**), require that the moving median value for the total coliform bacteria in any seven consecutive samples not to exceed 2.2 MPN/100mL and any single sample not to exceed 240 MPN/100mL. These limitations are based on Basin Plan Table 4-2 for shallow water dischargers. This Order changes the previous 7-sample median of 23 MPN/100mL to Basin Plan Table 4-2's 2.2 MPN/100mL. Therefore, the new effluent limits are more stringent. The Discharger has put online new tertiary filters and installed new disinfection control devices, and there have been no total coliform effluent limit violations since December 2007. It is expected that the Discharger will be able to comply with these limits. However, if the Discharger completes a beneficial use study during the permit term and the study is approved by the Executive Officer, the Shallow Water Discharge Exception will be reinstated and the 7-sample median will be changed to 23 MPN/100 mL.

ATTACHMENT 2

September 4, 2008

Sonoma Valley County Sanitation District
Sonoma Valley Wastewater Treatment Plant

Comments Regarding the Tentative Cease and Desist Order for NPDES Permit No. CA0037800

The Sonoma Valley County Sanitation District (District) appreciates the opportunity to submit the following comments on the Tentative Cease and Desist Order (CDO) released for review and comment on August 6th, 2008.

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

---

1. **The District requests that heptachlor be added to the CDO beginning May 18, 2010. Heptachlor was detected only once in the District's wastewater during the last 5 years (a DNQ value of 0.006 ug/L in a sample collected in February, 2002). As specified in the permit, the District will investigate sample collection/handling/analytical procedures and identify potential sources of heptachlor to the sewer system. However, if these actions are not effective and heptachlor is not detected again until 2010, the District will not have time to address the problem prior to the effective date of final limits. Inclusion of heptachlor in the CDO at this time allows protection for the Discharger past May 17, 2010 in order to implement additional control activities.**

2. **The District requests the option of performing a dynamic model to calculate copper effluent limitations for the next permit term. As stated in Section 1.4 of the State Implementation Policy (SIP), effluent limits can be developed using either a steady state model or a dynamic model, as approved by the Regional Water Board. Dynamic models are used to calculate effluent limits that predict the effects of receiving water and effluent flow and of concentration variability. The outputs of dynamic models can be used to base effluent limitations on probability estimates of receiving water concentrations rather than critical conditions (which are used in the steady-state model). Dynamic model results were used by the Central Valley Regional Water Quality Control Board to derive copper and ammonia effluent limits in the 2007 NPDES Permit adopted for the City of Yuba City Wastewater Treatment Facility (R5-2007-0134).**

   The following changes to the CDO time schedule are presented for your consideration:

Table 2: Time Schedule and Prescribed Actions for Copper

Action	Deadline
f. If by February 28, 2011, discharge data continue to show the discharge is out of compliance for copper (as defined in 2.4.5 of the State Implementation Policy) with the Permit effluent limits, submit report, by the deadline for this action, identifying more aggressive actions to ensure compliance. These actions shall include, but not be limited to, modeling receiving water quality and reviewing options for pretreatment and upgrades to the treatment plant. The report shall identify an implementation schedule for investigating these options, selecting a preferred option, and implementing the chosen option. At a minimum, the report shall plan for the following activities: (1) Dynamic modeling of the discharge and its impacts on receiving water quality (2) Bench scale testing or pilot scale testing or both (3) Development of preliminary design specifications (4) Development of final design specifications (5) Procurement of funding (6) Acquisition of necessary permits and approvals (7) Constructions	June 1, 2011

Bay Area Clean Water Agencies

A Joint Powers Public Agency

P.O. Box 24055, MS 702
Oakland, California 94623

September 5, 2008

VIA EMAIL AND FACSIMILE: (510) 622-2460

Ms. Tong Yin, Water Resources Control Engineer
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Subject: Comments on Tentative Order Reissuing the Sonoma Valley County Sanitation District NPDES Permit (CA0037800)

Dear Ms. Yin:

The Bay Area Clean Water Agencies (BACWA) appreciate the opportunity to comment on the Tentative Order (TO) for the Sonoma Valley County Sanitation District (District), as well as make comments on policy issues related to the NPDES permit. BACWA members own and operate publicly-owned treatment works (POTWs) that discharge to San Francisco Bay and its tributaries. Collectively, BACWA members serve over 6.5 million people in the nine-county Bay Area, treating domestic, commercial and a significant amount of industrial wastewater. BACWA was formed to develop a region-wide understanding of the watershed protection and enhancement needs through reliance on sound technical, scientific, environmental and economic information and to ensure that this understanding leads to long-term stewardship of the San Francisco Bay Estuary. BACWA member agencies are public agencies, governed by elected officials and managed by professionals who are dedicated to protecting our water environment and the public health.

BACWA hopes that the following comments will result in changes made to the tentative order prior to issuance of the final NPDES permit for the District. Further, in order to avoid repetition, but to preserve these arguments, BACWA supports and incorporates by reference the comments made by the District in its comment letters. The comments are presented roughly in the order the topics occur in within the draft permit.

1. **BACWA requests that Finding Q pertaining to the Endangered Species Act (ESA) be deleted.**

The Endangered Species Act is not applicable to this NPDES permit. The treatment plant was approved and constructed under the California Environmental Quality Act (CEQA), which took the ESA into account, and CEQA (under which the ESA would be considered for this permit) does not apply to this permit.

2. BACWA objects to including numeric final limits for dioxin-TEQ.

BACWA requests that the dioxin-TEQ numeric final effluent limits be removed because there is no approved numeric water quality objective for dioxin-TEQ, it is unclear that the District will be able to meet this limit, and there are no analytical methods that can accurately detect dioxins at these levels. BACWA believes that the Regional Water Board has the discretion to maintain the narrative standard that exists in the San Francisco Bay Basin Plan. There is no value in developing a numerical standard at this time since dioxin at these levels cannot be measures. The dioxin sources are air emissions and combustion, neither of which the District or any BACWA member agency can control or prevent.

3. BACWA believes that dilution for shallow water dischargers as calculated under the approved Cyanide Site Specific Objectives and associated Basin Plan Amendment should be applied to newly derived effluent ammonia limits.

