CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

CENTRAL VALLEY REGION

11020 Sun Center Drive #200, Rancho Cordova, California 95670-6114
Phone (916) 464-3291 • FAX (916) 464-4645
http://www.waterboards.ca.gov/centralvalley

ORDER NO. R5-2008-0079-01
NPDES NO. CA0084573

WASTE DISCHARGE REQUIREMENTS FOR THE CITY OF ROSEVILLE PLEASANT GROVE WASTEWATER TREATMENT PLANT PLACER COUNTY

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

Table 1. Discharger Information

Discharger	City of Roseville
Name of Facility	Pleasant Grove Wastewater Treatment Plant
Facility Address	5051 Phillips Road
	Roseville, CA 95747
	Placer County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a **major** discharge.	

The discharge by the City of Roseville from the discharge point identified below is subject to waste discharge requirements as set forth in this Order:

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Treated Municipal Wastewater	38º 79’ 21” N	121º 37’ 01” W	Pleasant Grove Creek

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	**12 June 2008**
This Order shall become effective on:	**1 August 2008**
This Order shall expire on:	**1 June 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:	**<u>180 days prior to the Order expiration date</u>**

IT IS HEREBY ORDERED, that Order No. 5-00-075 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code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 Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

I, PAMELA C. CREEDON, 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, Central Valley Region, on 12 June 2008.

ORIGINAL SIGNED BY KENNETH D. LANDAU FOR

PAMELA C. CREEDON, Executive Officer

Table of Contents

I. Facility Information ... 3
II. Findings ... 3
III. Discharge Prohibitions ... 10
A. Effluent Limitations – Discharge Point No. 001 ... 11
1. Final Effluent Limitations – Effective Until Completion of Upgrades to the Facility .. 11
2. Final Effluent Limitations – Effective Upon Completion of Upgrades to the Facility. 12
3. Interim Effluent Limitations ... 14
B. Land Discharge Specifications ... 14
C. Reclamation Specifications ... 14
V. Receiving Water Limitations ... 14
A. Surface Water Limitations ... 14
B. Groundwater Limitations ... 16
VI. Provisions ... 17
A. Standard Provisions ... 17
B. Monitoring and Reporting Program (MRP) Requirements ... 21
C. Special Provisions ... 21
1. Reopener Provisions ... 21
2. Special Studies, Technical Reports and Additional Monitoring Requirements ... 23
3. Best Management Practices and Pollution Prevention ... 27
4. Construction, Operation and Maintenance Specifications ... 28
5. Special Provisions for Municipal Facilities (POTWs Only) ... 30
6. Other Special Provisions ... 33
7. Compliance Schedules ... 33
VII. Compliance Determination ... 33

List of Tables

Table 1. Discharger Information ... Cover
Table 2. Discharge Location ... Cover
Table 3. Administrative Information ... Cover
Table 4. Facility Information ... 3
Table 5. Basin Plan Beneficial Uses ... 6
Table 6. Effluent Limitations (until completion of upgrades to the Facility) ... 11
Table 7. Effluent Limitations (upon completion of upgrades to the Facility) ... 13

List of Attachments

Attachment A – Definitions ... A-1
Attachment B – Map ... B-1
Attachment C – Flow Schematic ... C-1
Attachment D – Standard Provisions ... D-1
Attachment E – Monitoring and Reporting Program (MRP) ... E-1
Attachment F – Fact Sheet ... F-1
Attachment G – Summary of Reasonable Potential Analysis ... G-1
Attachment H – Priority Pollutant Study ... H-1
Attachment I – Dioxin and Furan Sampling ... I-1

I. FACILITY INFORMATION

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

Table 4. Facility Information

Discharger	City of Roseville
Name of Facility	Pleasant Grove Wastewater Treatment Plant
Facility Address	5051 Phillips Road
	Roseville, CA 95747
	Placer County
Facility Contact, Title, and Phone	Alfred Lawrence, Chief Operator, (916) 746-1902
Mailing Address	Same as Facility Address
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	12 million gallons per day (mgd) average dry weather flow (ADWF); 15 mgd (ADWF) upon completion of plant expansion and upgrades

II. FINDINGS

The California Regional Water Quality Control Board, Central Valley Region (hereinafter Regional Water Board), finds:

A. Background. The City of Roseville (hereinafter Discharger) is currently discharging pursuant to Order No. 5-00-075 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0084573. The Discharger submitted a Report of Waste Discharge, dated 30 September 2004, for a NPDES permit renewal to discharge up to 12 mgd of treated wastewater from the Pleasant Grove Wastewater Treatment Plant (hereinafter Facility). The Discharger submitted an addendum to the Report of Waste Discharge dated 10 December 2007 to provide data more representative of the effluent from the Facility, as full operation did not occur until February 2005. According to the addendum to the Report of Waste Discharge, the Discharger has also requested an increase in capacity to 15 mgd upon completion of upgrades to and expansion of the Facility. The application was deemed complete on 18 January 2008.

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. The Discharger owns and operates the Facility, a publicly owned treatment works. The Discharger also owns and operates portions of the wastewater collection system. Placer County and the South Placer Municipal Utility District own and operate the remaining portions of the wastewater collection system. The treatment system includes mechanically cleaned bar racks, aerated grit basins, and secondary treatment using activated sludge oxidation ditches with nitrification-denitrification, and secondary clarification. Tertiary treatment is provided by chemical coagulation with organic polymers, using rapid mix flocculation, followed by continuous backwash

filtration, disinfection with hypochlorite, dechlorination using sodium bisulfate, and final polishing over a cascade to increase dissolved oxygen.

As a condition of the approval under CEQA for the construction of the Facility, effluent storage was required as a mitigation measure to reduce the potential for downstream flooding of Pleasant Grove Creek due to discharges from the Facility. The Facility includes three storage basins (approximately 31.8 acres with a combined capacity of 65.1 million gallons) that provide effluent storage capacity and 100-year flood protection by storing partially treated effluent for short periods or by storing only tertiary treated effluent. These storage basins are also used in the event of plant upsets to prevent discharge of effluent that does not meet discharge requirements. An additional emergency storage basin (approximately 10 acres with a capacity of 20.6 million gallons) is used to store influent that could compromise the plant process, as well as secondary effluent, or tertiary filter effluent from plant upsets.

Biosolids treatment consists of an aerated waste activated sludge holding tank and centrifuges for dewatering. Biosolids are disposed offsite at the Western Regional Sanitary Landfill.

The Discharger is planning an expansion and upgrade to the Facility to accommodate anticipated development in the service area. In particular, the Discharger is increasing the treatment capacity from 12.0 mgd to 15.0 mgd. The upgrades include the addition of primary clarifiers, possible expansion of secondary treatment processes including the addition of a new oxidation ditch and secondary clarifier, replacing the hypochlorite disinfection system with an ultraviolet light system, additions of fine screens upstream of the existing tertiary filters, expansion of the solids handling facilities; and addition of an anaerobic digestion process. The proposed schedule for completion of the upgrade is at the end of 2011 for the replacement of the disinfection system, and as needed based on growth and flow projections for the remainder of the upgrades.

Wastewater is discharged from the Facility at Discharge Point No. 001 (see table on cover page) to Pleasant Grove Creek, a water of the United States (and a tributary to Pleasant Grove Creek Canal, Natomas Cross Canal, and further to the Sacramento River). Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

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 (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 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 Order

requirements, is hereby incorporated into this Order and constitutes part of the Findings for this Order. Attachments A through E and G through I 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, Public Resources Code sections 21100-21177.

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

G. Water Quality-based Effluent Limitations. Section 301(b) of the CWA 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. This Order contains requirements, expressed as a technology equivalence requirement, that are necessary to achieve water quality standards. The Regional Water Board has considered the factors listed in CWC Section 13241 in establishing these requirements. The rationale for these requirements, which consist of tertiary treatment or equivalent requirements, is discussed in the Fact Sheet.

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 Plans. The Regional Water Board adopted a *Water Quality Control Plan, Fourth Edition (Revised February 2007), for the Sacramento and San Joaquin River Basins* (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. The Basin Plan at page II-2.00 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 Pleasant Grove Creek, which is a tributary to Pleasant Grove Creek Canal and Natomas Cross Canal before entering the Sacramento River. Upon review

of the flow conditions, habitat, and beneficial uses of Pleasant Grove Creek, the Regional Water Board finds that the beneficial uses identified in the Basin Plan for the Sacramento River, from the Colusa Basin Drain to the I Street Bridge, are applicable to Pleasant Grove Creek. These beneficial uses are as follows: municipal and domestic supply, agricultural irrigation, water contact recreation, canoeing and rafting recreation, other non-contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, warm and cold fish migration habitat, warm and cold spawning habitat, wildlife habitat, and navigation.

In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Thus, as discussed in detail in the Fact Sheet, beneficial uses applicable to Pleasant Grove Creek are as follows:

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Pleasant Grove Creek, a tributary to Pleasant Grove Creek Canal, Natomas Cross Canal, and further to the Sacramento River (between the Colusa Basin Drain and the I Street Bridge)	Existing: Municipal and domestic supply (MUN), agricultural irrigation (AGR), water contact recreation, canoeing and rafting recreation (REC-1), other non-contact water recreation (REC-2), warm freshwater aquatic habitat (WARM), cold freshwater aquatic habitat (COLD), warm and cold fish migration habitat (MIGR), warm and cold spawning habitat (SPWN), wildlife habitat (WILD), and navigation (NAV). Groundwater: Municipal and domestic supply (MUN), industrial service supply (IND), industrial process supply (PRO), and agricultural supply (AGR).

The Basin Plan includes a list of Water Quality Limited Segments (WQLSs), which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 CFR 130, et seq.)*." The Basin Plan also states, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to WQLSs. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment.*" Pleasant Grove Creek is a tributary to Pleasant Grove Creek Canal, Natomas Cross Canal, and further to the Sacramento River. The Sacramento River (Knights Landing to the Delta) is listed as a WQLS for mercury and unknown toxicity in the 303(d) list of impaired water bodies.

I. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on 22 December 1992, and later amended it on 4 May 1995 and 9 November 1999. About 40 criteria in the NTR applied in California. On 18 May 2000, 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 13 February 2001. These rules contain water quality criteria for priority pollutants.

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

K. Compliance Schedules and Interim Requirements. In general, an NPDES permit must include final effluent limitations that are consistent with CWA section 301 and with 40 CFR 122.44(d). There are exceptions to this general rule. The State Water Board has concluded that where the Regional Water Board's Basin Plan allows for schedules of compliance and the Regional Water Board is newly interpreting a narrative standard, it may include schedules of compliance in the permit to meet effluent limits that implement a narrative standard. See In the Matter of Waste Discharge Requirements for Avon Refinery (State Water Board Order WQ 2001-06 at pp. 53-55). See also Communities for a Better Environment et al. v. State Water Resources Control Board, 34 Cal.Rptr.3d 396, 410 (2005). The Basin Plan for the Sacramento and San Joaquin Rivers includes a provision that authorizes the use of compliance schedules in NPDES permits for water quality objectives that are adopted after the date of adoption of the Basin Plan, which was 25 September 1995 (see Basin Plan at page IV-16). Consistent with the State Water Board's Order in the CBE matter, the Regional Water Board has the discretion to include compliance schedules in NPDES permits when it is including an effluent limitation that is a "new interpretation" of a narrative water quality objective. This conclusion is also consistent with USEPA policies and administrative decisions. See, e.g., Whole Effluent Toxicity (WET) Control Policy. The Regional Water Board, however, is not required to include a schedule of compliance, but may issue a Time Schedule Order pursuant to CWC section 13300 or a Cease and Desist Order pursuant to CWC section 13301 where it finds that the discharger is violating or threatening to violate the permit. The Regional Water Board will consider the merits of each case in determining whether it is appropriate to include a compliance schedule in a permit, and, consistent with the Basin Plan, should consider feasibility of achieving compliance, and must impose a schedule that is as short as practicable to achieve compliance with the objectives, criteria, or effluent limit based on the objective or criteria.

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 18 May 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. Where allowed by the Basin Plan, compliance schedules and interim effluent limitations or discharge specifications may also be granted to allow time to implement a new or revised water quality objective. This Order does not include compliance schedules and interim effluent limitations.

L. Alaska Rule. On 30 March 2000, 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 30 May 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by 30 May 2000 may be used for CWA purposes, whether or not approved by USEPA.

M. Stringency of Requirements for Individual Pollutants. This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on 5-day biochemical oxygen demand (BOD_5) and total suspended solids (TSS). The WQBELs consist of restrictions on turbidity and pathogens. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order includes effluent limitations for turbidity and pathogens to meet numeric objectives or protect beneficial uses.

WQBELs have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant water quality-based effluent limitations were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR 131.38. The scientific procedures for calculating the individual WQBELs are based on the CTR-SIP, which was approved by USEPA on 1 May 2001. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to 30 May 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to 30 May 2000, but not approved by USEPA before that date, are nonetheless "*applicable water quality standards for purposes of the [Clean Water] Act*" pursuant to 40 CFR 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the CWA and the applicable water quality standards for purposes of the CWA.

N. 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 is consistent with 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. The Discharger submitted an Antidegradation Analysis Report in accordance with the antidegradation provision of 40 CFR 131.12 and State Water Board Resolution No. 68-16 stating that in order to maintain beneficial uses of the receiving water and to limit degradation of the receiving water, the Discharger operates a wastewater treatment process that meets or exceeds the highest statutory and regulatory requirements which meets or exceeds Best Practical Treatment or Control (BPTC).

The Regional Water Board finds that the Discharger implements water conservation measures, utilizes tertiary treatment technology, and reclaims treated wastewater as the means of minimizing degradation and discharges in accordance with federal and State antidegradation policies. Therefore, the Regional Water Board finds that the Discharger is implementing all reasonable alternatives to discharge, and the permitted discharge allows important economic and social development to occur. Therefore, this Order is in accordance with the antidegradation provision of 40 CFR 131.12 and State Water Board Resolution No. 68-16.

O. Anti-Backsliding Requirements. Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 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. Some effluent limitations in this Order are less stringent that those in the previous Order. As discussed in detail in the Fact Sheet this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

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

Q. Monitoring and Reporting. 40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorizes the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.

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

additional conditions that are applicable 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 attached Fact Sheet.

S. Provisions and Requirements Implementing State Law. The provisions/requirements in subsections IV.B, V.B, VI.A.2.v, and VI.C.2.b of this Order are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

T. Notification of Interested Parties. The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet of this Order.

U. 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 of this Order.

III. DISCHARGE PROHIBITIONS

A. Discharge of wastewater at a location or in a manner different from that described in the Findings is prohibited.

B. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Federal Standard Provisions I.G. and I.H. (Attachment D).

C. Neither the discharge nor its treatment shall create a nuisance as defined in Section 13050 of the California Water Code.

D. The Discharger shall not allow pollutant-free wastewater to be discharged into the collection, treatment, and disposal system in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point No. 001

1. Final Effluent Limitations – Effective Until Completion of Upgrades to the Facility

During the period beginning the Permit Effective Date until the completion of upgrades to the Facility, the Discharger shall maintain compliance with the following effluent limitations at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001 as described in the attached MRP (Attachment E).

a. The Discharger shall maintain compliance with the effluent limitations specified in the table below:

Table 6. Effluent Limitations (until completion of upgrades to the Facility)[1]

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Aluminum, Total Recoverable	µg/L	374	--	750	--	--
Ammonia Nitrogen, Total (as N)	mg/L	1.9	--	5.5	--	--
	lbs/day[1]	190	--	551	--	--
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	--	--
	lbs/day[1]	1,000	1,500	2,000	--	--
Cadmium, Total Recoverable	µg/L	1.4	--	3.3	--	--
Cyanide	µg/L	3.5	--	9.6	--	--
Dibromochloromethane	µg/L	0.41	--	0.82	--	--
Dichlorobromomethane	µg/L	0.56	--	1.12	--	--
pH	standard units	--	--	--	6.5	8.0
Settleable Solids	ml/L	0.1	--	0.2	--	--
Total Coliform Organisms	MPN/100 mL	--	--	--	--	240
Total Suspended Solids	mg/L	10	15	20	--	--
	lbs/day[1]	1,000	1,500	2,000	--	--
Turbidity	NTU	--	--	--	--	10

[1] Based on an average dry weather flow of 12 mgd.

b. **Percent Removal.** The average monthly percent removal of BOD_5 and TSS shall not be less than 85 percent.

c. **Acute Whole Effluent Toxicity.** Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

i. 70%, minimum for any one bioassay; and
ii. 90%, median for any three consecutive bioassays.

d. **Total Residual Chlorine.** Effluent total residual chlorine shall not exceed:

i. 0.011 mg/L, as a 4-day average; and
ii. 0.019 mg/L, as a 1-hour average.

e. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed:

i. 2.2 most probable number (MPN) per 100 mL, as a 7-day median; and
ii. 23 MPN/100 mL more than once in any 30-day period.

f. **Average Dry Weather Flow.** The average dry weather flow shall not exceed 12 mgd.

g. **Fluoride.** For a calendar year, the annual average effluent concentration shall not exceed 2,000 µg/L.

h. **Iron, Total Recoverable.** For a calendar year, the annual average effluent concentration shall not exceed 300 µg/L.

i. **Manganese, Total Recoverable.** For a calendar year, the annual average effluent concentration shall not exceed 50 µg/L.

j. **Aluminum, Total Recoverable.** For a calendar year, the annual average effluent concentration shall not exceed 200 µg/L.

k. **Mercury, Total Recoverable.** For a calendar year, the annual average mercury mass loading shall not exceed 1.39 lbs/year.

l. **Turbidity.** Turbidity shall not exceed:

i. 2 NTU, as a daily average; and
ii. 5 NTU, more than 5% of the time within a 24-hour period.

2. Final Effluent Limitations – Effective Upon Completion of Upgrades to the Facility

During the period beginning upon the completion of upgrades to the Facility until the Permit Expiration Date, the Discharger shall maintain compliance with the following effluent limitations at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001 as described in the attached MRP (Attachment E).

a. The Discharger shall maintain compliance with the effluent limitations specified in the table below:

Table 7. Effluent Limitations (upon completion of upgrades to the Facility) [1]

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Aluminum, Total Recoverable	µg/L	374	--	750	--	--
Ammonia Nitrogen, Total (as N)	mg/L	1.9	--	5.5	--	--
	lbs/day[1]	238	--	689	--	--
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	--	--
	lbs/day[1]	1,250	1,875	2,500	--	--
Cadmium, Total Recoverable	µg/L	1.4	--	3.3	--	--
Cyanide	µg/L	3.5	--	9.6	--	--
Dibromochloromethane	µg/L	0.41	--	0.82	--	--
Dichlorobromomethane	µg/L	0.56	--	1.12	--	--
pH	standard units	--	--	--	6.5	8.0
Settleable Solids	ml/L	0.1	--	0.2	--	--
Total Coliform Organisms	MPN/100 mL	--	--	--	--	240
Total Suspended Solids	mg/L	10	15	20	--	--
	lbs/day[1]	1,250	1,875	2,500	--	--
Turbidity	NTU	--	--	--	--	10

[1] Based on an average dry weather flow of 15 mgd.

b. **Percent Removal.** The average monthly percent removal of BOD_5 and TSS shall not be less than 85 percent.

c. **Acute Whole Effluent Toxicity.** Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

   i. 70%, minimum for any one bioassay; and
   ii. 90%, median for any three consecutive bioassays.

d. **Total Residual Chlorine.** Effluent total residual chlorine shall not exceed:

   i. 0.011 mg/L, as a 4-day average; and
   ii. 0.019 mg/L, as a 1-hour average.

e. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed:

   i. 2.2 MPN/100 mL, as a 7-day median; and
   ii. 23 MPN/100 mL more than once in any 30-day period.

f. **Average Dry Weather Flow.** The average dry weather flow shall not exceed 15 mgd.

g. **Fluoride.** For a calendar year, the annual average effluent concentration shall not exceed 2,000 µg/L.

h. **Iron, Total Recoverable.** For a calendar year, the annual average effluent concentration shall not exceed 300 µg/L.

i. **Manganese, Total Recoverable.** For a calendar year, the annual average effluent concentration shall not exceed 50 µg/L.

j. **Aluminum, Total Recoverable.** For a calendar year, the annual average effluent concentration shall not exceed 200 µg/L.

k. **Mercury, Total Recoverable.** For a calendar year, the annual average mercury mass loading shall not exceed 1.39 lbs/year.

l. **Turbidity.** Turbidity shall not exceed:

i. 2 NTU, as a daily average; and
ii. 5 NTU, more than 5% of the time within a 24-hour period.

3. Interim Effluent Limitations – Not Applicable

B. Land Discharge Specifications – Not Applicable

C. Reclamation Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. The discharge shall not cause the following in Pleasant Grove Creek:

1. **Bacteria**. The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mL, nor more than ten percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.

2. **Biostimulatory Substances**. Water to contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.

3. **Chemical Constituents**. Chemical constituents to be present in concentrations that adversely affect beneficial uses.

4. **Color**. Discoloration that causes nuisance or adversely affects beneficial uses.

5. **Dissolved Oxygen**:

    a. The monthly median of the mean daily dissolved oxygen concentration to fall below 85 percent of saturation in the main water mass;
    b. The 95 percentile dissolved oxygen concentration to fall below 75 percent of saturation; nor
    c. The dissolved oxygen concentration to be reduced below 7.0 mg/L at any time.

6. **Floating Material**. Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.

7. **Oil and Grease**. Oils, greases, waxes, or other materials to be present in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.

8. **pH**. The pH to be depressed below 6.5, raised above 8.5, nor changed by more than 0.5 units on an annual basis.

9. **Pesticides**:

    a. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses;
    b. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses;
    c. Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by USEPA or the Executive Officer, or other equivalent methods approved by the Executive Officer;
    d. Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Board Resolution No. 68-16 and 40 CFR 131.12);
    e. Pesticide concentrations to exceed the lowest levels technically and economically achievable;
    f. Pesticides to be present in concentration in excess of the maximum contaminant levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15; nor
    g. Thiobencarb to be present in excess of 1.0 µg/L.

10. **Radioactivity**:

    a. Radionuclides to be present in concentrations that are harmful to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
    b. Radionuclides to be present in excess of the maximum contaminant levels specified in Table 4 (MCL Radioactivity) of Section 64443 of Title 22 of the California Code of Regulations.

11. **Suspended Sediments**. The suspended sediment load and suspended sediment discharge rate of surface waters to be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

12. **Settleable Substances**. Substances to be present in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.

13. **Suspended Material**. Suspended material to be present in concentrations that cause nuisance or adversely affect beneficial uses.

14. **Taste and Odors**. Taste- or odor-producing substances to be present in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.

15. **Temperature**. The natural temperature to be increased by more than 5°F.

16. **Toxicity**. Toxic substances to be present, individually or in combination, in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.

17. **Turbidity**. The turbidity to increase as follows:

    a. More than 1 Nephelometric Turbidity Unit (NTU) where natural turbidity is between 0 and 5 NTUs.
    b. More than 20 percent where natural turbidity is between 5 and 50 NTUs.
    c. More than 10 NTU where natural turbidity is between 50 and 100 NTUs.
    d. More than 10 percent where natural turbidity is greater than 100 NTUs.

    When wastewater is treated to a tertiary level (including coagulation) or equivalent, a 1-month averaging period may be used when determining compliance with this limitation for turbidity**.**

B. Groundwater Limitations

a. Release of waste constituents from any storage, treatment, or disposal component associated with the Facility, in combination with other sources, shall not cause the underlying groundwater to contain waste constituents in concentrations greater than background water quality. Any increase in total dissolved solids or electrical conductivity concentrations within the monitoring points, when compared to background, shall not exceed the increase typically caused by the percolation discharge of domestic wastewater, and shall not violate water quality objectives, impact beneficial uses, or cause pollution or nuisance. For purposes of this limitation, the monitoring points are the three existing groundwater monitoring wells near the infiltration area (storage basins), within the property owned or controlled by the Discharger.

b. Resolution No. 68-16 requires that the Discharger provide best practicable treatment or control prior to a discharge to groundwater. If monitoring of the groundwater indicates that the discharge has caused an increase in constituent concentrations, when compared to background, the Discharger is required in Section VI.C.2.b of this Order to conduct a study of the extent of groundwater degradation.

VI. 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:

   a. If the Discharger's wastewater treatment plant is publicly owned or subject to regulation by California Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to Title 23, CCR, Division 3, Chapter 26.

   b. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

      i. violation of any term or condition contained in this Order;

      ii. obtaining this Order by misrepresentation or by failing to disclose fully all relevant facts;

      iii. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and

      iv. a material change in the character, location, or volume of discharge.

      The causes for modification include:

      - *New regulations.* New regulations have been promulgated under Section 405(d) of the Clean Water Act, or the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued.

      - *Land application plans.* When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.

      - *Change in sludge use or disposal practice.* Under 40 CFR 122.62(a)(1), a change in the Discharger's sludge use or disposal practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

The Regional Water Board may review and revise this Order at any time upon application of any affected person or the Regional Water Board's own motion.

c. If a toxic effluent standard or prohibition (including any scheduled compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the CWA, or amendments thereto, for a toxic pollutant that is present in the discharge authorized herein, and such standard or prohibition is more stringent than any limitation upon such pollutant in this Order, the Regional Water Board will revise or modify this Order in accordance with such toxic effluent standard or prohibition.

   The Discharger shall comply with effluent standards and prohibitions within the time provided in the regulations that establish those standards or prohibitions, even if this Order has not yet been modified.

d. This Order shall be modified, or alternately revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:

   i. contains different conditions or is otherwise more stringent than any effluent limitation in the Order; or

   ii. controls any pollutant limited in the Order.

   The Order, as modified or reissued under this paragraph, shall also contain any other requirements of the CWA then applicable.

e. The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.

f. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the State or users of those waters resulting from any discharge or sludge use or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge or sludge use or disposal.

g. The Discharger shall ensure compliance with any existing or future pretreatment standard promulgated by USEPA under Section 307 of the CWA, or amendment thereto, for any discharge to the municipal system.

h. The discharge of any radiological, chemical or biological warfare agent or high-level, radiological waste is prohibited.

i. A copy of this Order shall be maintained at the discharge facility and be available at all times to operating personnel. Key operating personnel shall be familiar with its content.

j. Safeguard to electric power failure:

i. The Discharger shall provide safeguards to assure that, should there be reduction, loss, or failure of electric power, the discharge shall comply with the terms and conditions of this Order.

ii. Upon written request by the Regional Water Board the Discharger shall submit a written description of safeguards. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact of power failures experienced over the past 5 years on effluent quality and on the capability of the Discharger to comply with the terms and conditions of the Order. The adequacy of the safeguards is subject to the approval of the Regional Water Board.

iii. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Regional Water Board not approve the existing safeguards, the Discharger shall, within 90 days of having been advised in writing by the Regional Water Board that the existing safeguards are inadequate, provide to the Regional Water Board and USEPA a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Regional Water Board, become a condition of this Order.

k. The Discharger, upon written request of the Regional Water Board, shall file with the Board a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. This report may be combined with that required under Regional Water Board Standard Provision VI.A.2.m.

The technical report shall:

i. Identify the possible sources of spills, leaks, untreated waste by-pass, and contaminated drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.

ii. Evaluate the effectiveness of present facilities and procedures and state when they became operational.

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

The Regional Water Board, after review of the technical report, may establish conditions which it deems necessary to control accidental discharges and to

minimize the effects of such events. Such conditions shall be incorporated as part of this Order, upon notice to the Discharger.

l. A publicly owned treatment works (POTW) whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment and disposal facilities. The projections shall be made in January, based on the last 3 years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in 4 years, the Discharger shall notify the Regional Water Board by 31 January. A copy of the notification shall be sent to appropriate local elected officials, local permitting agencies and the press. Within 120 days of the notification, the Discharger shall submit a technical report showing how it will prevent flow volumes from exceeding capacity or how it will increase capacity to handle the larger flows. The Regional Water Board may extend the time for submitting the report.

m. The Discharger shall submit technical reports as directed by the Executive Officer. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code, sections 6735, 7835, and 7835.1. To demonstrate compliance with Title 16, CCR, sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.

n. Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Regional Water Board.

o. The Discharger shall conduct analysis on any sample provided by USEPA as part of the Discharge Monitoring Quality Assurance (DMQA) program. The results of any such analysis shall be submitted to USEPA's DMQA manager.

p. Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.

q. All monitoring and analysis instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary, at least yearly, to ensure their continued accuracy.

r. The Discharger shall file with the Regional Water Board technical reports on self-monitoring performed according to the detailed specifications contained in the Monitoring and Reporting Program attached to this Order.

s. The results of all monitoring required by this Order shall be reported to the Regional Water Board, and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order. Unless otherwise specified, discharge flows shall be reported in terms of the monthly average and the daily maximum discharge flows.

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

u. For POTWs, prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. (CWC section 1211).

v. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, maximum daily effluent limitation, 1-hour average effluent limitation, or receiving water limitation contained in this Order, the Discharger shall notify the Regional Water Board by telephone (916) 464-3291 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within 5 days, unless the Regional Water Board waives confirmation. The written notification shall include the information required by Attachment D, Section V.E.1 [40 CFR 122.41(l)(6)(i)].

B. Monitoring and Reporting Program (MRP) Requirements

1. The Discharger shall comply with the MRP and future revisions thereto, in Attachment E of this Order.

C. Special Provisions

1. Reopener Provisions

a. This Order may be reopened for modification, or revocation and reissuance, as a result of the detection of a reportable priority pollutant generated by special conditions included in this Order. These special conditions may be, but are not limited to, fish tissue sampling, whole effluent toxicity, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.

b. Conditions that necessitate a major modification of a permit are described in 40 CFR 122.62, including:

i. If new or amended applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA, or amendments thereto, this

permit may be reopened and modified in accordance with the new or amended standards.

ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.

c. **Mercury.** If mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted, this Order shall be reopened and the mass effluent limitation modified (higher or lower) or an effluent concentration limitation imposed.

d. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if the State Water Board revises the SIP's toxicity control provisions that would require the establishment of numeric chronic toxicity effluent limitations, this Order may be reopened to include a numeric chronic toxicity effluent limitation based on the new provisions.

e. **Water Effects Ratios (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when developing effluent limitations for inorganic constituents. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

f. **Salinity/EC Site-Specific Studies.** This Order requires the Discharger to complete and submit a report on the results of salinity/EC site-specific studies to determine appropriate salinity/EC levels necessary to protect downstream beneficial uses. The studies shall be completed and submitted to the Regional Water Board as specified in section VI.C.2.d of this Order. Based on a review of the results of the report on the salinity/EC site-specific studies this Order may be reopened for addition of an effluent limitation and requirements for salinity and/or EC.

g. **Aluminum Site-Specific Studies.** This Order requires the Discharger to complete and submit a report on the results of aluminum site-specific studies to determine appropriate aluminum levels necessary to protect downstream aquatic life beneficial uses. The studies shall be completed and submitted to the Regional Water Board as specified in section VI.C.2.e of this Order. Based on a review of the results of the report on the aluminum site-specific studies this Order may be reopened for addition of an effluent limitation and requirements for aluminum.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. **Chronic Whole Effluent Toxicity.** For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct chronic whole effluent toxicity testing, as specified in the Monitoring and Reporting Program (Attachment E, Section V). Furthermore, this Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity. If the discharge exceeds the toxicity numeric monitoring trigger established in this Provision, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE), in accordance with an approved TRE Work Plan, and take actions to mitigate the impact of the discharge and prevent reoccurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TREs are designed to identify the causative agents and sources of whole effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. This Provision includes requirements for the Discharger to develop and submit a TRE Work Plan and includes procedures for accelerated chronic toxicity monitoring and TRE initiation.

i. **Initial Investigative Toxicity Reduction Evaluation (TRE) Work Plan. Within 90 days of the effective date of this Order,** the Discharger shall submit to the Regional Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer. This should be a one to two page document including, at a minimum:

a) A description of the investigation and evaluation techniques that will be used to identify potential causes and sources of effluent toxicity, effluent variability, and treatment system efficiency;

b) A description of the facility's methods of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in operation of the facility; and

c) A discussion of who will conduct the Toxicity Identification Evaluation, if necessary (i.e., an in-house expert or outside contractor).

ii. **Accelerated Monitoring and TRE Initiation.** When the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity monitoring, and the testing meets all test acceptability criteria, the Discharger shall initiate accelerated monitoring as required in the Accelerated Monitoring Specifications. WET testing results exceeding the monitoring trigger during accelerated monitoring demonstrates a pattern of toxicity and requires the Discharger to initiate a TRE to address the effluent toxicity.

iii. **Numeric Monitoring Trigger.** The numeric toxicity monitoring trigger is > 1 TUc (where TUc = 100/NOEC). The monitoring trigger is not an

effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring and initiate a TRE.

iv. **Accelerated Monitoring Specifications.** If the monitoring trigger is exceeded during regular chronic toxicity testing, within 14 days of notification by the laboratory of the test results, the Discharger shall initiate accelerated monitoring. Accelerated monitoring shall consist of four (4) chronic toxicity tests in a 6-week period (i.e., one test every 2 weeks) using the species that exhibited toxicity. The following protocol shall be used for accelerated monitoring and TRE initiation:

a) If the results of four (4) consecutive accelerated monitoring tests do not exceed the monitoring trigger, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring. However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity, the Executive Officer may require that the Discharger initiate a TRE.

b) If the source(s) of the toxicity is easily identified (i.e. temporary plant upset), the Discharger shall make necessary corrections to the facility and shall continue accelerated monitoring until four (4) consecutive accelerated tests do not exceed the monitoring trigger. Upon confirmation that the effluent toxicity has been removed, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring.

c) If the result of any accelerated toxicity test exceeds the monitoring trigger, and the source(s) of the toxicity are not easily identified as described in item b of this subsection, the Discharger shall cease accelerated monitoring and initiate a TRE to investigate the cause(s) of, and identify corrective actions to reduce or eliminate effluent toxicity. Within thirty (30) days of notification by the laboratory of the test results exceeding the monitoring trigger during accelerated monitoring, the Discharger shall submit a TRE Action Plan to the Regional Water Board including, at minimum:

1) Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including TRE WET monitoring schedule;

2) Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and

3) A schedule for these actions.

Within sixty (60) days of notification by the laboratory of the test results, the Discharger shall submit to the Regional Water Board a TRE Work Plan for approval by the Executive Officer. The TRE Work Plan shall outline the procedures for identifying the source(s) of, and reducing or eliminating effluent toxicity.

The TRE Work Plan must be developed in accordance with USEPA guidance[1].

b. **Groundwater Monitoring.** To determine compliance with Groundwater Limitations V.B., the groundwater monitoring network shall include one or more background monitoring wells and a sufficient number of designated monitoring wells downgradient of every treatment, storage, and disposal unit that does or may release waste constituents to groundwater. All monitoring wells shall comply with the appropriate standards as described in California Well Standards Bulletin 74-90 (June 1991) and Water Well Standards: State of California Bulletin 74-81 (December 1981), and any more stringent standards adopted by the Discharger or County pursuant to CWC section 13801.

If the monitoring shows that any constituent concentrations are increased above background water quality, the Discharger shall perform BPTC evaluation tasks as required in Section VI.C.2.c below.

c. **Best Practicable Treatment or Control (BPTC) Evaluation Tasks.** If the groundwater monitoring results conducted under this Order show that the discharge of waste is threatening to cause or has caused groundwater to contain waste constituents in concentrations statistically greater than background water quality, the Discharger shall propose a work plan and schedule for providing BPTC as required by Resolution 68 16. The work plan and schedule shall be submitted, within 6 months the after the first full year of monitoring that documents constituent concentrations increased beyond background water quality. The technical report describing the work plan and schedule shall contain a preliminary evaluation of each component and propose a time schedule for completing the comprehensive technical evaluation

[1] See Attachment F (Fact Sheet) Section VII.B.2.a. for a list of USEPA guidance documents that must be considered in development of the TRE Workplan.

Following completion of the comprehensive technical evaluation, the Discharger shall submit a technical report describing the evaluation's results and critiquing each evaluated component with respect to BPTC and minimizing the discharge's impact on groundwater quality. Where deficiencies are documented, the technical report shall provide recommendations for necessary modifications (e.g., new or revised source control measures, Facility component upgrade and retrofit) to achieve BPTC and identify the source of funding and proposed schedule for modifications. The schedule shall be as short as practicable but in no case shall completion of the necessary modifications exceed 4 years past the Executive Officer's determination of the adequacy of the comprehensive technical evaluation, unless the schedule is reviewed and specifically approved by the Regional Water Board. The technical report shall include specific methods the Discharger proposes as a means to measure processes and assure continuous optimal performance of BPTC measures. The Discharger shall comply with the following compliance schedule in implementing the work required by this Provision:

Task	Compliance Date
i. Submit technical report: work plan and schedule for comprehensive evaluation	**Within 6 months** after 1st full year of monitoring that documents constituent concentrations increased beyond background water quality.
ii. Commence comprehensive evaluation	**30 days** following Executive Officer approval of Task i.
iii. Complete comprehensive evaluation	As established by Task i and/or 2 years following Task ii, whichever is sooner.
iv. Submit technical report: comprehensive evaluation results	**60 days** following completion of Task iii.
v. Submit annual report, if applicable, describing the overall status of BPTC implementation and compliance with groundwater limitations over the past reporting year	To be submitted in accordance with the MRP (Attachment E, Section X.D.1).

d. **Salinity/EC Site-Specific Study.** The Discharger shall prepare and submit a report on the results of a site-specific investigation of appropriate salinity/EC levels to determine appropriate salinity/EC levels necessary to protect downstream beneficial uses. The study shall evaluate how climate, river flow, background water quality, rainfall, and flooding affect salinity/EC requirements. Based on these factors, the study shall recommend site-specific numeric values for salinity/EC that fully protect the agricultural irrigation use designation of Pleasant Grove Creek. The Regional Water Board will evaluate the

recommendations, select appropriate values, reevaluate reasonable potential for salinity/EC, and reopen the permit, as necessary, to include appropriate effluent limitations for these constituents. The Discharger shall comply with the following time schedule to complete the study:

Task	Compliance Date
i. Submit Workplan and Time Schedule for approval by the Executive Officer	**Within 6 months** following adoption of this Order.
ii. Complete Study and submit Study Report	Within 27 months following Executive Officer approval of the Workplan and Time Schedule.

e. **Aluminum Site-Specific Study.** The Discharger shall prepare and submit a report on the results of a site-specific investigation of appropriate aluminum levels to determine appropriate aluminum levels necessary to protect downstream aquatic life beneficial uses. The study shall evaluate how pH, hardness, and other factors affect aluminum requirements. Based on these factors, the study shall recommend site-specific numeric values for aluminum that fully protect the aquatic life use designation of Pleasant Grove Creek. The Regional Water Board will evaluate the recommendations, select appropriate values, reevaluate reasonable potential for aluminum, and reopen the permit, as necessary, to revise as appropriate, the effluent limitations for aluminum. The Discharger shall comply with the following time schedule to complete the study:

Task	Compliance Date
i. Submit Workplan and Time Schedule for approval by the Executive Officer	**Within 6 months** following adoption of this Order.
ii. Complete Study and submit Study Report	Within 27 months following Executive Officer approval of the Workplan and Time Schedule.

3. Best Management Practices and Pollution Prevention

a. **Pollutant Minimization Program**. The Discharger shall develop and conduct a Pollutant Minimization Program (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 Attachment A and reporting protocols described in MRP.

The PMP shall include, but not be limited to, the following actions and submittals acceptable to the Regional Water Board:

i. An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;

ii. Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system;

iii. 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;

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

v. An annual status report that shall be sent to the Regional Water Board including:

(1) All PMP monitoring results for the previous year;

(2) A list of potential sources of the reportable priority pollutant(s);

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

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

b. **Salinity Evaluation and Minimization Plan.** The Discharger shall prepare a salinity evaluation and minimization plan to address sources of salinity from the Facility. The plan shall be completed and submitted to the Regional Water Board **within 9 months of the adoption date of this Order** for the approval by the Executive Officer.

c. **Salinity Reduction Goal.** The Discharger shall provide a report demonstrating reasonable progress in the reduction of salinity in its discharge to Pleasant Grove. Based on effluent data for this Facility, the Regional Water Board finds that an increment of 500 µmhos/cm over the electrical conductivity (EC) of the municipal water supply is a reasonable goal that the Facility shall strive to achieve over the term of this Order. The report shall be submitted as part of the Report of Waste Discharge (as required on the Cover Page for the Order).

4. Construction, Operation and Maintenance Specifications

a. The effluent storage basins shall be used for flood prevention or to prevent discharge of partially tertiary-treated wastewater that does not meet effluent limits,

b. The emergency storage basin shall be used only to prevent discharge of wastewater that does not meet effluent limits, to store partially treated wastewater, or to prevent plant upsets by diverting influent that would be harmful to the treatment process.

c. Objectionable odors originating at this Facility shall not be perceivable beyond the limits of the property owned by the Discharger.

d. As a means of discerning compliance with Land Discharge Specification 3, the dissolved oxygen content in the upper zone (1 foot) of wastewater in the basins shall not be less than 1.0 mg/L.

e. Basins containing water for more than 7 consecutive days shall not have a pH less than 6.5 or greater than 8.5.

f. The effluent and emergency storage basins shall be managed to prevent breeding of mosquitoes. In particular:

    i. An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface;

    ii. Weeds shall be minimized; and

    iii. Vegetation, debris, and dead algae shall not accumulate on the water surface.

g. Public contact with wastewater shall be precluded through means as fences, signs, and other acceptable alternatives.

h. Freeboard shall never be less than 2 feet (measured vertically to the lowest point of overflow). In no case shall wind/wave action cause overtopping of levees (freeboard of more than 2 feet may be necessary).

i. Wastewater contained in the storage basins must meet all effluent limitations in Section IV.A.1 prior to discharge to Pleasant Grove Creek.

j. The Discharger shall keep a log related to the use of the basins. In particular, the Discharger shall record the following when any type of wastewater is directed to any basin:

    i. The date(s) when the wastewater is directed to each basin;

    ii. The type(s) of wastewater (e.g., untreated due to plant upset, tertiary treated) directed to each basin;

    iii. The total volume of wastewater directed to each basin;

    iv. The duration of time wastewater is collected in each basin; prior to redirection back to the wastewater treatment plant; and

v. The date when all wastewater in each basin has been redirected to the wastewater treatment plant.

The basin log shall be submitted with the monthly self-monitoring reports required in Section X.B of the Monitoring and Reporting Program (Attachment E).

5. Special Provisions for Municipal Facilities (POTWs Only)

a. **Pretreatment Requirements**

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

ii. The Discharger shall enforce the Pretreatment Standards promulgated under sections 307(b), 307(c), and 307(d) of the Clean Water Act. The Discharger shall perform the pretreatment functions required by 40 CFR Part 403 including, but not limited to:

a) Adopting the legal authority required by 40 CFR 403.8(f)(1);

b) Enforcing the Pretreatment Standards of 40 CFR 403.5 and 403.6;

c) Implementing procedures to ensure compliance as required by 40 CFR 403.8(f)(2); and

d) Providing funding and personnel for implementation and enforcement of the pretreatment program as required by 40 CFR 403.8(f)(3).

iii. The Discharger shall implement, as more completely set forth in 40 CFR 403.5, the necessary legal authorities, programs, and controls to ensure that the following incompatible wastes are not introduced to the treatment system, where incompatible wastes are:

a) Wastes which create a fire or explosion hazard in the treatment works;

b) Wastes which will cause corrosive structural damage to treatment works, but in no case wastes with a pH lower than 5.0, unless the works is specially designed to accommodate such wastes;

c) Solid or viscous wastes in amounts which cause obstruction to flow in sewers, or which cause other interference with proper operation or treatment works;

d) Any waste, including oxygen demanding pollutants (BOD_5, *etc*.), released in such volume or strength as to cause inhibition or disruption in the treatment works, and subsequent treatment process upset and loss of treatment efficiency;

e) Heat in amounts that inhibit or disrupt biological activity in the treatment works, or that raise influent temperatures above 40°C (104°F), unless the Regional Water Board approves alternate temperature limits;

f) Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;

g) Pollutants which result in the presence of toxic gases, vapors, or fumes within the treatment works in a quantity that may cause acute worker health and safety problems; and:

h) Any trucked or hauled pollutants, except at points predesignated by the Discharger.

iv. The Discharger shall implement, as more completely set forth in 40 CFR 403.5, the legal authorities, programs, and controls necessary to ensure that indirect discharges do not introduce pollutants into the sewerage system that, either alone or in conjunction with a discharge or discharges from other sources:

a) Flow through the system to the receiving water in quantities or concentrations that cause a violation of this Order, or:

b) Inhibit or disrupt treatment processes, treatment system operations, or sludge processes, use, or disposal and either cause a violation of this Order or prevent sludge use or disposal in accordance with this Order.

b. **Sludge/Biosolids Discharge Specifications**

i. Collected screenings, residual sludge, biosolids, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer, and consistent with *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste,* as set forth in Title 27, CCR, Division 2, Subdivision 1, section 20005, et seq. Removal for further treatment, disposal, or reuse at sites (i.e., landfill, composting sites, soil amendment sites) that are operated in accordance with valid waste discharge requirements issued by a Regional Water Board will satisfy these specifications.

ii. Sludge and solid waste shall be removed from screens, sumps, ponds, clarifiers, etc. as needed to ensure optimal plant performance.

iii. The treatment of sludge generated at the Facility shall be confined to the Facility property and conducted in a manner that precludes infiltration of waste constituents into soils in a mass or concentration that will violate Groundwater Limitations in Section V.B. In addition, the storage of residual sludge, solid waste, and biosolids on Facility property shall be temporary and controlled, and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate Groundwater Limitations in Section V.B.

iv. The use and disposal of biosolids shall comply with existing Federal and State laws and regulations, including permitting requirements and technical standards included in 40 CFR Part 503. If the State Water Board and the Regional Water Board are given the authority to implement regulations contained in 40 CFR Part 503, this Order may be reopened to incorporate appropriate time schedules and technical standards. The Discharger must comply with the standards and time schedules contained in 40 CFR Part 503 whether or not they have been incorporated into this Order.

c. **Biosolids Disposal Requirements**

i. The Discharger shall comply with the Monitoring and Reporting Program for biosolids disposal contained in Attachment E.

ii. Any proposed change in biosolids use or disposal practice from a previously approved practice shall be reported to the Executive Officer and USEPA Regional Administrator at least **90 days** in advance of the change.

iii. The Discharger is encouraged to comply with the “Manual of Good Practice for Agricultural Land Application of Biosolids” developed by the California Water Environment Association.

d. **Biosolids Storage Requirements**

i. Facilities for the storage of Class B biosolids shall be located, designed and maintained to restrict public access to biosolids.

ii. Biosolids storage facilities shall be designed and maintained to prevent washout or inundation from a storm or flood with a return frequency of 100 years.

iii. Biosolids storage facilities, which contain biosolids, shall be designed and maintained to contain all storm water falling on the biosolids storage area during a rainfall year with a return frequency of 100 years.

iv. Biosolids storage facilities shall be designed, maintained and operated to minimize the generation of leachate.

e. **Collection System.** On 2 May 2006, the State Water Board adopted State Water Board Order 2006-0003, a Statewide General WDR for Sanitary Sewer Systems.

The Discharger shall be subject to the requirements of Order 2006-0003 and any future revisions thereto. Order 2006-0003 requires that all public agencies that currently own or operate sanitary sewer systems apply for coverage under the General WDR. By 2 November 2006**,** the Discharger was required by that Order, not incorporated by reference herein, to apply for coverage under State Water Board Order 2006-0003 for operation of its wastewater collection system.

Regardless of the coverage obtained under Order 2006-0003, the Discharger's collection system is part of the treatment system that is subject to this Order. As such, pursuant to federal regulations, the Discharger must properly operate and maintain its collection system [40 CFR 122.41(e)], report any non-compliance [40 CFR 122.41(l)(6) and (7)], and mitigate any discharge from the collection system in violation of this Order [40 CFR 122.41(d)].

6. Other Special Provisions

a. Wastewater shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to the DHS (recently changed to Department of Public Health or DPH) reclamation criteria, California Code of Regulations, Title 22, Division 4, Chapter 3, (Title 22), or equivalent.

b. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Regional Water Board.

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Regional Water Board and a statement. The statement shall comply with the signatory and certification requirements in the Federal Standard Provisions (Attachment D, Section V.B) and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

7. Compliance Schedules – Not Applicable

VII. COMPLIANCE DETERMINATION

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

A. **BOD_5 and TSS Effluent Limitations**. Compliance with the final effluent limitations for BOD_5 and TSS required in sections IV.A.1.a and IV.A.2.a shall be ascertained by 24-

hour composite samples. Compliance with effluent limitations required in sections IV.A.1.b and IV.A.2.b for percent removal shall be calculated using the arithmetic mean of BOD_5 and TSS in effluent samples collected over a monthly period as a percentage of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period.

B. **Aluminum Effluent Limitations**. Compliance with the final effluent limitations for aluminum can be demonstrated using either total or acid-soluble (inductively coupled plasma/atomic emission spectrometry or inductively coupled plasma/mass spectrometry) analysis methods, as supported by USEPA's Ambient Water Quality Criteria for Aluminum document (EPA 440/5-86-008), or other standard methods that exclude aluminum silicate particles as approved by the Executive Officer.

C. **Average Dry Weather Flow Effluent Limitations**. The average dry weather flow represents the daily average flow when groundwater is at or near normal and runoff is not occurring. Compliance with the average dry weather flow effluent limitations will be determined annually based on the average daily flow over 3 consecutive dry weather months (i.e., July, August, and September).

D. **Mass Effluent Limitations.** Compliance with the mass effluent limitations will be determined during average dry weather flow periods only.

E. **Total Coliform Organisms Effluent Limitations**. For each day that an effluent sample is collected and analyzed for total coliform organisms, the 7-day median shall be determined by calculating the median concentration of total coliform bacteria in the effluent utilizing the bacteriological results of the last 7 days for which analyses have been completed. If the 7-day median of total coliform organisms exceeds a most probable number (MPN) of 2.2 per 100 milliliters, the Discharger will be considered out of compliance for that parameter for that 1 day only within the reporting period.

F. **Total Residual Chlorine Effluent Limitations.** Continuous monitoring analyzers for chlorine residual or for dechlorination agent residual in the effluent are appropriate methods for compliance determination. A positive residual dechlorination agent in the effluent indicates that chlorine is not present in the discharge, which demonstrates compliance with the effluent limitations. This type of monitoring can also be used to prove that some chlorine residual exceedances are false positives. Continuous monitoring data showing either a positive dechlorination agent residual or a chlorine residual at or below the prescribed limit are sufficient to show compliance with the total residual chlorine effluent limitations, as long as the instruments are maintained and calibrated in accordance with the manufacturer's recommendations.

Any excursion above the 1-hour average or 4-day average total residual chlorine effluent limitations is a violation. If the Discharger conducts continuous monitoring and the Discharger can demonstrate, through data collected from a back-up monitoring system, that a chlorine spike recorded by the continuous monitor was not actually due to chlorine, then any excursion resulting from the recorded spike will not be considered an exceedance, but rather reported as a false positive.

G. **Total Mercury Mass Loading Effluent Limitations.** The procedures for calculating mass loadings are as follows:

1. The total pollutant mass load for each calendar year shall be determined using an average of all concentration data collected that calendar year and the corresponding total calendar year flow. All monitoring data collected under the monitoring and reporting program, pretreatment program and any special studies shall be used for these calculations.
2. In calculating compliance, the Discharger shall count all non-detect measures at one-half of the detection level. If compliance with the effluent limitation is not attained due to the non-detect contribution, the Discharger shall improve and implement available analytical capabilities and compliance shall be evaluated with consideration of the detection limits.

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.

Best Practicable Treatment or Control (BPTC): BPTC is a requirement of State Water Resources Control Board Resolution 68-16 – "Statement of Policy with Respect to Maintaining High Quality of Waters in California" (referred to as the "Antidegradation Policy"). BPTC is the treatment or control of a discharge necessary to assure that, *"(a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained."* Pollution is defined in CWC Section 13050(l). In general, an exceedance of a water quality objective in the Basin Plan constitutes "pollution".

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

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

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

Daily Discharge: Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in 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) are those sample results less than the RL, but greater than or equal to the laboratory's MDL.

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

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

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

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

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

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

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

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

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

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

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

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

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

Pollutant Minimization Program (PMP) means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority 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 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) is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

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

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

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

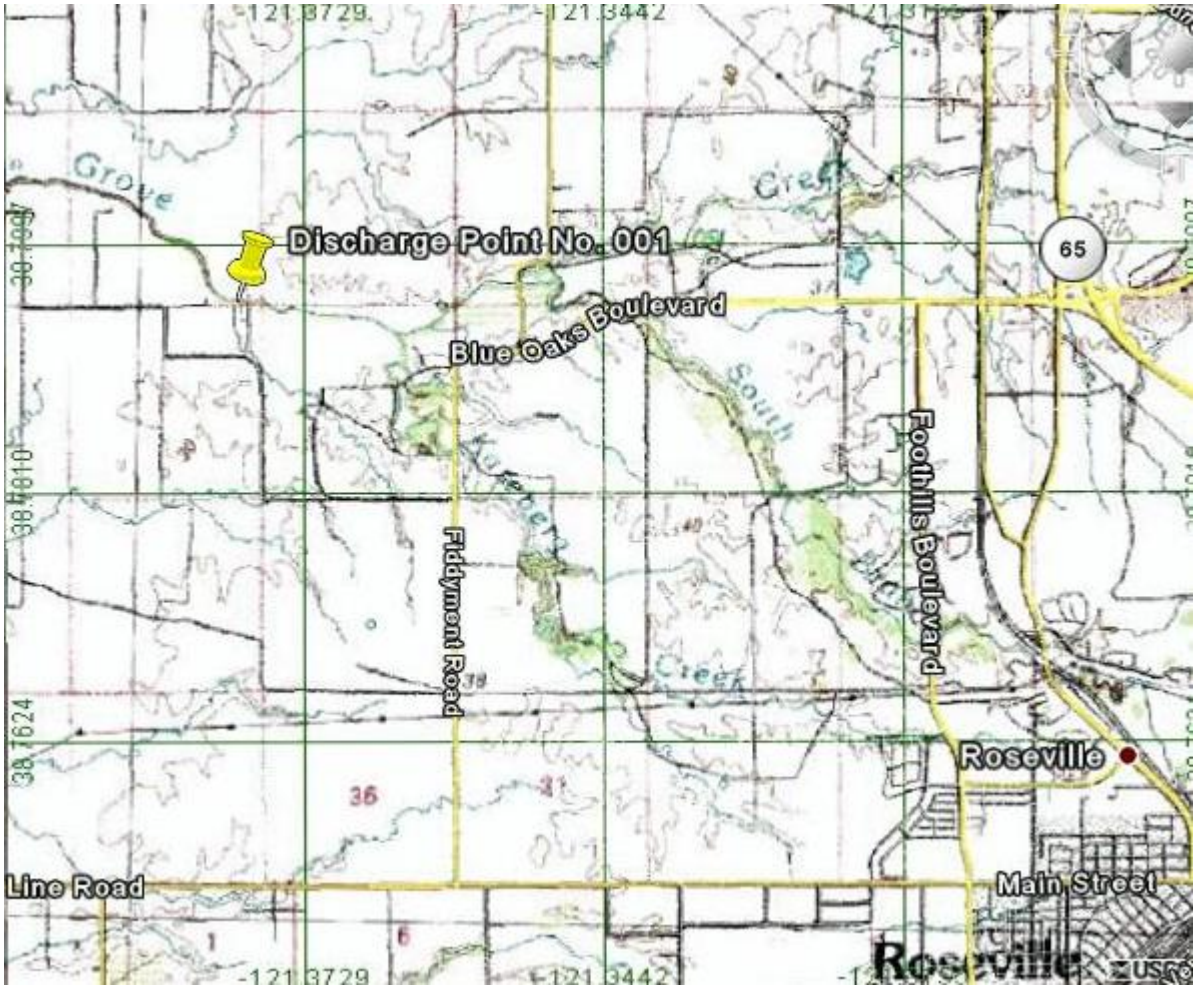
$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:

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

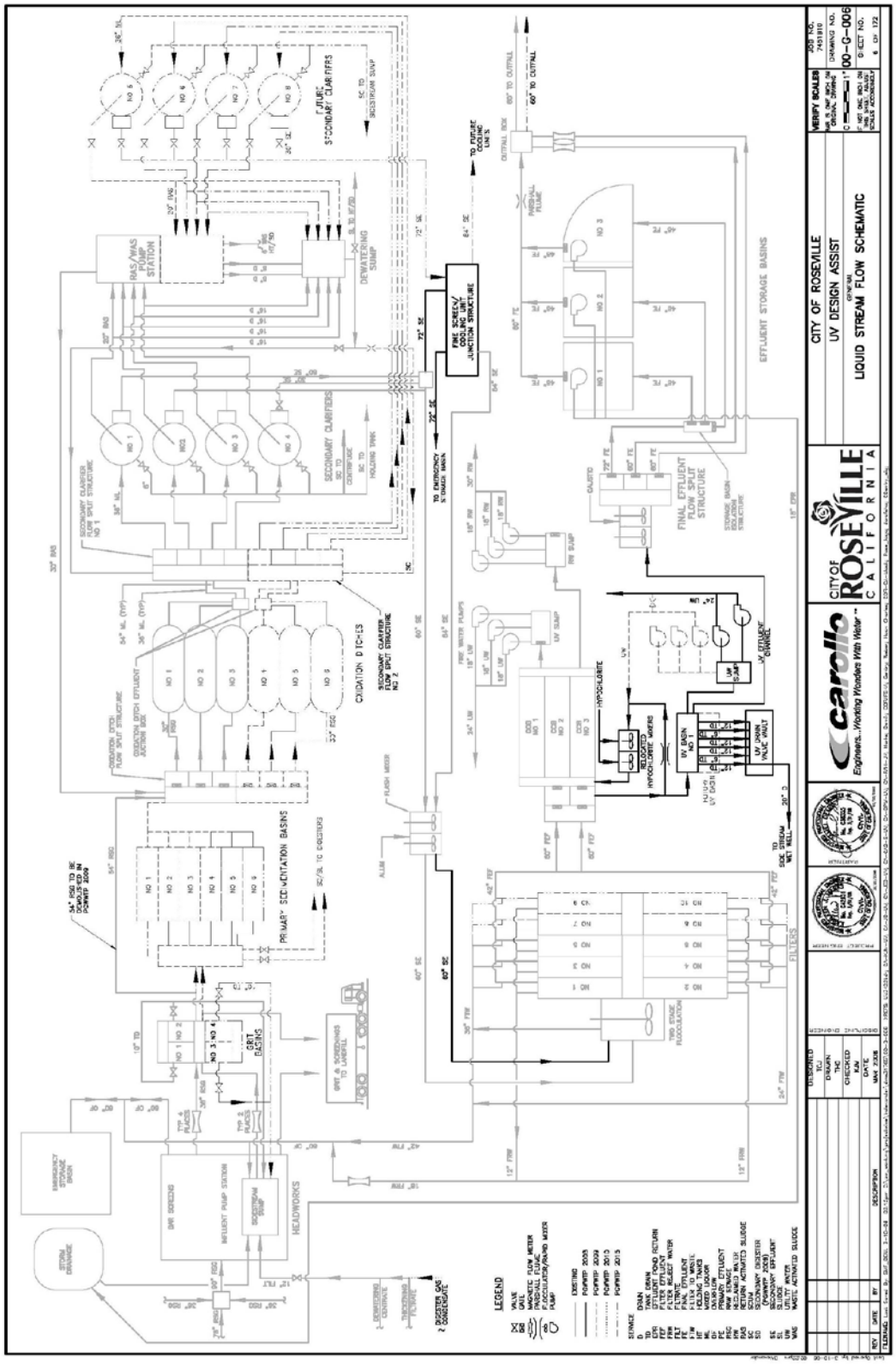
Toxicity Reduction Evaluation (TRE) is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps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

ATTACHMENT B – MAP



SITE LOCATION MAP
CITY OF ROSEVILLE
PLEASANT GROVE WASTEWATER TREATMENT PLANT
PLACER COUNTY

ATTACHMENT C – FLOW SCHEMATIC



ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

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

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

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

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

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

F. Inspection and Entry

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

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

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

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

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

G. Bypass

1. Definitions

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

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

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

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

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

    b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 CFR 122.41(m)(4)(i)(B)); and

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

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

5. Notice

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

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

H. Upset

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

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was

caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 CFR 122.41(n)(2).).

