CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

CENTRAL VALLEY REGION

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ORDER NO. R5-2010-XXXX
NPDES NO. CA0079316

WASTE DISCHARGE REQUIREMENTS FOR THE PLACER COUNTY DEPARTMENT OF FACILITY SERVICES PLACER COUNTY SEWER MAINTENANCE DISTRICT 1 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	Placer County Department of Facility Services
Name of Facility	Placer County Sewer Maintenance District 1 Wastewater Treatment Plant
Facility Address	11755 Joeger Road, Auburn, CA 95603
	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 Placer County Department of Facility Services from the discharge points 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 57’ 56” N	121º 06’ 36” W	Rock Creek
002	Treated Municipal Wastewater	38° 57’ 54” N	121° 06’ 36” W	Rock Creek

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	**<Adoption Date>**
This Order shall become effective on:	**50 Days After the Adoption Date**
This Order shall expire on:	**<Expiration Date>**
The Discharger shall file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	**<180 days prior to the Order expiration date>**

I, **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 **<Adoption Date>**.

_____
Pamela C. Creedon, Executive Officer

Table of Contents

I. Facility Information 4
II. Findings 4
III. Discharge Prohibitions 11
IV. Effluent Limitations and Discharge Specifications 12
A. Effluent Limitations – Discharge Point Nos. 001 and 002 12
B. Land Discharge Specifications – Not Applicable 14
C. Reclamation Specifications – Not Applicable 14
V. Receiving Water Limitations 14
A. Surface Water Limitations 14
B. Groundwater Limitations 17
VI. Provisions 17
A. Standard Provisions 17
B. Monitoring and Reporting Program 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 25
4. Construction, Operation and Maintenance Specifications 25
5. Special Provisions for Municipal Facilities (POTWs Only) 27
6. Other Special Provisions – Not Applicable 31
7. Compliance Schedules 31
VII. Compliance Determination 32

List of Tables

Table 1. Discharger Information 1
Table 2. Discharge Location 1
Table 3. Administrative Information 1
Table 4. Facility Information 4
Table 5. Basin Plan Beneficial Uses 7
Table 6. Final Effluent Limitations 12
Table 7. Interim Effluent Limitations for BOD_5 and TSS 14

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 E-1
Attachment F – Fact Sheet F-1
Attachment G – Summary of Reasonable Potential Analysis G-1
Attachment H – Calculation of Water Quality-based Effluent LImitations H-1
Attachment I – Effluent and Receiving Water Characterization Study I-1
Attachment J – Interim 1-Hour Average Effluent Limitations for Ammonia J-1
Attachment K – Interim 4-Day Average Effluent Limitations for Ammonia K-1
Attachment L – Interim 30-Day Average Effluent Limitations for Ammonia L-1

I. FACILITY INFORMATION

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

Table 4. Facility Information

Discharger	Placer County Department of Facility Services
Name of Facility	Placer County Sewer Maintenance District 1 Wastewater Treatment Plant
Facility Address	11755 Joeger Road
	Auburn, CA 95603
	Placer County
Facility Contact, Title, and Phone	Bryan Kangas, Supervising Plant Operator, (530) 886-1100
Mailing Address	11476 C Avenue, Auburn, CA 95603
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	2.18 million gallons per day (MGD), average dry weather flow

II. FINDINGS

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

A. Background. Placer County Department of Facility Services (hereinafter Discharger) is currently discharging pursuant to Order No. R5-2005-0074 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0079316. The Discharger submitted a Report of Waste Discharge, dated 5 October 2009, and applied for a NPDES permit renewal to discharge up to 2.7 MGD of treated wastewater from the Placer County Sewer Maintenance District 1 Wastewater Treatment Plant, hereinafter Facility. The application was deemed complete on 11 November 2009.

B. Facility Description. The Discharger owns and operates a POTW. The treatment system consists of headworks (influent flow meter, comminution, and aerated grit removal), four rectangular primary clarifiers, three rotating biological contactors (RBCs), two trickling filters, four circular clarifiers, six gravity filters with anthracite media, and chlorine disinfection and dechlorination in three chlorine contact chambers. Sludge is treated in primary and secondary digesters and is dewatered using a belt press and sludge drying beds. The dewatered sludge is disposed of at a landfill.

The Facility is designed to provide tertiary treatment for average dry weather flows of 2.18 MGD. However, the Discharger has historically had high levels of infiltration and inflow (I/I) during wet weather events. During severe wet weather events when flows exceed the capacity of the gravity filters of 3.5 MGD, the Facility bypasses the gravity filters and discharges a combination of secondary and tertiary treated wastewater.

Wastewater is discharged from Discharge Point No. 001 (see table on cover page) to Rock Creek, a water of the United States, and a tributary to Dry Creek and, further, the Bear River and the Sacramento River within the Upper Coon-Upper Auburn watershed.

The Discharger periodically discharges wastewater to Rock Creek at Discharge Point No. 002, located approximately 200 feet upstream of Discharge Point No. 001, when Chlorine Contact Basin No. 3 is temporarily offline for routine maintenance. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

In October 2009, the Discharger submitted a Report of Waste Discharge that described plans to proceed with a project to upgrade the treatment process and expand the design capacity of the treatment plant to 2.7 MGD (average dry weather flow). As proposed in the Report of Waste Discharge, the upgraded and expanded Facility will include a new headworks, new primary clarifiers, new biological nutrient removal facilities, new secondary clarifiers and tertiary filters, new ultraviolet light (UV) disinfection facilities and new and renovated solids handling facilities. As discussed further in the Fact Sheet (Attachment F), this Order does not authorize the Discharger's proposed increase in flow.

C. **Legal Authorities.** This Order is issued pursuant to section 402 of the Clean Water Act (CWA) and implementing regulations adopted by USEPA and chapter 5.5, division 7 of the California Water Code (CWC; 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 CWC (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 L are also incorporated into this Order.

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

G. **Water Quality-Based Effluent Limitations (WQBELs).** 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 water quality-based requirements, that are necessary to achieve water quality standards. The Regional Water Board previously considered the factors listed in CWC section 13241 in establishing these requirements in Order No. R5-2005-0074. 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, 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 September 2009)*, 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 Rock Creek, but does identify present and potential uses for the Sacramento River from the Colusa Basin Drain to the "I" Street Bridge and the Bear River, to which Rock Creek, via several intermediate waterbodies, is tributary, as described further in section IV.C.2.a of the Fact Sheet (Attachment F). 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 Rock Creek are as follows:

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001 and 002	Rock Creek	Existing: Municipal and domestic supply (MUN); agricultural supply, including irrigation and stock watering (AGR); hydropower generation (POW); water contact recreation, including canoeing and rafting (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); migration of aquatic organisms, warm and cold (MIGR); spawning, reproduction, and/or early development, warm and cold (SPWN); wildlife habitat (WILD); and navigation (NAV).