The Regional Water Board has previously recognized the uniqueness and temporary nature of potential ammonia toxicity. The Basin Plan (p. 4-9) acknowledges that ammonia "*rapidly decays in the receiving water*."

The ammonia limits in the tentative order were derived without application of a dilution allowance. However, the precedent for dilution credit for shallow water dischargers was established for non-conservative pollutants when the EPA gave final approval to the cyanide site-specific objective Basin Plan amendment on July 22, 2008 (See: Cyanide SSO Basin Plan Amendment Adoption Resolution R2-20060-0086, Table 4-7 Dilution Credits for Calculation of Cyanide Water Quality Based Effluent Limits for Shallow Water Dischargers). The State and EPA approved a dilution credit of 3.25:1 for the Plant's cyanide discharge based on site-specific studies (2004 Cyanide Attenuation Study) conducted by the city and corroborated by the city's 1989 dilution study results.

Ammonia is quite similar to cyanide in that bacteria as well as other factors mediate its breakdown to less harmful products. Furthermore, much more so than for cyanide, the breakdown of ammonia in the receiving water can be readily explained both theoretically and empirically. The nitrification of ammonia to nitrate is a much better understood process than the degradation of cyanide in the receiving water and is more predictable (e.g., the nitrification process is bacterially mediated and is strongly temperature dependent). In addition, the District is not able to meet the final cyanide limits without dilution.

For these reasons, BACWA requests that the ammonia limit calculation include dilution at levels no less than that approved in the cyanide site specific objective basin plan amendment (3.25:1).

4. The compliance schedule action plan for dioxin-TEQ and heptachlor (Provision C.6.) is neither realistic nor commensurate with actual water quality impacts, and overly burdensome.

It is highly unlikely that compliance schedule action plan activities will result in compliance with proposed final limits. Although an optional offset provision (as described in Task j) may provide an alternative to compliance with a final effluent limit for dioxin-TEQ and/or heptachlor, such a

program does not currently exist. Even though the Regional Water Board directed Regional Water Board staff to develop such a program, there do not appear to be any plans in place. Until such a program is developed with a feasible implementation strategy, the District believes this is not a realistic alternative and it is misleading to expect that such a program would lead to compliance.

5. The added language in the chlorine residual compliance footnote (Monitoring and Reporting Program (MRP) Table E-4., Footnote 8, Page E-7) substantially revises the Regional Water Board's current chlorine compliance strategy and discourages the use of continuous monitoring devices.

On October 19, 2004 the Regional Water Board informed the Bay Area Clean Water Agencies (BACWA) of its approval of a chlorine compliance strategy for dischargers in Region 2 using continuous monitoring devices. This compliance strategy was prepared in cooperation with BACWA in response to the Regional Water Board's desire to *"encourage dischargers to monitor for chlorine residual continuously without increasing risk for violations …"* Under the approved compliance strategy, the Regional Water Board allowed for compliance to be determined with the continuous monitoring provision of the permit by recording discrete readings from the continuous monitoring equipment every hour on the hour, provided that the discharger would implement additional reporting measures. BACWA supports and recommends continuation of this chlorine compliance strategy and offer the following modifications to the draft permit:

- Footnote 8 to Table E-4 of the Monitoring and Reporting Program (MRP). Delete the following language to conform to the approved chlorine compliance strategy: "*However, any confirmed chlorine residual incident occurring at any time during the day is an effluent limit violation and must be reported in accordance with SMP Part A and Standard Provisions (Attachments D and G).*"

- Modify language in the Fact Sheet, Attachment F.IV.C.3.e., to remove the following sentence: *However, any other real chlorine residual incidents will be treated as violations, even if they do not occur on the hour.*

6. BACWA requests a clarification regarding sanitary sewer overflow requirements.

BACWA requests the following new language to ***replace*** that in section IV.A.5 of the Fact Sheet. Language in this section was not consistent with the Basin Plan, nor was it a correct reference in Prohibition III.E of the permit, and should be revised as follows (this replacement language is also consistent with other recently adopted permits):

5. **Discharge Prohibition III.E (No sanitary sewer overflows (SSO) to waters of the United States)**: *The purpose of this provision is to explain this Order's requirements as they relate to the Discharger's conveyance system, and to promote consistency with the State Water Board-adopted Statewide General Waste Discharge Requirements for Sanitary Sewer Overflow (SSO WDRs) and a related Monitoring and Reporting Program (Order No. 2006-0003-DWQ).*

7. BACWA has concerns that the Prescribed Actions in the Cease and Desist Order (CDO) are overly stringent.

Table 2 should be consistent with the copper action plan in the permit. This will better facilitate group implementation of tasks.

In Table 2, Action b., of the CDO, it is impossible to know all the potential contributors of copper to the treatment plant, so BACWA requests that the word "all" be removed in this context.

The Time Schedule and Prescribed Actions in the CDO include requirements for capital improvements. BACWA strongly objects to notion that a CDO with a schedule for building new facilities is good public policy without greater discussion than is allowed under the terms of the CDO.

For this reason, BACWA requests that the compliance schedule be revised to remove all activities related to the installation of capital improvements.

BACWA requests revised language as follows:

Table 2: Time Schedules and Prescribed Actions for Copper

Action	Deadline
a. Comply with the following interim effluent limits at Monitoring Station EFF-001 (for Schell Slough discharge) and EFF-001B (for wetland discharge): Average monthly interim limit = 18 µg/L, Daily maximum interim limit = 24 µg/L	Upon the effective date of this Order
b. Review Potential Copper Sources The Discharger shall submit an inventory of potential copper sources to the treatment plant.	Within 90 days of the date on which the copper SSOs become effective (Discharger may include with the SMR due on or immediately after the end of the 90 day period)
c. Implement Copper Control Program The Discharger shall submit a plan for and begin implementation of a program to reduce copper discharges identified in Task b consisting, at a minimum, of the following elements: (1) Provide education and outreach to the public (e.g., focus on proper pool and spa maintenance and plumbers' roles in reducing corrosion). (2) If corrosion is determined to be a significant copper source, work cooperatively with local water purveyors to reduce and control water corrosivity, as appropriate, and ensure that local plumbing contractors implement best management practices to reduce corrosion in pipes. (3) Educate plumbers, designers, and maintenance contractors for pools and spas to encourage best management practices that minimize copper discharge. ~~b. Submit a plan for identifying all copper sources to the discharge.~~	With the annual P2 report due on or immediately following the end of a 90 day period after completing Task b ~~February 1, 2009~~