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

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

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

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

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

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

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of 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) and 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 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503 unless other test procedures have been specified in this Order. (40 CFR 122.41(j)(4) and 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 5 years (or longer as required by 40 CFR 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 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR 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 that are not subject to effluent limitations in this Order. (40 CFR 122.41(l)(1)(ii).)

3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the

application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 CFR 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

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

H. Other Noncompliance

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

I. Other Information

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

VI. STANDARD PROVISIONS – ENFORCEMENT

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

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

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

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

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

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

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Table of Contents

Attachment E – Monitoring and Reporting Program (MRP) E-1
I. General Monitoring Provisions E-1
II. Monitoring Locations E-2
III. Influent Monitoring Requirements E-2
A. Monitoring Location INF-001 ..... E-2
IV. Effluent Monitoring Requirements E-3
A. Monitoring Location EFF-001 ..... E-3
V. Whole Effluent Toxicity Testing Requirements E-5
VI. Land Discharge Monitoring Requirements E-7
A. Monitoring Location LND-001, LND-002, LND-003, and LND-004 ..... E-7
VII. Reclamation Monitoring Requirements E-8
VIII. Receiving Water Monitoring Requirements – Surface Water E-8
A. Monitoring Location RSW-001 and RSW-002 ..... E-8
B. Monitoring Locations GW-001, GW-002, and GW-003 ..... E-9
IX. Other Monitoring Requirements E-10
A. Biosolids E-10
B. Municipal Water Supply E-10
X. Reporting Requirements E-11
A. General Monitoring and Reporting Requirements E-11
B. Self Monitoring Reports (SMRs) E-12
C. Discharge Monitoring Reports (DMRs) E-14
D. Other Reports E-14

List of Tables

Table E-1. Monitoring Station Locations E-2
Table E-2. Influent Monitoring E-2
Table E-3. Effluent Monitoring E-3
Table E-4. Chronic Toxicity Testing Dilution Series E-6
Table E-5. Land Discharge Monitoring Requirements E-8
Table E-6. Receiving Water Monitoring Requirements E-8
Table E-7. Groundwater Monitoring Requirements E-9
Table E-8. Municipal Water Supply Monitoring Requirements E-10
Table E-9. Monitoring Periods and Reporting Schedule E-13
Table E-10. Reporting Requirements for Special Provisions Progress Reports E-15

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations section 122.48 (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 Quality Control Board (Regional Water Board) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements, which implement the federal and state regulations.

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of this Regional Water Board.

B. Chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. In the event a certified laboratory is not available to the Discharger, analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program must be kept in the laboratory and shall be available for inspection by Regional Water Board staff. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Regional Water Board.

C. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Health Services. Laboratories that perform sample analyses shall be identified in all monitoring reports required in Section X.B of this MRP.

D. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.

E. Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program.

II. MONITORING LOCATIONS

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

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	A location where a representative sample of the influent into the Wastewater Treatment Plant can be collected.
001	EFF-001	Location(s) representative of the final effluent from the Wastewater Treatment Plant.
--	RSW-001	Approximately 200 feet upstream of the outfall.
--	RSW-002	Approximately 200 feet downstream of the outfall.
--	LND-001	Monitoring within Storage Basin 1.
--	LND-002	Monitoring within Storage Basin 2.
--	LND-003	Monitoring within Storage Basin 3.
--	LND-004	Monitoring within Emergency Storage Basin.
--	GW-001	Groundwater monitoring well (identified as MW-01). This is an existing monitoring location.
--	GW-002	Groundwater monitoring well (identified as MW-02). This is an existing monitoring location.
--	GW-003	Groundwater monitoring well (identified as MW-03). This is an existing monitoring location.
--	BIO-001	Representative sample location for biosolids.
--	SPL-001	Station shall be established where a representative sample of the municipal water supply can be obtained.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. The Discharger shall monitor influent to the Facility at INF-001 as follows:

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Meter	Continuous	[1]
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/month	[1]
pH	Standard Units	Grab	1/day	[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L lbs/day	24-hr Composite[2,3]	1/day	[1]
Total Suspended Solids	mg/L lbs/day	24-hr Composite[2,3]	1/day	[1]

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Appendix 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board.

[2] 24-hour flow proportional composite.

[3] BOD_5 and TSS samples shall be collected during the same 24-hour period as the effluent samples.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor treated wastewater at EFF-001 representing effluent discharged through Discharge Point No. 001 as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level.

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Meter	Continuous	[1]
Chlorine, Total Residual[2]	mg/L	Meter	Continuous	[1]
Turbidity	NTU	Meter	Continuous	[1]
pH	Standard Units	Meter	Continuous	[1]
Temperature	°F	Grab	1/day	[1]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/day	[1]
Total Coliform	MPN/100 mL	Grab	1/day	[1]
Ammonia Nitrogen, Total (as N)[3,4]	mg/L	Grab	1/week	[1]
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L lbs/day	24-hr Composite[5]	1/day	[1]
Total Suspended Solids	mg/L lbs/day	24-hr Composite[5]	1/day	[1]
Settleable Solids	ml/L	24-hr Composite[5]	1/week	[1]
Total Dissolved Solids (TDS)	mg/L	Grab	1/month	[1]
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/month	[1]
Cadmium, Total Recoverable[6]	µg/L	24-hr Composite[5]	1/month	[1]
Aluminum, Total Recoverable	µg/L	24-hr Composite[5]	1/month	[1]
Bis (2-Ethylhexyl) Phthalate[6]	µg/L	Grab	1/quarter	[1,7]
Cyanide, Total (as CN)[6]	µg/L	Grab	1/month	[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dibromochloromethane[6]	µg/L	Grab	1/month	[1]
Dichlorobromomethane[6]	µg/L	Grab	1/month	[1]
1,1-Dichloroethylene[6]	µg/L	Grab	1/quarter	[1]
Fluoride	µg/L	Grab	1/month	[1]
Mercury, Total Recoverable	µg/L	24-hr Composite	1/month	[1]
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/month	[1]
Iron, Total Recoverable	µg/L	24-hr Composite[5]	1/month	[1]
Manganese, Total Recoverable	µg/L	24-hr Composite[5]	1/month	[1]
Persistent Chlorinated Hydrocarbon Pesticides[8]	µg/L	24-hr Composite[5]	1/year	[1]
Priority Pollutants and Pollutants of Concern[6]	µg/L	[9]	[10]	[1]

[1] As specified in 40 CFR Part 136.

[2] Total chlorine residual must be monitored with a method sensitive to and accurate to a level of 0.01 mg/L. Monitoring for chlorine residual is only required when the Facility is using chlorine-based disinfection systems. Monitoring for chlorine residual is not required after the Discharger submits certification to the Regional Water Board that the use when the Facility is using its chlorine-based disinfection systems and the use of other chlorine-containing agents in its treatment process has been ceased. After certification of non-use of chlorine, the Discharger must, however, immediately restart monitoring for chlorine residual upon any unplanned use of chlorine in the treatment process.

[3] Concurrent with acute toxicity testing.

[4] pH and temperature data shall be collected on the same date and at the same time as the ammonia sample.

[5] 24-hour flow proportioned composite.

[6] For priority pollutant constituents with effluent limitations, detection limits shall be below the effluent limitations. If the lowest minimum level (ML) published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP) is not below the effluent limitation, the detection limit shall be the lowest ML. For priority pollutant constituents without effluent limitations, the detection limits shall be equal to or less than the lowest ML published in Appendix 4 of the SIP. See Attachment H for specific requirements.

[7] In order to verify if bis (2-ethylhexyl) phthalate is truly present in the effluent discharge, the Discharger shall take steps to assure that sample containers, sampling apparatus, and analytical equipment are not sources of the detected contaminant.

[8] Alpha BHC, aldrin, alpha endosulfan, beta endosulfan, beta BHC, gamma BHC (lindane), delta BHC, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, chlordane, dieldrin, endrin, endrin aldehyde, endosulfan sulfate, heptachlor, heptachlor epoxide, and toxaphene.

[9] Volatile organics and bis (2-ethylhexl) phthalate samples shall be grab samples; the remainder shall be 24-hour composite samples.

[10] Priority pollutants and pollutants of concern shall be sampled quarterly during the third year following the date of permit adoption and shall be conducted concurrently with upstream receiving water monitoring for hardness (as $CaCO_3$) and pH. The Discharger is not required to conduct effluent monitoring for priority pollutants that have already been sampled in a given quarter, as required in Table E-3. See Attachments H and I for more detailed requirements related to performing the priority pollutant study.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. **Acute Toxicity Testing.** The Discharger shall conduct acute toxicity testing to determine whether the effluent is contributing acute toxicity to the receiving water. The Discharger shall meet the following acute toxicity testing requirements:

1. *Monitoring Frequency* – The Discharger shall perform quarterly flow-through acute toxicity sampling, concurrent with effluent ammonia sampling.

2. *Test Species* – Test species shall be rainbow trout (*Oncorhynchus mykiss*).

3. *Methods* – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.

4. *Test Failure* – If an acute toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger must re-sample and re-test as soon as possible, not to exceed 7 days following notification of test failure.

B. **Chronic Toxicity Testing**. The Discharger shall conduct three species chronic toxicity testing to determine whether the effluent is contributing chronic toxicity to the receiving water. The Discharger shall meet the following chronic toxicity testing requirements:

1. *Monitoring Frequency* –The Discharger shall perform quarterly three species chronic toxicity testing.

2. *Sample Types* – Effluent samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the effluent monitoring location specified in the Monitoring and Reporting Program. The receiving water control shall be a grab sample obtained from the RSW-001 sampling location, as identified in the Monitoring and Reporting Program.

3. *Sample Volumes* – Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.

4. *Test Species* – Chronic toxicity testing measures sublethal (e.g., reduced growth, reproduction) and/or lethal effects to test organisms exposed to an effluent compared to that of the control organisms. The Discharger shall conduct chronic toxicity tests with:

   - The cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test);
   - The fathead minnow, *Pimephales promelas* (larval survival and growth test); and
   - The green alga, *Selenastrum capricornutum* (growth test).

5. *Methods* – The presence of chronic toxicity shall be estimated as specified in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition,* EPA/821-R-02-013, October 2002.

6. *Reference Toxicant* – As required by the SIP, all chronic toxicity tests shall be conducted with concurrent testing with a reference toxicant and shall be reported with the chronic toxicity test results.

7. *Dilutions* – The chronic toxicity testing shall be performed using the dilution series identified in Table E-4, below. The receiving water control shall be used as the diluent unless the receiving water is toxic or is dry upstream of the discharge. In such cases, laboratory control water may be used as the diluent.

8. *Test Failure* –The Discharger must re-sample and re-test as soon as possible, but no later than fourteen (14) days after receiving notification of a test failure. A test failure is defined as follows:

   - The reference toxicant test or the effluent test does not meet all test acceptability criteria as specified in the *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA/821-R-02-013, October 2002 (Method Manual), and its subsequent amendments or revisions; or

   - The percent minimum significant difference (PMSD) measured for the test exceeds the upper PMSD bound variability criterion in Table 6 on page 52 of the Method Manual. (A retest is only required in this case if the test results do not exceed the monitoring trigger specified in Special Provisions VI.C.2.a.iii.).

Table E-4. Chronic Toxicity Testing Dilution Series

Sample	Dilutions (%)					Controls	
	100	75	50	25	12.5	Receiving Water	Laboratory Water
% Effluent	100	75	50	25	12.5	0	0
% Receiving Water[1]	0	25	50	75	87.5	100	0
% Laboratory Water	0	0	0	0	0	0	100

[1] If receiving water is toxic, laboratory water will be used for the dilution series as described in EPA Method 821-R-02-013 Section 7.12.

C. **WET Testing Notification Requirements**. The Discharger shall notify the Regional Water Board within 24-hrs after the receipt of test results exceeding the monitoring trigger during regular or accelerated monitoring, or an exceedance of the acute toxicity effluent limitation.

D. **WET Testing Reporting Requirements**. All toxicity test reports shall include the contracting laboratory's complete report provided to the Discharger and shall be in accordance with the appropriate "Report Preparation and Test Review" sections of the

method manuals. At a minimum, whole effluent toxicity monitoring shall be reported as follows:

1. **Chronic WET Reporting.** Regular chronic toxicity monitoring results shall be reported to the Regional Water Board on the schedule for quarterly sampling described in Table E-9, and shall contain, at a minimum:
   a. The results expressed in TUc, measured as 100/NOEC, and also measured as $100/LC_{50}$, $100/EC_{25}$, $100/IC_{25}$, and $100/IC_{50}$, as appropriate.
   b. The statistical methods used to calculate endpoints;
   c. The statistical output page, which includes the calculation of the percent minimum significant difference (PMSD);
   d. The dates of sample collection and initiation of each toxicity test; and
   e. The results compared to the numeric toxicity monitoring trigger.

   Additionally, the quarterly discharger self-monitoring reports shall contain an updated chronology of chronic toxicity test results expressed in TUc, and organized by test species, type of test (survival, growth or reproduction), and monitoring frequency, i.e., either quarterly, monthly, accelerated, or TRE.

2. **Acute WET Reporting.** Acute toxicity test results shall be submitted with the monthly discharger self-monitoring reports and reported as percent survival.

3. **TRE Reporting.** Reports for Toxicity Reduction Evaluations shall be submitted in accordance with the schedule contained in the Discharger's approved TRE Work Plan.

4. **Quality Assurance (QA).** The Discharger must provide the following information for QA purposes:
   a. Results of the applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD, and dates tested.
   b. The reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory.
   c. Any information on deviations or problems encountered and how they were dealt with.

VI. LAND DISCHARGE MONITORING REQUIREMENTS

A. Monitoring Location LND-001, LND-002, LND-003, and LND-004

1. When emergency storage basins contain water for more than seven consecutive days, the Discharger shall monitor the storage basins at LND-001, LND-002, LND-003, and LND-004 as follows:

Table E-5. Land Discharge Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Freeboard	Feet[1,2]	--	1/day	[3]
pH	Standard Units	Grab	1/week	[3]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/week	[3]
Odors	Observation	--	1/week	[3]
Levee Condition	Observation	--	1/week	[3]
Dissolved Oxygen	mg/L	Grab	1/month	[3]

1 To be measured vertically to the lowest point of overflow.

2 Include estimation of volume of wastewater in each pond.

3 Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Appendix 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board.

VII. RECLAMATION MONITORING REQUIREMENTS

[Not applicable]

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER

A. Monitoring Location RSW-001 and RSW-002

1. The Discharger shall monitor Pleasant Grove Creek at RSW-001 and RSW-002 as follows:

Table E-6. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dissolved Oxygen[1,2,3]	mg/L	Grab	1/week	[4]
pH[1,5]	Standard Units	Grab	1/week	[4]
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/month	[4]
Temperature[1,5]	°F (°C)	Grab	1/week	[4]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/week	[4]
Priority Pollutants and Pollutants of Concern	µg/L	Grab	[6]	[4]

1 A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

2 Temperature shall be determined at the time of sample collection for use in determining saturation concentration. Any additional factors or parameters used in determining saturation concentration shall also be reported.

3 Report both saturation and saturation concentration.

4 Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Appendix 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board.

[5] pH, temperature, and hardness data shall be collected at the same time and on the same date as the effluent priority pollutant samples.

[6] Priority pollutants shall be sampled quarterly at RSW-001 during the third year following the date of permit adoption and shall be conducted concurrently with upstream receiving water monitoring for hardness (as $CaCO_3$) and pH. See Attachments H and I for more detailed requirements related to performing the priority pollutant study.

2. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Monitoring Locations RSW-001 and RSW-002. Attention shall be given to the presence or absence of:

   a. Floating or suspended matter,
   b. Discoloration,
   c. Bottom deposits,
   d. Aquatic life,
   e. Visible films, sheens, or coatings,
   f. Fungi, slimes, or objectionable growths, and
   g. Potential nuisance conditions.

   Notes on receiving water conditions shall be summarized in the monitoring report.

B. Monitoring Locations GW-001, GW-002, and GW-003

1. The Discharger shall monitor groundwater at GW-001, GW-002, and GW-003 as follows:

Table E-7. Groundwater Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Depth to Groundwater	Feet	--	1/month	[1]
Groundwater Elevation[2]	Feet	--	1/month	[1]
pH[3]	Standard Units	Grab	1/month	[1]
Electrical Conductivity @ 25°C[3]	µmhos/cm	Grab	1/month	[1]
Total Dissolved Solids	mg/L	Grab	1/month[4]	[1]
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/quarter[4]	[1]
Total Coliform	MPN/100 mL	Grab	1/quarter[4]	[1]
Metals[5]	mg/L	Grab	1/year[4]	[1]
Volatile Organics[6]	µg/L	Grab	1/year[4]	[1]
Semi-Volatile Organics[7]	µg/L	Grab	1/year[4]	[1]
Oxygenate Compounds[8]	µg/L	Grab	1/year[4]	[1]

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Appendix 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board.

[2] The groundwater elevation shall be used to calculate the direction and gradient of groundwater flow. Elevations shall be measured to the nearest one-hundredth of a foot from mean sea level. The groundwater elevation shall be measured prior to purging the wells.

[3] A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

[4] These constituents shall be sampled only when wastewater is present in the storage basins.

[5] Metals include those listed in Appendix 4, Table 2c-Inorganics, in the SIP.
[6] Volatile organics include those listed in Appendix 4, Table 2a – Volatile Substances, in the SIP.
[7] Semi-volatile organics include those listed in Appendix 4, Table 2b – Semi-Volatile Substances, in the SIP.
[8] Monitoring for oxygenate compounds shall include those analyzed by USEPA Method 8260.

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids

1. Monitoring Location BIO-001

a. A composite sample of sludge shall be collected quarterly at Monitoring Location BIO-001 in accordance with EPA's *POTW Sludge Sampling and Analysis Guidance Document*, August 1989, and tested for priority pollutants listed in 40 CFR Part 122, Appendix D, Tables II and III (excluding total phenols).

b. Sampling records shall be retained for a minimum of **5 years**. A log shall be maintained of sludge quantities generated and of handling and disposal activities. The frequency of entries is discretionary; however, the log must be complete enough to serve as a basis for part of the annual report.

c. Upon removal of sludge, the Discharger shall submit characterization of sludge quality, including sludge percent solids and the most recent quantitative results of chemical analysis for the priority pollutants listed in 40 CFR Part 122, Appendix D, Tables II and III (excluding total phenols). In addition to USEPA's POTW *Sludge Sampling and Analysis Guidance Document*, August 1989, suggested methods for analysis of sludge are provided in USEPA publications titled "*Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*" and "*Test Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater*". Recommended analytical holding times for sludge samples should reflect those specified in 40 CFR 136.6.3(e).

B. Municipal Water Supply

1. Monitoring Location SPL-001

The Discharger shall monitor the Municipal Water Supply at SPL-001 as follows. A sampling station shall be established where a representative sample of the municipal water supply can be obtained. Municipal water supply samples shall be collected at approximately the same time as effluent samples.

Table E-8. Municipal Water Supply Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total Dissolved Solids[1]	mg/L	Grab	1/quarter	[2]
Electrical Conductivity @ 25°C[1]	µmhos/cm	Grab	1/quarter	[2]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Standard Minerals	mg/L	Grab	1/year	[2]

[1] If the water supply is from more than one source, the total dissolved solids and electrical conductivity shall be reported as a weighted average and include copies of supporting calculations.
[2] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Appendix 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board.
[3] Standard minerals shall include all major cations and anions and include verification that the analysis is complete (i.e., cation/anion balance).

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

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

2. Upon written request of the Regional Water Board, the Discharger shall submit a summary monitoring report. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).

3. **Compliance Time Schedules.** For compliance time schedules included in the Order, if applicable, the Discharger shall submit to the Regional Water Board, on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Water Board by letter when it returns to compliance with the compliance time schedule.

4. The Discharger shall report to the Regional Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act" of 1986.

5. **Reporting Protocols.** As part of the self-monitoring reports required in Section X.B below, the Discharger shall report with each sample result the applicable Reporting Level (RL) and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR 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 RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

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

estimated chemical concentration of the sample shall also be reported.

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

6. **Multiple Sample Data.** When determining compliance with an AMEL, AWEL, or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "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:

   a. 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.

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

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 Self-Monitoring Reports (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. Monitoring results shall be submitted to the Regional Water Board by the **first day** of the second month following sample collection. Quarterly and annual monitoring

results shall be submitted by the **first day of the second month following each calendar quarter, semi-annual period, and year**, respectively.

3. In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge complies with waste discharge requirements. The highest daily maximum for the month, monthly and weekly averages, and medians, and removal efficiencies (%) for BOD_5 and TSS, shall be determined and recorded as needed to demonstrate compliance.

4. With the exception of flow, all constituents monitored on a continuous basis (metered), shall be reported as daily maximums, daily minimums, and daily averages; flow shall be reported as the total volume discharged per day for each day of discharge.

5. If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.

6. A letter transmitting the self-monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions.

7. 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:

   Regional Water Quality Control Board
   Central Valley Region
   NPDES Compliance and Enforcement Unit
   11020 Sun Center Dr., Suite #200
   Rancho Cordova, CA 95670-6114

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

Table E-9. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	1st day of calendar month following permit effective date	All	First day of second calendar month following

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
			month of sampling.
1/day	1st day of calendar month following permit effective date	Any 24-hour period that reasonably represents a calendar day for purposes of sampling.	First day of second calendar month following month of sampling.
1/week	1st Sunday of calendar month following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of second calendar month following month of sampling
1/month	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	First day of calendar month through last day of calendar month	First day of second calendar month following month of sampling.
1/quarter	Closest of 1 January, 1 April, 1 July, or 1 October following (or on) permit effective date	1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	1 May 1 August 1 November 1 February
1/year	1 January following (or on) permit effective date	1 January through 31 December	1 February

C. Discharge Monitoring Reports (DMRs)

1. As described in Section X.B.1 above, at any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of 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 cannot be accepted unless they follow the exact same format as EPA form 3320-1.

D. Other Reports

1. **Progress Reports.** As specified in the Special Provisions, progress reports shall be submitted in accordance with the following reporting requirements. At minimum, the progress reports shall include a discussion of the status of final compliance, whether

the Discharger is on schedule to meet the final compliance date, and the remaining tasks to meet the final compliance date.

Table E-10. Reporting Requirements for Special Provisions Progress Reports

Special Provision	Reporting Requirements
Annual report describing the overall status of BPTC implementation (if applicable) and compliance with groundwater limitations over the past reporting year (Section VI.C.2.c)	**1 June**, annually (if applicable)
Progress in achieving Salinity Reduction Goal (Section VI.C.3.c)	Submitted as part of the Report of Waste Discharge
Compliance Schedules for Final Effluent Limitations for cadmium and fluoride compliance with final effluent limitations (Section VI.C.7)	**1 June**, annually, until final compliance

2. Within **60 days** of permit adoption, the Discharger shall submit a report outlining minimum levels, method detection limits, and analytical methods for approval, with a goal to achieve detection levels below applicable water quality criteria. At a minimum, the Discharger shall comply with the monitoring requirements for CTR constituents as outlined in Section 2.3 and 2.4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, adopted 2 March 2000 by the State Water Resources Control Board. All peaks identified by analytical methods shall be reported.

3. The Discharger's sanitary sewer system collects wastewater using sewers, pipes, pumps, and/or other conveyance systems and directs the raw sewage to the wastewater treatment plant. A "sanitary sewer overflow" is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the wastewater treatment plant. Sanitary sewer overflows are prohibited by this Order. All violations must be reported as required in Standard Provisions. Facilities (such as wet wells, regulated impoundments, tanks, highlines, etc.) may be part of a sanitary sewer system and discharges to these facilities are not considered sanitary sewer overflows, provided that the waste is fully contained within these temporary storage facilities.

4. **Annual Operations Report**. By **1 February** of each year, the Discharger shall submit a written report to the Executive Officer containing the following:

   a. The names, certificate grades, and general responsibilities of all persons employed at the Facility.

   b. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.

   c. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.

   d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently

constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.

e. The Discharger may also be requested to submit an annual report to the Regional Water Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

5. **Annual Pretreatment Reporting Requirements.** The Discharger shall submit annually a report to the Regional Water Board, with copies to USEPA Region 9 and the State Water Board, describing the Discharger's pretreatment activities over the previous 12 months. In the event that the Discharger is not in compliance with any conditions or requirements of this Order, including noncompliance with pretreatment audit/compliance inspection requirements, then the Discharger shall also include the reasons for noncompliance and state how and when the Discharger shall comply with such conditions and requirements.

   The Discharger may combine annual pretreatment reporting requirements for both this Facility and their Dry Creek Wastewater Treatment Plant (CA0079502). If the reports are combined for both plants, then the Discharger shall note so in its transmittal letter accompanying the submission of the annual report.

   An annual report shall be submitted by **28 February** and include at least the following items:

   a. A summary of analytical results from representative, flow proportioned, 24-hour composite sampling of the POTW's influent and effluent for those pollutants EPA has identified under Section 307(a) of the CWA which are known or suspected to be discharged by industrial users.

      Sludge shall be sampled during the same 24-hour period and analyzed for the same pollutants as the influent and effluent sampling and analysis. The sludge analyzed shall be a composite sample of a minimum of 12 discrete samples taken at equal time intervals over the 24-hour period. Wastewater and sludge sampling and analysis shall be performed at least annually. The discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants which may be causing or contributing to Interference, Pass-Through or adversely impacting sludge quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto.

   b. A discussion of Upset, Interference, or Pass-Through incidents, if any, at the treatment plant, which the Discharger knows or suspects were caused by industrial users of the POTW. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and

address of, the industrial user(s) responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent Pass-Through, Interference, or noncompliance with sludge disposal requirements.

c. The cumulative number of industrial users that the Discharger has notified regarding Baseline Monitoring Reports and the cumulative number of industrial user responses.

d. An updated list of the Discharger's industrial users including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Discharger shall provide a brief explanation for each deletion. The list shall identify the industrial users subject to federal categorical standards by specifying which set(s) of standards are applicable. The list shall indicate which categorical industries, or specific pollutants from each industry, are subject to local limitations that are more stringent than the federal categorical standards. The Discharger shall also list the noncategorical industrial users that are subject only to local discharge limitations. The Discharger shall characterize the compliance status through the year of record of each industrial user by employing the following descriptions:

   i. complied with baseline monitoring report requirements (where applicable);
   ii. consistently achieved compliance;
   iii. inconsistently achieved compliance;
   iv. significantly violated applicable pretreatment requirements as defined by 40 CFR 403.8(f)(2)(vii);
   v. complied with schedule to achieve compliance (include the date final compliance is required);
   vi. did not achieve compliance and not on a compliance schedule; and
   vii. compliance status unknown.

   A report describing the compliance status of each industrial user characterized by the descriptions in items iii. through vii. above shall be submitted for each calendar quarter **within 21 days of the end of the quarter**. The report shall identify the specific compliance status of each such industrial user and shall also identify the compliance status of the POTW with regards to audit/pretreatment compliance inspection requirements. If none of the aforementioned conditions exist, at a minimum, a letter indicating that all industries are in compliance and no violations or changes to the pretreatment program have occurred during the quarter must be submitted. The information required in the fourth quarter report shall be included as part of the annual report. This quarterly reporting requirement shall commence upon issuance of this Order.

e. A summary of the inspection and sampling activities conducted by the Discharger during the past year to gather information and data regarding the industrial users. The summary shall include:

i. the names and addresses of the industrial users subjected to surveillance and an explanation of whether they were inspected, sampled, or both and the frequency of these activities at each user; and
ii. the conclusions or results from the inspection or sampling of each industrial user.

f. A summary of the compliance and enforcement activities during the past year. The summary shall include the names and addresses of the industrial users affected by the following actions:

i. Warning letters or notices of violation regarding the industrial users' apparent noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the apparent violation concerned the federal categorical standards or local discharge limitations.
ii. Administrative orders regarding the industrial users noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.
iii. Civil actions regarding the industrial users' noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.
iv. Criminal actions regarding the industrial users noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.
v. Assessment of monetary penalties. For each industrial user identify the amount of the penalties.
vi. Restriction of flow to the POTW.
vii. Disconnection from discharge to the POTW.

g. A description of any significant changes in operating the pretreatment program which differ from the information in the Discharger's approved Pretreatment Program including, but not limited to, changes concerning: the program's administrative structure, local industrial discharge limitations, monitoring program or monitoring frequencies, legal authority or enforcement policy, funding mechanisms, resource requirements, or staffing levels.

h. A summary of the annual pretreatment budget, including the cost of pretreatment program functions and equipment purchases.