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*." Rock Creek is not listed on the 303(d) list of impaired water bodies. Downstream water bodies listed on the 303(d) list of impaired water bodies include the Sacramento River from Knights Landing to the Delta (mercury and unknown toxicity), the Lower Bear River (diazinon), and Camp Far West Reservoir (mercury). TMDLs have not been adopted for Rock Creek, the Sacramento River from Knights Landing to the Delta, the Lower Bear River, or Camp Far West Reservoir. However, due to the pending development of the proposed Sacramento-San Joaquin Delta Mercury TMDL, effluent limitations for mercury are included in this Order.

Requirements of this Order implement the Basin Plan.

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 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 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's *Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits* (Compliance Schedule Policy) allows compliance schedules for new, revised, or newly interpreted water quality objectives or criteria, or in accordance with a TMDL. All compliance schedules must be as short as possible, and may not exceed 10 years from the effective date of the adoption, revision, or new interpretation of the applicable water quality objective or criterion, unless a TMDL allows a longer schedule. The Regional Water Board, however, is not required to include a compliance schedule, 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 Compliance Schedule Policy, should consider feasibility of achieving compliance, and must impose a schedule that is as short as possible to achieve compliance with the effluent limitation based on the objective or criteria.

The Compliance Schedule Policy and the SIP do not allow compliance schedules for priority pollutants beyond 18 May 2010, except for new or more stringent priority pollutant criteria adopted by USEPA after 17 December 2008.

Where a compliance schedule for a final effluent limitation exceeds 1 year, the Order must include interim numeric limitations for that constituent or parameter, interim milestones and compliance reporting within 14 days after each interim milestone. The permit may also include interim requirements to control the pollutant, such as pollutant minimization and source control measures. This Order includes compliance schedules and interim effluent limitations. A detailed discussion of the basis for the compliance schedules and interim effluent limitations is included in the Fact Sheet (Attachment F).

L. Alaska Rule. On 30 March 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards become effective for CWA purposes. (40 CFR 131.21 and 65 FR 24641 (27 April 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 effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on flow and percent removal requirements for 5-day biochemical oxygen demand (BOD_5), and total suspended solids (TSS). The WQBELs consist of restrictions on aluminum, ammonia, arsenic, chlorine

residual, chlorodibromomethane, copper, dichlorobromomethane, electrical conductivity, lead, mercury, nitrate plus nitrite, nitrite, and pH. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order includes effluent limitations for BOD_5, total coliform organisms, and TSS 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 WQBELs 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 for priority pollutants are based on the CTR-SIP, which was approved by USEPA on 18 May 2000. 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 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. As discussed in detail in the Fact Sheet, the permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and Resolution No. 68-16.

O. Anti-Backsliding Requirements. Sections 303(d)(4) and 402(o)(2) of the CWA and federal regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions. Some effluent limitations in this Order are less stringent than those in Order No. R5-2005-0074. 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. CWC sections 13267 and 13383 authorize 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. The 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 Fact Sheet.

S. **Provisions and Requirements Implementing State Law.** The provisions/requirements in sections V.B and VI.A.2.o 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.

THEREFORE, IT IS HEREBY ORDERED, that Order No. R5-2005-0074 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 CWC (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

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

B. Discharge of wastewater to Rock Creek at Discharge Point No. 002, at a time other than when Chlorine Contact Basin No. 3 is temporarily offline for routine maintenance and when daily average flows are at or below 2.18 MGD, is prohibited.

C. 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).

D. Neither the discharge nor its treatment shall create a nuisance as defined in section 13050 of the CWC.

E. 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.

F. The discharge or storage of waste classified as 'hazardous' or 'designated', as defined in Section 2521(a) and 2522(a) of Title 27, is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point Nos. 001 and 002

1. Final Effluent Limitations – Discharge Point Nos. 001 and 002

a. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point Nos. 001 and 002, with compliance measured at Monitoring Locations EFF-001 and EFF-002 as described in the Monitoring and Reporting Program:

Table 6. Final Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	10	15	25	--	--
	lbs/day[1]	182	273	455	--	--
Total Suspended Solids	mg/L	10	15	25	--	--
	lbs/day[1]	182	273	455	--	--
pH	standard units	--	--	--	6.5	8.2
Priority Pollutants						
Chlorodibromomethane	µg/L	0.41	--	0.82	--	--
Copper, Total Recoverable	µg/L	7.6	--	19	--	--
Dichlorobromomethane	µg/L	0.56	--	1.5	--	--
Lead, Total Recoverable	µg/L	2.3	--	6.5	--	--
Non-Conventional Pollutants						
Aluminum, Total Recoverable	µg/L	68	--	151	--	--
Ammonia Nitrogen, Total (as N)	mg/L	1.4	--	3.9	--	--
	lbs/day[1]	25	--	71	--	--
Nitrate Plus Nitrite (as N)	mg/L	10	--	--	--	--
Nitrite Nitrogen, Total (as N)	mg/L	1.0	--	--	--	--

[1] Mass-based effluent limitations are based on a permitted average dry weather flow of 2.18 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. Chronic Whole Effluent Toxicity. There shall be no chronic toxicity in the effluent discharge.

e. 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.

f. Average Dry Weather Flow. The average dry weather discharge flow shall not exceed 2.18 MGD.

g. 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;
ii. 23 MPN/100 mL, more than once in any 30-day period; and
iii. 240 MPN/100 mL, as an instantaneous maximum.

h. Arsenic, Total Recoverable. The monthly average effluent concentration shall not exceed 10 µg/L.

i. Mercury, Total Recoverable. The total monthly mass discharge of total mercury shall not exceed 0.0018 lbs. This performance-based limitation shall be in effect until the Regional Water Board establishes final effluent limitations after adoption of a TMDL for mercury in the Sacramento-San Joaquin Delta.

j. Electrical Conductivity @ 25°C. For a calendar year, the annual average effluent electrical conductivity shall not exceed 700 µmhos/cm.

2. Interim Effluent Limitations

a. Effective immediately and ending on **31 August 2015**, the Discharger shall maintain compliance with the following limitations at Discharge Point Nos. 001 and 002, with compliance measured at Monitoring Locations EFF-001 and EFF-002 as described in the Monitoring and Reporting Program. These interim effluent limitations shall apply in lieu of all of the final effluent limitations specified for the same parameters during the time period indicated in this provision.

i. Total Ammonia Nitrogen (as N). The 1-hour average, 4-day average, and 30-day average effluent concentration of total ammonia nitrogen (as N) in the effluent shall not exceed the applicable interim effluent limitations in Attachments J, K, and L, respectively, based on the pH and temperature of the effluent at the time of effluent ammonia sampling.

ii. Total Coliform Organisms[1]. When the influent flow is greater than 3.5 MGD and the 7-day median receiving water temperature at Monitoring Location RSW-001 (as described in the MRP) is less than 60°F, effluent total coliform organisms shall not exceed:

(a) 2.2 most probable number (MPN) per 100 mL, as a as a 30-day median;
(b) 23 MPN/100 mL, more than once in any 30-day period; and
(c) 240 MPN/100 mL as an instantaneous maximum.

iii. BOD_5 and TSS[1]. When the influent flow is greater than 3.5 MGD and the 7-day median receiving water temperature at Monitoring Location RSW-001 (as described in the MRP) is less than 60°F, effluent BOD_5 and TSS shall not exceed:

Table 7. Interim Effluent Limitations for BOD_5 and TSS

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	20	30	50	--	--
	lbs/day[1]	364	546	910	--	--
Total Suspended Solids	mg/L	20	30	50	--	--
	lbs/day[1]	364	546	910	--	--

[1] Mass-based effluent limitations based on a permitted average dry weather flow of 2.18 MGD.