Action	Deadline
~~Examples of copper sources include pool and spa, plumbing corrosivity. The plan shall, at a minimum, include sampling influent waste streams to identify and quantify pollutant sources.~~	
d. Implement Additional Measures If the three-year rolling mean copper concentration of San Pablo Bay exceeds 3.0 µg/L, evaluate the effluent copper concentration trend, and if it is increasing, develop and implement additional measures to control copper discharges. ~~c. Implement the plan developed in action "c" within 30 days following the deadline for action "c," and submit by the deadline for this action a report that contains an inventory of the pollutant sources.~~	Within 90 days ofexceedance ~~June 1, 2009~~
e. Report Status of Copper Control Program Submit a report to the Regional Water Board documenting implementation of the copper control program. ~~d. Submit a report documenting development and initial implementation of a program to reduce and prevent the pollutants of concern in the discharge. The program shall consist, at a minimum, of the following elements:~~ ~~(1) Maintain a list of sources of pollutants of concern.~~ ~~(2) Investigate each source to assess the need to include it in the program.~~ ~~(3) Identify and implement targeted actions to reduce or eliminate discharges from each source in the program.~~ ~~(4) Develop and distribute, as appropriate, educational materials regarding the need to prevent sources to the sewer system.~~	Annually, with P2 reports due February 28 ~~August 1, 2010~~
~~e. Continue to implement the program described in action "d" and submit annual status reports that evaluate its effectiveness and summarize planned changes. Report whether the program has successfully brought the discharge into compliance with the effluent limits in the Permit. If not, identify and implement additional measures to further reduce discharges.~~	~~Annually each February 28 in Best Management Practices and Pollutant Minimization Reports required by Permit Provision VII.C.3~~
f. If by February 28, 2011, discharge data continue to show the discharge is out of compliance (as defined in 2.4.5. of the State Implementation Policy) with the Permit effluent limits, submit a report, by the deadline for this action, identifying more aggressive actions to ensure compliance. ~~These actions shall include, but not be limited to, reviewing options for pretreatment and upgrades to the treatment plant. The report shall identify an implementation schedule for investigating these options, selecting a preferred option, and implementing the chosen option. At a minimum, the report shall plan for the following activities:~~ ~~(1) Bench scale testing or pilot scale testing or both~~ ~~(2) Development of preliminary design specifications~~ ~~(3) Development of final design specifications~~ ~~(4) Procurement of funding~~ ~~(5) Acquisition of necessary permits and approvals~~ ~~(6) Construction~~	June 1, 2011

Action	Deadline
g. Implement the plan required in action "f" within 45 days following the deadline for action "f," and submit annual status reports.	Annually, each February 1 in Annual Self-Monitoring Reports required by Permit Attachment E, Monitoring and Reporting Program
h. Submit documentation confirming complete plan implementation and achieve compliance with copper effluent limits specified in IV.B. of the Permit.	December 1, 2013

BACWA appreciates the Regional Water Board's close attention to the comments made herein. I would be more than happy to meet with you to discuss our comments and concerns in more detail as you wish.

Respectfully submitted,

Michele Pla
BACWA Executive Director

cc: BACWA Executive Board
Robert Cole, BACWA Permits Committee Chair
Bruce Wolfe, Regional Water Board
Lila Tang, Regional Water Board
Bill Johnson, Regional Water Board

APPENDIX D

RESPONSE TO COMMENTS

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

Response to Written Comments
On August 2008 Draft NPDES Permit and Cease and Desist Order for
Sonoma Valley County Sanitation District,
Sonoma, Sonoma County

The Regional Water Board received written comments on the draft Permit and Cease and Desist Order distributed for public comment from the following parties:

1. Sonoma Valley County Sanitation District (District), dated September 4, 2008
2. Bay Area Clean Water Agencies (BACWA), dated September 5, 2008

This Response to Comments summarizes each comment in *italics* (quoted where possible, or paraphrased for brevity) followed by Regional Water Board staff's response. For the full context and content of the comment, please refer to the comment letters associated with this item.

DISTRICT COMMENTS

Comments on Tentative Order (TO) – Main Body (Limitations and Discharge Requirements)

District Comment 1. *The District requests to make changes to Table 4 to correct the facility contact and to accurately reflect the wet weather treatment capacity to 16 million gallons per day (MGD) and discharge capacity (11 MGD) of the wastewater treatment plant.*

Response to District Comment 1. We agree. We have revised the TO to reflect these changes.

District Comment 2. *The District argued that the beneficial uses listed in Table 5 for its wetlands areas have not been studied or confirmed. Some of these wetlands areas are isolated during most of the year by tide gates that completely prevent tidal exchange. Also fish migration in MU1 and MU3 is prohibited by the existing V-notch weirs that are in place year-round. The District requests to make a change to the table to indicate these beneficial uses are "potential beneficial uses" and add the following sentence at the end of the finding: "wetlands surveys must be undertaken before beneficial uses are formally established for these wetland areas."*

Response to District Comment 2. We did not make most of the requested changes. The Table 5 heading already indicates these beneficial uses are either exiting or potential beneficial uses, and further specifying potential uses (versus existing uses) in the permit would not change any substantive requirements of this Order. As the District indicates, only a few beneficial uses are questionable. These wetlands are very small wetlands; the Regional Water Board may not have the resources to survey every small wetland areas when considering beneficial use designations in the future. The District may provide beneficial use survey results to the Regional Water Board when it considers beneficial use designations for these wetland areas. In response, we revised the TO Fact Sheet to include this option. Also see our **Response to District Comment 17** below.

District Comment 3. *The Districts argues that total coliform effluent limits for discharges to Shell Slough are overly stringent. The District requests the option of completing a beneficial use study*

during the permit term and that the permit include alternate total coliform effluent limits based on Basin Plan Table 4-2 footnote e, shallow water discharge exception.