Duplicate signed copies of these Pretreatment Program reports shall be submitted to the Regional Water Board and the:

State Water Resources Control Board
Division of Water Quality
P.O. Box 944213
Sacramento, CA 94244-2130

and the

Regional Administrator
U.S. Environmental Protection Agency W-5
75 Hawthorne Street
San Francisco, CA 94105

ATTACHMENT F – FACT SHEET

Table of Contents

Attachment F – Fact Sheet F-3
I. Permit Information F-3
II. Facility Description F-4
A. Description of Wastewater and Biosolids Treatment or Controls F-4
B. Discharge Points and Receiving Waters F-5
C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data F-5
D. Compliance Summary F-7
E. Planned Changes F-8
III. Applicable Plans, Policies, and Regulations F-8
A. Legal Authority F-8
B. California Environmental Quality Act (CEQA) F-8
C. State and Federal Regulations, Policies, and Plans F-8
D. Impaired Water Bodies on CWA 303(d) List F-11
E. Other Plans, Polices and Regulations F-12
IV. Rationale For Effluent Limitations and Discharge Specifications F-12
A. Discharge Prohibitions F-13
B. Technology-Based Effluent Limitations F-14
1. Scope and Authority F-14
2. Applicable Technology-Based Effluent Limitations F-14
C. Water Quality-Based Effluent Limitations (WQBELs) F-15
1. Scope and Authority F-15
2. Applicable Beneficial Uses and Water Quality Criteria and Objectives F-16
3. Determining the Need for WQBELs F-17
4. WQBEL Calculations F-34
5. Whole Effluent Toxicity (WET) F-39
D. Final Effluent Limitations F-40
1. Mass-based Effluent Limitations F-40
2. Averaging Periods for Effluent Limitations F-41
3. Satisfaction of Anti-Backsliding Requirements F-41
4. Satisfaction of Antidegradation Policy F-42
E. Interim Effluent Limitations F-48
F. Land Discharge Specifications F-48
G. Reclamation Specifications F-48
V. Rationale for Receiving Water Limitations F-49
A. Surface Water F-49
B. Groundwater F-49
VI. Rationale for Monitoring and Reporting Requirements F-50
A. Influent Monitoring F-50
B. Effluent Monitoring F-50
C. Whole Effluent Toxicity Testing Requirements F-52
D. Receiving Water Monitoring F-52
1. Surface Water F-52
2. Groundwater F-52
E. Other Monitoring Requirements F-54

VII. Rationale for Provisions F-54
A. Standard Provisions F-54
B. Special Provisions F-55
1. Reopener Provisions F-55
2. Special Studies and Additional Monitoring Requirements F-55
3. Best Management Practices and Pollution Prevention F-59
4. Construction, Operation, and Maintenance Specifications F-60
5. Special Provisions for Municipal Facilities (POTWs Only) F-60
6. Other Special Provisions F-61
7. Compliance Schedules F-62
VIII. Public Participation F-62
A. Notification of Interested Parties F-62
B. Written Comments F-62
C. Public Hearing F-62
D. Waste Discharge Requirements Petitions F-63
E. Information and Copying F-63
F. Register of Interested Persons F-63
G. Additional Information F-63

List of Tables

Table F-1. Facility Information F-3
Table F-2. Historic Effluent Limitations and Monitoring Data F-5
Table F-3. Historic Effluent Limitations and Monitoring Data F-6
Table F-4. Historic Effluent Limitations and Monitoring Data F-7
Table F-5. Summary of Technology-based Effluent Limitations F-15
Table F-6. Salinity Water Quality Criteria/Objectives F-30
Table F-7. WQBEL Calculations for Aluminum F-36
Table F-8. WQBEL Calculations for Ammonia F-36
Table F-9. WQBEL Calculations for Cadmium F-37
Table F-10. WQBEL Calculations for Cyanide F-37
Table F-11. WQBEL Calculations for Dibromochloromethane F-37
Table F-12. WQBEL Calculations for Dichlorobromomethane F-38
Table F-13. Summary of Water Quality-based Effluent Limitations F-38
Table F-14. Summary of Final Effluent Limitations 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	5A310106007
Discharger	City of Roseville
Name of Facility	Pleasant Grove Wastewater Treatment Plant
Facility Address	5051 Phillips Road Roseville, CA 95747 Placer County
Facility Contact, Title and Phone	Alfred Lawrence, Chief Operator, (916) 746-1902
Authorized Person to Sign and Submit Reports	Art O'Brien, Wastewater Utility Manager, (916) 774-5754
Mailing Address	Same as Facility Address
Billing Address	2005 Hilltop Circle, Roseville, CA 95747
Type of Facility	Publicly Owned Treatment Works (POTW)
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Y
Reclamation Requirements	Not applicable
Facility Permitted Flow	Average dry weather flow of 12 million gallons per day (mgd); 15 mgd upon completion of plant expansion and upgrades
Facility Design Flow	Average dry weather flow of 12 mgd; 15 mgd upon completion of plant expansion and upgrades
Watershed	Pleasant Grove
Receiving Water	Pleasant Grove Creek
Receiving Water Type	Inland Surface Water

A. The City of Roseville (hereinafter Discharger) is the owner and operator of the Pleasant Grove Wastewater Treatment Plant (hereinafter Facility), a POTW. The Discharger owns and operates portions of the wastewater collection system. Placer County and the

South Placer Municipal Utility District own and operate the remaining portions of the wastewater collection system.

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

B. The Facility discharges wastewater to Pleasant Grove Creek, a water of the United States, and is currently regulated by Order No. 5-00-075 which was adopted on 17 March 2000 and expired on 17 March 2005. The terms and conditions of the current Order have been automatically continued and remain in effect until new Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit are adopted pursuant to this Order.

C. The Discharger filed a report of waste discharge and submitted an application for renewal of its WDRs and NPDES permit on 30 September 2004. An addendum to the report of waste discharge was submitted on 10 December 2007 to provide updated data and information, as well as request to expand the capacity of the Facility from a design average dry weather flow (ADWF) of 12.0 mgd to 15.0 mgd.

II. FACILITY DESCRIPTION

The Facility provides for the treatment of sewerage for the northwestern portion of the service area within the City of Roseville, portions of southeast Placer County, and the South Placer Municipal Utility District. The Facility serves a population of approximately 78,000. The Facility's current design ADWF rate is 12.0 mgd. As described in Section II.E below, the Discharger has plans to upgrade the Facility to increase the overall capacity to 15.0 mgd (ADWF).

Previously, all wastewater from the entire service area was treated at the existing Dry Creek Wastewater Treatment Plant (WWTP). The Discharger diverted part of the wastewater directed to the Dry Creek WWTP to the new Facility. Wastewater from five of the City's six permitted significant industrial users (SIUs) is now discharged to the Facility. Wastewater was diverted to the Facility over a seven month period, from July 2004 through January 2005.

A. Description of Wastewater and Biosolids Treatment or Controls

The wastewater treatment system at the Facility consists of mechanically cleaned bar screens, aerated grit basins, secondary treatment activated sludge oxidation ditches with nitrification-denitrification, and secondary clarification. Tertiary treatment is provided by chemical coagulation with organic polymers, using rapid mix flocculation, followed by continuous backwash filtration, disinfection with hypochlorite, dechlorination using sodium bisulfate, and final polishing via cascade aeration to increase dissolved oxygen.

As a condition of the approval under CEQA for the construction of the Facility, effluent storage was required as a mitigation measure to reduce the potential for downstream flooding of Pleasant Grove Creek due to discharges from the Facility. The Facility includes three storage basins (approximately 31.8 acres with a combined capacity of 65.1 million gallons) that provide effluent storage capacity and 100-year flood protection by storing partially treated effluent for short periods or by storing only tertiary treated effluent. These storage basins are also used in the event of plant upsets to prevent discharge of effluent that does not meet discharge requirements. An additional emergency storage basin (approximately 10 acres with a capacity of 20.6 million gallons) is used to store influent that could compromise the plant process, as well as secondary effluent, or tertiary filter effluent from plant upsets.

Biosolids treatment consists of an aerated waste activated sludge holding tank and centrifuges for dewatering. Biosolids are disposed offsite at the Western Regional Sanitary Landfill.

B. Discharge Points and Receiving Waters

1. The Facility is located in Section 23, T11N, R5E, MDB&M, as shown in Attachment B, a part of this Order.

2. Treated municipal wastewater is discharged at Discharge Point No. 001 to Pleasant Grove Creek, a water of the United States (and a tributary to Pleasant Grove Creek Canal, Natomas Cross Canal, and the Sacramento River, south of confluence with the Feather River) at a point latitude 38° 79’ 21” N and longitude 121° 37’ 01” W.

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

Effluent limitations contained in Order No. 5-00-075 for discharges from Discharge Point No. 001 and representative monitoring data from the term of Order No. 5-00-075 are summarized in the tables below.

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Monitoring Data October 2004 – December 2006		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	3.6	5.2	8
	lbs/ day[1]	1,000	1,500	2,000	189	236	439
	% removal	85[2]	--	--	97.1	--	--
Total Suspended Solids	mg/L	10	15	20	4.7	6.9	8.9
	lbs/ day[1]	1,000	1,500	2,000	204	250	377
	% removal	85[2]	--	--	97.1	--	--

Parameter	Units	Effluent Limitation			Monitoring Data October 2004 – December 2006		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Oil and Grease	mg/L	10	--	15	<5		<5
	lbs/day[1]	1,000	--	1,500	<334	--	<345
MBAS	mg/L	--	--	0.5	--	--	0.49
	lbs/day[1]	--	--	50	--	--	27.8
Turbidity	NTU	2[3]	--	5	2[3]	--	5.7
Settleable Solids	ml/L	0.1	--	0.2	NR	--	NR

ND – Reported as non-detect.
NR – Not Reported.
1 Based on a design treatment capacity of 12 mgd (X mg/L x 8.345 x 12 mgd = Y lbs/day).
2 The arithmetic mean of BOD_5 and TSS collected over a monthly period shall not exceed 15% of the arithmetic mean of the values for influent samples.
3 A daily average.

Table F-3. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation				Monitoring Data October 2004 - December 2006			
		1-Hour Average[1]	4-Day Average[2]	30-Day Average	Daily Max	Highest 1-Hour Average[1]	Highest 4-Day Average[2]	Highest 30-Day Average	Daily Max
Chlorine Residual	mg/L	0.02	0.01	--	--	0.83	0.0	--	--
	lbs/day[3]	2	1	--	--	30	0.0	--	--
Ammonia	mg N/L	[5]	--	[5]	--	Range of 0.1-7.6			
	lbs/day[3]	[7]	--	[7]	--	Range of 0.0-477			
Acrolein	µg/L	--	--	21	68	--	--	<14	<14
	lbs/day[3]	--	--	2	7	--	--	<0.9	<0.9
Bis(2-Ethylhexyl) Phthalate	µg/L	--	--	1.8	--	--	--	5.7	--
	lbs/day[3]	--	--	0.2	--	--	--	0.3	--
Organochlorine Pesticides	µg/L	--	--	--	ND[4]	--	--	--	ND[4]
	lbs/day[3]	--	--	--	0.0	--	--	--	0.0
Cadmium	µg/L	[6]	[6]	--	--	Range of <0.03 – 5.6			
	lbs/day[3]	[7]	[7]	--	--	Range of 0.0 - 0.3			
Copper	µg/L	[6]	[6]	--	--	Range of 1.1 - 6.6			
	lbs/day[3]	[7]	[7]	--	--	Range of 0.06 - 0.19			
Cyanide	µg/L	22	5.2	--	--	29	18	--	--
	lbs/day[3]	2	0.5	--	--	1.5	0.95	--	--
Mercury	lbs/12 month	--	--	1.71[8]	--	--	--	0.001[8]	--
pH	standard units	Range of 6.5-8.5				Range of 6.7-8.0			

Parameter	Units	Effluent Limitation				Monitoring Data October 2004 - December 2006			
		1-Hour Average[1]	4-Day Average[2]	30-Day Average	Daily Max	Highest 1-Hour Average[1]	Highest 4-Day Average[2]	Highest 30-Day Average	Daily Max
Flow	mgd	--	--	12[9]	--	--	--	7[9]	--
Acute Toxicity	% of survival	[10]				Minimum of 95%			

ND – Reported as non-detect.
1 Maximum Concentration.
2 Continuous Concentration.
3 Based upon a design treatment capacity of 12 mgd (x mg/L x 8.345 x 12 mgd = y lbs/day).
4 The Non-Detectable (ND) limitation applies to each individual pesticide. No individual pesticide may be present in the discharge at detectable concentrations. The Discharger shall use EPA standard analytical techniques with the lowest possible detectable level for organochlorine pesticides with a maximum acceptable detection level of 0.05 µg/L.
5 Floating effluent limitation based on pH and temperature.
6 Floating effluent limitation based on hardness.
7 Using the value in mg/L calculate the lbs per day using the formula: x mg/L X 8.34 x 12 mgd = y lbs/day.
8 The interim mass effluent limit for mercury shall not exceed 1.71 lbs per 12 months on a running average for the combined discharges to surface waters from the Pleasant Grove and Dry Creek Wastewater Treatment Plants.
9 The 30-day average dry weather discharge flow.
10 Minimum for any one bioassay is 70% and median for any three or more consecutive bioassays is 90%.

Table F-4. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation		Monitoring Data January 2004 – December 2006	
		7-Day Median[1]	Single Sample, 30-Day Maximum[2]	Highest 7-Day Median[1]	Single Sample, 30-Day Maximum[2]
Total Coliform Organisms	MPN/100 mL	2.2	23 to 240	2	50

1 7-Day Median is based on the sample results of the previous 7 days.
2 In a 30-day period, only a single sample may exceed 23 MPN/100 mL, and no sample should exceed 240 MPN/100 mL.

D. Compliance Summary

The following compliance summary applies to the Facility during the term of Order No. 5-00-075 (NPDES Permit No. CA0084573).

1. Based on monitoring data collected during the term of Order No. 5-00-075, the Facility exceeded coliform limitations (7-day median) and cyanide limitations (1-hour and 4-day average) occasionally. The effluent limitations for turbidity (daily maximum), chlorine residual (1-hour average), bis (2-ethylhexyl) phthalate (30-day average), and a receiving water limitation of increment of 5°F were exceeded infrequently.

2. A pretreatment inspection was conducted on 15 February 2006 for both the Facility and the Dry Creek WWTP. The primary finding from this inspection was that although the Discharger recognized that Envirotech Dewatering could have a reasonable

potential to adversely affect the Facility, it was not considered an SIU. It was recommended to classify Envirotech Dewatering as an SIU and issue a permit to the non-domestic user to ensure adequate protection of the Facility.

E. Planned Changes

The Discharger is planning an expansion and upgrade to the Facility to accommodate anticipated development in the service area. In particular, the Discharger is increasing the treatment capacity from 12.0 mgd to 15.0 mgd (ADWF). The following specific additions and improvements are planned for the Facility:

- Addition of primary clarifiers;
- Possible expansion of secondary treatment processes including the addition of a new oxidation ditch and secondary claifier;
- Replacing the hypochlorite disinfection system with an ultraviolet light system;
- Addition of fine screens upstream of the existing tertiary filters;
- Expansion of the solids handling facilities; and
- Addition of an anaerobic digestion process.

The effluent storage basins will be reduced in size from 31.8 acres to 27.2 acres and the capacity will be reduced from 65.1 million gallons to 31.9 million gallons. The Discharger has determined that this capacity still meets the CEQA requirements of reducing the potential for downstream flooding of Pleasant Grove Creek. The proposed schedule for completion of the upgrade is at the end of 2011 for the replacement of the disinfection system, and as needed based on growth and flow projections for the remainder of the upgrades.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the applicable plans, policies, and regulations identified in section II of the Limitations and Discharge Requirements (Findings). This section provides supplemental information, where appropriate, for the plans, policies, and regulations relevant to the discharge.

A. Legal Authority

See Limitations and Discharge Requirements - Findings, Section II.C.

B. California Environmental Quality Act (CEQA)

See Limitations and Discharge Requirements - Findings, Section II.E.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans**. The Regional Water Board adopted a Water Quality Control Plan, Fourth Edition (Revised February 2007), for the Sacramento and San Joaquin River Basin (Basin Plan) that designates beneficial uses, establishes water

quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, State Water Board Resolution No. 88-63 requires that, with certain exceptions, the Regional Water Board assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan. The beneficial uses of Pleasant Grove Creek are not individually identified in the Basin Plan, but Pleasant Grove Creek is a tributary to Pleasant Grove Creek Canal and Natomas Cross Canal, and further to a section of the Sacramento River between the Colusa Basin Drain and the I Street Bridge in Sacramento. Upon review of the flow conditions, habitat values, and beneficial uses of Pleasant Grove Creek, the Board finds that the beneficial uses identified in the Basin Plan for the Sacramento River, from the Colusa Basin Drain to the I Street Bridge, are applicable to Pleasant Grove Creek. The beneficial uses of the Sacramento River from the Colusa Basin Drain to the I Street Bridge are municipal and domestic supply, agricultural irrigation, water contact recreation, canoeing and rafting recreation, other non-contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, warm fish migration habitat, cold fish migration habitat, warm and cold spawning habitat, wildlife habitat, and navigation.

The Basin Plan, on page IV-24, prohibits the direct discharge of municipal and industrial wastewater into the Sacramento River from the confluence with the Feather River to the Freeport Bridge. When sufficient water is present, the discharged effluent flows through western Placer County and Sutter County where it commingles with water in Pleasant Grove Creek Canal and Natomas Cross Canal before entering the Sacramento River. The discharge to the Sacramento River is not a direct discharge.

The Basin Plan on page II-1.00 states: "*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning…*" and with respect to disposal of wastewaters states that "...*disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses.*"

The federal CWA section 101(a)(2), states: "*it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983.*" Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal Regulations, 40 CFR 131.2 and 131.10, require that all waters of the State regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shellfish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. 40 CFR 131.3(e), defines existing beneficial uses as those uses actually attained after 28 November 1975, whether or not they are included in the water quality standards. Federal Regulation, 40 CFR 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

2. **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 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 Discharger submitted an Antidegradation Analysis Report in accordance with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16 stating that in order to maintain beneficial uses of the receiving water and to limit degradation of the receiving water, the Discharger operates a wastewater treatment process that meets or exceeds the highest statutory and regulatory requirements which meets or exceeds Best Practical Treatment or Control (BPTC).

   The Regional Water Board finds that the Discharger implements water conservation measures, utilizes tertiary treatment technology, and reclaims treated wastewater as the means of minimizing degradation and discharges in accordance with federal and State antidegradation policies. Therefore, the Regional Water Board finds that the Discharger is implementing all reasonable alternatives to discharge, and the permitted discharge allows important economic and social development to occur. Therefore, this Order is in accordance with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16.

3. **Anti-Backsliding Requirements.** Sections 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. Compliance with the anti-backsliding requirements is discussed in Section IV.D.3.

4. **Emergency Planning and Community Right to Know Act**. Section 13263.6(a), California Water Code, requires that "*the Regional Water Board shall prescribe effluent limitations as part of the waste discharge requirements of a POTW for all substances that the most recent toxic chemical release data reported to the state emergency response commission pursuant to Section 313 of the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. Sec. 11023) (EPCRA) indicate as discharged into the POTW, for which the State Water Board or the Regional Water Board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective*".

   The most recent toxic chemical data report does not indicate any reportable off-site releases or discharges to the collection system for this Facility. Therefore, a reasonable potential analysis based on information from EPCRA cannot be

conducted. Based on information from EPCRA, there is no reasonable potential to cause or contribute to an excursion above any numeric water quality objectives included within the Basin Plan or in any State Water Board plan, so no effluent limitations are included in this permit pursuant to CWC section 13263.6(a).

However, as detailed elsewhere in this Order, available effluent data indicate that there are constituents present in the effluent that have a reasonable potential to cause or contribute to exceedances of water quality standards and require inclusion of effluent limitations based on federal and state laws and regulations.

5. **Stormwater Requirements.** USEPA promulgated Federal Regulations for storm water on 16 November 1990 in 40 CFR Parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from wastewater treatment facilities. Wastewater treatment plants are applicable industries under the stormwater program and are obligated to comply with the Federal Regulations.

6. **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.

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

1. Under Section 303(d) of the 1972 Clean Water Act, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 30 November 2006 USEPA gave final approval to California's 2006 Section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (WQLSs), which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 CFR 130, et seq.)*." The Basin Plan also states, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment.*" Pleasant Grove is a tributary to Pleasant Grove Canal, Natomas Cross Canal, and further to the Sacramento River. The listing for the Sacramento River (Knights Landing to the Delta) is listed as a WQLS for mercury and unknown toxicity in the 303(d) list of impaired water bodies.

2. **Total Maximum Daily Loads.** The USEPA requires the Regional Water Board to develop total maximum daily loads (TMDLs) for each 303(d) listed pollutant and

water body combination. No applicable TMDL has been developed for Pleasant Grove Creek.

E. Other Plans, Polices and Regulations

1. The discharge authorized herein and the treatment and storage facilities associated with the discharge of treated municipal wastewater, except for discharges of residual sludge and solid waste, are exempt from the requirements of Title 27, California Code of Regulations (CCR), section 20005 *et seq*. (hereafter Title 27). The exemption, pursuant to Title 27 CCR section 20090(a), is based on the following:

    a. The waste consists primarily of domestic sewage and treated effluent;

    b. The waste discharge requirements are consistent with water quality objectives; and

    c. The treatment and storage facilities described herein are associated with a municipal wastewater treatment plant.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

Effluent limitations and toxic and pretreatment effluent standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.

The Federal CWA mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law [33 U.S.C., §1311(b)(1)(C); 40 CFR 122.44(d)(1)]. NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to Federal Regulations, 40 CFR 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that "*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, including state narrative criteria for water quality*." Federal Regulations, 40 CFR 122.44(d)(1)(vi), further provide that "[w]*here a state has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits.*"

The CWA requires point source discharges 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: 40 CFR 122.44(a) requires that permits include applicable technology-based

limitations and standards, and 40 CFR 122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established. The Regional Water Board's Basin Plan, page IV-17.00, contains an implementation policy ("Policy for Application of Water Quality Objectives" that specifies that the Regional Water Board "*will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives*." This Policy complies with 40 CFR 122.44(d)(1). With respect to narrative objectives, the Regional Water Board must establish effluent limitations using one or more of three specified sources, including (1) USEPA's published water quality criteria, (2) a proposed state criterion (*i.e*., water quality objective) or an explicit state policy interpreting its narrative water quality criteria (*i.e*., the Regional Water Board's "Policy for Application of Water Quality Objectives")(40 CFR 122.44(d)(1) (vi) (A), (B) or (C)), or (3) an indicator parameter. The Basin Plan contains a narrative objective requiring that: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*" (narrative toxicity objective). The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, discoloration, toxic substances, radionuclides, or taste and odor producing substances that adversely affect beneficial uses. The Basin Plan states that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The Basin Plan also limits chemical constituents in concentrations that adversely affect surface water beneficial uses. For waters designated as municipal, the Basin Plan specifies that, at a minimum, waters shall not contain concentrations of constituents that exceed Maximum Contaminant Levels (MCL) of CCR Title 22. The Basin Plan further states that, to protect all beneficial uses, the Regional Water Board may apply limits more stringent than MCLs.

A. Discharge Prohibitions

1. As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal Regulations, 40 CFR 122.41(m), define "bypass" as the intentional diversion of waste streams from any portion of a treatment facility. This section of the Federal Regulations, 40 CFR 122.41(m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Regional Water Board's prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites the Federal Regulations, 40 CFR 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.

B. 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 Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTWs (defined in section 304(d)(1)). Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the USEPA Administrator.

Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in 40 CFR Part 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 5-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), and pH.

2. Applicable Technology-Based Effluent Limitations

a. **BOD_5 and TSS.** Federal Regulations, 40 CFR Part 133, establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD_5 and TSS. Tertiary treatment is necessary to protect the beneficial uses of the receiving stream and the final effluent limitations for BOD_5 and TSS are based on the technical capability of the tertiary process. BOD_5 is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The secondary and tertiary treatment standards for BOD_5 and TSS are indicators of the effectiveness of the treatment processes. The principal design parameter for wastewater treatment plants is the daily BOD_5 and TSS loading rates and the corresponding removal rate of the system. In applying 40 CFR Part 133, weekly and monthly average BOD_5 and TSS (15 mg/L and 10 mg/L respectively) have been carried over from the previous Order. In addition to the average weekly and average monthly effluent limitations, a daily maximum effluent limitation for BOD_5 and TSS of 20 mg/L has been carried over from the previous Order. See Table F-5 for final technology-based effluent limitations required by this Order. In addition, 40 CFR 133.102, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal shall not be less than 85 percent. If 85 percent removal of BOD_5 and TSS must be achieved by a secondary treatment plant, it must also be achieved by a tertiary (i.e., treatment beyond secondary level) treatment plant. This Order continues to have a limitation requiring an average of 85 percent removal of BOD_5 and TSS over each calendar month.

b. **pH.** Federal Regulations, 40 CFR Part 133, also establish technology-based effluent limitations for pH. The secondary treatment standards require the pH of the effluent to be no lower than 6.0 and no greater than 9.0 standard units.

c. **Flow.** The Facility is currently designed to provide a tertiary level of treatment for up to a design ADWF of 12 mgd. Therefore, this Order contains an ADWF effluent limitation of 12 mgd. The Discharger is in the process of upgrading the Facility to provide a tertiary level of treatment for up to a design ADWF of 15 mgd. Therefore, this Order contains an ADWF effluent limitation of 15 mgd which is effective upon completion of the upgrades to the Facility.

Summary of Technology-based Effluent Limitations
Discharge Point No. 001

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

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Average Dry Weather Flow	mgd	--	--	12[1]	--	--
		--	--	15[2]	--	--
Biochemical Oxygen Demand, 5-day @ 20°C [3]	mg/L	10	15	20	--	--
	lbs/day[4]	1,000	1,500	2,000	--	--
	lbs/day[5]	1,250	1,875	2,500	--	--
Total Suspended Solids [3]	mg/L	10	15	20	--	--
	lbs/day[4]	1,000	1,500	2,000	--	--
	lbs/day[5]	1,250	1,875	2,500	--	--
pH	standard units	--	--	--	6.0	9.0

1 Effective until completion of upgrades to the Facility.
2 Effective upon completion of upgrades to the Facility.
3 The average monthly percent removal of BOD_5 and TSS shall not be less than 85 percent.
4 Based on the permitted ADWF of 12 mgd. Effective until completion of upgrades to the Facility.
5 Based on the permitted ADWF of 15 mgd. Effective upon completion of upgrades to the Facility.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

As specified in 40 CFR 122.44(d)(1)(i), permits are required to include WQBELs for pollutants (including toxicity) that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an in-stream excursion above any state water quality standard. 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 water quality objectives and criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the CTR and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

a. **Receiving Water.** The Discharger discharges to Pleasant Grove Creek, which is a tributary to Pleasant Grove Creek Canal and Natomas Cross Canal and further to the Sacramento River. The beneficial uses are summarized in Section III.C of this Fact Sheet.

b. **Hardness.** While no effluent limitation for hardness is necessary in this Order, hardness is critical to the assessment of the need for, and the development of, effluent limitations for certain metals. The *California Toxics Rule*, at (c)(4), states the following:

"Application of metals criteria. (i) *For purposes of calculating freshwater aquatic life criteria for metals from the equations in paragraph (b)(2) of this section, for waters with a hardness of 400 mg/L or less as calcium carbonate, the actual ambient hardness of the surface water* <u>*shall*</u> *be used in those equations*." [emphasis added]

The State Water Board, in footnote 19 to Water Quality Order No. 2004-0013, stated: "*We note that…the Regional Water Board…applied a variable hardness value whereby effluent limitations will vary depending on the actual, current hardness values in the receiving water. We recommend that the Regional Water Board establish either fixed or seasonal effluent limitations for metals, as provided in the SIP, rather than 'floating' effluent limitations*."

Effluent limitations for the discharge must be set to protect the beneficial uses of the receiving water for all discharge conditions. In the absence of the option of including condition-dependent, "floating" effluent limitations that are reflective of actual conditions at the time of discharge, effluent limitations must be set using a reasonable worst-case condition in order to protect beneficial uses for all discharge conditions. The Facility provided monitoring data for hardness. Hardness of the upstream receiving water ranged from 36 mg/L to 140 mg/L with an average of 92 mg/L based on 12 samples collected between January 2002 and December 2002. Hardness of the effluent ranged from 75 mg/L to 193 mg/L with an average of 100 mg/L based on 23 samples collected between February 2005 and December 2006. Because Pleasant Grove Creek is an intermittent stream, the lowest hardness of the effluent (75 mg/L as $CaCO_3$) was used to represent a reasonable worst case downstream hardness value under critical low flow conditions for establishing effluent limitations.

c. **Assimilative Capacity/Mixing Zone.** Since Pleasant Grove Creek is an intermittent stream, there is no assimilative capacity and no dilution credits have been granted for this discharge. Hence, all effluent limitations must be met at the point of the discharge into the receiving water.

3. Determining the Need for WQBELs

a. CWA section 301 (b)(1) requires NPDES permits to include effluent limitations that achieve technology-based standards and any more stringent limitations necessary to meet water quality standards. Water quality standards include Regional Water Board Basin Plan beneficial uses and narrative and numeric water quality objectives, State Water Board-adopted standards, and federal standards, including the CTR and NTR. The Basin Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, and tastes and odors. The narrative toxicity objective states: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at III-8.00.) With regards to the narrative chemical constituents objective, the Basin Plan states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At minimum, "…*water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs)*" in Title 22 of CCR. The narrative tastes and odors objective states: "*Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.*"

b. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. Based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs, the Regional Water Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for aluminum, ammonia, cadmium, cyanide, dibromochloromethane, dichlorobromomethane, fluoride, iron, manganese, mercury, and pH. WQBELs for aluminum, ammonia, cadmium, cyanide, dibromochloromethane, dichlorobromomethane, fluoride, iron, manganese, mercury, and pH are included in this Order. A summary of the reasonable potential analysis (RPA) is provided in Attachment G, and a detailed discussion of the RPA for each constituent is provided below.

   Though the Discharger provided monitoring data from October 2004 through December 2006 for the Facility, data collected prior to February 2005 are not considered to be representative of the discharge. Upon completion of the Facility, the Discharger diverted part of the wastewater that had been directed to the Dry Creek WWTP to the Facility. Since wastewater was diverted to the Facility over a seven month period which was completed in January 2005, the RPA was conducted based on monitoring data starting in February 2005 to most accurately represent the Facility's operations.

c. The Regional Water Board conducted the RPA in accordance with Section 1.3 of the SIP. Although the SIP applies directly to the control of CTR priority

pollutants, the State Water Board has held that the Regional Water Board may use the SIP as guidance for water quality-based toxics control.[1] The SIP states in the introduction "*The goal of this Policy is to establish a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency."* Therefore, in this Order the RPA procedures from the SIP were used to evaluate reasonable potential for both CTR and non-CTR constituents.

d. WQBELs were calculated in accordance with section 1.4 of the SIP, as described in Attachment F, Section IV.C.4.

e. **Acrolein.** Order No. 5-00-075 contained effluent limitations for acrolein of 21 µg/L (2 lbs/day) as a 30-day average and 68 µg/L (7 lbs/day) as a daily maximum. The monitoring data collected during the term of Order No. 5-00-075 indicated that there is no reasonable potential to exceed water quality objectives for acrolein. Therefore, as described further in Section IV.D.3, the effluent limitations for acrolein have not been retained in this Order. See Attachment G for more details regarding the reasonable potential analysis.

f. **Aluminum***.* USEPA developed National Recommended Ambient Water Quality Criteria for protection of freshwater aquatic life for aluminum. The recommended 4-day average (chronic) and 1-hour average (acute) criteria for aluminum are 87 µg/L and 750 µg/L, respectively. The Secondary Maximum Contaminant Level - Consumer Acceptance Limit for aluminum is 200 µg/L.