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 Rock 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 10 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.

[1] If these conditions are not present, then the final effluent limitations for BOD_5, total coliform organisms, and TSS in sections IV.A.1.a and IV.A.1.g above are in effect.

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 nor raised above 8.5.

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;

   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 CCR, 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 exceed the following limitations:

    1. Where natural turbidity is less than 1 Nephelometric Turbidity Units (NTU), controllable factors shall not cause the downstream receiving water to exceed 2 NTU;

    2. Where natural turbidity is between 1 and 5 NTUs, increases shall not exceed 1 NTU;

    3. Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed more than 20 percent;

    4. Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTU; nor

    5. Where natural turbidity is greater than 100 NTUs, increases shall not exceed more than 10 percent.

B. Groundwater Limitations

1. The release of waste constituents from any transport, storage, treatment, or disposal component associated with the Facility or collection system shall not cause the underlying groundwater to be degraded.

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions (federal NPDES standard conditions from 40 CFR Part 122) 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 CWA, 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. 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.

i. 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.

j. 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 contained in section VI.A.2.i. of this Order.

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.

k. A publicly owned treatment works 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.

l. 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.

m. 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.

n. For publicly owned treatment works, 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).

o. 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 the Standard Provision contained in Attachment D section V.E.1.
[40 CFR 122.41(l)(6)(i)].

p. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.

q. 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 CWC. Transfer shall be approved or disapproved in writing by the Executive Officer.

B. Monitoring and Reporting Program Requirements

The Discharger shall comply with the Monitoring and Reporting Program, and future revisions thereto, in Attachment E of this Order.

C. Special Provisions

1. Reopener Provisions

a. 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.

b. 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.

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 interim mass effluent limitation modified (higher or lower) or an effluent concentration limitation imposed. If the Regional Water Board determines that a mercury offset program is feasible for Dischargers subject to a NPDES permit, then this Order may be reopened to reevaluate the interim mercury mass loading limitation(s) and the need for a mercury offset program for the Discharger.

d. **Pollution Prevention.** This Order requires the Discharger prepare a pollution prevention plan following CWC section 13263.3(d)(3) for ammonia. Based on a review of the pollution prevention plan, this Order may be reopened for addition and/or modification of effluent limitations and requirements for ammonia.

e. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a new 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.

f. **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 copper and lead. 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.

g. **Increased Flow.** Upon availability of additional information indicating that an increase in discharge to Rock Creek is consistent with the antidegradation provisions of 40 CFR 131.12 and Resolution No. 68-16, this Order may be reopened to allow an increased discharge to Rock Creek.

h. **Dilution/Mixing Zone Study.** In order to allow dilution credits for the calculation of WQBELs for nitrate plus nitrite, the Discharger must submit an approved Dilution/Mixing Zone Study, in accordance with a workplan submitted to and approved by the Regional Water Board, which meets all of the requirements of Section 1.4.2.2 of the SIP. Should the Discharger submit an approved Dilution/Mixing Zone Study that meets the requirements of Section 1.4.2.2 of the SIP, including sufficient data demonstrating that assimilative capacity is available

and that granting the mixing zone would not adversely impact biologically sensitive aquatic life resources or critical habitats, or produce undesirable or nuisance conditions, the Regional Water Board may reopen this Order to include effluent limitations based on an appropriate dilution factor for nitrate plus nitrite.

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 (WET) 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 exhibits toxicity as described in subsection ii below, the Discharger is required to initiate a TRE in accordance with an approved TRE Workplan, and take actions to mitigate the impact of the discharge and prevent recurrence 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 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 Workplan and includes procedures for accelerated chronic toxicity monitoring and TRE initiation.

i. Toxicity Reduction Evaluation (TRE) Workplan. Within 90 days of the effective date of this Order, the Discharger shall submit to the Regional Water Board a TRE Workplan for approval by the Executive Officer. The TRE Workplan shall outline the procedures for identifying the source(s) of, and reducing or eliminating effluent toxicity. The TRE Workplan must be developed in accordance with USEPA guidance[1] and be of adequate detail to allow the Discharger to immediately initiate a TRE as required in this Provision.

ii. Accelerated Monitoring and TRE Initiation. When the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity monitoring the Discharger shall initiate accelerated monitoring as required in the Accelerated Monitoring Specifications. The Discharger shall initiate a TRE to address effluent toxicity if any WET testing results exceed the numeric toxicity monitoring trigger during accelerated monitoring.

iii. Numeric Toxicity Monitoring Trigger. The numeric toxicity monitoring trigger to initiate a TRE is > **1 TU_C** (where TU_C = 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 when the effluent exhibits toxicity.

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

iv. Accelerated Monitoring Specifications. If the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity testing, the Discharger shall initiate accelerated monitoring within 14 days of notification by the laboratory of the exceedance. Accelerated monitoring shall consist of four (4) chronic toxicity tests conducted once 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 evidence 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 (e.g., 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, the Discharger shall cease accelerated monitoring and begin 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 any test result 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 a 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.

b. Regionalization. By 1 February, annually, the Discharger shall submit a report documenting efforts towards regionalization. The report shall detail progress made towards regionalization over the past year and milestones necessary to complete regionalization with proposed dates for completion. Milestones to be evaluated include, but are not limited to, acquisition of funding, obtaining the necessary approvals from local and regulatory agencies, and completing construction of the regional sewer system. If the proposed dates for milestone completion are not met, the Discharger shall explain why and propose a revised date for completion. This report regarding regionalization must be combined and submitted with the Discharger's annual report.

3. Best Management Practices and Pollution Prevention

a. 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, including include interim milestones and schedule for proposed implementation of minimization efforts, shall be completed and submitted to the Regional Water Board. Implementation of the identified salinity minimization tasks shall be in accordance with the Executive Officer-approved workplan.

b. Infiltration and Inflow (I/I) Reduction Program. The Discharger shall comply with the following time schedule to implement and complete an I/I reduction program. Further detail required in the I/I reduction program is included in Fact Sheet (Attachment F).