Response to District Comment 3. We revised the TO to include the existing permit effluent limits, which are a 5-sample median of 23 MPN/100ml and a single sample maximum of 240 MPN/100ml. However, in the existing permit, compliance with the median limit is determined over seven samples, which we believe was a typographical error started in Order No. 98-111. This error was carried over to the existing permit, Order No. R2-2002-0046. The adopted Sonoma Creek pathogen TMDL includes waste load allocations for the District for total coliform, a 5-sample median of 240 MPN/100mL and a single sample maximum of 10,000 MPN/100mL, which are less stringent then the existing permit limits. We believe the current permit limits will be protective of water quality in the receiving water. Therefore, we retain the existing total coliform effluent limits (with a minor typographical error correction) in the revised TO.

District Comment 4. *The District requests to remove final dioxin-TEQ effluent limits from the permit because the District believes the total impacts of dioxin in the District's discharge were not considered during Reasonable Potential Analysis. The District requests to use BEFs (bioaccumulation equivalency factors) to assess the effects of dioxin congeners on fish. The District indicated, if using the BEFs as included in 40 CFR Part 132, Appendix F, there would be no RP for its discharge for dioxin.*

Response to District Comment 4. We disagree. We retained the dioxin limits as written in the TO. We conclude that reasonable potential exists for dioxins to violate water quality standards because the District's receiving water has a maximum toxicity equivalents concentration (TEC) above the most stringent water quality criteria; the downstream San Francisco Bay is listed as impaired by dioxins and furans; dioxin congeners have been detected in the District's effluent and the discharge enters Sonoma Creek just upstream of San Francisco Bay contributing to this impairment.

We chose not to include BEFs in this permit at this time. We agree that dioxin and furan congeners do not all bioaccumulate at the same rate, and our existing TEQ calculations do not account for these differences. We agree that accounting for BEFs in NPDES permits may be appropriate at some time. However, we have not yet reviewed all the literature related to BEF derivation and use. We are currently working cooperatively with BACWA to evaluate the potential use of BEFs in the near future. When we better understand their basis and the implications of routinely incorporating them into NPDES permits, we may propose them with future permits.

In the meantime, because the District qualifies for a compliance schedule of up to 10 years to comply with the dioxin-TEQ effluent limits in this permit, our recommendation not to incorporate BEFs at this time does not place the District in any immediate regulatory peril. In fact, by granting a compliance schedule, the Permit does not require the District to meet final effluent limits for up to 10 years. With the BEFs, dioxin TEQ limits would become effective with the permit, and the District could face compliance challenges due to the highly variable nature of dioxin detection and quantification.

Since the TO includes a compliance schedule for dioxin-TEQ, it must comply with the State Water Board's recently adopted compliance policy (effective August 27, 2008), which requires NPDES permits to include interim effluent limits for all pollutants with compliance schedules. Therefore,

we have added to the revised TO an interim effluent limit for dioxin-TEQ based on the minimum level (ML) of each congener and its respective TEF.

District Comment 5. *The District believes that the final effluent limits are overly protective of receiving water quality. The District requests that the Water Board use the 2.25 attenuation factor approved for cyanide site-specific objectives adopted in July 2008 to re-calculate the District's ammonia effluent limits. The District believes ammonia and cyanide are similar in that they both degrade and dissipate in the receiving water. The District also cites that the Water Board granted full actual dilution for the City of Burlingame wastewater discharge for ammonia effluent limit calculation. The District further argues that the 2.25 dilution credit was verified through measurements in Schell Slough. Therefore, the District wants to properly account for ammonia attenuation and obtain an effluent limit representative of its discharge impacts.*

Response to District Comment 5. We disagree. Ammonia, although it degrades and dissipates in the receiving water, has different degradation pathways and rates than cyanide does. The District's wastewater treatment plant discharges into a dead end slough, which is primarily dominated by effluent at low tides; therefore, there may not be any initial dilution for the discharge.

The District cites some permit language from a deep water discharge permit regarding using actual dilution to develop ammonia effluent limits. For deep water dischargers, the Regional Water Board has been using a very conservative dilution ratio of 10:1 for all conservative toxic pollutants. In reality, deep water dischargers can usually demonstrate a much larger dilution credit for their discharges (not accounting for attenuation). Therefore, if a discharger has difficulty complying with ammonia effluent limits based on a conservative 10:1 dilution ratio, the Regional Water Board has been using actual demonstrated dilution and site-specific background concentrations to develop ammonia effluent limits. In the District's case, no actual dilution has been demonstrated, much less quantified. Based on the District's historical performance, it appears that the District can comply with the proposed ammonia effluent limits. We recognize that ammonia, a non-persistent pollutant, is likely attenuated in the receiving water; therefore, the TO allows the District to conduct a study to justify a dilution factor at a later time. The Regional Water Board may consider incorporating such a dilution factor for ammonia when reissuing the Permit in the future.

District Comment 6. *The District is concerned about its ability to meet final heptachlor limits in 2010. The District is uncertain about the sources of heptachlor and there are no strategies for preventing heptachlor from entering the wastewater treatment plant. The District, therefore, requests that heptachlor be added to the Cease and Desist Order starting on May 18, 2010. The District further requests to make the following changes to Effluent Limitations and Discharge specifications IV.C. (add <u>underlined language</u>):*

> *The Discharger shall comply with the following interim limits in Table 8, (1) for the discharge to Schell Slough via Discharge Point 001 with compliance measured at Monitoring Location EFF-001; and (2) for the discharge to sloughs or wetlands via Discharge Points 002 through 006 (from reclamation reservoirs R1, R2, and R4), with compliance measured at Monitoring Location EFF-001B as described in the attached MRP (**Attachment E**). The interim limit for heptachlor shall remain in effect until May 17, 2010. <u>If full compliance is not attainable by that date, the Discharger will be required to follow activities detailed in the concurrently issued Cease and Desist Order.</u>*

Response to District Comment 6. We disagree. Our analysis indicates that it is not necessary to issue a CDO for heptachlor now for it to take effect after May 18, 2010. Heptachlor was banned in 1988 and its phasing-out started in 1978. Although heptachlor can persist in the environment for several decades, based on the District's effluent data, the only detected sample occurred in 2002, and it has not been determined whether this detection was due to an illegal dumping incident or a lab error. However, it is highly unlikely that this pollutant would be detected again in the future. In addition, even if the effluent limits are very low, actual non-compliance will be confirmed only after both the effluent limits and the SIP ML are exceeded. In the unlikely event that heptachlor is detected again in the future, the Regional Water Board may issue a CDO to address possible non-compliance with final effluent limits after the compliance schedule ends on May 17, 2010. This possible situation has been included in the revised TO Fact Sheet.