The MEC for aluminum was 280 µg/L, based on seven samples collected between February 2005 and December 2006, while the maximum observed upstream receiving water aluminum concentration was 1,000 µg/L, based on 13 samples collected between January 2002 and December 2002. Therefore, aluminum in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the acute and chronic aquatic life criteria.

Footnote L to the National Recommended Ambient Water Quality Criteria summary table for aluminum indicates that the chronic aquatic life criterion is based on studies conducted under specific receiving water conditions with a low pH (6.5 to 6.8 pH units) and low hardness (<10 mg/L as $CaCO_3$). Monitoring data demonstrates that these conditions are not similar to those in Pleasant Grove Creek, which consistently has an upstream pH greater than 7.0 and hardness concentrations ranging from 36 mg/L to 140 mg/L. The downstream pH is also consistently greater than 7.0 (of 111 data points, only one was reported at a pH of 6.5). Thus, it is unlikely that application of the chronic criterion of 87 µg/L is necessary to protect aquatic life in Pleasant Grove Creek and USEPA advises that a water effects ratio may be more appropriate to better reflect the actual toxicity of aluminum to aquatic organisms. Due to the uncertainty of the relevance of the chronic criterion to the receiving water, this Order requires the Discharger to conduct a study to determine an appropriate

[1] See, Order WQO 2001-16 (Napa) and Order WQO 2004-0013 (Yuba City).

chronic aluminum criterion on which to base appropriate effluent limitations and a reopener that will allow the Regional Water Board to reconsider the limitations herein.

In the absence of an applicable chronic aquatic life criterion, the most stringent water quality criterion is the Secondary MCL - Consumer Acceptance Limit for aluminum of 200 µg/L. The discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL for aluminum. Based on input from the Department of Public Health (DPH) and the fact that secondary MCLs are designed to protect consumer acceptance, effluent limitations based on secondary MCLs are applied as an annual average concentration. An annual average effluent limitation of 200 µg/L for aluminum is included in this Order based on protection of the Basin Plan's numeric chemical constituents objective.

It is uncertain whether regulating the discharge based on the secondary MCL (200 µg/L as an annual average) would also be protective of the acute aquatic life criterion. Therefore, this Order also includes an average monthly effluent limitation (AMEL) and a maximum daily effluent limitation (MDEL) of 374 µg/L and 750 µg/L, respectively, based on USEPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life (see Table F-7 for WQBEL calculations).

In USEPA's *Ambient Water Quality Criteria for Aluminum—1988* [EPA 440/5-86-008], USEPA states that "[a]*cid-soluble aluminum…is probably the best measurement at the present…*"; however, USEPA has not yet approved an acid-soluble test method for aluminum. Replacing the ICP/AES portion of the analytical procedure with ICP/MS would allow lower detection limits to be achieved. Based on USEPA's discussion of aluminum analytical methods, this Order allows the use of the alternate aluminum testing protocol described above to meet monitoring requirements.

g. **Ammonia.** Untreated domestic wastewater contains ammonia. Nitrification is a biological process that converts ammonia to nitrite and nitrite to nitrate. Denitrification is a process that converts nitrate to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas, which is then released to the atmosphere. The Discharger currently uses nitrification to remove ammonia from the waste stream. Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving stream. Ammonia is known to cause toxicity to aquatic organisms in surface waters. Discharges of ammonia would violate the Basin Plan narrative toxicity objective. Applying 40 CFR 122.44(d)(1)(vi)(B), it is appropriate to use USEPA's Ambient National Water Quality Criteria for the Protection of Freshwater Aquatic Life for ammonia, which was developed to be protective of aquatic organisms.

USEPA's *Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life*, for total ammonia, recommends acute (1-hour average; criteria maximum concentration) standards based on pH and chronic (30-day average, criteria

continuous concentration) standards based on pH and temperature. It also recommends a maximum 4-day average concentration of 2.5 times the criteria continuous concentration. USEPA found that as pH increased, both the acute and chronic toxicity of ammonia increased. Salmonids were more sensitive to acute toxicity effects than other species. However, while the acute toxicity of ammonia was not influenced by temperature, it was found that invertebrates and young fish experienced increasing chronic toxicity effects with increasing temperature. Because Pleasant Grove Creek has a beneficial use of cold freshwater habitat, the recommended criteria for waters where salmonids and early life stages are present were used. USEPA's recommended criteria are shown below:

$$CCC_{30-day} = \left(\frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}} \right) \times MIN\left(2.85, 1.45 \cdot 10^{0.028(25-T)}\right), \text{ and}$$

$$CMC = \left(\frac{0.275}{1+10^{7.204-pH}} + \frac{39.0}{1+10^{pH-7.204}} \right),$$

where *T* is in degrees Celsius

The maximum permitted effluent pH is 8.0. The Basin Plan objective for pH in the receiving stream is the range of 6.5 to 8.5. In a meeting on 7 March 2008, the Discharger requested an upper effluent pH limitation of 8.0 which reflects the Facility's actual process limit. Data collected over the previous permit term indicate that pH in the effluent never exceeded 8.0, with a maximum reported pH value of 8.0. Therefore, at the request of the Discharger, this Order establishes a more stringent upper pH limitation of 8.0. In order to protect against the worst-case short-term exposure of an organism, the upper pH limitation of 8.0 was used to derive the acute criterion. The resulting acute criterion is 5.6 mg/L.

Because Pleasant Grove Creek is an ephemeral stream and is sometimes dominated by the effluent, the maximum observed rolling 30-day average temperature and the maximum observed pH of the effluent during the period when the maximum observed rolling 30-day average temperature occurred were used to calculate the 30-day CCC. The maximum observed effluent 30-day rolling average temperature was 25.54°C, for the 30-day period ending 31 December 2006. The maximum observed effluent pH value during the period when the maximum observed rolling 30-day average temperature occurred (between 14 July 2006 through 12 August 2006) was 7.4.

Using a pH value of 7.4 and the worst-case temperature value of 25.54° C on a rolling 30-day basis, the resulting 30-day CCC is 2.3 mg/L (as N). The 4-day average concentration is derived in accordance with the USEPA criterion as 2.5 times the 30-day CCC. Based on a 30-day CCC of 2.3 mg/L (as N), the 4-day average concentration that should not be exceeded is 5.8 mg/L (as N).

The MEC for ammonia was 7.6 mg/L, based on 698 samples collected between February 2005 and December 2006. The maximum reported ammonia

concentration in the upstream receiving water was 0.53 mg/L, based on 26 samples collected between February 2005 and November 2006. Therefore, ammonia in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a level necessary to protect aquatic life resulting in a violation of the Basin Plan's narrative toxicity objective.

The Regional Water Board calculates WQBELs in accordance with the SIP procedures for non-CTR constituents, and ammonia is a non-CTR constituent. The SIP procedure assumes a 4-day averaging period for calculating the long term average discharge condition (LTA). However, USEPA recommends modifying the procedure for calculating permit limits for ammonia using a 30-day averaging period for the calculation of the LTA corresponding to the 30-day chronic criteria. Therefore, while the LTAs corresponding to the acute and 4-day chronic criteria were calculated according to SIP procedures, the LTA corresponding to the 30-day chronic criteria was calculated assuming a 30-day averaging period. The lowest LTA representing the acute, 4-day, and 30-day chronic criteria is then selected for deriving the AMEL and the MDEL. The remainder of the WQBEL calculation for ammonia was performed according to the SIP procedures.

This Order contains a final AMEL and MDEL for ammonia of 1.9 mg/L and 5.5 mg/L, respectively, based on USEPA's National Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life and to assure the treatment process adequately nitrifies the waste stream to protect the aquatic habitat beneficial uses (see Table F-8 for WQBEL calculations).

h. **Bis (2-Ethylhexyl) Phthalate.** Bis (2-ethylhexyl) phthalate, in addition to several other phthalates, is used primarily as one of several plasticizers in polyvinyl chloride (PVC) resins for fabricating flexible vinyl products. According to the Consumer Product Safety Commission, USEPA, and the Food and Drug Administration, these PVC resins are used to manufacture many products, including soft squeeze toys, balls, raincoats, adhesives, polymeric coatings, components of paper and paperboard, defoaming agents, animal glue, surface lubricants, and other products that must stay flexible and noninjurious for the lifetime of their use. The State MCL for bis (2-ethylhexyl) phthalate is 4 µg/L and the USEPA MCL is 6 µg/L. The NTR criterion for human health protection for consumption of water and aquatic organisms is 1.8 µg/L and for consumption of aquatic organisms only is 5.9 µg/L.

The MEC for bis (2-ethylhexyl) phthalate was 5.7 µg/L, based on eight samples collected between February 2005 and December 2006 (the remaining seven samples were non-detect). The maximum concentration for bis (2-ethylhexyl) phthalate in the receiving water was 0.3 µg/L based on four samples collected between January 2002 and December 2002.

As described above, bis (2-ethylhexyl) phthalate is a commonly used plasticizer and is to some extent ubiquitous in the environment. Order No. 5-00-075 included 24-hour composite sampling for bis (2-ethylhexyl) phthalate, which

typically requires the use of plastic sampling equipment. Since bis (2-ethylhexyl) phthalate is a common contaminant of sample containers, sampling apparatus, and analytical equipment, and sources of the detected bis (2-ethylhexyl) phthalate may be from plastics used for sampling or analytical equipment, the Regional Water Board it is uncertain whether reasonable potential actually exists and is therefore not establishing effluent limitations for bis (2-ethylhexyl) phthalate at this time. Instead of limitations, additional monitoring has been established for bis (2-ethylhexyl) phthalate; should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, then this Order may be reopened and modified by adding an appropriate effluent limitation.

i. **Cadmium.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for cadmium. The criteria for cadmium are presented in dissolved concentrations. USEPA recommends use of hardness-dependent conversion factors to translate dissolved concentrations to total concentrations. Using the worst-case measured hardness from the effluent (75 mg/L as $CaCO_3$) and the USEPA recommended dissolved-to-total translators, the applicable chronic criterion is 1.96 µg/L and the applicable acute criterion is 3.27 µg/L, as total recoverable.

The MEC for total cadmium was 5.6 µg/L, based on 13 samples collected between February 2005 and December 2006, while the maximum observed upstream receiving water cadmium concentration was 1.2 µg/L, based on 12 samples collected between January 2002 and December 2002. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for cadmium. Order No. 5-00-075 contained “floating” effluent limitations for cadmium. In the absence of the option of including condition-dependent “floating” effluent limitations, effluent limitations must be set using a worst-case condition in order to protect beneficial uses. An AMEL and MDEL for total cadmium of 1.4 µg/L and 3.3 µg/L, respectively, are included in this Order based on CTR criteria for the protection of freshwater aquatic life (see Table F-9 for WQBEL calculations).

The sample results for the effluent indicate that the Discharger will not be able to meet the new limitations. The Discharger has indicated in an Infeasibility Report submitted 19 March 2008, and revised on 2 May 2008, that additional time will be required to comply with the final effluent limits for cadmium. A time schedule for compliance with cadmium final effluent limitations is established in Time Schedule Order (TSO) No. R5-2008-0080 in accordance with CWC sections 13300 and 13385. Order No. R5-2008-0080 also requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

j. **Chlorine Residual.** The Discharger currently uses chlorine for disinfection, which is extremely toxic to aquatic organisms. The Discharger uses sulfur dioxide to dechlorinate the effluent prior to discharge to Pleasant Grove Creek. Due to the existing chlorine use and the potential for chlorine to be discharged, the

discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

The USEPA *Technical Support Document for Water Quality-Based Toxics Control* (EPA/505/2-90-001) contains statistical methods for converting chronic (4-day) and acute (1-hour) aquatic life criteria to average monthly and maximum daily effluent limitations based on the variability of the existing data and the expected frequency of monitoring. However, because chlorine is an acutely toxic constituent that can and will be monitored continuously, an average 1-hour limitation is considered more appropriate than an average daily limitation.

The chlorine residual limitations of 0.011 mg/L for a 4-day average and 0.019 mg/L for a 1-hour average required in this Order are protective of aquatic organisms in the undiluted discharge. If compliance is maintained, the Regional Water Board does not anticipate residual chlorine impacts to benthic organisms. Based on data reported during the term of Order No. 5-00-075, it appears as if the Discharger can immediately comply with these new effluent limitations for chlorine residual.

As described in Section II.E above, the Discharger plans on replacing the hypochlorite disinfection system with a ultraviolet light disinfection system. Once on-line and operational, and after the Discharger submits written certification to the Regional Water Board that it has cease all use of chlorine-containing agents in its wastewater treatment process, the Discharger will not be required to monitor for compliance with the chlorine residual WQBELs.

k. **Copper.** Order No. 5-00-075 contained floating effluent limitations for copper. The monitoring data collected during the term of Order No. 5-00-075 indicated that there is no reasonable potential to exceed water quality objectives for copper. Therefore, as described in Section IV.D.3, the effluent limitations for copper have not been retained in this Order. See Attachment G for more details regarding the reasonable potential analysis.

l. **Cyanide.** The CTR includes maximum 1-hour average and 4-day average cyanide concentrations of 22 µg/L and 5.2 µg/L, respectively, for the protection of freshwater aquatic life. Order No. 5-00-075 contained a 1-hour average effluent limitation of 22 µg/L (2 lbs/day) and a 4-day average effluent limitation of 5.2 µg/L (0.5 lbs/day) based on the USEPA Ambient Water Quality Criteria for the protection of freshwater aquatic life, which were applied at the end of the pipe.

The MEC for cyanide was 29 µg/L, based on 13 samples collected between February 2005 and December 2006, while the maximum observed upstream receiving water cyanide concentration was 2.8 µg/L, based on 12 samples collected between January 2002 and December 2002. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for cyanide. An AMEL and MDEL for cyanide of 3.5 µg/L and 9.6 µg/L, respectively, are included in this Order based on CTR criteria for the protection of freshwater aquatic life (see Table F-10 for WQBEL calculations).

The sample results for the effluent indicate that the Discharger will not be able to meet the new limitations. The Discharger has indicated in an Infeasibility Report submitted 19 March 2008, and revised on 2 May 2008, that additional time will be required to comply with the final effluent limits for cyanide. In particular, the Discharger anticipates that the addition of ultraviolet disinfection and eliminating chlorine, as well as changing analytical laboratories to reduce the possibility of false positives is necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within a reasonable period of time. Furthermore, the effluent limitations for cyanide are a new and more stringent regulatory requirement within this permit, which becomes applicable to the waste discharge with the adoption of this Order, which was adopted after 1 July 2000. Therefore, a compliance time schedule order for compliance with the cyanide effluent limitations is established in TSO No. R5-2008-0080 in accordance with CWC section 13300, that also requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

m. **Dibromochloromethane*.*** The CTR includes a dibromochloromethane criterion of 0.41 µg/L for the protection of human health and is based on a one-in-a-million cancer risk for waters from which both water and organisms are consumed. The MEC for dibromochloromethane was 7.4 µg/L, based on eight samples collected between February 2005 and December 2006, while it was not detected in the receiving water, based on 12 samples collected between January 2002 and December 2002. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for dibromochloromethane.

An AMEL and MDEL for dibromochloromethane of 0.41 µg/L and 0.82 µg/L, respectively, are included in this Order based on the CTR criterion for the protection of human health (see Table F-11 for WQBEL calculations).

The sample results for the effluent indicate that the Discharger will not be able to meet the new limitations. The Discharger has indicated in an Infeasibility Report submitted 19 March 2008, and revised on 2 May 2008, that additional time will be required to comply with the final effluent limits for dibromochloromethane. In particular, the Discharger anticipates that the addition of ultraviolet disinfection and eliminating chlorine will be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within a reasonable period of time. Furthermore, the effluent limitations for dibromochloromethane are a new regulatory requirement within this permit, which become effective upon the effective date of this Order. Therefore, a compliance time schedule order for compliance with the dibromochloromethane effluent limitations is established in TSO No. R5-2008-0080 in accordance with CWC section 13300, that also requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

n. **Dichlorobromomethane.** The CTR includes a dichlorobromomethane criterion of 0.56 µg/L for the protection of human health and is based on a one-in-a-million cancer risk for waters from which both water and organisms are consumed. The MEC for dichlorobromomethane was 24 µg/L, based on eight samples collected between February 2005 and December 2006, while it was not detected in the receiving water, based on 12 samples collected between January 2002 and December 2002. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for dichlorobromomethane.

An AMEL and MDEL for dichlorobromomethane of 0.56 µg/L and 1.12 µg/L, respectively, are included in this Order based on based on the CTR criterion for the protection of human health (see Table F-12 for WQBEL calculations).

The sample results for the effluent indicate that the Discharger will not be able to meet the new limitations. The Discharger has indicated in an Infeasibility Report submitted 19 March 2008, and revised on 2 May 2008, that additional time is required to comply with the final effluent limits for dichlorobromomethane. In particular, the Discharger anticipates that the addition of ultraviolet disinfection and eliminating chlorine will be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within a reasonable period of time. Furthermore, the effluent limitations for dichlorobromomethane are a new regulatory requirement within this permit, which become effective upon the effective date of this Order. Therefore, a compliance time schedule order for compliance with the dichlorobromomethane effluent limitations is established in TSO No. R5-2008-0080 in accordance with CWC section 13300, that also requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

o. **1,1-Dichloroethylene.** The California Primary MCL for 1,1-dichloroethylene is 6 µg/L. The NTR criterion for human health protection for consumption of water and aquatic organisms is 0.057 µg/L.

The MEC for 1,1-dichloroethylene was 0.2 µg/L, based on eight samples collected between February 2005 and December 2006, while it was not detected in the receiving water based on 12 samples collected between January 2002 and December 2002. Because there was only one detection of 1,1-dichloroethylene, and the reported detection levels for the other seven samples were above the NTR criterion, it is uncertain whether reasonable potential to cause or contribute to an in-stream excursion above the NTR criterion for 1,1-dichloroethylene exists. Quarterly monitoring has been established for 1,1-dichloroethylene in this Order to gather additional information to determine if 1,1-dichloroethylene is present in the effluent. Should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, then this Order may be reopened and modified by adding an appropriate effluent limitation.

p. **Electrical Conductivity. (see subsection for Salinity)**

q. **Fluoride.** The California Primary MCL for fluoride is 2,000 µg/L. The MEC for fluoride was 3,600 µg/L based on eight samples collected between February 2005 and December 2006, while the maximum observed upstream receiving water fluoride concentration was 1,100 µg/L based on 12 samples collected between January 2002 and December 2002. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Primary MCL for fluoride. Based on input from DPH and the fact that secondary MCLs are designed to protect consumer acceptance, effluent limitations based on secondary MCLs are applied as an annual average concentration. An annual average limitation of 2,000 µg/L for fluoride is included in this Order based on the MCL.

   Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Furthermore, the effluent limitations for fluoride are a new regulatory requirement within this permit, which become effective upon the effective date of this Order. Therefore, a compliance time schedule for compliance with the fluoride effluent limitations is established in TSO No. R5-2008-0080 in accordance with CWC section 13300, that requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

r. **Iron.** The Secondary MCL - Consumer Acceptance Limit for iron is 300 µg/L. The MEC for iron was 880 µg/L, based on 12 samples collected between February 2005 and December 2006, while the maximum observed upstream receiving water iron concentration was 1,700 µg/L, based on 12 samples collected between January 2002 and December 2002. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL for iron. Based on input from DPH and the fact that secondary MCLs are designed to protect consumer acceptance, effluent limitations based on secondary MCLs are applied as an annual average concentration. An annual average effluent limitation of 300 µg/L for iron is included in this Order based on protection of the Basin Plan's numeric chemical constituents objective.

s. **Manganese.** The Secondary MCL - Consumer Acceptance Limit for manganese is 50 µg/L. Based on input from DPH and the fact that secondary MCLs are designed to protect consumer acceptance, effluent limitations based on secondary MCLs are applied as an annual average concentration. The MEC for manganese was 27 µg/L, based on 13 samples collected between February 2005 and December 2006, while the maximum observed upstream receiving water manganese concentration was 140 µg/L, based on 12 samples collected between January 2002 and December 2002. Because the maximum receiving water concentration of mangangese exceeds the MCL and manganese

has been detected in the effluent, an effluent limitation for manganese is required. An annual average effluent limitation of 50 µg/L for manganese is included in this Order based on protection of the Basin Plan's numeric chemical constituents objective. Based on the sample results in the effluent, it appears the Discharger can meet this new limitation.

t. **Methylene Blue Active Substances (MBAS).** Order No. 5-00-075 contained daily maximum effluent limitations of 0.5 mg/L and 50 lbs/day. The monitoring data collected during the term of Order No. 5-00-075 indicated that there is no reasonable potential to exceed water quality criteria for MBAS. Therefore, as described in Section IV.D.3, the effluent limitations for MBAS have not been retained in this Order.

u. **Mercury.** The current USEPA Ambient Water Quality Criteria for protection of freshwater aquatic life, continuous concentration, for mercury is 0.77 µg/L (30-day average, chronic criteria). The CTR contains a human health criterion of 0.050 µg/L for waters from which both water and aquatic organisms are consumed. Both values are controversial and subject to change. In 40 CFR Part 131, USEPA acknowledges that the human health criteria may not be protective of some aquatic or endangered species and that "…*more stringent mercury limits may be determined and implemented through use of the State's narrative criterion*." In the CTR, USEPA reserved the mercury criteria for freshwater and aquatic life and may adopt new criteria at a later date.

The maximum observed effluent mercury concentration in the effluent was 0.038 µg/L measured on 9 November 2005. The Sacramento River (Knights Landing to the Delta), where Pleasant Grove Creek is tributary to, is listed as a water quality limited segment (WQLS) for mercury in the 303(d) list of impaired water bodies. Mercury bioaccumulates in fish tissue and, therefore, discharge of mercury to the receiving water is likely to contribute to exceedances of the narrative toxicity objective and impacts on beneficial uses. Because the Sacramento River has been listed as an impaired water body for mercury, the discharge must not cause or contribute to increased mercury levels. The SIP, Section 1.3, requires the establishment of an effluent limitation for a constituent when the receiving stream background water quality exceeds an applicable criterion or objective.

This Order contains a final performance-based mass effluent limitation of 1.39 lbs/year for mercury for the effluent discharge to Pleasant Grove Creek, a tributary to Pleasant Grove Creek Canal and Natomas Cross Canal before entering the Sacramento River effective until completion of upgrades to the Facility. These limitations are based on maintaining the mercury loading at the current level until a total maximum daily load (TMDL) can be established and USEPA develops mercury standards that are protective of human health. The mass limitation was derived using the maximum observed effluent mercury concentration of 0.000038 mg/L and the permitted average dry weather flow.

(0.000038 mg/L) x (12 mgd) x (8.34 lbs/day conversion factor) x (365 days) = 1.39 lbs/year

If USEPA develops new water quality standards for mercury, this permit may be reopened and the effluent limitations adjusted.

v. **Oil and Grease.** Order No. 5-00-075 included numeric monthly average and daily maximum effluent limitations of 10 mg/L (1,000 lbs/day) and 15 mg/L (1,500 lbs/day), respectively. The monitoring data collected for oil and grease during the term of Order No. 5-00-075 indicated that there is no reasonable potential to exceed water quality criteria (all values were reported as less than 5 mg/L). Therefore, as described in Section IV.D.3, oil and grease effluent limitations have not been retained in this Order.

w. **Persistent Chlorinated Hydrocarbon Pesticides.** Order No. 5-00-075 contained non-detectable (ND) concentration and 0.0 lbs/day daily maximum effluent limitations for organochlorine pesticides (persistent chlorinated hydrocarbon pesticides). The monitoring data collected during the term of Order No. 5-00-075 indicated that persistent chlorinated hydrocarbon pesticides were not detected in the effluent, and their reported detection limits were less than the minimum levels (MLs) in the SIP. Therefore, as described in Section IV.D.3, the effluent limitations for persistent chlorinated hydrocarbon pesticides have not been retained in this Order. Effluent monitoring has been retained from Order No. 5-00-075 in order to determine if detectable quantities of persistent chlorinated hydrocarbon pesticides are present in the effluent.

x. **Pathogens and Turbidity**. The beneficial uses of Pleasant Grove Creek include municipal and domestic supply, water contact recreation, and agricultural irrigation supply, and there is, at times, less than 20:1 dilution. To protect these beneficial uses, the Regional Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease. The principal infectious agents (pathogens) that may be present in raw sewage may be classified into three broad groups: bacteria, parasites, and viruses. Tertiary treatment, consisting of chemical coagulation, sedimentation, and filtration, has been found to remove approximately 99.5% of viruses. Filtration is an effective means of reducing viruses and parasites from the waste stream. The wastewater must be treated to tertiary standards (filtered), or equivalent, to protect contact recreational and food crop irrigation uses.

The California DPH has developed reclamation criteria, CCR, Division 4, Chapter 3 (Title 22), for the reuse of wastewater. Title 22 requires that for spray irrigation of food crops, parks, playgrounds, schoolyards, and other areas of similar public access, wastewater be adequately disinfected, oxidized, coagulated, clarified, and filtered, and that the effluent total coliform levels not exceed 2.2 MPN/100 mL as a 7-day median. As coliform organisms are living and mobile, it is impracticable to quantify an exact number of coliform organisms and to establish weekly average limitations. Instead, coliform organisms are measured as a most probable number and regulated based on a 7-day median

limitation. In addition, Order No. 5-00-075 stated that in a 30-day period only a single sample may exceed 23 MPN/100 mL and no sample should exceed 240 MPN/100 mL. These effluent limitations are retained in accordance Title 22 requirements.

Title 22 also requires that recycled water used as a source of water supply for non-restricted recreational impoundments be disinfected tertiary recycled water that has been subjected to conventional treatment. A non-restricted recreational impoundment is defined as "*…an impoundment of recycled water, in which no limitations are imposed on body-contact water recreational activities.*" Title 22 is not directly applicable to surface waters; however, the Regional Water Board finds that it is appropriate to apply an equivalent level of treatment to that required by DPH's reclamation criteria because the receiving water is used for irrigation of agricultural land and for contact recreation purposes. The stringent disinfection criteria of Title 22 are appropriate since the undiluted effluent may be used for the irrigation of food crops and/or for body-contact water recreation. Coliform organisms are intended as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing other pathogens. The method of treatment is not prescribed by this Order; however, wastewater must be treated to a level equivalent to that recommended by DPH.

In addition to coliform testing, a turbidity effluent limitation has been included as a second indicator of the effectiveness of the treatment process and to assure compliance with the required level of treatment. The tertiary treatment process, or equivalent, is capable of reliably meeting a turbidity limitation of 2 nephelometric turbidity units (NTU) as a daily average. Failure of the filtration system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. Coliform testing, by comparison, is not conducted continuously and requires several hours, to days, to identify high coliform concentrations. Therefore, to ensure compliance with the DPH recommended Title 22 disinfection criteria, weekly average effluent limitations are impracticable for turbidity. Order No. 5-00-075 established an effluent limitation of 5 NTU as a daily maximum. To be consistent with the requirements of Title 22, this Order includes an effluent limitation of 5 NTU, not to be exceeded 5% of the time within a 24-hour period, and 10 NTU as an instantaneous maximum.

This Order contains effluent limitations and requires a tertiary level of treatment, or equivalent, necessary to protect the beneficial uses of the receiving water. The Regional Water Board has previously considered the factors in CWC section 13241 in establishing these requirements.

y. **pH.** The Basin Plan includes a water quality objective for surface waters (except for Goose Lake) that the "…*pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh*

waters with designated COLD or WARM beneficial uses." Effluent limitations for pH are included in this Order based on the Basin Plan objectives for pH.

In a meeting on 7 March 2008, the Discharger requested an upper effluent pH limitation of 8.0 which reflects the Facility's actual process limit. Data collected over the previous permit term indicate that pH in the effluent never exceeded 8.0, with a maximum reported pH value of 8.0. Therefore, at the request of the Discharger, this Order establishes a more stringent upper pH limitation of 8.0.

z. **Salinity.** The discharge contains total dissolved solids (TDS), chloride, sulfate, and electrical conductivity (EC). These are water quality parameters that are indicative of the salinity of the water. Their presence in water can be growth limiting to certain agricultural crops and can affect the taste of water for human consumption. There are no USEPA water quality criteria for the protection of aquatic organisms for these constituents. The Basin Plan contains a chemical constituent objective that incorporates State MCLs, contains a narrative objective, and contains numeric water quality objectives for EC, TDS, sulfate, and chloride.

Table F-6. Salinity Water Quality Criteria/Objectives

Parameter	Agricultural WQ Goal[1]	Secondary MCL[3]	Effluent Concentration (February 2005 – December 2006)	
			Average	Maximum
EC (µmhos/cm)	Varies[2]	900, 1600, 2200	610	1,020
TDS (mg/L)	Varies	500, 1000, 1500	382	444
Sulfate (mg/L)	Varies	250, 500, 600	51	60
Chloride (mg/L)	Varies	250, 500, 600	103	130

[1] Agricultural water quality goals based on *Water Quality for Agriculture*, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985)

[2] The EC level in irrigation water that harms crop production depends on the crop type, soil type, irrigation methods, rainfall, and other factors. An EC level of 700 umhos/cm is generally considered to present no risk of salinity impacts to crops. However, many crops are grown successfully with higher salinities.

[3] The secondary MCLs are stated as a recommended level, upper level, and a short-term maximum level.

i. **Chloride**. The secondary MCL for chloride is 250 mg/L, as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum. The recommended agricultural water quality goal for chloride, that would apply the narrative chemical constituent objective, is 106 mg/L as a long-term average based on *Water Quality for Agriculture*, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29,

Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The 106 mg/L water quality goal is intended to protect against adverse effects on sensitive crops when irrigated via sprinklers.

Chloride concentrations in the effluent ranged from 80 mg/L to 130 mg/L, with an average of 103 mg/L, for eight samples collected by the Discharger from February 2005 through December 2006. Background concentrations in Pleasant Grove Creek ranged from 6 mg/L to 62 mg/L, with an average of 24 mg/L, for 12 samples collected by the Discharger from January 2002 through December 2002. The effluent exceeds the agricultural water quality goal of 106 mg/L.

ii. **Electrical Conductivity (EC)**. The secondary MCL for EC is 900 µmhos/cm as a recommended level, 1,600 µmhos/cm as an upper level, and 2,200 µmhos/cm as a short-term maximum. The agricultural water quality goal, that would apply the narrative chemical constituents objective, is 700 µmhos/cm as a long-term average based *on Water Quality for Agriculture*, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The 700 µmhos/cm agricultural water quality goal is intended to prevent reduction in crop yield (i.e., a restriction on use of water for salt-sensitive crops, such as beans, carrots, turnips, and strawberries). Most other crops can tolerate higher EC concentrations without harm, however, as the salinity of the irrigation water increases, more crops are potentially harmed by the EC, or extra measures must be taken by the farmer to minimize or eliminate any harmful impacts.