Task	Compliance Date
i. Submit updated priority improvement list for I/I reduction and implementation schedule[3]	Within **6 months** of adoption of this Order
ii. Complete repairs of the collection system identified in *WDR. F.9.c I&I Priority Improvement List and Schedule*, July 2007 and the updated priority list	Within **12 months** of completion of Task i.
iii. Complete monitoring of flow in the collection system and the influent to the wastewater treatment plant	Within **12 months** of completion of Task ii
iv. Maintain log of specific repairs to manholes, pipelines, and private sectors	Ongoing
v. Submit annual report	**30 June,** annually
vi. Submit final report assessing effectiveness of the I/I reduction program[4]	Within **3 years** of adoption of this Order

4. Construction, Operation and Maintenance Specifications

a. Turbidity Operational Requirements. Effective 1 September 2015, the Discharger shall operate the treatment system to ensure that the turbidity measured at EFF-001 and EFF-002, as described in the MRP (Attachment E), shall not exceed 2 NTU as a daily average, 5 NTU more than 5 percent of the time within a 24 hour period, and 10 NTU, at any time. Effective immediately and ending 31 August 2015, the Discharger is not required to meet the turbidity

[3] The implementation schedule should identify a schedule for conducting additional flow metering using appropriate equipment and data analysis techniques that recognize the variations in I/I rates associated with changes in antecedent moisture conditions and varying rainfall rates.

[4] The final report shall include an analysis of a series of individual storm events to determine the effectiveness of I/I repairs.

operational requirements when the influent flow is greater than 3.5 MGD and the 7-day median receiving water temperature at RSW-001 is less than 60°F. The Discharger is required to meet the turbidity operational requirement when the influent flow is less than 3.5 MGD, or the influent flow is greater than 3.5 MGD and the 7-day median receiving water temperature at RSW-001 is greater than 60°F.

b. Wastewater shall be oxidized, coagulated, filtered, and adequately disinfected, or equivalent, pursuant to the Department of Public Health (DPH; formerly the Department of Health Services) reclamation criteria, CCR, Title 22, division 4, chapter 3, (Title 22) in accordance with the compliance schedule in Section VI.C.7.b, below.

c. The treatment facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

d. Ultraviolet Light (UV) Disinfection System Operating Specifications. Once in operation, the Discharger shall operate the UV disinfection system in accordance with the following specifications in accordance with DPH recommendations and the National Water Research Institute (NWRI) and American Water Works Association Research Foundation NWRI/AWWARF's "*Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse*" first published in December 2000 revised as a Second Edition dated May 2003.

i. When using non-membrane filtration (e.g., granular, cloth, or other synthetic media) as part of the treatment process upstream of the UV disinfection system, the following operating specifications apply:

(a) The Discharger shall operate the UV disinfection system to provide a minimum UV dose per bank of 100 millijoules per square centimeter (mJ/cm2) at peak daily flow and shall maintain an adequate dose for disinfection while discharging to Rock Creek.

(b) The Discharger shall operate the treatment system to insure that turbidity prior to disinfection shall not exceed 2 NTU as a daily average, and 5 NTU more than 5 percent of the time within a 24-hour period, and 10 NTU, at any time.

(c) The UV transmittance (at 254 nanometers) in the wastewater exiting the UV disinfection system shall not fall below 55 percent of maximum at any time.

ii. When using membrane filtration (e.g., microfiltration or ultrafiltration) as part of the treatment process upstream of the UV disinfection system, the following specifications apply:

(a) The Discharger shall operate the UV disinfection system to provide a minimum UV dose per bank of 80 mJ/cm^2 at peak daily flow and shall

maintain an adequate dose for disinfection while discharging to Rock Creek.

(b) The Discharger shall operate the treatment system to insure that turbidity prior to disinfection shall not exceed 0.2 NTU more than 5 percent of the time within a 24-hour period, and 0.5 NTU at any time.

(c) The UV transmittance (at 254 nanometers) in the wastewater exiting the UV disinfection system shall not fall below 65 percent of maximum at any time.

iii. The Discharger shall provide continuous, reliable monitoring of flow, UV transmittance, UV power, and turbidity.

iv. The quartz sleeves and cleaning system components must be visually inspected per the manufacturer's operations manual for physical wear (scoring, solarization, seal leaks, cleaning fluid levels, etc.) and to check the efficacy of the cleaning system.

v. The lamp sleeves must be cleaned periodically as necessary to meet the requirements.

vi. Lamps must be replaced per the manufacturer's operations manual, or sooner, if there are indications the lamps are failing to provide adequate disinfection. Lamp age and lamp replacement records must be maintained.

vii. The Facility must be operated in accordance with an operations and maintenance program that assures adequate disinfection.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Pretreatment Requirements.

i. The Discharger shall be responsible and liable for the performance of all Control Authority pretreatment requirements contained in 40 CFR Part 403, including any subsequent regulatory revisions to 40 CFR Part 403. Where 40 CFR Part 403 or subsequent revision places mandatory actions upon the Discharger as Control Authority but does not specify a timetable for completion of the actions, the Discharger shall complete the required actions within 6 months from the issuance date of this permit or the effective date of the 40 CFR Part 403 revisions, whichever comes later. For violations of pretreatment requirements, the Discharger shall be subject to enforcement actions, penalties, fines, and other remedies by USEPA or other appropriate parties, as provided in the CWA.

ii. The Discharger shall enforce the requirements promulgated under sections 307(b), 307(c), 307(d), and 402(b) of the CWA with timely, appropriate and effective enforcement actions. The Discharger shall cause all nondomestic

users subject to federal categorical standards to achieve compliance no later than the date specified in those requirements or, in the case of a new nondomestic user, upon commencement of the discharge.

iii. The Discharger shall perform the pretreatment functions as required in 40 CFR Part 403 including, but not limited to:

(a) Implement the necessary legal authorities as provided in 40 CFR 403.8(f)(1);

(b) Enforce the pretreatment requirements under 40 CFR 403.5 and 403.6;

(c) Implementthe programmatic functions as provided in 40 CFR 403.8(f)(2); and

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

iv. 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, 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.

v. 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 (e.g., 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. of this Order. 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 included in section V.B. of this Order.

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 No. 2006-0003, a Statewide General WDR for Sanitary Sewer Systems. The Discharger shall be subject to the requirements of Order No. 2006-0003 and any future revisions thereto. Order No. 2006-0003 requires that all public agencies that currently own or operate sanitary sewer systems apply for coverage under the General WDR. The Discharger has applied for and has been approved for coverage under State Water Board Order 2006-0003 for operation of its wastewater collection system.

Regardless of the coverage obtained under Order No. 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)].

f. Continuous Monitoring Systems. This permit, and the Monitoring and Reporting Program which is a part of this permit, requires that certain parameters be monitored on a continuous basis. The wastewater treatment plant is typically staffed from 6:30 a.m. to 3:30 p.m. daily, and therefore not staffed on a full time basis. Permit violations or system upsets can go undetected during periods the facility is unstaffed. The Discharger is required to establish an electronic system for operator notification based on continuous recording device alarms. For any future facility upgrades, the Discharger shall upgrade the continuous monitoring and notification system simultaneously.