Comments on Tentative Monitoring and Reporting Program (MRP, Attachment E)

District Comment 7. *The District requests that monitoring for enterococci bacteria be reduced to once per month at EFF-001 instead of five times per month. The District argues that this requirement will place an inordinate burden on the District and no other discharger in Region 2 has been asked to complete these analyses unless required to show compliance with enterococci effluent limits. The District further requests approval to use the IDEXX Enterolert method.*

Response to District Comment 7. We revised the TO to remove the enterococci monitoring requirement. The Regional Water Board intends to consider new bacteriological objectives in the future. If and when that happens, the total coliform effluent limits in the permit may be replaced with new enterococcus effluent limits. It would be to the District's own benefit to collect some enterococcus monitoring data before the next permit reissuance to evaluate its compliance attainability with any future new effluent limits.

District Comment 8. *The District requests that if the TO is revised to remove dioxin-TEQ limits, then Table E-4 sampling frequency of dioxin-TEQ be reduced to once per year.*

Response to District Comment 8. We disagree. We have retained effluent limits for dioxin-TEQ; therefore, the sampling frequency for dioxin-TEQ remains the same: twice per year. See our **Response to District Comment 4.**

District Comment 9. *The District requests that the Water Board return to the chlorine compliance strategy agreed upon with BACWA in October 2004, which allows the dischargers to report hourly chlorine residual readings hourly on the hour from its continuous monitoring device. Only those hourly values would then be held to a compliance evaluation by the Water Board.*

Response to District Comment 9. We partly agree. The October 2004 letter allows dischargers to report discrete readings from continuous monitoring devices every hour on the hour. According to the 2004 letter, this compliance reporting method is only to be granted when the discharger fulfills all of the following conditions:

> "(1) The permittee must continuously monitor dechlorinated final effluent chlorine residual using equipment designed for this function and retain the continuous monitoring records for three years.

(2) The permittee shall acknowledge in writing that Regional Board reserves the right to use all other continuous monitoring data for discretionary enforcement.
(3) The permittee must provide in writing the brand name(s), model number(s), and serial number(s) of the equipment used to continuously monitor dechlorinated final effluent chlorine residual. If the identified equipment is replaced, the permittee shall provide the Regional Board in writing, within 72 hours of the successful startup of the new equipment, the new equipment's brand name, model number, and serial number.
(4) The written notification identified in items 1 through 3 shall be in the form of a letter addressed to the Regional Board's Executive Officer."

Therefore, we revised the TO at Table E-4 footnote (7) to reiterate these requirements for the District to use this compliance strategy.

District Comment 10. *The District suggests that reporting of dioxin-TEQ concentrations using bioaccumulation equivalency factors (BEFs). The District suggests the following change to MRP, footnote 12 to Table E-4 (add <u>underlined language</u>):*

> *[12] Dioxin-TEQ. Chlorinated dibenzodioxins and chlorinated dibenzofurans shall be analyzed using the latest version of USEPA Method 1613; the analysis shall be capable of achieving the MLs listed previously in this Order. Alternative methods of analysis must be approved by the Executive Officer. In addition to reporting results for each of the 17 congeners, the dioxin-TEQ shall be calculated and reported using 1998 USEPA Toxicity Equivalent Factors for dioxin and furan congeners <u>as well as bioaccumulative equivalency factors as noted in 40 CFR Part 132, Appendix F as multipliers.</u>*

Response to District Comment 10. We choose not to incorporate BEFs at this time. If and when we do incorporate BEFs, we plan to provide an opportunity for public review prior to consideration by the Regional Water Board. See our **Response to District Comment 4**.

District Comment 11. *The District requests that monitoring for chlorine residual in the reclamation ponds be limited to times when effluent is delivered to the ponds or effluent is discharged from the ponds. Based on the District's monitoring over the past several years, the chlorine residual in the ponds is almost always zero, unless measured within a day or two of receiving effluent from the treatment plant. The District requests the following changes to be made to Footnote 2 to Table E-5 (add <u>underlined language</u>):*

> *[2] Chlorine residual. The Discharger shall sample weekly for chlorine residual in the discharge source when there is discharge to reservoirs any time that Hudeman Slough, Schell Slough, the Management Units, Ringstrom Bay, or Napa-Sonoma Marsh is receiving discharges from a recycled water storage reservoir. Reservoir sampling shall begin at the commencement and cessation of each reservoir discharge event and once per week throughout said discharge event. <u>Weekly reservoir chlorine residual monitoring may be discontinued when the source reservoir does not receive additional treatment plant effluent flow and two consecutive weekly chlorine residual samples are zero. Weekly</u>*

reservoir chlorine residual monitoring shall resume on the day that plant effluent discharge to the reservoir is resumed.

Response to District Comment 11. We agree. We revised the TO MPR, Table E-5 footnote (2), to allow the District to conduct chlorine residual monitoring as the District suggests.

District Comment 12. *The District requests a change in the procedures specified to correct errors in data reporting. The District suggests the following changes to MRP, Item X.g.*

> *g. If the Discharger wishes to invalidate any measurement, the letter of transmittal ~~will~~ should include identification of the measurement suspected to be invalid and notification of intent to submit, within a specified schedule ~~60 days~~, a formal request to invalidate the measurement. The~~is~~ formal request will~~must~~ include the original measurement in question, the reason for invalidating the measurement, all relevant documentation that supports the 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. ~~The invalidation of a measurement requires the approval of Water Board staff and will be based solely on the documentation submitted at that time.~~*

Response to District Comment 12. We partly agree. We changed the TO to remove the last sentence of this requirement consistent with recently adopted permits. We did not make the other changes because we believe it is important for dischargers to provide a basis for invalidating data in a timely manner.