A review of the Discharger's monitoring reports from February 2005 through December 2006 shows an average effluent EC of 610 µmhos/cm, with a range from 450 µmhos/cm to 1,020 µmhos/cm for 699 samples. These levels exceed the applicable objectives. The background receiving water EC averaged 291 µmhos/cm in 95 sampling events collected by the Discharger from February 2005 through November 2006.

iii. **Sulfate**. The secondary MCL for sulfate is 250 mg/L as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum. Sulfate concentrations in the effluent ranged from 44 mg/L to 60 mg/L, with an average of 51 mg/L, for six samples collected by the Discharger from February 2005 through December 2006. Background concentrations in Pleasant Grove Creek ranged from 5 mg/L to 16 mg/L, with an average of 10 mg/L, for 12 samples collected by the Discharger from January 2002 through December 2002. The effluent does not exceed the secondary MCL recommended level of 250 mg/L.

iv. **Total Dissolved Solids (TDS)**. The secondary MCL for TDS is 500 mg/L as a recommended level, 1,000 mg/L as an upper level, and 1,500 mg/L as a short-term maximum. The recommended agricultural water quality goal for TDS, that would apply the narrative chemical constituent objective, is

450 mg/L as a long-term average based on *Water Quality for Agriculture*, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). Water Quality for Agriculture evaluates the impacts of salinity levels on crop tolerance and yield reduction, and establishes water quality goals that are protective of the agricultural uses. The 450 mg/L water quality goal is intended to prevent reduction in crop yield (i.e., a restriction on use of water, for salt-sensitive crops). Only the most salt sensitive crops require irrigation water of 450 mg/L or less to prevent loss of yield. Most other crops can tolerate higher TDS concentrations without harm, however, as the salinity of the irrigation water increases, more crops are potentially harmed by the TDS, or extra measures must be taken by the farmer to minimize or eliminate any harmful impacts.

The average TDS effluent concentration was 382 mg/L and ranged from 340 mg/L to 444 mg/L for 23 samples collected by the Discharger from February 2005 through December 2006. These concentrations do not exceed the applicable water quality objectives. The background receiving water TDS ranged from 64 mg/L to 491 mg/L, with an average of 236 mg/L in 12 sampling events performed by the Discharger from January 2002 through December 2002. These data indicate the receiving water exceeds water quality objectives and lacks assimilative capacity for TDS.

v. **Salinity Effluent Limitations.** Effluent limitations based on the MCL or the Basin Plan would likely require construction and operation of a reverse osmosis treatment plant. The State Water Board, in Water Quality Order 2005-005 (for the City of Manteca), states, "*…the State Board takes official notice [pursuant to Title 23 of California Code of Regulations, Section 648.2] of the fact that operation of a large-scale reverse osmosis treatment plant would result in production of highly saline brine for which an acceptable method of disposal would have to be developed. Consequently, any decision that would require use of reverse osmosis to treat the City's municipal wastewater effluent on a large scale should involve thorough consideration of the expected environmental effects.*" The State Water Board states in that Order, "*Although the ultimate solution to southern Delta salinity problems have not yet been determined, previous actions establish that the State Board intended for permit limitations to play a limited role with respect to achieving compliance with the EC water quality objectives in the southern Delta.*" The State Water Board goes on to say, "*Construction and operation of reverse osmosis facilities to treat discharges…prior to implementation of other measures to reduce the salt load in the southern Delta, would not be a reasonable approach.*"

The Regional Water Board, with cooperation of the State Water Board, has begun the process to develop a new policy for the regulation of salinity in the Central Valley. In a statement issued at the 16 March 2006, Regional Water Board meeting, Board Member Dr. Karl Longley recommended that the Regional Water Board continue to exercise its authority to regulate

discharges of salt to minimize salinity increases within the Central Valley. Dr. Longley stated, "*The process of developing new salinity control policies does not, therefore, mean that we should stop regulating salt discharges until a salinity Policy is developed. In the meantime, the Board should consider all possible interim approaches to continue controlling and regulating salts in a reasonable manner, and encourage all stakeholder groups that may be affected by the Regional Board's policy to actively participate in policy development.*"

Based on the relatively low reported salinity, the discharge currently does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity. However, since the Discharger discharges to Pleasant Grove Creek, a tributary of the Sacramento River and eventually the Sacramento – San Joaquin Delta, of additional concern is the salt contribution to Delta waters.

The Discharger has implemented several measures to address water supply issues that are expected to impact the salinity levels of the municipal source water. In particular, the Discharger recently initiated operation of an Aquifer Storage and Recovery (ASR) project that allows the Discharger to store treated drinking water in aquifers for recovery and domestic use at a later time. In addition, the Discharger has implemented an aggressive water conservation program throughout their service area. As a result of the ASR and water conservation initiatives, the salinity data to date is not expected to be representative of near and long-term salinity levels from the Facility.

The Antidegradation Policy (Resolution No. 68-16) requires that the Discharger implement best practicable treatment or control (BPTC) of its discharge. For salinity, the Regional Water Board is considering limiting effluent salinity of municipal wastewater treatment plants to an increment of 500 µmhos/cm over the salinity of the municipal water supply as representing BPTC. This Order includes an interim performance-based goal for EC but no final effluent limitation because of the uncertainty of the salinity characteristics of the effluent and in an effort to not discourage efforts to ensure a long-term reliable water supply. Final effluent limitations for salinity based on BPTC will be established subsequent to the collection and analysis by the Discharger of EC in the Discharger's water supply. This Order requires quarterly monitoring of EC and TDS of the Discharger's influent and water supply (see Attachment E, section IX.B.).

In order to ensure that the Discharger will continue to evaluate opportunities to control the discharge of salinity, this Order includes a requirement to develop and implement a salinity evaluation and minimization plan. This Order also requires the Discharger to develop and implement a site-specific salinity/EC study to determine the appropriate levels of salinity to protect the beneficial uses of Pleasant Grove Creek. The Discharger will also be required to report on salinity reduction efforts and salinity within the Facility

prior to expiration of this Order (specifically as part of the Report of Waste Discharge).

aa. **Settleable Solids.** For inland surface waters, the Basin Plan states that "*[w]ater shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.*" Order No. 5-00-075 contained effluent limitation of 0.1 mL/L as a monthly average and 0.2 mL/L as a daily maximum, which are retained in this Order.

Because the amount of settleable solids is measured in terms of volume per volume without a mass component, it is impracticable to calculate mass limitations for inclusion in this Order. A daily maximum effluent limitation for settleable solids is included in the Order, in lieu of a weekly average, to ensure that the treatment works operate in accordance with design capabilities.

bb. **Toxicity.** See Section IV.C.5 for a discussion regarding whole effluent toxicity.

cc. **Zinc*.*** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for zinc. The criteria for zinc are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The conversion factors for zinc in freshwater are 0.978 for the acute criteria and 0.986 for the chronic criteria. Using the worst-case hardness from the effluent (75 mg/L), the applicable chronic criterion (maximum 4-day average concentration) and the applicable acute criterion (maximum 1-hour average concentration) are both 93.9 µg/L, as total recoverable.

The MEC for total zinc was 68 µg/L, based on 48 samples collected between February 2008 and June 2012, while the maximum observed upstream receiving water total zinc concentration was 9 µg/L, based on 12 samples collected between January 2002 and December 2002. Therefore, the discharge does not exhibit reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for zinc.

4. WQBEL Calculations

a. As discussed in Section IV.C.3 above, effluent limitations based on primary and secondary MCLs were applied as an annual average for aluminum, fluoride, iron, and manganese. Effluent limitations for pH, settleable solids, and chlorine residual were based on Basin Plan objectives and applied directly as effluent limitations. A performance-based mass effluent limitation for mercury was established based on the CTR for human health protection. Effluent limitations for pathogens (total coliform) and turbidity were based on the California DPH reclamation criteria and Order No. 5-00-075.

b. Effluent limitations for aluminum, ammonia, cadmium, cyanide, dibromochloromethane, and dichlorobromomethane were calculated in

accordance with section 1.4 of the SIP. The following paragraphs describe the methodology used for calculating effluent limitations for these parameters.

c. **Effluent Limitation Calculations.** For each water quality criterion/objective, calculate the effluent concentration allowance (ECA) using the following steady-state mass balance equation:

ECA = C + D(C – B) where C>B, and
ECA= C where C<=B,

where:

ECA = effluent concentration allowance

D = dilution credit

C = the priority pollutant criterion/objective

B = the ambient background concentration. The ambient background concentration shall be the observed maximum with the exception that an ECA calculated from a priority pollutant criterion/objective that is intended to protect human health from carcinogenic effects shall use the ambient background concentration as an arithmetic mean.

Acute and chronic toxicity ECAs were then converted to equivalent long-term averages (LTA) using statistical multipliers and the lowest is used. Additional statistical multipliers were then used to calculate the maximum daily effluent limitation (MDEL) and the average monthly effluent limitation (AMEL).

AMELs based on human health criteria are set equal to the human health ECAs and a statistical multiplier is used to calculate the MDEL.

$$AMEL = mult_{AMEL}\left[\min\left(\overbrace{M_A ECA_{acute}}^{LTA_{acute}}, M_C ECA_{chronic}\right)\right]$$

$$MDEL = mult_{MDEL}\left[\min\left(M_A ECA_{acute}, \underbrace{M_C ECA_{chronic}}_{LTA_{chronic}}\right)\right]$$

$$MDEL_{HH} = \left(\frac{mult_{MDEL}}{mult_{AMEL}}\right) AMEL_{HH}$$

where: $mult_{AMEL}$ = statistical multiplier converting minimum LTA to AMEL
$mult_{MDEL}$ = statistical multiplier converting minimum LTA to MDEL
M_A = statistical multiplier converting CMC to LTA
M_C = statistical multiplier converting CCC to LTA

WQBELs were calculated for aluminum, ammonia, cadmium, cyanide, dibromochloromethane, and dichlorobromomethane as follows in Tables F-7 through F-12, below.

Table F-7. WQBEL Calculations for Aluminum

	Acute
Criteria (µg/L)[1]	750
Dilution Credit	No Dilution
ECA	750
ECA Multiplier	0.32
LTA	240.8
AMEL Multiplier (95th%)	1.55
AMEL (µg/L)	**374**
MDEL Multiplier (99th%)	3.11
MDEL (µg/L)	**750**

(1) USEPA Ambient Water Quality Criteria.

Table F-8. WQBEL Calculations for Ammonia

	Acute	Chronic (30-day)	Chronic (4-day)
pH [1]	8.0	7.4	N/A
Temperature °C [2]	N/A	25.54	N/A
Criteria (mg/L) [3]	5.6	2.3	5.8
Dilution Credit	No Dilution	No Dilution	No Dilution
ECA	5.6	2.3	5.8
ECA Multiplier	0.13	0.52	0.24
LTA [4]	0.73	1.21	1.4
AMEL Multiplier (95th%)	2.54	[5]	[5]
AMEL (mg/L)	**1.9**	[5]	[5]
MDEL Multiplier (99th%)	7.53	[5]	[5]
MDEL (mg/L)	**5.5**	[5]	[5]

(1) Acute design pH = 8.0 (max. allowed pH); Chronic design pH =7.4 (max. effluent pH).
(2) Temperature = the maximum observed running 30-day average effluent temperature.
(3) USEPA Ambient Water Quality Criteria.
(4) LTA developed based on Acute and Chronic ECA Multipliers calculated at 99th percentile level per sections 5.4.1 and 5.5.4 of TSD.
(5) Limitations based on acute LTA.

Table F-9. WQBEL Calculations for Cadmium

	Acute	Chronic
Criteria, dissolved (µg/L) [1]	3.12	1.81
Dilution Credit	No Dilution	No Dilution
Translator [2]	0.96	0.92
ECA, total recoverable [3]	3.27	1.96
ECA Multiplier [4]	0.24	0.43
LTA	0.79	0.84
AMEL Multiplier (95th%) [5][6]	1.78	[8]
AMEL (µg/L)	**1.4**	[8]
MDEL Multiplier (99th%) [7]	4.14	[8]
MDEL (µg/L)	**3.3**	[8]

[1] CTR aquatic life criteria, based on a hardness of 75 mg/L as $CaCO_3$.
[2] EPA Translator used as default.
[3] ECA calculated per section 1.4.B, Step 2 of SIP. This allows for the consideration of dilution.
[4] Acute and Chronic ECA Multiplier calculated at 99th percentile per section 1.4.B, Step 3 of SIP or per sections 5.4.1 and 5.5.4 of the TSD.
[5] Assumes sampling frequency n<=4.
[6] The probability basis for AMEL is 95th percentile per section 1.4.B, Step 5 of SIP or section 5.5.4 of the TSD.
[7] The probability basis for MDEL is 99th percentile per section 1.4.B, Step 5 of SIP or section 5.5.4 of the TSD.
[8] Limitations based on acute LTA.

Table F-10. WQBEL Calculations for Cyanide

	Acute	Chronic
Criteria (µg/L)	22	5.2
Dilution Credit	No Dilution	No Dilution
ECA	22	5.2
ECA Multiplier	0.17	0.31
LTA	3.69	1.61
AMEL Multiplier (95th%)	[1]	2.18
AMEL (µg/L)	[1]	**3.5**
MDEL Multiplier (99th%)	[1]	5.96
MDEL (µg/L)	[1]	**9.6**

[1] Limitations based on chronic LTA.

Table F-11. WQBEL Calculations for Dibromochloromethane

	Human Health
Criteria (mg/L)	0.41
Dilution Credit	No Dilution
ECA	0.41
AMEL (mg/L) [1]	**0.41**
MDEL/AMEL Multiplier[2]	2.01
MDEL (mg/L)	**0.82**

[1] AMEL = ECA per section 1.4.B, Step 6 of SIP.
[2] Assumes sampling frequency n<=4. Uses MDEL/AMEL multiplier from Table 2 of SIP.

Table F-12. WQBEL Calculations for Dichlorobromomethane

	Human Health
Criteria (mg/L)	0.56
Dilution Credit	No Dilution
ECA	0.56
AMEL (mg/L) [(1)]	**0.56**
MDEL/AMEL Multiplier[(2)]	2.01
MDEL (mg/L)	**1.12**

(1) AMEL = ECA per section 1.4.B, Step 6 of SIP
(2) Assumes sampling frequency n<=4. Uses MDEL/AMEL multiplier from Table 2 of SIP.

Summary of Water Quality-based Effluent Limitations
Discharge Point No. 001

Table F-13. Summary of Water Quality-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Aluminum, Total Recoverable	µg/L	374	200[1]	750	--	--
Ammonia Nitrogen, Total (as N)	mg/L	1.9	--	5.5	--	--
Cadmium, Total Recoverable	µg/L	1.4	--	3.3	--	--
Chlorine, Total Residual	mg/L	0.011[2]	--	0.019[3]	--	--
Cyanide	µg/L	3.5	--	9.6	--	--
Dibromochloromethane	µg/L	0.41	--	0.82	--	--
Dichlorobromomethane	µg/L	0.56	--	1.12	--	--
Fluoride	µg/L	2,000[1]	--	--	--	--
Iron, Total Recoverable	µg/L	300[1]	--	--	--	--
Manganese, Total Recoverable	µg/L	50[1]	--	--	--	--
Mercury, Total Recoverable	lbs/year	1.39[4]	--	--	--	--
pH	standard units	--	--	--	6.5	8.0
Settleable Solids	ml/L	0.1	--	0.2	--	--
Total Coliform	MPN/100 mL	7- Day Median of 2.2[5]		--	--	240

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Turbidity	NTU	--	--	2[6]	--	10

[1] Applied as an annual average.
[2] Applied as a 4-day average. This effluent limitation will only apply when chlorination system is used.
[3] Applied as a 1-hour average. This effluent limitation will only apply when chlorination system is used.
[4] Applied as an annual average for a calendar year.
[5] Effluent total coliform organisms shall not exceed 23 MPN/100 mL more than once in any 30-day period.
[6] Turbidity not to exceed 2 NTU as a daily average and 5 NTU more than 5% of the time in a 24-hour period.

5. Whole Effluent Toxicity (WET)

For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct whole effluent toxicity testing for acute and chronic toxicity, as specified in the Monitoring and Reporting Program (Attachment E, Section V). This Order also contains effluent limitations for acute toxicity and requires the Discharger to implement best management practices to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity.

a. **Acute Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at III-8.00) The Basin Plan also states that, "…*effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate*…". USEPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "*In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc."* Accordingly, and consistent with the requirements in Order 5-00-075, effluent limitations for acute toxicity have been included in this Order as follows:

Acute Toxicity. Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

Minimum for any one bioassay---------- 70%
Median for any three or more consecutive bioassays --------- 90%

b. **Chronic Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*." (Basin Plan at III-8.00). Chronic WET data from the first

quarter 2005 through the fourth quarter 2006 indicate that the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective (all values were reported as <1 TUc). Due to the contribution from industrial users, the Facility will continue to monitor chronic toxicity quarterly. Attachment E of this Order requires quarterly chronic WET monitoring for demonstration of compliance with the narrative toxicity objective.

In addition to WET monitoring, Special Provision VI.C.2.a. requires the Discharger to submit to the Regional Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The provision also includes a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as, requirements for TRE initiation if a pattern of toxicity is demonstrated.

D. Final Effluent Limitations

1. Mass-based Effluent Limitations

40 CFR 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 CFR 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. This Order includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass limitations provided in 40 CFR 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g., CTR criteria and MCLs) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

Mass-based effluent limitations were calculated for the technology-based effluent limitations (BOD_5 and TSS) based upon the permitted ADWFs allowed in Sections IV.A.1.f and IV.A.2.f of the Limitations and Discharge Requirements.

Except for ammonia, for those pollutant parameters for which effluent limitations are based on water quality objectives and criteria that are concentration-based, mass-based effluent limitations are not included in this Order. For ammonia, an oxygen-demanding substance, mass-based effluent limitations were included in the Order based upon the permitted ADWFs allowed in Sections IV.A.1.f and IV.A.2.f of the Limitations and Discharge Requirements.

The mass-based performance effluent limitations for mercury were based upon the permitted ADWF allowed in Section IV.A.1.f of the Limitations and Discharge Requirements.

2. Averaging Periods for Effluent Limitations

Title 40 CFR 122.45 (d) requires average weekly and average monthly discharge limitations for publicly owned treatment works (POTWs) unless impracticable. However, for toxic pollutants and pollutant parameters in water quality permitting, the USEPA recommends the use of a maximum daily effluent limitation in lieu of average weekly effluent limitations for two reasons. "*First, the basis for the 7-day average for POTWs derives from the secondary treatment requirements. This basis is not related to the need for assuring achievement of water quality standards. Second, a 7-day average, which could comprise up to seven or more daily samples, could average out peak toxic concentrations and therefore the discharge's potential for causing acute toxic effects would be missed.*" (TSD, pg. 96) This Order utilizes maximum daily effluent limitations in lieu of average weekly effluent limitations for ammonia, aluminum, cadmium, cyanide, dibromochloromethane, dichlorobromomethane, and zinc as recommended by the TSD for the achievement of water quality standards and for the protection of the beneficial uses of the receiving stream. Furthermore, for pH, coliform, residual chlorine, settleable solids and turbidity, weekly average effluent limitations have been replaced or supplemented with effluent limitations utilizing shorter averaging periods. The rationale for using shorter averaging periods for these constituents is discussed in Attachment F, Section IV.C.3, above.

Based on a conversation between the Regional Water Board and the California DPH, annual average limitations are more appropriate for some pollutants whose effluent limitations are based on primary and secondary MCLs. Therefore, annual average limitations have been applied for aluminum, iron, manganese, and fluoride.

3. Satisfaction of Anti-Backsliding Requirements

The effluent limitations contained in Order No. 5-00-075 for oil and grease, acrolein, bis (2-ethylhexyl) phthalate, copper, MBAS, and organochlorine pesticides have not been retained in this Order.

The monitoring data for oil and grease collected during the term of Order No. 5-00-075 were reported below analytical detection levels and well below the effluent limitations in Order No. 5-00-075. The monitoring data for acrolein, copper, and MBAS indicated that there is no reasonable potential to violate water quality for these pollutants. The monitoring data for organochlorine pesticides indicated that organochlorine pesticides were not detected in the effluent, and their reported detection limits were less than the minimum levels (MLs) in the SIP. The monitoring data submitted by the Facility is considered new information by the Regional Board.

The effluent limitation for bis (2-ethylhexyl) phthalate has not been retained in this Order based on new information about sources of the detected bis (2-ethylxehyl) phthalate. As described in Section IV.C.3.g, there are concerns about sample contamination that make a decision about reasonable potential uncertain.

The removal of the effluent limitations for oil and grease, acrolein, bis (2-ethylhexyl) phthalate, copper, MBAS, and organochlorine pesticides is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16.

4. Satisfaction of Antidegradation Policy

a. **Surface Water.** This Order provides for an increase in the volume and mass of pollutants discharged and is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16 as updated by State Water Board Administrative Procedure Update (APU) No. 90-004. Detailed socioeconomic and alternatives analyses are required when the water quality impacts are significant. APU 90-004 states: "…a complete antidegradation analysis is not required if…[t]he "Regional Board determines the proposed action will produce minor effects which will not result in a significant reduction of water quality…" This is consistent with the federal guidance that states: "Applying antidegradation review requirements only to those activities that may result in significant degradation of water quality is a useful approach that allows states and tribes to focus their resources where they may result in the greatest environmental protection" (EPA, 2005). Although the Discharger concluded that the impacts to Pleasant Grove Creek would be insignificant, a complete analysis was performed by the Discharger.

The Discharger developed a report titled, “Antidegradation Analysis for Proposed Discharge Modification for the Pleasant Grove Wastewater Treatment Plant”, December 2007, (Larry Walker Associates), that provides a complete antidegradation analysis following the guidance provided by State Water Board APU 90-004. A final Antidegradation Analysis for Proposed Discharge Modification for the Pleasant Grove Wastewater Treatment Plant” report was provided to the Regional Water Board on 31 March 2008 to address comments from the Regional Water Board. Pursuant to the State guidelines, the Antidegradation Analysis evaluated whether changes in water quality resulting from the proposed increase from 12 mgd to 15 mgd in discharge flow to Pleasant Grove Creek are consistent with the maximum benefit to the people of the state, will not unreasonably affect beneficial uses, will not cause water quality to be less than water quality objectives, and that the discharge will provide protection for existing in-stream uses and water quality necessary to protect those uses. The Regional Water Board concurs with the revised Antidegradation Analysis.

i. **Water Quality Parameters and Beneficial Uses that will be Affected by This Order and the Extent of the Impact.** The discharge authorized by this Order does not adversely impact beneficial uses of the receiving water or downstream receiving waters. All beneficial uses will be maintained and protected. This Order provides for an increase in the volume and mass of pollutants discharged directly to the receiving water. 40 CFR 131.12 defines the following tier designations to describe water quality in the receiving water body:

- Tier 1 Designation: *Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected. (40 CFR 131.12)*

- Tier 2 Designation: *Where the quality of waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully. Further, the State shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control. (40 CFR 131.12)*

The tier designation is assigned on a pollutant-by-pollutant basis. The following is the potential effect on water quality parameters regulated in this Order, as was assessed in the Antidegradation Analysis:

- The projected increase in permitted discharge capacity causes slight increases in downstream water quality concentrations in Pleasant Grove Creek for some constituents (EC, TDS, and total zinc). The projected increase will produce slight decreases in downstream concentrations for MBAS, total aluminum, total copper, total iron, and total manganese. The estimated incremental change in downstream concentrations of some parameters due to the proposed increase in discharge flow were projected on average to be so small as to be immeasurable (e.g., total cadmium, total mercury, and ammonia as nitrogen). The projected increases will not adversely affect existing or probable beneficial uses of Pleasant Grove Creek, nor will it cause water quality to fall below applicable water quality objectives.

- The projected increase in permitted discharge capacity is projected to cause an exceedance in the near-field of the Title 22 Secondary MCL standard (2,000 µg/L) for fluoride. The Discharger is in the process of implementing a comprehensive source identification and control program as a means to address the elevated fluoride concentrations in its influent and effluent.

- The proposed increase in discharge would also have a very minor impact on downstream Sacramento River water quality (which Pleasant Grove Creek, via the Pleasant Grove Creek Canal and Natomas Cross Canal, is tributary to). The analysis particularly evaluated TDS, due to salinity issues in the Delta, and mercury, due to the fact that it is included on the 303(d) list for the Sacramento River. The proposed increase in discharge

is projected to produce on average a slight increase in the downstream receiving water concentration for TDS. The analysis also shows that downstream total mercury concentrations are projected to decrease very slightly on average; however, the increment is small enough as to likely be immeasurable. Furthermore, estimated downstream median concentrations of TDS and total mercury in the Sacramento River due to the proposed increase exist below their respective water quality objectives. On a mass loading basis, future "with project" estimates show TDS and total mercury loading to the Sacramento River increasing only slightly relevant to existing upstream loads. The incremental change in Sacramento River mass loading due to the proposed project as a percent of existing upstream loads is estimated to be 0.11 percent for TDS and 0.02 percent for total mercury.

ii. **Scientific Rationale for Determining Potential Lowering of Water Quality**. The rationale used in the Antidegradation Analysis is based on 40 CFR 131.12, State Water Board Resolution No. 68-16, and an Administrative Procedures Update (APU 90-004) issued by the State Water Board to the Regional Water Boards.

The scientific rationale used in the Antidegradation Analysis to determine if the Order allows a lowering of water quality is to compare the projected receiving water quality to the water quality objectives and/or criteria used to protect designated beneficial uses. This approach addresses a key objective of the Antidegradation Analysis to "*[c]ompare receiving water quality to the water quality objectives established to protect designated beneficial uses*" (APU 90-004). APU 90-004 also requires the consideration of "feasible alternative control measures" as part of the procedures for a complete antidegradation analysis.

The Antidegradation Analysis analyzed each pollutant detected in the effluent and receiving water to determine if the proposed discharge of 15 mgd authorized by this Order potentially allows significant increase of the amount of pollutants present in the upstream and downstream receiving water influenced by the proposed discharge. Pollutants that significantly increased concentration or mass downstream would have required an alternatives analysis to determine whether implementation of alternatives to the proposed action would be in the best socioeconomic interest of the people of the region, and be to the maximum benefit of the people of the State. Details on the scientific rationale are discussed in detail in the Antidegradation Analysis. This includes a detailed discussion on calculating acute, chronic, and long-term water quality effects associated with a continuous discharge to Pleasant Grove Creek.

The Regional Water Board concurs with this scientific approach.

iii. **Alternative Control Measures.** The Discharger considered several alternatives that would reduce or eliminate the lowering of water quality

resulting from the proposed 15 mgd discharge. Two effluent disposal alternatives were assessed to determine if any alternative would substantially reduce or eliminate the lowering of water quality as a result of the proposed discharge. Alternatives included 1) not increasing Facility capacity, 2) an expanded recycled water program, and 3) additional wastewater treatment through the implementation of microfiltration and reverse osmosis (MF/RO). Each of these alternatives possess unique abilities to address water quality constituents of concern, and each has distinct implementation benefits, liabilities, and costs.

Of the three alternatives, only MF/RO was considered viable as a potential control option. If the Discharger did not expand capacity, unfavorable socio-economic impacts would occur both locally and regionally. Roseville is considered one of the fastest growing cities in the country (for cities with populations greater than 100,000), and restriction in growth will negatively affect residential development, retail markets, and the economic prosperity of Placer County in general. Due to the lack of year-round recycled water consumptive demand sufficient to offset current and future Facility treated effluent flows produced during the wet season, an expanded recycled water program was considered not feasible. Due to the seasonal demand patterns of the Discharger's recycled water customers, with greatest demand occurring during the summer months and little to no demand occurring during the winter, an expansion of the Discharger's recycled water program in the absence of sufficient year-round recycled water demand precludes such an expansion from offering a viable alternative for offsetting the increase in Facility discharge rates due to the proposed project. The MF/RO alternative may result in other environmental impacts (e.g., generation of waste brine), that are worse than those identified for the proposed action.

iv. **Socioeconomic Evaluation.** The objective of the socioeconomic analysis was to determine if the lowering of Pleasant Grove Creek water quality is in the maximum interest of the people of the state. The socioeconomic evaluation considered the social benefits and costs based on the ability to accommodate socioeconomic development as described in the South Placer Regional Wastewater and Recycled Water Systems Evaluation and the City of Roseville General Plan. Given the current infrastructure, future development in the City of Roseville and Placer County would rely on the Discharger for wastewater collection, treatment, and recycled water services. The plant expansion and new 15 mgd surface water discharge would accommodate planned and approved growth in the City of Roseville and surrounding areas. From a socio-economic impact perspective, construction and operation of a MF/RO plant would lead to decreases in "after tax" or disposable personal income (DPI) spending of ratepayers. Reductions in DPI in the City's local economy due to the financing of a MF/RO plant would result in fewer dollars being spent on non-essential goods and services by ratepayers. Decreased spending within an economy ultimately leads to decreases in labor demand, which further impacts household spending due to losses in employment. Increased connection fees for business, commercial,

and industrial ratepayers makes Roseville a less attractive place to establish or expand such businesses, when all other considerations remain unchanged. On balance, allowing the minor degradation of water quality is in the best interest of the people of the area and the state, compared to other options, and is necessary to accommodate important economic or social development in the area.

v. **Justification for Allowing Degradation.** Potential degradation identified in the Antidegradation Analysis due to this Order is justified by the following considerations:

- Implementation of alternatives does not provide important socioeconomic benefit to the people of the region, nor do they provide maximum benefit to the people of the State. The socioeconomic evaluation of alternatives to the proposed project would inhibit socioeconomic growth making it economically infeasible for any new development to occur.