6. Other Special Provisions – Not Applicable

7. Compliance Schedules

a. Compliance Schedule for Final Effluent Limitations for Ammonia. This Order requires compliance with the final effluent limitations for ammonia by **1 September 2015**. The Discharger shall comply with the following time schedule to ensure compliance with the final effluent limitations:

Task	Date Due
i. Submit Method of Compliance Workplan/Schedule	Within 6 months after adoption of this Order
ii. Update and Implement Pollution Prevention Plan (PPP)[1] for Ammonia	Within 90 days after adoption of this Order
iii. Award Final Design and Environmental Consultant Contracts	1 May 2011
iv. Complete Final Design of Improvements and Complete CEQA Documentation	31 July 2011
v. Obtain Bids and Project Funding and Award Construction Contract	31 December 2011
vi. Complete Construction of Improvements	31 December 2014
vii. Complete Startup and Performance Testing	30 April 2015
viii. Report of Compliance or Non-Compliance with Interim Milestones	14 days following the due date for Tasks iii through vii
ix. Progress Reports[2]	30 May, monthly, until final compliance
x. Full Compliance	**1 September 2015**

[1] The PPP for ammonia shall be updated and implemented in accordance with CWC section 13263.3(d)(3) as outlined in the Fact Sheet (Attachment F, section VII.B.7.b).

[2] The progress reports shall detail what steps have been implemented towards achieving compliance with waste discharge requirements, including studies, construction progress, evaluation of measures implemented, and recommendations for additional measures as necessary to achieve full compliance by the final compliance date.

b. **Title 22, or Equivalent, Requirements.** Effective immediately and ending 31 August 2015, when the influent flow is greater than 3.5 MGD and the 7-day median receiving water temperature at RSW-001 is less than 60°F, the coagulation and filtration systems shall be operated to the maximum extent possible and all wastewater shall receive full secondary treatment. When influent flows are less than 3.5 MGD, wastewater discharged to Rock Creek shall be oxidized, coagulated, filtered, and adequately disinfected, or equivalent, pursuant to DPH reclamation criteria, Title 22 CCR, Division 4, Chapter 3, (Title 22). By **1 September 2015**, all wastewater discharged to Rock Creek shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to DPH reclamation criteria, Title 22 CCR, Division 4, Chapter 3, (Title 22), or equivalent. This Order also requires compliance with the final effluent limitations for BOD_5, total coliform organisms, and TSS by **1 September 2015**. Until final compliance, the Discharger shall submit progress reports in accordance with the Monitoring and Reporting Program (Attachment E, section X.D.1).

VII. COMPLIANCE DETERMINATION

A. **BOD_5 and TSS Effluent Limitations (Sections IV.A.1.a and IV.A.1.b).** Compliance with the final effluent limitations for BOD_5 and TSS required in Limitations and Discharge Requirements section IV.A.1.a shall be ascertained by 24-hour composite samples. Compliance with effluent limitations required in Limitations and Discharge Requirements section IV.A.1.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. **Aluminium Effluent Limitations (Section IV.A.1.a).** 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. **Total Mercury Mass Loading Effluent Limitations (Section IV.A.1.i).**

The procedures for calculating mass loadings are as follows:

1. The total pollutant mass load for each individual calendar month shall be determined using an average of all concentration data collected that month and the corresponding total monthly flow. All effluent 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.

D. **Average Dry Weather Flow Effluent Limitations (Section IV.A.1.f).** The average dry weather flow is intended to represent 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).

E. **Total Coliform Organisms Effluent Limitation (Section IV.A.1.g.i).** 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 example, if a sample is collected on a Wednesday, the result from that sampling event and all results from the previous 6 days (e.g. Tuesday, Monday, Sunday, Saturday, Friday, and Thursday) are used to calculate the 7-day median. If the 7-day median of total coliform organisms exceeds a most probable number (MPN) specified in this Order, the Discharger will be considered out of compliance.

F. **Total Residual Chlorine Effluent Limitations (Section IV.A.1.e).** 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. Records supporting validation of false positives shall be maintained in accordance with Section IV Standard Provisions (Attachment D).

G. **Chronic Whole Effluent Toxicity Effluent Limitation (Section IV.A.1.d).** Compliance with the accelerated monitoring and TRE/TIE provisions of Provision VI.C.2.a shall constitute compliance with effluent limitation IV.A.1.d for chronic whole effluent toxicity.

H. **Mass Effluent Limitations (Section IV.A.1.a).** Compliance with mass effluent limitations will be determined during average dry weather periods only when groundwater is at or near normal and runoff is not occurring.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)

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

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

Average Monthly Effluent Limitation (AMEL)

The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL)

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

Bioaccumulative

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

Carcinogenic

Pollutants are substances that are known to cause cancer in living organisms.

Coefficient of Variation (CV)

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

Daily Discharge

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

The daily discharge may be determined by the analytical results of a composite sample taken over the course of 1 day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

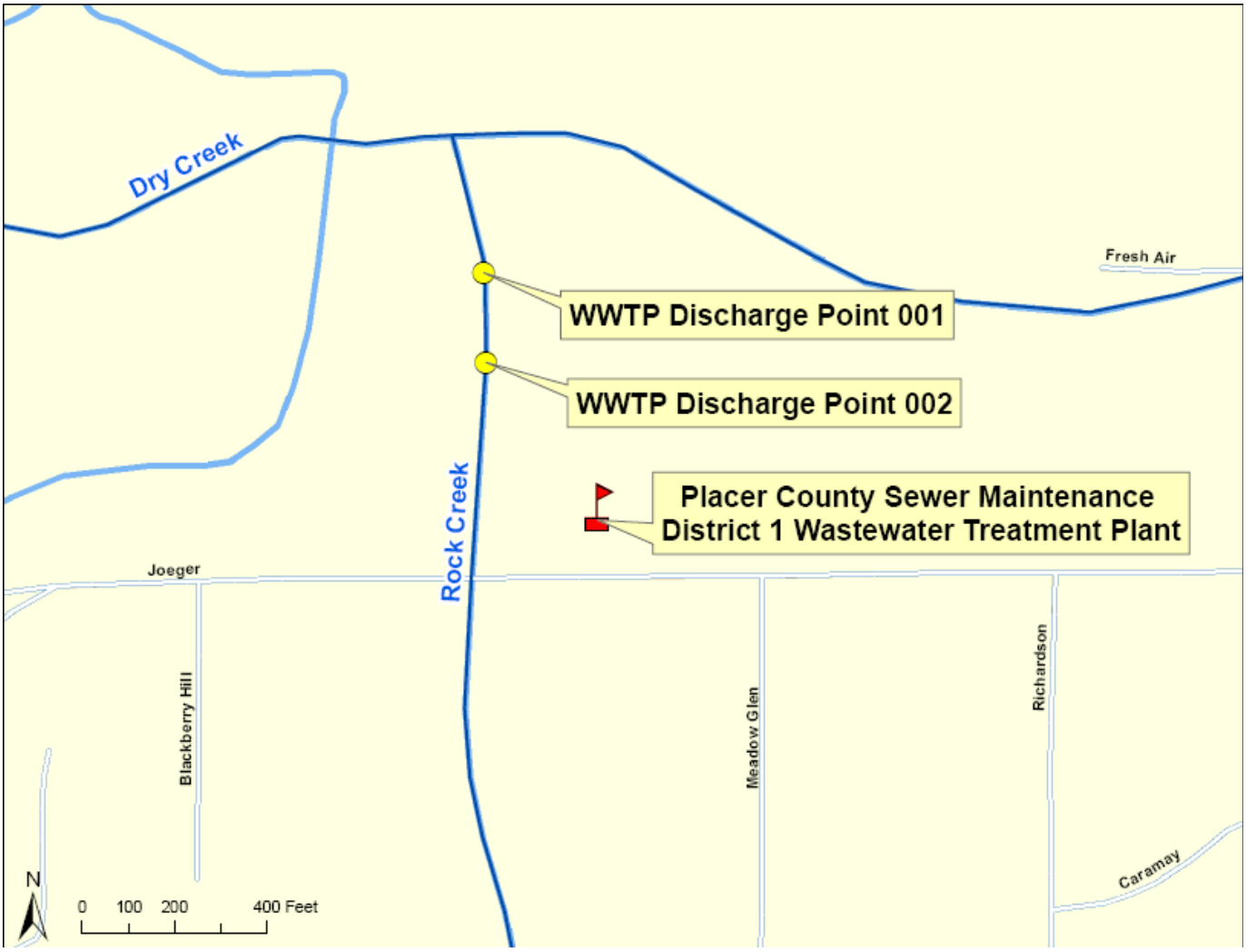
Standard Deviation (σ)
Standard Deviation is a measure of variability that is calculated as follows:

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

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

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

ATTACHMENT B – MAP



SITE LOCATION MAP

PLACER COUNTY DEPARTMENT OF FACILITY SERVICES
PLACER COUNTY SEWER MAINTENANCE DISTRICT 1 WASTEWATER TREATMENT PLANT
PLACER COUNTY

ATTACHMENT C – FLOW SCHEMATIC

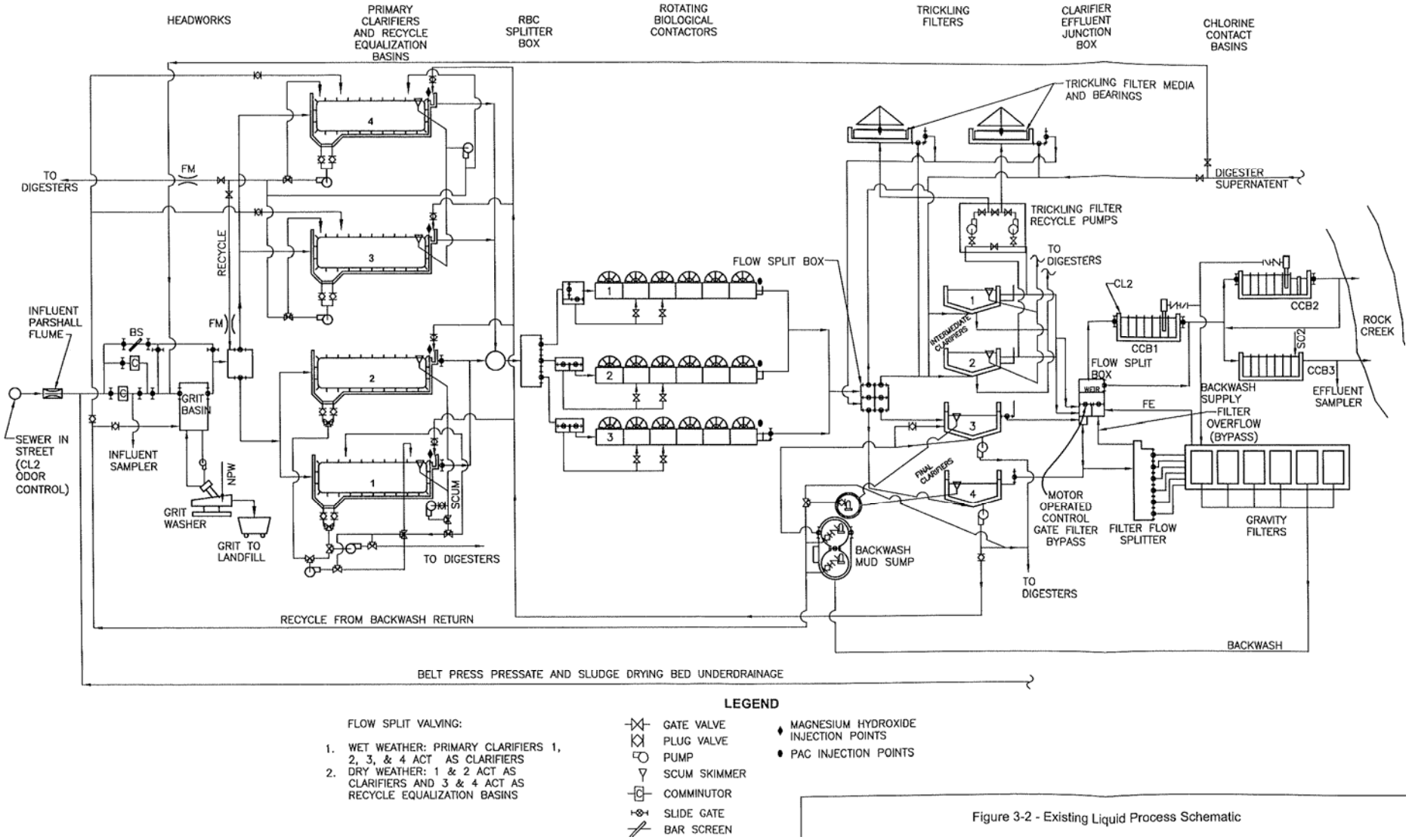


Figure 3-2 - Existing Liquid Process Schematic

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 (CWC) 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); CWC section 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 CWC, 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 CWC. (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. Two-Hour and Twenty-Four Hour Reporting

1. The Discharger shall notify the Office of Emergency Services any noncompliance that may endanger health or the environment within 2-hours from the time the Discharger becomes aware of the circumstances. Any information shall be provided

by telephone or fax 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 CWC, 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

I. General Monitoring Provisions E-2
II. Monitoring Locations E-4
III. Influent Monitoring Requirements E-4
  A. Monitoring Location INF-001 ..... E-4
IV. Effluent Monitoring Requirements E-5
  A. Monitoring Locations EFF-001 and EFF-002 ..... E-5
V. Whole Effluent Toxicity Testing Requirements E-7
VI. Land Discharge Monitoring Requirements – Not Applicable E-10
VII. Reclamation Monitoring Requirements – Not Applicable E-10
VIII. Receiving Water Monitoring Requirements – Surface Water E-10
  A. Monitoring Locations RSW-001, RSW-002, RSW-003, and RSW-004 ..... E-10
IX. Other Monitoring Requirements E-12
  A. Biosolids E-12
  B. Municipal Water Supply E-12
  C. Ultraviolet Light (UV) Disinfection System E-12
X. Reporting Requirements E-13
  A. General Monitoring and Reporting Requirements E-13
  B. Self Monitoring Reports (SMRs) E-13
  C. Discharge Monitoring Reports (DMRs) E-16
  D. Other Reports E-17