District Comment 13. *The District requests the option of completing the next Chronic Toxicity Screening Phase in conjunction with another discharger to save costs. The District suggests adding a sentence in Appendix E-1 to indicate this option.*

Response to District Comment 13. We agree. However, we did not change Appendix E-1; instead, we added a sentence under MRP, V.B.1.b.(1) to indicate this option. This approach would be subject to the Executive Officer's approval at that time.

Comments on Tentative Order Fact Sheet (Attachment F)

District Comment 14. *The District requests that the changes indicated in Comment #1 also be applied to Table F-1.*

Response to District Comment 14. We agree. We have revised TO Fact Sheet Table F-1 to reflect these changes.

District Comment 15. *The District requests that the following sentence be included in the Facility Description to fully explain the District's approach for addressing dry weather capacity issues at the wastewater treatment plant.*

> *"The Facility has a permitted ADWF of 3.0 MGD. In 2005, 2006, and 2007, effluent flows measured during three consecutive dry weather months were 2.85 MGD, 2.52 MGD, and*

2.54 MGD, respectively. The previous permit requires the Discharger to perform a dry weather capacity study because its dry weather effluent flows had been near the design capacity. In the study submitted to the Regional Water Board on March 31, 2004, the Discharger reported that the Facility can actually handle up to 4.4 MGD during the dry season ("Technical Memorandum – Dry Weather Flow Capacity Analysis," dated March 29, 2004). The observed dry weather flows were less than 70% of the rated treatment capacity of 4.4 MGD. Therefore, the Discharger does not plan to seek an increase in its permitted capacity at this time because it has completed many upgrades at the treatment plant, including an addition of tertiary filters, which provide filtration to all dry weather flows; therefore, producing effluent with better water quality. It is also expected that all inflows greater than 3.0 MGD (ADWF) will be reclaimed for landscape and agricultural irrigation, not discharged to surface waters."

Response to District Comment 15. We disagree. This sentence is inconsistent with Prohibition III.C: "The average dry weather flow as measured at monitoring station EFF-001 or EFF-001B as described in the attached MRP (**Attachment E**) shall not exceed 3.0 MGD." Therefore, the flow limit is for both the discharges to receiving water and to land. Exceedance of the treatment plant's average dry weather flow design capacity may result in lowering the reliability of achieving compliance with water quality requirements for both discharges to surface waters and to land (reclamation).

District Comment 16. *The District requests to make changes to Finding III.A.3 (page F-4) on the wet weather flow handling description to accurately reflect the District's operational procedures.*

"Current operation during extreme storm flow events is to first maximize ~~the~~ plant treatment ~~capacity~~ to the current effluent transmission capacity of 11 MGD, then utilize the equalization basins (35 million gallons total capacity) to retain preliminary treated wastewater until it can be returned to the headworks for complete treatment."

Response to District Comment 16. We agree. We have revised the TO Fact Sheet to reflect this change.

District Comment 17. *The District requests that the changes indicated in Comment #2 (potential beneficial uses) also be applied to the text in Applicable Plans, Policies, and Regulations III.C.1. and Table F-4.*

Response to District Comment 17. See our **Response to District Comment 4** above**.** We only revised the TO Fact Sheet to indicate that the District has the option to provide beneficial use survey results as evidence when the Regional Water Board considers beneficial use designations for these wetland areas.

District Comment 18. *The District requests that the changes indicated in Comment #9 (chlorine residual compliance) also be applied to the Rational for Effluent Limitations and Discharge Specifications IV.C.3.e.*

Response to District Comment 18. We agree. We have revised the TO Fact Sheet to reflect these changes.

District Comment 19. *The District requests the following language be incorporated into the discussion of whole effluent acute toxicity testing (IV.D.1.b, page F-24) to clarity the District's record on acute toxicity compliance.*

> *b.* ***Compliance History.*** *The Discharger's acute toxicity monitoring data show that there have been ~~three~~ two tests with lower than 70% survival (20%~~, 40%,~~ and 55%) during 2005-2008 for fathead minnow. The Discharger~~ has not~~ identified the cause of the 20% survival test as excessive sulfur dioxide dosing, but the cause of the 55% survival was undermined. ~~t~~The failed tests both occurred after the tertiary filters were put online. In accordance ~~to~~ with the Order, the Discharger will need to conduct a special study to identify causes in the future if violations continue to occur."*

Response to District Comment 19. We agree. We have revised the TO Fact Sheet finding to reflect these changes.

District Comment 20. *The District requests the option of performing a dynamic model to calculate copper effluent limitations for the next permit term. This approach is allowed by SIP Section 1.4. Dynamic models are used to calculate effluent limits that predict the effects of receiving water and effluent flow and of concentration variability. The outputs of dynamic models can be used to base effluent limitations on probability estimates of receiving water concentrations rather than critical conditions (which are used in the steady-state models). The Central Valley Regional Water Board used dynamic model results to derive copper and ammonia effluent limits in one of its adopted permits.*

Response to District Comment 20. We agree. We have revised the TO Fact Sheet (IV.E.4.c.(1)(v)) under Copper to reflect this change. However, any revised limit would be subject to the Regional Water Board's approval. The CDO includes a time schedule that allows the District to submit a work plan and submit the study results.

District Comment 21. *The District requests that the changes indicated in Comment #4 regarding dioxin-TEQ also be applied to the relevant Fact Sheet Sections.*

Response to District Comment 21. We did not revise the Fact Sheet. See our **Response to District Comment 4**.

District Comment 22. *The District requests that the changes requested in Comment #6 (including heptachlor in the Cease and Desist Order) also be applied to the Fact Sheet (IV.E.4.c.(6).v.)*

Response to District Comment 22. We agree. We have revised the TO Fact Sheet to add a finding to reflect these changes.

District Comment 23. *The District requests that the changes requested in Comment #5 (use of the 2.25 attenuation factor for ammonia also be applied to the Rational for Effluent Limitations and Discharge Specifications IV.E.4.c.(7).*

Response to District Comment 23. We disagree. See our **Response to District Comment 5**. However, the District always has the option to conduct a study to justify a site-specific dilution factor for its ammonia effluent limit calculation.