- The Discharger's planned expansion will continue to produce Title 22 tertiary treated effluent that will result in minimal water quality degradation. The Discharger's planned wastewater treatment process will meet or exceed the highest statutory and regulatory requirements which meets or exceeds best practical treatment and control (BPTC);

- This Order is fully protective of beneficial use of Pleasant Grove Creek. The anticipated water quality changes in Pleasant Grove Creek will not reduce or impair its designated beneficial uses and is consistent with State and federal antidegradation policies;

- No feasible alternatives currently exist to reduce the impacts; and

- The Discharger has fully satisfied the requirements of the intergovernmental coordination and public participation provisions of the State's continuing planning process concurrent with the public participation period of this Order.

b. **Groundwater.** The Discharger utilizes three unlined storage basins, and an additional unlined emergency storage basin. Domestic wastewater contains constituents such as total dissolved solids (TDS), specific conductivity, pathogens, nitrates, organics, metals and oxygen demanding substances (BOD_5). Percolation from the basins may result in an increase in the concentration of these constituents in groundwater. The increase in the concentration of these constituents in groundwater must be consistent with Resolution No. 68-16. Any increase in pollutant concentrations in groundwater must be shown to be necessary to allow wastewater utility service necessary to accommodate housing and economic expansion in the area and must be consistent with maximum benefit to the people of the State of California. Some degradation of groundwater by the Discharger is consistent with Resolution No.

68-16 provided that:

i. the degradation is limited in extent;

ii. the degradation after effective source control, treatment, and control is limited to waste constituents typically encountered in municipal wastewater as specified in the groundwater limitations in this Order;

iii. the Discharger minimizes the degradation by fully implementing, regularly maintaining, and optimally operating best practicable treatment and control (BPTC) measures; and

iv. the degradation does not result in water quality less than that prescribed in the Basin Plan.

Summary of Final Effluent Limitations
Discharge Point No. 001

Table F-14. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Aluminum, Total Recoverable	µg/L	374	200[8]	750	--	--	NAWQC, MCL
Ammonia Nitrogen, Total (as N)	mg/L	1.9	--	5.5	--	--	NAWQC
	lbs/day[2]	190	--	551	--	--	
	lbs/day[3]	238	--	689	--	--	
Average Dry Weather Flow	mgd	--	--	12[6]	--	--	--
	mgd	--	--	15[7]	--	--	--
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	--	--	TTC
	lbs/day[2]	1,000	1,500	2,000	--	--	
	lbs/day[3]	1,250	1,875	2,500	--	--	
	% Removal	85	--	--	--	--	
Cadmium, Total Recoverable	µg/L	1.4	--	3.3	--	--	CTR
Chlorine, Total Residual	mg/L	0.011[4]	--	0.019[5]	--	--	BP
Cyanide	µg/L	3.5	--	9.6	--	--	CTR
Dibromochloromethane	µg/L	0.41	--	0.82	--	--	CTR
Dichlorobromomethane	µg/L	0.56	--	1.12	--	--	CTR
Fluoride	µg/L	2,000[8]	--	--	--	--	MCL
Iron, Total Recoverable	µg/L	300[8]	--	--	--	--	MCL
Manganese, Total Recoverable	µg/L	50[8]	--	--	--	--	MCL
Mercury, Total Recoverable	lbs/year	1.39[9]	--	--	--	--	PB

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
pH	standard units	--	--	--	6.5	8.0	BP, PB
Settleable Solids	ml/L	0.1	--	0.2	--	--	BP
Total Coliform Organisms	MPN/100 mL	--	2.2[10]	[11]	--	240	TTC
Total Suspended Solids	mg/L	10	15	20	--	--	TTC
	lbs/day[2]	1,000	1,500	2,000	--	--	
	lbs/day[3]	1,250	1,875	2,500	--	--	
	% Removal	85	--	--	--	--	
Turbidity	NTU	--	--	2[12]	--	10	TTC

[1] TTC- Tertiary treatment capability. These limitations reflect the level of treatment that is capable of a properly operated tertiary treatment facility.
BP- Based on the Basin Plan.
CTR- Based on water quality criteria contained in the California Toxics Rule, and applied as specified in the SIP.
NTR- Based on water quality criteria contained in the National Toxics Rule.
NAWQC- Based on USEPA' National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
MCL- Based on California Primary Maximum Contaminant Level.
PB – Performance-based

[2] Based on a design treatment capacity of 12 mgd. Effective until completion of upgrades to the Facility.

[3] Based on a design treatment capacity of 15 mgd. Effective upon completion of upgrades to the Facility.

[4] Applied as a 4-day average. This effluent limitation will only apply when chlorination system is used.

[5] Applied as a 1-hour average. This effluent limitation will only apply when chlorination system is used.

[6] Effective until completion of upgrades to the Facility.

[7] Effective upon completion of upgrades to the Facility.

[8] Applied as an annual average.

[9] Applied as an annual average for a calendar year.

[10] Applied as a 7-day median.

[11] Effluent total coliform organisms shall not exceed 23 MPN/100 mL more than once in any 30-day period.

[12] Turbidity not to exceed 2 NTU as a daily average and 5 NTU more than 5% of the time in a 24-hour period.

E. Interim Effluent Limitations

[Not Applicable]

F. Land Discharge Specifications

[Not Applicable]

G. Reclamation Specifications

Treated wastewater discharged for reclamation is regulated under separate waste discharge requirements and must meet the requirements of California Code of Regulations, Title 22.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

Basin Plan water quality objectives to protect the beneficial uses of surface water and groundwater include numeric objectives and narrative objectives, including objectives for chemical constituents, toxicity, and tastes and odors. The toxicity objective requires that surface water and groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective requires that surface water and groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use or that exceed the maximum contaminant levels (MCLs) in Title 22, CCR. The tastes and odors objective states that surface water and groundwater shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances in concentrations that adversely affect domestic drinking water supply, agricultural supply, or any other beneficial use.

A. Surface Water

1. CWA section 303(a-c), requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Regional Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that "*[t]he numerical and narrative water quality objectives define the least stringent standards that the Regional Water Board will apply to regional waters in order to protect the beneficial uses*." The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains Receiving Surface Water Limitations based on the Basin Plan numerical and narrative water quality objectives for bacteria, biostimulatory substances, color, chemical constituents, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity.

B. Groundwater

1. The beneficial uses of the underlying groundwater are municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply.

2. Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, and toxicity for groundwater. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use. The tastes and odors objective prohibits taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan also establishes numerical water quality objectives for chemical constituents and radioactivity in groundwaters designated as municipal supply. These include, at

a minimum, compliance with MCLs in Title 22 of the CCR. The bacteria objective prohibits coliform organisms at or above 2.2 MPN/100 mL. The Basin Plan requires the application of the most stringent objective necessary to ensure that waters do not contain chemical constituents, toxic substances, radionuclides, taste- or odor-producing substances, or bacteria in concentrations that adversely affect municipal or domestic supply, agricultural supply, industrial supply or some other beneficial use.

3. Groundwater limitations are required to protect the beneficial uses of the underlying groundwater.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorizes the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (MRP), Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., BOD_5 and TSS reduction requirements). The daily monitoring for BOD_5, TSS, electrical conductivity and pH, continuous monitoring for flow, and monthly monitoring for hardness have been retained from Order No. 5-00-075.

B. Effluent Monitoring

1. Pursuant to the requirements of 40 CFR 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream.

2. Effluent monitoring of the discharge to Pleasant Grove Creek (Discharge Point No. 001) at Monitoring Location EFF-001 has been established as follows:

   a. Effluent monitoring frequencies and sample types for flow (continuous), chlorine residual (continuous), pH (continuous), turbidity (continuous), temperature (daily), total coliform (daily), BOD_5 (daily), TSS (daily), total dissolved solids (monthly), and hardness (monthly) have been retained from Order No. 5-00-075 to determine compliance with effluent limitations. Effluent monitoring frequencies have been reduced from daily to weekly for ammonia and settleable solids.

b. Monitoring data collected over the term of Order No. 5-00-075 for oil and grease, MBAS, tributyltin, diazinon, and chlorpyrifos did not demonstrate reasonable potential to exceed water quality criteria. Thus, specific monitoring requirements for these parameters have not been retained from Order No. 5-00-075.

c. Monitoring data collected over the term of Order No. 5-00-075 indicated that persistent chlorinated hydrocarbon pesticides were not detected in the effluent, and effluent limitations for persistent chlorinated hydrocarbon pesticides have not be retained in this Order. However, in order to determine if detectable quantities are present in the effluent, annual effluent monitoring for persistent chlorinated hydrocarbon pesticides has been included in this Order.

d. Monitoring data collected over the term of Order No. 5-00-075 for aluminum, cadmium, cyanide, dibromochloromethane, dichlorobromomethane, fluoride, iron, and manganese indicate reasonable potential to exceed water quality criteria for these pollutants. Therefore, monthly effluent monitoring for aluminum, cadmium, cyanide, dibromochloromethane, dichlorobromomethane, fluoride, iron, and manganese has been added to this Order. There was insufficient data to determine whether a reasonable potential existed for 1,1-dichloroethylene. Therefore, quarterly effluent monitoring is required to generate the data to determine if the pollutant is present in concentrations that would trigger reasonable potential to exceed applicable water quality criteria. Though monitoring data for nitrate does not indicate reasonable potential to exceed water quality criteria, the Facility generates nitrate in its normal operational activities. Therefore, monthly effluent monitoring for nitrate has been established in this Order. Since Pleasant Grove Creek is discharging to the Sacramento River (Knights Landing to the Delta) which is listed as a water quality limited segment for mercury in the 303(d) list of impaired water bodies, a performance-based mass effluent limitation and monthly effluent monitoring for mercury have been established in this Order.

e. Limited monitoring data for bis (2-ethylhexyl) phthalate indicated reasonable potential to exceed water quality criteria. Though the effluent limitation for bis (2-ethylhexyl) phthalate has not been retained in this Order, as described in Section IV.C.3.h, quarterly effluent monitoring for bis (2-ethylhexyl) phthalate has been established in this Order.

f. Priority pollutant data for the effluent has been provided by the Discharger over the term of the previous Order, and was used to conduct a meaningful reasonable potential analysis. However, in accordance with Section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. Periodic priority pollutant monitoring is also necessary to provide data that would account for changes in the service population. Thus, the monitoring frequency for priority pollutants has been established quarterly during the third year of the permit term. See Attachments H and I for more detailed requirements related to performing the priority pollutant study.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Acute toxicity monitoring data for the period from February 2005 to January 2007 indicate that the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above acute toxicity criteria. Therefore, the monitoring frequency has been reduced from three times per month flow-through bioassay testing to monthly flow-through bioassay testing in this Order to demonstrate compliance with the effluent limitations for acute toxicity.

2. **Chronic Toxicity.** Quarterly chronic whole effluent toxicity testing has been retained from Order No. 5-00-075 in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

D. Receiving Water Monitoring

1. Surface Water

a. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream. The receiving water monitoring requirements contained in Order 5-00-075 for dissolved oxygen (weekly), pH (weekly), temperature (weekly), and electrical conductivity (weekly) have been retained in this Order. In addition, monthly monitoring for hardness (as $CaCO_3$) is being required to collect sufficient data for use in determining hardness-dependent criteria.

b. Quarterly monitoring for priority pollutants upstream of the discharge point is required during the third year of the Order term to collect the necessary data to determine reasonable potential as required in section 1.2 of the SIP. The pH and hardness (as $CaCO_3$) of the upstream receiving water shall also be monitored concurrently with the priority pollutants to ensure the water quality criteria are correctly adjusted for the receiving water when determining reasonable potential as specified in section 1.3 of the SIP. See Attachments H and I for more detailed requirements related to performing the priority pollutant study.

2. Groundwater

a. Section 13267 of the California Water Code states, in part, *"(a) A Regional Water Board, in establishing…waste discharge requirements… may investigate the quality of any waters of the state within its region*" and *"(b) (1) In conducting an investigation…, the Regional Water Board may require that any person who… discharges… waste…that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Regional Water Board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports*." In requiring those reports, the Regional Water Board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports. The Monitoring and Reporting Program (Attachment E) is

issued pursuant to California Water Code Section 13267. The groundwater monitoring and reporting program required by this Order and the Monitoring and Reporting Program are necessary to assure compliance with these waste discharge requirements. The Discharger is responsible for the discharges of waste at the Facility subject to this Order.

b. Monitoring of the groundwater must be conducted to determine if the discharge has caused an increase in constituent concentrations, when compared to background. The monitoring must, at a minimum, require a complete assessment of groundwater impacts including the vertical and lateral extent of degradation, an assessment of all wastewater-related constituents that may have migrated to groundwater, an analysis of whether additional or different methods of treatment or control of the discharge are necessary to provide best practicable treatment or control to comply with Resolution No. 68-16. Economic analysis is only one of many factors considered in determining best practicable treatment or control. If monitoring indicates that the discharge has incrementally increased constituent concentrations in groundwater above background, this permit may be reopened and modified. This Order contains Groundwater Limitations that allow groundwater quality to be degraded for certain constituents when compared to background groundwater quality, but not to exceed water quality objectives. If groundwater quality has been degraded by the discharge, the incremental change in pollutant concentration (when compared with background) may not be increased. If groundwater quality has been or may be degraded by the discharge, this Order may be reopened and specific numeric limitations established consistent with Resolution No. 68-16 and the Basin Plan.

c. Groundwater monitoring data collected during the previous permit term showed no change in ground water quality in monitoring wells downstream of ponds compared to monitoring wells upstream of ponds. This Order requires the Discharger to continue groundwater monitoring and includes a regular schedule of groundwater monitoring in the attached Monitoring and Reporting Program. The groundwater monitoring reports are necessary to continue evaluating impacts to waters of the State to assure protection of beneficial uses and compliance with Regional Water Board plans and policies, including Resolution No. 68-16. Evidence in the record includes effluent monitoring data that indicates the presence of constituents that may degrade groundwater and surface water.

d. Monthly monitoring of depth to groundwater, groundwater elevation, pH, electrical conductivity, quarterly monitoring of nitrates, and total coliform, and annual monitoring of heavy metals, volatile organics, semi-volatile organics, and oxygenate compounds has been retained from Order No. 5-00-075. Monthly monitoring for total dissolved solids (TDS) has been established in this Order to provide an indication of the level of pollution of the groundwater.

E. Other Monitoring Requirements

1. Biosolids Monitoring

Biosolids monitoring is required to ensure compliance with the biosolids disposal requirements (Special Provisions VI.C.5.b.). Biosolids disposal requirements are imposed pursuant to 40 CFR Part 503 to protect public health and prevent groundwater degradation.

2. Water Supply Monitoring

Consistent with the requirements contained in Order No. 5-00-075, water supply monitoring is required to evaluate the relative contribution of salinity from the source water to the effluent and to collect data for establishing effluent limitations to protect the receiving water from further salinity degradation. In particular, the monitoring frequency for electrical conductivity and total dissolved solids has been increased to quarterly in this Order. In addition, quarterly monitoring for standard minerals is required to assist in the evaluation of salinity in the water supply.

3. Storage Basin Monitoring

Storage basin monitoring has been retained from Order No. 5-00-075 to ensure proper operation of the storage basins and compliance with the land discharge specifications. In particular, monitoring of the discharge to the treatment ponds at Monitoring Locations LND-001, LND-002, LND-003 (three effluent storage basins), and LND-004 (an emergency storage basin), is being required. When the ponds contain water for more than 7 consecutive days, daily monitoring for freeboard, weekly monitoring for pH, electrical conductivity, odors, and levee condition, and monthly monitoring for dissolved oxygen have been retained from Order No. 5-00-075.

VII. 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 Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable 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. 40 CFR 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 CFR 123.25, this Order omits federal conditions that address enforcement authority

specified in 40 CFR 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

a. **Whole Effluent Toxicity.** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a Toxicity Reduction Evaluation (TRE). This Order may be reopened to include a numeric chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective is adopted by the State Water Board, this Order may be reopened to include a numeric chronic toxicity limitation based on that objective.

b. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when developing effluent limitations for inorganic constituents. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

c. **Salinity/EC Site-Specific Study.** This Order requires the Discharger to complete and submit a report on the results of salinity/EC site-specific studies to determine appropriate salinity/EC levels necessary to protect downstream beneficial uses. The studies shall be completed and submitted to the Regional Water Board as specified in section VI.C.2.c of this Order. Based on a review of the results of the report on the salinity/EC site-specific studies this Order may be reopened for addition of an effluent limitation and requirements for salinity and/or EC.

d. **Aluminum Site-Specific Study.** This Order requires the Discharger to complete and submit a report on the results of aluminum site-specific studies to determine appropriate aluminum levels necessary to protect downstream aquatic life beneficial uses. The studies shall be completed and submitted to the Regional Water Board as specified in section VI.C.2.d of this Order. This reopener allows the Regional Water Board to reopen this Order for addition of an effluent limitation and requirements for aluminum based on a review of the results of the report on the aluminum site-specific studies.

2. Special Studies and Additional Monitoring Requirements

a. **Chronic Whole Effluent Toxicity Requirements.** The Basin Plan contains a narrative toxicity objective that states, “All waters shall be maintained free of toxic

substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at III-8.00.) WET data collected during the term of Order No. 5-00-075 indicate that the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective. Attachment E of this Order requires quarterly chronic WET monitoring for demonstration of compliance with the narrative toxicity objective.

In addition to WET monitoring, this provision requires the Discharger to submit to the Regional Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The provision also includes a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as requirements for TRE initiation if a pattern of toxicity is demonstrated.

Monitoring Trigger. A numeric toxicity monitoring trigger of > 1 TUc (where TUc = 100/NOEC) is applied in the provision, because this Order does not allow any dilution for the chronic condition. Therefore, a TRE is triggered when the effluent exhibits a pattern of toxicity at 100% effluent.

Accelerated Monitoring. The provision requires accelerated WET testing when a regular WET test result exceeds the monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether there is a pattern of toxicity before requiring the implementation of a TRE. Due to possible seasonality of the toxicity, the accelerated monitoring should be performed in a timely manner, preferably taking no more than 2 to 3 months to complete.

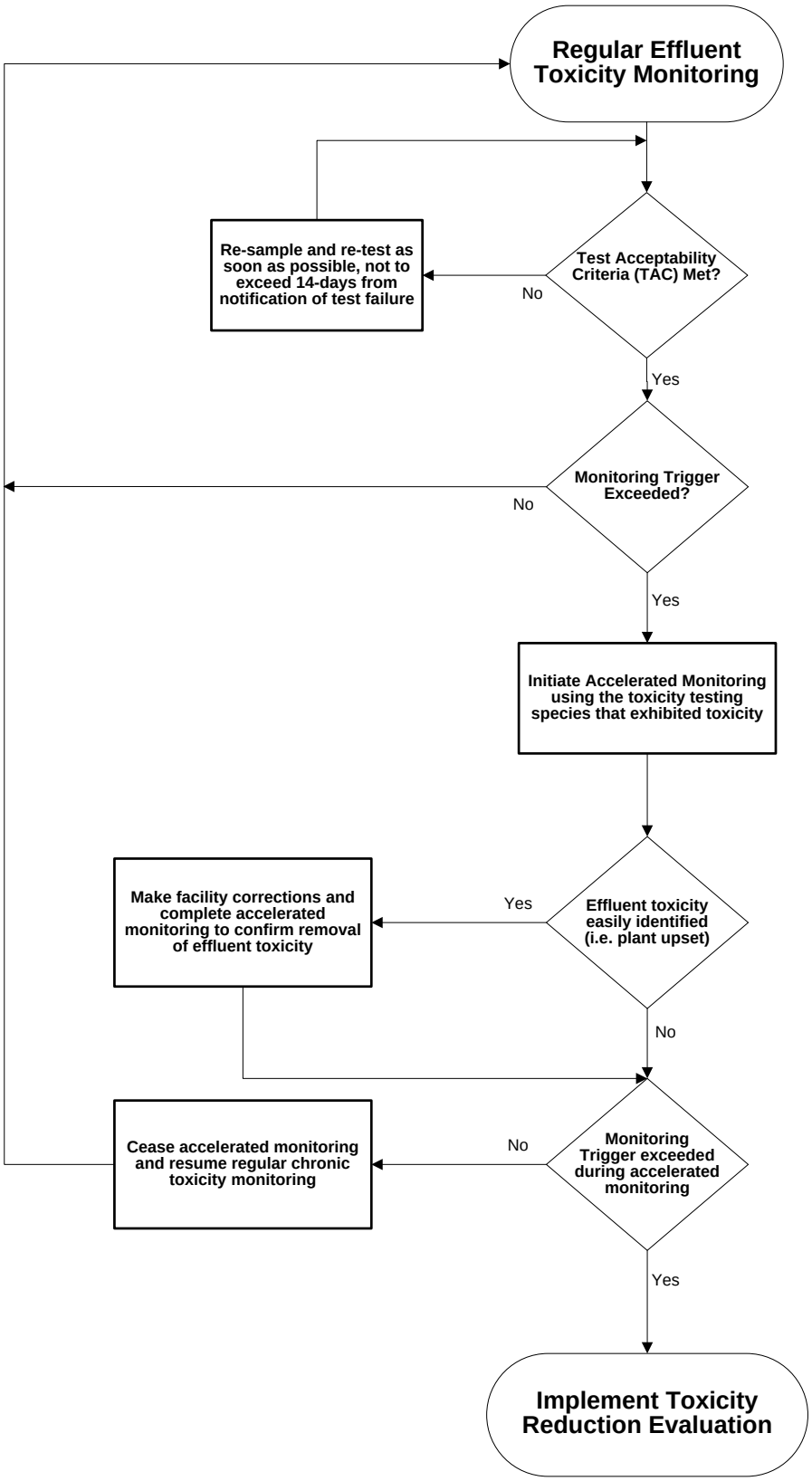
The provision requires accelerated monitoring consisting of four chronic toxicity tests every 2 weeks using the species that exhibited toxicity. Guidance regarding accelerated monitoring and TRE initiation is provided in the *Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991* (TSD). The TSD at page 118 states, "EPA recommends if toxicity is repeatedly or periodically present at levels above effluent limits more than 20 percent of the time, a TRE should be required." Therefore, four accelerated monitoring tests are required in this provision. If no toxicity is demonstrated in the four accelerated tests, then it demonstrates that toxicity is not present at levels above the monitoring trigger more than 20 percent of the time (only 1 of 5 tests are toxic, including the initial test). However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity (i.e. toxicity present exceeding the monitoring trigger more than 20 percent of the time), the Executive Officer may require that the Discharger initiate a TRE.

See the WET Accelerated Monitoring Flow Chart (Figure F-1), below, for further clarification of the accelerated monitoring requirements and for the decision points for determining the need for TRE initiation.

TRE Guidance. The Discharger is required to prepare a TRE Work Plan in accordance with USEPA guidance. Numerous guidance documents are available, as identified below:

- *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants,* EPA/833B-99/002, August 1999.
- *Generalized Methodology for Conducting Industrial TREs,* EPA/600/2-88/070*,* April 1989.
- *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures,* Second Edition, EPA/600/6-91/005F, February 1991.
- *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I*, EPA/600/6-91/005F, May 1992.
- *Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting acute and Chronic Toxicity,* Second Edition, EPA/600/R-92/080, September 1993.
- *Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity*, Second Edition, EPA/600/R-92/081, September 1993.
- *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, Fifth Edition, EPA-821-R-02-012, October 2002.
- *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, EPA-821-R-02-013, October 2002.
- *Technical Support Document for Water Quality-based Toxics Control,* EPA/505/2-90-001, March 1991.

Figure F-1
WET Accelerated Monitoring Flow Chart



b. **Groundwater Monitoring.** To determine compliance with Groundwater Limitations V.B., the Discharger is required to evaluate the adequacy of its groundwater monitoring network. This provision requires the Discharger to evaluate its groundwater monitoring network to ensure there are one or more background monitoring wells and a sufficient number of designated monitoring wells downgradient of every treatment, storage, and disposal unit that does or may release waste constituents to groundwater. If the monitoring shows that any constituent concentrations are increased above background water quality, within 6 months after 1st full year of monitoring that documents constituent concentrations increased beyond background water quality, the Discharger shall submit a technical report describing the groundwater evaluation report results and critiquing each evaluated facility component with respect to BPTC and minimizing the discharge's impact on groundwater quality.

c. **Salinity/EC Site-Specific Studies.** This Order requires the Discharger to prepare and submit a report on the results of salinity/EC site-specific studies to determine appropriate salinity/EC levels necessary to protect downstream beneficial uses. The study shall evaluate how climate, river flow, background water quality, rainfall, and flooding affect salinity/EC requirements. Based on these factors, the study shall recommend site-specific numeric values for salinity/EC that fully protect the agricultural irrigation use designation of Pleasant Grove Creek. The Regional Water Board will evaluate the recommendations, select appropriate values, reevaluate reasonable potential for salinity/EC, and reopen the permit, as necessary, to include appropriate effluent limitations for these constituents. The study shall be completed and submitted to the Regional Water Board within **27** months following approval of the study workplan and time schedule by the Executive Officer.

d. **Aluminum Site Specific Studies.** This Order requires the Discharger to prepare and submit a report on the results of aluminum site-specific studies to determine appropriate aluminum levels necessary to protect downstream aquatic life beneficial uses. The study shall evaluate how pH, hardness, and other factors affect aluminum requirements. Based on these factors, the study shall recommend site-specific numeric values for aluminum that fully protect the aquatic life use designation of Pleasant Grove Creek. The Regional Water Board will evaluate the recommendations, select appropriate values, reevaluate reasonable potential for aluminum, and reopen the permit, as necessary, to revise as appropriate, the effluent limitations for aluminum. The study shall be completed and submitted to the Regional Water Board within **27** months following approval of the study workplan and time schedule by the Executive Officer.

3. **Best Management Practices and Pollution Prevention**

a. Salinity Evaluation and Minimization Plan. An Evaluation and Minimization Plan for salinity is required in this Order to ensure adequate measures are developed and implemented by the Discharger to reduce the discharge of salinity to Pleasant Grove Creek. For example, the Discharger should still be minimizing

the use of salt containing substances in their collection system maintenance and in Facility processes such as additives used for pH adjustment and other chemicals used in the treatment processes.

b. Salinity Reduction Goal. The Discharger shall provide a report demonstrating reasonable progress in the reduction of salinity in its discharge to Pleasant Grove Creek. Based on effluent data for this Facility, the Regional Water Board finds that an increment of 500 µmhos/cm over the electrical conductivity (EC) of the municipal water supply is a reasonable goal that the Facility shall strive to achieve over the term of this Order. The report shall be submitted as part of the Report of Waste Discharge (as required on the Cover Page for the Order).

4. Construction, Operation, and Maintenance Specifications

The operation and maintenance specifications for the storage basins are necessary to protect the beneficial uses of the groundwater. The specifications included in this Order are carried over from Order No. 5-00-075. In addition, reporting requirements related to use of the basins are required to monitor their use and the potential impact on groundwater.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. **Pretreatment Requirements**

i. The Federal Clean Water Act, Section 307(b), and Federal Regulations, 40 CFR Part 403, require publicly owned treatment works to develop an acceptable industrial pretreatment program. A pretreatment program is required to prevent the introduction of pollutants, which will interfere with treatment plant operations or sludge disposal, and prevent pass through of pollutants that exceed water quality objectives, standards or permit limitations. Pretreatment requirements are imposed pursuant to 40 CFR Part 403.

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

iii. The City of Roseville operates a pretreatment program that addresses discharges to both the City of Roseville's Dry Creek and Pleasant Grove wastewater treatment plants. Although the pretreatment program requirements, including the requirements to submit annual reports on program progress, are included in the Orders for both plants, the Discharger will be allowed to submit one report that addresses the City's activities that affect both plants.

b. **Sludge/Biosolids Discharge Specifications**

The sludge/biosolids provisions are required to ensure compliance with State disposal requirements (Title 27, CCR, Division 2, Subdivision 1, section 20005, et seq) and USEPA sludge/biosolids use and disposal requirements at 40 CFR Part 503.

c. **Collection System**

The previous Order contained a provision to establish interagency agreements with the collection system users to ensure that the Discharger had the proper authority and procedures in place to protect its collection system. These agreements were completed in 2000.

In 2006, the State Water Board adopted a Statewide General WDR for Sanitary Sewer Systems (Order 2006-0003-DWQ). This general order requires the development and implementation of a system-specific Sewer System Management Plan (SSMP) to provide proper and efficient management, operation, and maintenance of sanitary sewer systems. In this Order a provision is included to ensure that the Discharger complies with the requirements in the State Water Board adopted Statewide General WDR for Sanitary Sewer Systems (Order 2006-0003-DWQ). The requirements in the previous Order related to the collection system have not been retained as the State Water Board general order should ensure proper management of the Discharger's collection system.

6. Other Special Provisions

a. Wastewater shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to the DPH's reclamation criteria, California Code of Regulations, Title 22, Division 4, Chapter 3, (Title 22), or equivalent.

b. Prior to making any change in the discharge point, place of use, or purpose of use of the wastewater, the Discharger must obtain approval of, or clearance from the State Water Resources Control Board (Division of Water Rights).

In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Regional Water Board and a statement. The statement shall comply with the signatory paragraph of Federal Standard Provision V.B.5 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall

be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

7. Compliance Schedules

[Not Applicable]

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, Central Valley Region (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 the Pleasant Grove Wastewater Treatment Plant. 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 published in the Press Tribune newspaper on 5 April 2008.

B. Written Comments

The 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 should be received at the Regional Water Board offices by 5:00 p.m. on 5 May 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:	12 June 2008
Time:	8:30 am
Location:	Regional Water Quality Control Board, Central Valley Region 11020 Sun Center Dr., Suite #200 Rancho Cordova, CA 95670

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

Please be aware that dates and venues may change. Our Web address is http://www.waterboards.ca.gov/centralvalley/ 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 through the Regional Water Board by calling (916) 464-3291.

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 Diana Messina at (916) 464-4828 or dcmessina@waterboards.ca.gov.