List of Tables

Table E-1. Monitoring Station Locations E-4
Table E-2. Influent Monitoring E-4
Table E-3. Effluent Monitoring – EFF-001 and EFF-002 ..... E-5
Table E-4. Effluent Monitoring – EFF-001 When Bypassing Filters, Influent Flow is Greater than 3.5 MGD, and the 7-Day Median Receiving Water Temperature at RSW-001 is Less than 60°F E-7
Table E-5. Chronic Toxicity Testing Dilution Series E-8
Table E-6. Receiving Water Monitoring Requirements E-10
Table E-7. Receiving Water Monitoring Requirements When Bypassing Filters, Influent Flow is Greater than 3.5 MGD and the 7-Day Median Receiving Water Temperature at RSW-001 is Less than 60°F E-11
Table E-8. Municipal Water Supply Monitoring Requirements E-12
Table E-9. Ultraviolet Light Disinfection System Monitoring Requirements E-12
Table E-10. Monitoring Periods and Reporting Schedule E-14
Table E-11. Reporting Requirements for Special Provisions Progress Reports E-17

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Title 40 of the Code of Federal Regulations (CFR), section 122.48 (40 CFR 122.48) requires that all NPDES permits specify monitoring and reporting requirements. California Water Code (CWC) sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This Monitoring and Reporting Program establishes monitoring and reporting requirements, which implement the federal and California 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. 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.

C. Chemical, bacteriological, and bioassay analyses of any material required by this Order shall be conducted at by a laboratory certified for such analyses by the Department of Public Health (DPH; formerly the Department of Health Services). Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Regional Water Board. 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.

D. All analyses shall be performed in a laboratory certified to perform such analyses by DPH. Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Regional Water Board. The Discharger shall institute a Quality Assurance-Quality Control Program for any onsite field measurements such as pH, turbidity, temperature and residual chlorine. A manual containing the steps followed in this program must be kept onsite and shall be available for inspection by Regional Water Board staff. The Discharger must demonstrate sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform these field measurements. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Regional Water Board.

E. 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, at least yearly, to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.

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

G. Laboratories analyzing monitoring samples shall be certified by DPH, in accordance with the provision of CWC section 13176, and must include quality assurance/quality control data with their reports.

H. 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.

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

J. 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.

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 Facility can be collected.
001	EFF-001	Downstream from the last connection through which wastes can be admitted into the outfall.
002	EFF-002	Approximately 200 feet upstream of EFF-001. (This discharge location is only to be used when Chlorine Contact Basin No. 3 is offline for maintenance.)
--	RSW-001	In Rock Creek, 50 feet upstream from both discharge locations.
--	RSW-002	In Rock Creek, downstream of both discharge locations and just prior to the confluence of Rock Creek and Dry Creek.
--	RSW-003	In Dry Creek, just prior to the confluence of Rock Creek and Dry Creek.
--	RSW-004	In Dry Creek, 150 feet downstream of the confluence of Rock Creek and Dry Creek.
--	BIO-001	A location where a representative sample of biosolids can be obtained.
--	SPL-001	A location where a representative sample of the municipal water supply can be obtained.
--	UVS-001	Ultraviolet light (UV) disinfection system.

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	--
Conventional Pollutants				
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	24-Hour Composite[1]	5/Week	[2]
Total Suspended Solids	mg/L	24-Hour Composite[1]	5/Week	[2]

[1] 24-hour flow proportioned composite.
[2] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Locations EFF-001 and EFF-002

1. The Discharger shall monitor the treated effluent at Monitoring Locations EFF-001 and EFF-002 as follows when discharging from Discharge Point Nos. 001 and 002, respectively. 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 – EFF-001 and EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	Continuous[1]	--
Location of Discharge (Discharge Point No. 001 or 002)	--	--	1/Day	--
Filtration Bypassed (Yes or No)	--	--	1/Day	--
Conventional Pollutants				
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	24-Hour Composite[2]	5/Week	[3]
	lbs/day	Calculate	5/Week	--
pH	standard units	Grab[4]	1/Day	[3]
Total Suspended Solids	mg/L	24-Hour Composite[2]	5/Week	[3]
	lbs/day	Calculate	5/Week	--
Priority Pollutants				
Arsenic, Total Recoverable	µg/L	Grab	1/Month	[3,5]
Chlorodibromomethane	µg/L	Grab	1/Month	[3,5]
Copper, Total Recoverable[6]	µg/L	24-Hour Composite[2]	1/Month	[3,5]
Dichlorobromomethane	µg/L	Grab	1/Month	[3,5]
Lead, Total Recoverable[6]	µg/L	24-Hour Composite[2]	1/Month	[3,5]
Mercury, Total Recoverable	µg/L	24-Hour Composite[2]	1/Month	[3,5,7]
Priority Pollutants and Other Constituents of Concern[8]	µg/L	24-Hour Composite[9]	1/Calendar Year[10]	[3,5,11]
Non-Conventional Pollutants				
Aluminum, Total Recoverable	µg/L	24-Hour Composite[2]	1/Month	[3,12]
Ammonia Nitrogen, Total (as N)	mg/L	Grab[4]	1/Day[13,14]	[3]
	lbs/day	Calculate	1/Day	--
Chlorine, Total Residual	mg/L	Meter	Continuous[1]	[3,15]
Electrical Conductivity @ 25°C	µmhos/cm	Grab[4]	1/Day	[3]
	Annual Average	Calculate	1/Calendar Year	--
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Month	[3]
Nitrate Plus Nitrite (as N)	mg/L	Grab[4]	2/Week	[3]
Nitrite Nitrogen, Total (as N)	mg/L	Grab[4]	2/Week	[3]
Temperature	°F/°C	Grab[4]	1/Day	[3]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total Coliform Organisms	MPN/100 mL	Grab[4]	1/Day	[3]
Total Dissolved Solids	mg/L	Grab	1/Month	[3]
Turbidity	NTU	Meter[16]	Continuous[1]	[3]

1 For continuous monitoring, the daily maximum, minimum, and average shall be reported.
2 24-hour flow proportioned composite.
3 Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.
4 Daily grab samples shall not be collected at the same time each day.
5 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.
6 Monitoring shall be conducted concurrently with effluent and receiving water hardness.
7 Unfiltered methylmercury and total mercury samples shall be taken using clean hands/dirty hands procedures, as described in USEPA Method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Levels, for collection of equipment blanks (section 9.4.4.2), and shall be analyzed by USEPA Method 1630/1631 (Revision E) with a method detection limit of 0.02 ng/L for methylmercury and 0.2 ng/L for total mercury.
8 See List of Priority Pollutants and Other Pollutants of Concern in Attachment I.
9 Volatile constituents shall be sampled in accordance with 40 CFR Part 136.
10 Priority pollutants and other constituents of concern shall be sampled once per calendar year following the date of permit adoption at Monitoring Location EFF-001 only, and shall be conducted concurrently with upstream receiving water monitoring for priority pollutants, 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 year, as required in Table E-3. See Attachment I for more detailed requirements related to performing the priority pollutant monitoring.
11 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 pollutant.
12 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.
13 Concurrent with whole effluent toxicity monitoring.
14 pH and temperature shall be recorded at the time of ammonia sample collection.
15 Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.01 mg/L. Monitoring for chlorine residual is not required after the Discharger submits certification to the Regional Water Board that the use of its chlorine-based disinfection system and the use of other chlorine-containing agents in its treatment process has ceased. After certification that the use of chlorine-containing agents in the treatment process has ceased, the Discharger must immediately restart monitoring for chlorine residual upon any unplanned use of chlorine in the treatment process.
16 Turbidity samples shall be collected from the outfall of the gravity filters.