District Comment 24. *The District further requests, if the 2.25 attenuation factor for ammonia is not incorporated, the Fact Sheet be revised to include language that an attenuation factor will be considered new information and any new ammonia effluent limits that incorporate the attenuation factor will be not subject to Anti-Backsliding review.*

Response to District Comment 24. We disagree. If the District can justify a dilution factor, which would result in less stringent ammonia effluent limits in the next permit reissuance, the Regional Water Board will still need to do an anti-backsliding analysis when reissuing the permit. It is premature to draw such conclusions now. Therefore, we cannot revise the TO to include the suggested language.

District Comment 25. *The District requests that the changes indicated in Comment #3 (alternate effluent limits for total coliform) also be applied to Rationale for Effluent Limitations and Discharge Specifications IV.C.3.f.*

Response to District Comment 25. We agree. We have revised the TO Fact Sheet to be consistent with the changes made to the TO.

District's Comments on Tentative Cease and Desist Order (CDO)

District CDO Comment 1. *The District requests that heptachlor be added to the CDO beginning May 18, 2010. Inclusion of heptachlor in the CDO at this time allows time for the Discharger past May 17, 2010, to implement additional control activities.*

Response to District CDO Comment 1. We disagree. See our **Response to District Comment 6**.

District CDO Comment 2. *The District requests the option of performing a dynamic model to calculate copper effluent limitations for the next permit term.*

Response to District CDO Comment 2. We agree. We have revised the tentative CDO to include within the time schedule an opportunity to conduct a dynamic modeling study.

BACWA COMMENTS

BACWA Comment 1. "*BACWA requests that Finding Q pertaining to the Endangered Species Act (ESA) be deleted.* *The Endangered Species Act is not applicable to this NPDES permit. The treatment plant was approved and constructed under the California Environmental Quality Act (CEQA), which took the ESA into account, and CEQA (under which the ESA would be considered for this permit) does not apply to this permit."*

Response to BACWA Comment 1. We disagree. Finding Q is a simple statement of fact that appears in almost every NPDES permit. It clarifies that nothing in the TO should be construed as authorizing any taking of a threatened or endangered species under the California Endangered

Species Act or the Federal Endangered Species Act. Finding Q is a reminder that the TO, with its prohibitions and limitations, is intended to protect beneficial uses, including the preservation of rare and endangered species. Nevertheless, as stated in the finding, the Discharger is responsible for meeting all Endangered Species Act requirements.

We believe the TO is consistent with the "Memorandum of Agreement (MOA) between the Environmental Protection Agency, Fish and Wildlife Service and National Marine Fisheries Service Regarding Enhanced Coordination Under the Clean Water Act and Endangered Species Act," Notice, February 22, 2001. (See http://www.epa.gov/fedrgstr/EPA-WATER/2001/February/Day-22/w2170.htm.) This MOA describes coordination regarding the protection of endangered and threatened species under the Endangered Species Act and the Clean Water Act's NPDES programs. It provides guidance to regional and field offices regarding consultations on U.S. EPA's approval of new or revised water quality standards, and addresses the procedures that U.S. EPA and the Services will follow in overseeing the operation of State NPDES permits to protect listed species and habitats.

BACWA Comment 2. *"**BACWA objects to including numeric final limits for dioxin-TEQ.** BACWA requests that the dioxin-TEQ numeric final effluent limits be removed because there is no approved numeric water quality objective for dioxin-TEQ, it is unclear that the District will be able to meet this limit, and there are no analytical methods that can accurately detect dioxins at these levels. BACWA believes that the Regional Water Board has the discretion to maintain the narrative standard that exists in the San Francisco Bay Basin Plan. There is no value in developing a numerical standard at this time since dioxin at these levels cannot be measures. The dioxin sources are air emissions and combustion, neither of which the District or any BACWA member agency can control or prevent."*

Response to BACWA Comment 2. We disagree. The numeric effluent limits for dioxin-TEQ are reasonable and appropriate. We derived them in accordance with 40 CFR 122.44(d)(1)(vi). CFR 122.44.(d)(1)(vi) states that, regarding establishment of effluent limits for pollutants with reasonable potential to cause or contribute to an excursion above a narrative criterion, a calculated numeric water quality criterion may be used. It further states, "Such a criterion may be derived using **a proposed State criterion** [emphasis added], or an explicit State policy or regulation interpreting its narrative water quality criterion …."; they are based on the CTR objective for 2,3,7,8-TCDD and other relevant information. The TO includes dioxin-TEQ effluent limits because State and federal laws and regulations require them. By adopting the dioxin-TEQ limits, the Regional Water Board is complying with regulations implementing the Clean Water Act at 40 CFR 122.44(d), which require that permits include effluent limits for all pollutants that may be discharged at levels with a reasonable potential to cause or contribute to exceedances of water quality standards, including narrative objectives, such as the Basin Plan's bioaccumulation objective. The Basin Plan states, "Water quality-based effluent limitations will consist of narrative requirements and, where appropriate, numerical limits for the protection of the most sensitive beneficial uses of the receiving water."

Dioxin and similar compounds have bioaccumulated in San Francisco Bay fish in violation of the Basin Plan's narrative bioaccumulation water quality objective. Therefore, a numeric effluent limit is appropriate to protect San Francisco Bay's beneficial uses, which the bioaccumulation objective is intended to preserve. We used Toxic Equivalency Factors (TEFs) published by U.S. EPA and the World Health Organization, together with the CTR water quality objective for 2,3,7,8-TCDD (the

most toxic of the dioxins) to translate the Basin Plan's narrative bioaccumulation objective into numeric water quality-based effluent limits.

We do not intend to enforce compliance with the dioxin limits in situations where we cannot determine whether the limits are exceeded. However, neither 40 CFR 122.44(d) nor the Basin Plan allows consideration of whether analytical methods can actually measure dioxin-TEQ at concentrations as low as the limits. The Basin Plan states, "…when pollutant concentrations in waters are relatively low, the limits of quantification will be taken into account in determining compliance with, rather than the calculation of, effluent limits." Following this policy and the State Implementation Policy's Minimum Level (ML) concept, we developed effluent limits consistent with the water quality objective. We will use analysis-based Minimum Levels for compliance determination and enforcement.