ATTACHMENT G-SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Aluminum	µg/l	280	1,000	87	750(1)	87(1)	--	--	--	200	Yes
Ammonia Nitrogen, Total (as N)	mg/L	7.6	0.53	2.3	5.6(1)	2.3(1)	--	--	--	--	Yes
Antimony	µg/l	0.8	0.5	6	--	--	14	--	--	6	No
Arsenic	µg/l	0.7	3	10	340	150	--	--	10	10	No
Barium	µg/l	13	160	1,000	--	--	--	--	--	1,000	No
Bis (2-ethylhexyl) phthalate	µg/l	5.7	0.3	1.8	--	--	1.8	--	--	4	Yes(7)
Bromoform	µg/l	0.3	ND	4.3	--	--	4.3	--	--	100	No
Cadmium	µg/l	5.6	1.2	1.96	3.27	1.96	--	--	--	5	Yes
Carbon Tetrachloride	µg/l	0.1	ND	0.25	--	--	0.25	--	--	0.5	No
Chloride	mg/l	130	62	106	860	230	--	--	--	106(2)	Yes
Chloroethane	µg/l	0.1	ND	16	--	--	--	--	--	16(3)	No
Chloroform	µg/l	66	ND	80	--	--	--	--	--	80	No
Chromium, Total	µg/l	0.8	2	50	1,372	163	--	--	--	50	No
Copper	µg/l	3.3	4.1	7.3	10.7	7.3	1,300	--	--	200(2)	No
Cyanide	µg/l	29	2.8	5.2	22	5.2	700	--	--	150	Yes
Dibromochloromethane	µg/l	7.4	ND	0.41	--	--	0.41	--	--	100	Yes
Dichlorobromomethane	µg/l	24	ND	0.56	--	--	0.56	--	--	80	Yes
1,4-Dichlorobenzene	µg/l	0.07	ND	5	--	763	400	--	--	5	No
1,1-Dichloroethylene	µg/l	0.2	ND	0.057	--	--	0.057	--	--	6	Yes(5)
Fluoride	µg/l	3,600	1,100	2,000	--	--	--	--	--	2,000	Yes
Iron	µg/l	880	1,700	300	--	1,000(1)	--	--	--	300	Yes
Lead	µg/l	0.42	0.78	2.21	56.61	2.21	--	--	--	15	No
Manganese	µg/l	27	140	50	--	--	--	--	--	50	Yes
Mercury	µg/l	0.038	0.043	0.050	1.4(1)	0.77(1)	0.050		--	2	No
Methyl Blue Active Substances (MBAS)	µg/l	490	ND	500	--	--	--	--	--	500	No
Methyl Chloride (Chloromethane)	µg/l	0.2	ND	3	--	--	3(4)	--	--	--	No
Methylene Chloride (Dichloromethane)	µg/l	0.09	NA	4.7	--	4.7	--	--	--	5	No
Nickel	µg/l	2.9	5.8	40.89	367.82	40.89	610	--	--	100	No
Phosphorus	µg/l	1,400	NA	0.14	--	--	0.14(6)	--	--	--	Yes
Selenium	µg/l	2	0.7	5	20	5	--	--	--	20(2)	No
Specific Conductance (EC)	µmhos/cm	1,020	732	700	--	--	--	--		700(2)	Yes

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Sulfate	µg/l	60	16	250	--	--	--	--	--	250	No
Thallium	µg/l	0.03	0.1	1.7	--	--	1.7	--	--	2	No
Toluene	µg/l	1.3	ND	150	--	--	6,800	--	--	150	No
Total Dissolved Solids (TDS)	mg/l	444	491	450	--	--	--	--	--	450 (2)	Yes
Zinc	µg/l	68	9	93.9	93.9	93.9	--	--	--	2,000(2)	No

General Note: All inorganic concentrations are give as a total recoverable.
MEC = Projected Maximum Effluent Concentration (calculated using multiplier from Table 3-1, TSD for non-CTR)
B = Maximum Receiving Water Concentration or lowest detection level, if non-detect
C = Criterion used for Reasonable Potential Analysis
CMC = Criterion Maximum Concentration (CTR or NTR)
CCC = Criterion Continuous Concentration (CTR or NTR)
Water & Org= Water and Organism Criterion Concentration (CTR or NTR)
Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective
MCL = Drinking Water Standards Maximum Contaminant Level
NA = Not available
ND = Reported as non-detect

Footnotes:
(1) USEPA National Recommended Ambient Water Quality Standard.
(2) Agriculture water quality goal (Ayers & Westcot).
(3) Odor threshold (Amoore and Hautala).
(4) USEPA SNARL.
(5) Though there is a reasonable potential for 1,1-dichloroethylene, effluent limitations have not been established because there was only one detection of 1,1-dichloroethylene, and the reported detection levels for the other seven samples were above the NTR criterion.
(6) USEPA IRIS Reference Dose for white phosphorus. The Regional Water Board staff is still considering the applicability and relationship of this criterion to total phosphorus.
(7) Although the data indicates reasonable potential exists, the Regional Water Board is not establishing effluent limitations due to concerns over sample contamination.

ATTACHMENT H – PRIORITY POLLUTANT STUDY

I. Background. Sections 2.4.1 through 2.4.4 of the SIP provide minimum standards for analyses and reporting. (Copies of the SIP may be obtained from the State Water Resources Control Board, or downloaded from http://www.waterboards.ca.gov/iswp/index.html). To implement the SIP, effluent and receiving water data are needed for all priority pollutants. Effluent and receiving water pH and hardness are required to evaluate the toxicity of certain priority pollutants (such as heavy metals) where the toxicity of the constituents varies with pH and/or hardness. Section 3 of the SIP prescribes mandatory monitoring of dioxin congeners. In addition to specific requirements of the SIP, the Regional Water Board is requiring the following monitoring:

A. **Drinking water constituents**. Constituents for which drinking water Maximum Contaminant Levels (MCLs) have been prescribed in the California Code of Regulation are included in the *Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins* (Basin Plan). The Basin Plan defines virtually all surface waters within the Central Valley Region as having existing or potential beneficial uses for municipal and domestic supply. The Basin Plan further requires that, at a minimum, water designated for use as domestic or municipal supply shall not contain concentrations of chemical constituents in excess of the MCLs contained in the California Code of Regulations.

B. **Effluent and receiving water temperature.** This is both a concern for application of certain temperature-sensitive constituents, such as fluoride, and for compliance with the Basin Plan's thermal discharge requirements.

C. **Effluent and receiving water hardness and pH.** These are necessary because several of the CTR constituents are hardness and pH dependent.

D. **Dioxin and furan sampling.** Section 3 of the SIP has specific requirements for the collection of samples for analysis of dioxin and furan congeners, which are detailed in Attachment H. Briefly, dischargers classified as minor must collect and analyze one wet season and one dry season sample. Pursuant to Section 13267 of the California Water Code, this Order includes a requirement for the Discharger to submit monitoring data for the effluent and receiving water as described in Attachment H.

II. Monitoring Requirements.

A. Quarterly Monitoring. Quarterly priority pollutant samples shall be collected from the effluent and upstream receiving water (EFF-001 and RSW-001) and analyzed for the constituents listed in Table H-1. Quarterly monitoring shall be conducted for 1 year (four consecutive samples, evenly distributed throughout the year) and the results of such monitoring be submitted to the Regional Water Board, during the fourth year of the permit term. Each individual monitoring event shall provide representative sample results for the effluent and upstream receiving water.

B. Semi-annual Monitoring (dioxins and furans only). Semi-annual monitoring is required for dioxins and furans, as specified in Attachment I. The results of dioxin and furan monitoring shall be submitted to the Regional Water Board with the quarterly priority data at the completion of the Priority Pollutant Study, and during the fourth year of the permit term..

C. Concurrent Sampling. Effluent and receiving water sampling shall be performed at approximately the same time, on the same date.

D. Sample type. All effluent samples shall be taken as 24-hour flow proportioned composite samples. All receiving water samples shall be taken as grab samples.

Table H-1. Priority Pollutants

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
			Basis	Criterion Concentration ug/L or noted[1]		
VOLATILE ORGANICS						
28	1,1-Dichloroethane	75343	Primary MCL	5	0.5	EPA 8260B
30	1,1-Dichloroethene	75354	National Toxics Rule	0.057	0.5	EPA 8260B
41	1,1,1-Trichloroethane	71556	Primary MCL	200	0.5	EPA 8260B
42	1,1,2-Trichloroethane	79005	National Toxics Rule	0.6	0.5	EPA 8260B
37	1,1,2,2-Tetrachloroethane	79345	National Toxics Rule	0.17	0.5	EPA 8260B
75	1,2-Dichlorobenzene	95501	Taste & Odor	10	0.5	EPA 8260B
29	1,2-Dichloroethane	107062	National Toxics Rule	0.38	0.5	EPA 8260B
	cis-1,2-Dichloroethene	156592	Primary MCL	6	0.5	EPA 8260B
31	1,2-Dichloropropane	78875	Calif. Toxics Rule	0.52	0.5	EPA 8260B
101	1,2,4-Trichlorobenzene	120821	Public Health Goal	5	0.5	EPA 8260B
76	1,3-Dichlorobenzene	541731	Taste & Odor	10	0.5	EPA 8260B
32	1,3-Dichloropropene	542756	Primary MCL	0.5	0.5	EPA 8260B
77	1,4-Dichlorobenzene	106467	Primary MCL	5	0.5	EPA 8260B
17	Acrolein	107028	Aquatic Toxicity	21	2	EPA 8260B
18	Acrylonitrile	107131	National Toxics Rule	0.059	2	EPA 8260B
19	Benzene	71432	Primary MCL	1	0.5	EPA 8260B
20	Bromoform	75252	Calif. Toxics Rule	4.3	0.5	EPA 8260B
34	Bromomethane	74839	Calif. Toxics Rule	48	1	EPA 8260B
21	Carbon tetrachloride	56235	National Toxics Rule	0.25	0.5	EPA 8260B
22	Chlorobenzene (mono chlorobenzene)	108907	Taste & Odor	50	0.5	EPA 8260B
24	Chloroethane	75003	Taste & Odor	16	0.5	EPA 8260B
25	2- Chloroethyl vinyl ether	110758	Aquatic Toxicity	122 (3)	1	EPA 8260B
26	Chloroform	67663	OEHHA Cancer Risk	1.1	0.5	EPA 8260B
35	Chloromethane	74873	USEPA Health Advisory	3	0.5	EPA 8260B
23	Dibromochloromethane	124481	Calif. Toxics Rule	0.41	0.5	EPA 8260B

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
			Basis	Criterion Concentration ug/L or noted[1]		
27	Dichlorobromomethane	75274	Calif. Toxics Rule	0.56	0.5	EPA 8260B
36	Dichloromethane	75092	Calif. Toxics Rule	4.7	0.5	EPA 8260B
33	Ethylbenzene	100414	Taste & Odor	29	0.5	EPA 8260B
88	Hexachlorobenzene	118741	Calif. Toxics Rule	0.00075	1	EPA 8260B
89	Hexachlorobutadiene	87683	National Toxics Rule	0.44	1	EPA 8260B
91	Hexachloroethane	67721	National Toxics Rule	1.9	1	EPA 8260B
94	Naphthalene	91203	USEPA IRIS	14	10	EPA 8260B
38	Tetrachloroethene	127184	National Toxics Rule	0.8	0.5	EPA 8260B
39	Toluene	108883	Taste & Odor	42	0.5	EPA 8260B
40	trans-1,2-Dichloroethylene	156605	Primary MCL	10	0.5	EPA 8260B
43	Trichloroethene	79016	National Toxics Rule	2.7	0.5	EPA 8260B
44	Vinyl chloride	75014	Primary MCL	0.5	0.5	EPA 8260B
	Methyl-tert-butyl ether (MTBE)	1634044	Secondary MCL	5	0.5	EPA 8260B
	Trichlorofluoromethane	75694	Primary MCL	150	5	EPA 8260B
	1,1,2-Trichloro-1,2,2-Trifluoroethane	76131	Primary MCL	1200	10	EPA 8260B
	Styrene	100425	Taste & Odor	11	0.5	EPA 8260B
	Xylenes	1330207	Taste & Odor	17	0.5	EPA 8260B
SEMI-VOLATILE ORGANICS						
60	1,2-Benzanthracene	56553	Calif. Toxics Rule	0.0044	5	EPA 8270C
85	1,2-Diphenylhydrazine	122667	National Toxics Rule	0.04	1	EPA 8270C
45	2-Chlorophenol	95578	Taste and Odor	0.1	2	EPA 8270C
46	2,4-Dichlorophenol	120832	Taste and Odor	0.3	1	EPA 8270C
47	2,4-Dimethylphenol	105679	Calif. Toxics Rule	540	2	EPA 8270C
49	2,4-Dinitrophenol	51285	National Toxics Rule	70	5	EPA 8270C
82	2,4-Dinitrotoluene	121142	National Toxics Rule	0.11	5	EPA 8270C
55	2,4,6-Trichlorophenol	88062	Taste and Odor	2	10	EPA 8270C
83	2,6-Dinitrotoluene	606202	USEPA IRIS	0.05	5	EPA 8270C
50	2-Nitrophenol	25154557	Aquatic Toxicity	150 (5)	10	EPA 8270C
71	2-Chloronaphthalene	91587	Aquatic Toxicity	1600 (6)	10	EPA 8270C
78	3,3'-Dichlorobenzidine	91941	National Toxics Rule	0.04	5	EPA 8270C
62	3,4-Benzofluoranthene	205992	Calif. Toxics Rule	0.0044	10	EPA 8270C
52	4-Chloro-3-methylphenol	59507	Aquatic Toxicity	30	5	EPA 8270C
48	4,6-Dinitro-2-methylphenol	534521	National Toxics Rule	13.4	10	EPA 8270C
51	4-Nitrophenol	100027	USEPA Health Advisory	60	5	EPA 8270C
69	4-Bromophenyl phenyl ether	101553	Aquatic Toxicity	122	10	EPA 8270C
72	4-Chlorophenyl phenyl ether	7005723	Aquatic Toxicity	122 (3)	5	EPA 8270C
56	Acenaphthene	83329	Taste and Odor	20	1	EPA 8270C

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
			Basis	Criterion Concentration ug/L or noted[1]		
57	Acenaphthylene	208968	No Criteria Available		10	EPA 8270C
58	Anthracene	120127	Calif. Toxics Rule	9,600	10	EPA 8270C
59	Benzidine	92875	National Toxics Rule	0.00012	5	EPA 8270C
61	Benzo(a)pyrene (3,4-Benzopyrene)	50328	Calif. Toxics Rule	0.0044	0.1	EPA 8270C
63	Benzo(g,h,i)perylene	191242	No Criteria Available		5	EPA 8270C
64	Benzo(k)fluoranthene	207089	Calif. Toxics Rule	0.0044	2	EPA 8270C
65	Bis(2-chloroethoxy) methane	111911	No Criteria Available		5	EPA 8270C
66	Bis(2-chloroethyl) ether	111444	National Toxics Rule	0.031	1	EPA 8270C
67	Bis(2-chloroisopropyl) ether	39638329	Aquatic Toxicity	122 (3)	10	EPA 8270C
68	Bis(2-ethylhexyl) phthalate	117817	National Toxics Rule	1.8	3	EPA 8270C
70	Butyl benzyl phthalate	85687	Aquatic Toxicity	3 (7)	10	EPA 8270C
73	Chrysene	218019	Calif. Toxics Rule	0.0044	5	EPA 8270C
81	Di-n-butylphthalate	84742	Aquatic Toxicity	3 (7)	10	EPA 8270C
84	Di-n-octylphthalate	117840	Aquatic Toxicity	3 (7)	10	EPA 8270C
74	Dibenzo(a,h)-anthracene	53703	Calif. Toxics Rule	0.0044	0.1	EPA 8270C
79	Diethyl phthalate	84662	Aquatic Toxicity	3 (7)	2	EPA 8270C
80	Dimethyl phthalate	131113	Aquatic Toxicity	3 (7)	2	EPA 8270C
86	Fluoranthene	206440	Calif. Toxics Rule	300	10	EPA 8270C
87	Fluorene	86737	Calif. Toxics Rule	1300	10	EPA 8270C
90	Hexachlorocyclopentadiene	77474	Taste and Odor	1	1	EPA 8270C
92	Indeno(1,2,3-c,d)pyrene	193395	Calif. Toxics Rule	0.0044	0.05	EPA 8270C
93	Isophorone	78591	National Toxics Rule	8.4	1	EPA 8270C
98	N-Nitrosodiphenylamine	86306	National Toxics Rule	5	1	EPA 8270C
96	N-Nitrosodimethylamine	62759	National Toxics Rule	0.00069	5	EPA 8270C
97	N-Nitrosodi-n-propylamine	621647	Calif. Toxics Rule	0.005	5	EPA 8270C
95	Nitrobenzene	98953	National Toxics Rule	17	10	EPA 8270C
53	Pentachlorophenol	87865	Calif. Toxics Rule	0.28	0.2	EPA 8270C
99	Phenanthrene	85018	No Criteria Available		5	EPA 8270C
54	Phenol	108952	Taste and Odor	5	1	EPA 8270C
100	Pyrene	129000	Calif. Toxics Rule	960	10	EPA 8270C
INORGANICS						
	Aluminum	7429905	Ambient Water Quality	87	50	EPA 6020/200.8
1	Antimony	7440360	Primary MCL	6	5	EPA 6020/200.8
2	Arsenic	7440382	Ambient Water Quality	0.018	0.01	EPA 1632
15	Asbestos	1332214	National Toxics Rule/ Primary MCL	7 MFL	0.2 MFL >10um	EPA/600/R-93/116(PCM)
	Barium	7440393	Basin Plan Objective	100	100	EPA 6020/200.8

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
			Basis	Criterion Concentration ug/L or noted[1]		
3	Beryllium	7440417	Primary MCL	4	1	EPA 6020/200.8
4	Cadmium	7440439	Public Health Goal	0.07	0.25	EPA 1638/200.8
5a	Chromium (total)	7440473	Primary MCL	50	2	EPA 6020/200.8
5b	Chromium (VI)	18540299	Public Health Goal	0.2	0.5	EPA 7199/1636
6	Copper	7440508	National Toxics Rule	4.1 (2)	0.5	EPA 6020/200.8
14	Cyanide	57125	National Toxics Rule	5.2	5	EPA 9012A
	Fluoride	7782414	Public Health Goal	1000	0.1	EPA 300
	Iron	7439896	Secondary MCL	300	100	EPA 6020/200.8
7	Lead	7439921	Calif. Toxics Rule	0.92 (2)	0.5	EPA 1638
8	Mercury	7439976	TMDL Development		0.0002 (11)	EPA 1669/1631
	Manganese	7439965	Secondary MCL/ Basin Plan Objective	50	20	EPA 6020/200.8
9	Nickel	7440020	Calif. Toxics Rule	24 (2)	5	EPA 6020/200.8
10	Selenium	7782492	Calif. Toxics Rule	5 (8)	5	EPA 6020/200.8
11	Silver	7440224	Calif. Toxics Rule	0.71 (2)	1	EPA 6020/200.8
12	Thallium	7440280	National Toxics Rule	1.7	1	EPA 6020/200.8
	Tributyltin	688733	Ambient Water Quality	0.063	0.002	EV-024/025
13	Zinc	7440666	Calif. Toxics Rule/ Basin Plan Objective	54/ 16 (2)	10	EPA 6020/200.8
PESTICIDES - PCBs						
110	4,4'-DDD	72548	Calif. Toxics Rule	0.00083	0.02	EPA 8081A
109	4,4'-DDE	72559	Calif. Toxics Rule	0.00059	0.01	EPA 8081A
108	4,4'-DDT	50293	Calif. Toxics Rule	0.00059	0.01	EPA 8081A
112	alpha-Endosulfan	959988	National Toxics Rule	0.056 (9)	0.02	EPA 8081A
103	alpha-Hexachlorocyclohexane (BHC)	319846	Calif. Toxics Rule	0.0039	0.01	EPA 8081A
	Alachlor	15972608	Primary MCL	2	1	EPA 8081A
102	Aldrin	309002	Calif. Toxics Rule	0.00013	0.005	EPA 8081A
113	beta-Endosulfan	33213659	Calif. Toxics Rule	0.056 (9)	0.01	EPA 8081A
104	beta-Hexachlorocyclohexane	319857	Calif. Toxics Rule	0.014	0.005	EPA 8081A
107	Chlordane	57749	Calif. Toxics Rule	0.00057	0.1	EPA 8081A
106	delta-Hexachlorocyclohexane	319868	No Criteria Available		0.005	EPA 8081A
111	Dieldrin	60571	Calif. Toxics Rule	0.00014	0.01	EPA 8081A
114	Endosulfan sulfate	1031078	Ambient Water Quality	0.056	0.05	EPA 8081A
115	Endrin	72208	Calif. Toxics Rule	0.036	0.01	EPA 8081A
116	Endrin Aldehyde	7421934	Calif. Toxics Rule	0.76	0.01	EPA 8081A
117	Heptachlor	76448	Calif. Toxics Rule	0.00021	0.01	EPA 8081A
118	Heptachlor Epoxide	1024573	Calif. Toxics Rule	0.0001	0.01	EPA 8081A
105	Lindane (gamma-Hexachlorocyclohexane)	58899	Calif. Toxics Rule	0.019	0.019	EPA 8081A

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
			Basis	Criterion Concentration ug/L or noted[1]		
119	PCB-1016	12674112	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
120	PCB-1221	11104282	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
121	PCB-1232	11141165	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
122	PCB-1242	53469219	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
123	PCB-1248	12672296	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
124	PCB-1254	11097691	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
125	PCB-1260	11096825	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
126	Toxaphene	8001352	Calif. Toxics Rule	0.0002	0.5	EPA 8081A
	Atrazine	1912249	Public Health Goal	0.15	1	EPA 8141A
	Bentazon	25057890	Primary MCL	18	2	EPA 643/ 515.2
	Carbofuran	1563662	CDFG Hazard Assess.	0.5	5	EPA 8318
	2,4-D	94757	Primary MCL	70	10	EPA 8151A
	Dalapon	75990	Ambient Water Quality	110	10	EPA 8151A
	1,2-Dibromo-3-chloropropane (DBCP)	96128	Public Health Goal	0.0017	0.01	EPA 8260B
	Di(2-ethylhexyl)adipate	103231	USEPA IRIS	30	5	EPA 8270C
	Dinoseb	88857	Primary MCL	7	2	EPA 8151A
	Diquat	85007	Ambient Water Quality	0.5	4	EPA 8340/ 549.1/HPLC
	Endothal	145733	Primary MCL	100	45	EPA 548.1
	Ethylene Dibromide	106934	OEHHA Cancer Risk	0.0097	0.02	EPA 8260B/504
	Glyphosate	1071836	Primary MCL	700	25	HPLC/EPA 547
	Methoxychlor	72435	Public Health Goal	30	10	EPA 8081A
	Molinate (Ordram)	2212671	CDFG Hazard Assess.	13	2	EPA 634
	Oxamyl	23135220	Public Health Goal	50	20	EPA 8318/632
	Picloram	1918021	Primary MCL	500	1	EPA 8151A
	Simazine (Princep)	122349	USEPA IRIS	3.4	1	EPA 8141A
	Thiobencarb	28249776	Basin Plan Objective/ Secondary MCL	1	1	HPLC/EPA 639
16	2,3,7,8-TCDD (Dioxin)	1746016	Calif. Toxics Rule	1.30E-08	5.00E-06	EPA 8290 (HRGC) MS
	2,4,5-TP (Silvex)	93765	Ambient Water Quality	10	1	EPA 8151A
	Diazinon	333415	CDFG Hazard Assess.	0.05	0.25	EPA 8141A/GCMS
	Chlorpyrifos	2921882	CDFG Hazard Assess.	0.014	1	EPA 8141A/GCMS
OTHER CONSTITUENTS						
	Ammonia (as N)	7664417	Ambient Water Quality	1500 (4)		EPA 350.1
	Chloride	16887006	Agricultural Use	106,000		EPA 300.0
	Flow			1 CFS		
	Hardness (as $CaCO_3$)			5000		EPA 130.2

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
			Basis	Criterion Concentration ug/L or noted[1]		
	Foaming Agents (MBAS)		Secondary MCL	500		SM5540C
	Nitrate (as N)	14797558	Primary MCL	10,000	2,000	EPA 300.0
	Nitrite (as N)	14797650	Primary MCL	1000	400	EPA 300.0
	pH		Basin Plan Objective	6.5-8.5	0.1	EPA 150.1
	Phosphorus, Total (as P)	7723140	USEPA IRIS	0.14		EPA 365.3
	Specific conductance (EC)		Agricultural Use	700 umhos/cm		EPA 120.1
	Sulfate		Secondary MCL	250,000	500	EPA 300.0
	Sulfide (as S)		Taste and Odor	0.029		EPA 376.2
	Sulfite (as SO_3)		No Criteria Available			SM4500-SO3
	Temperature		Basin Plan Objective	^oF		
	Total Disolved Solids (TDS)		Agricultural Use	450,000		EPA 160.1

FOOTNOTES:

(1) - The Criterion Concentrations serve only as a point of reference for the selection of the appropriate analytical method. They do not indicate a regulatory decision that the cited concentration is either necessary or sufficient for full protection of beneficial uses. Available technology may require that effluent limits be set lower than these values.

(2) - Freshwater aquatic life criteria for metals are expressed as a function of total hardness (mg/L) in the water body. Values displayed correspond to a total hardness of 40 mg/L.

(3) - For haloethers

(4) - Freshwater aquatic life criteria for ammonia are expressed as a function of pH and temperature of the water body. Values displayed correspond to pH 8.0 and temperature of 22 C.

(5) - For nitrophenols.

(6) - For chlorinated naphthalenes.

(7) - For phthalate esters.

(8) - Basin Plan objective = 2 ug/L for Salt Slough and specific constructed channels in the Grassland watershed.

(9) - Criteria for sum of alpha- and beta- forms.

(10) - Criteria for sum of all PCBs.

(11) - Mercury monitoring shall utilize "ultra-clean" sampling and analytical methods. These methods include:

Method 1669: Sampling Ambient Water for Trace Metals at USEPA Water Quality Criteria Levels, USEPA; and

Method 1631: Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluoresence, US EPA

III. Additional Study Requirements

A. Laboratory Requirements. The laboratory analyzing the monitoring samples shall be certified by the Department of Health Services in accordance with the provisions of Water Code 13176 and must include quality assurance/quality control data with their reports (ELAP certified).

B. Criterion Quantitation Limit (CQL). The criterion quantitation limits will be equal to or lower than the minimum levels (MLs) in Appendix 4 of the SIP or the detection limits for purposes of reporting (DLRs) below the controlling water quality criterion concentrations summarized in Table H-1 of this Order. In cases where the controlling water quality

criteria concentrations are below the detection limits of all approved analytical methods, the best available procedure will be utilized that meets the lowest of the MLs and DLR. Table H-1 contains suggested analytical procedures. The Discharger is not required to use these specific procedures as long as the procedure selected achieves the desired minimum detection level.

C. Method Detection Limit (MDL). The method detection limit for the laboratory shall be determined by the procedure found in 40 CFR Part 136, Appendix B (revised as of May 14, 1999).

D. Reporting Limit (RL). The reporting limit for the laboratory. This is the lowest quantifiable concentration that the laboratory can determine. Ideally, the RL should be equal to or lower than the CQL to meet the purposes of this monitoring.

E. Reporting Protocols. The results of analytical determinations for the presence of chemical constituents in a sample shall use the following reporting protocols:

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

2. Sample results less than the reported 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.

3. 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 shortened to "Est. Conc.). The laboratory, if such information is available, may include numerical estimates of the data quantity for the reported result. Numerical estimates of data quality may be percent accuracy (+ or – a percentage of the reported value), numerical ranges (low and high), or any other means considered appropriate by the laboratory.

4. Sample results that are less than the laboratory's MDL shall be reported as "Not Detected" or ND.

F. Data Format. The monitoring report shall contain the following information for each pollutant:

1. The name of the constituent.
2. Sampling location.
3. The date the sample was collected.
4. The time the sample was collected.
5. The date the sample was analyzed. For organic analyses, the extraction data will also be indicated to assure that hold times are not exceeded for prepared samples.
6. The analytical method utilized.
7. The measured or estimated concentration.
8. The required Criterion Quantitation Limit (CQL).
9. The laboratory's current Method Detection Limit (MDL), as determined by the procedure found in 40 CFR Part 136, Appendix B (revised as of May 14, 1999).
10. The laboratory's lowest reporting limit (RL).
11. Any additional comments.

ATTACHMENT I – DIOXIN AND FURAN SAMPLING

The CTR includes criteria for 2,3,7,8-tetrachlorodibenzo-pdioxin (2,3,7,8-TCDD). In addition to this compound, there are many congeners of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) that exhibit toxic effects similar to those of 2,3,7,8-TCDD. The USEPA has published toxic equivalency factors (TEFs) for 17 of the congeners. The TEFs express the relative toxicities of the congeners compared to 2,3,7,8-TCDD (whose TEF equals 1.0). In June 1997, participants in a World Health Organization (WHO) expert meeting revised TEF values for 1,2,3,7,8-PentaCDD, OctaCDD, and OctaCDF. The current TEFs for the 17 congeners, which include the three revised values, are shown below:

Toxic Equivalency Factors (TEFs) for 2,3,7,8-TCDD Equivalents

Congener	TEF
2,3,7,8-TetraCDD	1
1,2,3,7,8-PentaCDD	1.0
1,2,3,4,7,8-HexaCDD	0.1
1,2,3,6,7,8-HexaCDD	0.1
1,2,3,7,8,9-HexaCDD	0.1
1,2,3,4,6,7,8-HeptaCDD	0.01
OctaCDD	0.0001
2,3,7,8-TetraCDF	0.1
1,2,3,7,8-PentaCDF	0.05
2,3,4,7,8-PentaCDF	0.5
1,2,3,4,7,8-HexaCDF	0.1
1,2,3,6,7,8-HexaCDF	0.1
1,2,3,7,8,9-HexaCDF	0.1
2,3,4,6,7,8-HexaCDF	0.1
1,2,3,4,6,7,8-HeptaCDF	0.01
1,2,3,4,7,8,9-HeptaCDF	0.01
OctaCDF	0.0001

The Discharger shall conduct effluent and receiving water monitoring for the 2,3,7,8-TCDD congeners listed above to assess the presence and amounts of the congeners being discharged and already present in the receiving water. Effluent and upstream receiving water shall be monitored for the presence of the 17 congeners once during dry weather and once during wet weather for 1 year within the term of the study.

The Discharger shall report, for each congener, the analytical results of the effluent and receiving water monitoring, including the quantifiable limit and the method detection limit, and the measured or estimated concentration.

In addition, the Discharger shall multiply each measured or estimated congener concentration by its respective TEF value and report the sum of these values.