We recognize that the ultimate sources of most dioxins in San Francisco Bay are mostly combustion-related air emissions, and that these sources are outside of the District's direct control. In the context of the Basin Plan's narrative bioaccumulation objective, however, we disagree that dioxins cannot be controlled. The Basin Plan states, "Controllable water quality factors are those actions, conditions, or circumstances resulting from human activities that may influence the quality of the waters of the State and that may be reasonably controlled." U.S. EPA concluded that dioxins are controllable when it placed San Francisco Bay on the 303(d) list of impaired waters due to dioxin concentrations in fish and other aquatic organisms. Air emissions, which are created through combustion, are a source of dioxins, but wastewater treatment plants are also sources of dioxins discharged to San Francisco Bay. Dioxins in wastewater are primarily a result of human activity and their discharge to waters can be controlled by removing solids from wastewater (dioxins are hydrophobic and bind to particles). Additional dioxin removal could result from plant upgrades. This could be burdensome and may not be cost effective at this time; however, such actions could be necessary to control dioxin discharges in the future.

BACWA Comment 3. "*BACWA believes that dilution for shallow water dischargers as calculated under the approved Cyanide Site Specific Objectives and associated Basin Plan Amendment should be applied to newly derived effluent ammonia limits.*"

Response to BACWA Comment 3. We disagree. The District provided essentially the same comment. See our **Response to District Comment 5**.

BACWA Comment 4. "*BACWA argues that compliance schedule action plans for dioxin-TEQ and heptachlor (Provision C.6.) are neither realistic nor commensurate with actual water quality impacts, and overly burdensome*.

It is highly unlikely that compliance schedule action plan activities will result in compliance with proposed final limits. Although an optional offset provision (as described in Task j) may provide an alternative to compliance with a final effluent limit for dioxin-TEQ and/or heptachlor, such a program does not currently exist. Even though the Regional Water Board directed Regional Water Board staff to develop such a program, there do not appear to be any plans in place. Until such a program is developed with a feasible implementation strategy, the District believes this is not a realistic alternative and it is misleading to expect that such a program would lead to compliance."

Response to BACWA Comment 4. We disagree. These requirements are included in the permit in accordance with the SIP and the new State Water Board compliance policy. Both policies require dischargers to provide justifications for a compliance schedule, such as past diligent efforts in quantifying the pollutant in the influent and effluent; existing and accomplished source control measures; pollutant minimization program (PMP) activities; a proposed schedule for future additional source control actions, PMP activities, etc. Therefore, some typical activities specified in this provision (e.g., evaluating the reliability of analytical methods and identifying pollutant sources) should be in place already. However, we believe additional, more aggressive source control, and PMP actions would be needed and can be implemented to further reduce the pollutants entering the wastewater treatment plant and discharging to receiving waters, which will be helpful in bringing the District into compliance with final effluent limits when the compliance schedules end. However, we recognize the trace characteristics of these pollutants and the limitation of their analytical methods; therefore, most additional actions are only triggered after effluent concentrations are deemed out of compliance. When this happens, the effluent concentrations would be at a level that the discharge's water quality impacts cannot be ignored.

We acknowledge that a formal mass offset program does not currently exist. The TO refers to such a program simply as one possible means to overcome any technical infeasibility in meeting the dioxin-TEQ limits.

BACWA Comment 5. *BACWA requests Footnote (8) to Table E-4 of the MRP and Fact Sheet Section IV.C.3.e, regarding chlorine residual compliance, be revised to be consistent with the Regional Water Board letter dated October 19, 2004.*

Response to BACWA Comment 5. The District provided essentially the same comment. Please see our **Response to District Comment 9.**

BACWA Comment 6. ***"BACWA requests a clarification regarding sanitary sewer overflow requirements.*** *BACWA requests the following new language to replace that in section IV.A.5 of the Fact Sheet. Language in this section was not consistent with the Basin Plan, nor was it a correct reference in Prohibition III.E of the permit, and should be revised as follows (this replacement language is also consistent with other recently adopted permits):*

> *5.* ***Discharge Prohibition III.E (No sanitary sewer overflows (SSO) to waters of the United States)****: The purpose of this provision is to explain this Order's requirements as they relate to the Discharger's conveyance system, and to promote consistency with the State Water Board-adopted Statewide General Waste Discharge Requirements for Sanitary Sewer Overflow (SSO WDRs) and a related Monitoring and Reporting Program (Order No. 2006-0003-DWQ)."*

Response to BACWA Comment 6. We agree. We have revised the TO Fact Sheet to reflect the requested changes. However, this prohibition is consistent with Basin Plan Table 4-1, Basin Plan Discharge Prohibition No. 15, which prohibits the discharge of raw sewage or any waste failing to meet waste discharge requirements to any waters of the San Francisco Bay Basin. Sanitary sewer overflows are raw sewage, which is subject to this Basin Plan prohibition.

BACWA Comment 7. ***"BACWA has concerns that the Prescribed Actions in the Cease and Desist Order (CDO) are overly stringent.***

(1) Table 2 should be consistent with the Copper Action Plan in the permit. This will better facilitate group implementation of tasks.

(2) In Table 2, Action b., of the CDO, it is impossible to know all the potential contributors of copper to the treatment plant, so BACWA requests that the word "all" be removed in this context.

(3) The Time Schedule and Prescribed Actions in the CDO include requirements for capital improvements. BACWA strongly objects to the notion that a CDO with a schedule for building new facilities is good public policy without greater discussion than is allowed under the terms of the CDO. For this reason, BACWA requests that the compliance schedule be revised to remove all activities related to the installation of capital improvements."

Response to BACWA Comment 7.

(1) We disagree. The tentative CDO is fundamentally different than the Copper Action Plan. The Copper Action Plan is intended to ensure no degradation of existing receiving water quality, while the CDO is intended to ensure compliance with effluent limits. Therefore, it is necessary to include more stringent, additional actions in the CDO for this purpose.

(2) We agree. We have revised the tentative CDO to reflect this change.

(3) We disagree. Unfortunately, if after implementing aggressive source control measures, the District still cannot comply with the final effluent limits, the next step would be to look at plant upgrades. However, as requested by the District, we have added a task and schedule for the District to first examine whether effluent limits based on dynamic modeling would be achievable. If this option fails, the District will need to take other actions specified in the tentative CDO to comply with permit effluent limits.