2. In addition to the effluent monitoring requirements required in Table E-3, the Discharger shall monitor the treated effluent at Monitoring Location EFF-001 when the filters are bypassed, the influent flow is greater than 3.5 MGD, and the 7-day median receiving water temperature at RSW-001 is less than 60°F as follows.

Table E-4. Effluent Monitoring – EFF-001 When Bypassing Filters, Influent Flow is Greater than 3.5 MGD, and the 7-Day Median Receiving Water Temperature at RSW-001 is Less than 60°F

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Filter Effluent Flow	MGD	Meter	Continuous[1]	--
Chlorine Contact Basin Influent Flow	MGD	Meter	Continuous[1]	--
Turbidity	NTU	Meter	Continuous[1]	--

[1] For continuous monitoring, the daily maximum, minimum, and average shall be reported.

3. If the discharge to the receiving water ceases for more than 24 hours, then on the first day of each such intermittent discharge, the Discharger shall monitor and record data for all of the constituents listed above, after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge. In no event shall the Discharger be required to monitor and record data more often than twice the frequencies listed in the schedule.

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 acute toxicity testing, concurrent with effluent ammonia sampling.

2. *Sample Types* – For static non-renewal and static renewal testing, the samples shall be grab and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the effluent Monitoring Location EFF-001.

3. *Test Species* – Test species shall be fathead minnows (Pimephales promelas).

4. *Methods* – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition, and its subsequent amendments or revisions. 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.

5. *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 EFF-001. The receiving water control shall be a grab sample obtained from the RSW-001 sampling location, as identified in this 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:

   a. The cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test);

   b. The fathead minnow, *Pimephales promelas* (larval survival and growth test); and

   c. 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, and its subsequent amendments or revisions.

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* – For regular chronic toxicity monitoring, the testing shall be performed using 100% effluent and two controls. If toxicity is found in any regular effluent test, the Discharger must initiate accelerated monitoring using 100% effluent and two controls. The receiving water control shall be used as the diluent (unless the receiving water is toxic). Chronic toxicity testing shall be performed using the full dilution series identified in the following table for TRE monitoring.

Table E-5. 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	0	25	50	75	87.5	100	0
% Laboratory Water	0	0	0	0	0	0	100

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:

a. 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

b. 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 the Special Provision at section VI. 2.a.iii. of the Order.)

C. WET Testing Notification Requirements. The Discharger shall notify the Regional Water Board within 24-hours 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 within 30 days following completion of the test, and shall contain, at minimum:

   a. The results expressed in TUc, measured as 100/NOEC, and also measured as 100/LC50, 100/EC25, 100/IC25, and 100/IC50, 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 monthly 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 Toxicity Reduction Evaluation (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 TREs shall be submitted in accordance with the schedule contained in the Discharger's approved TRE Workplan.

4. **Quality Assurance (QA).** The Discharger must provide the following information for QA purposes ***(if applicable)***:

   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 – NOT APPLICABLE

VII. RECLAMATION MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER

A. Monitoring Locations RSW-001, RSW-002, RSW-003, and RSW-004

1. The Discharger shall monitor Rock Creek and Dry Creek at Monitoring Locations RSW-001, RSW-002, RSW-003, and RSW-004 as follows:

Table E-6. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Conventional Pollutants				
Fecal Coliform Organisms	MPN/100 mL	Grab	1/Month	[1]
pH	standard units	Grab	1/Day[2]	[1]
Priority Pollutants				
Priority Pollutants and Other Constituents of Concern[3]	µg/L	Grab	1/Calendar Year[4]	[1,5,6]
Non-Conventional Pollutants				
Aluminum	ug/L	Grab	1/Month	[1]
Dissolved Oxygen	mg/L	Grab	2/Week	[1]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Day	[1]
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Month	[1]
Temperature	°F/°C	Grab	1/Day[2,7]	[1]
Turbidity	NTU	Grab	2/Week	[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.
[2] Monitoring for pH and temperature shall be conducted concurrently with effluent ammonia sampling.
[3] See List of Priority Pollutants and Other Pollutants of Concern in Attachment I.
[4] Priority pollutants shall be sampled once per calendar year at RSW-001 and shall be conducted concurrently with effluent monitoring for priority pollutants. See Attachment I for more detailed requirements related to performing the priority pollutant monitoring.
[5] 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.
[6] In order to verify if bis (2-ethylhexyl) phthalate is truly present in the receiving water, the Discharger shall take steps to assure that sample containers, sampling apparatus, and analytical equipment are not sources of the detected pollutant.
[7] Between 1 October and 1 May, the Discharger shall calculate and report the 7-day median temperature for RSW-001 and RSW-003. The 7-day median is based on the previous seven daily sample results.

2. In addition to the receiving water monitoring requirements required in Table E-6, the Discharger shall monitor Rock Creek and Dry Creek at Monitoring Locations RSW-001, RSW-002, RSW-003, and RSW-004 when the filters are bypassed, the influent flow is greater than 3.5 MGD, and the 7-day median receiving water temperature at RSW-001 is less than 60°F as follows.

Table E-7. Receiving Water Monitoring Requirements When Bypassing Filters, Influent Flow is Greater than 3.5 MGD and the 7-Day Median Receiving Water Temperature at RSW-001 is Less than 60°F

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total Coliform Organisms	MPN/100 mL	Grab	1/Day	[1]
Escherichia coli	MPN/100 mL	Grab	1/Day	[1]

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.

3. 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 and the reach bounded by Monitoring Locations RSW-003 and RSW-004. 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.

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids

1. Monitoring Location BIO-001

a. A composite sample of sludge shall be collected annually 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.

B. Municipal Water Supply

1. Monitoring Location SPL-001

The Discharger shall monitor the municipal water supply at SPL-001 as follows.

Table E-8. Municipal Water Supply Monitoring Requirements

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

[1] If the water supply is from more than one source, 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.

C. Ultraviolet Light (UV) Disinfection System

1. Monitoring Location UVS-001

When the UV disinfection system is installed and becomes operational, the Discharger shall monitor the UV disinfection system at UVS-001 as follows:

Table E-9. Ultraviolet Light Disinfection System Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow rate	MGD	Meter	Continuous[1]
Turbidity [2]	NTU	Meter[3]	Continuous[1]
Number of UV banks in operation	Number	Meter	Continuous[1]
UV Transmittance	Percent (%)	Meter	Continuous[1]
UV Power Setting	Percent (%)	Meter	Continuous[1]
UV Dose [4]	MW-sec/cm^2	Calculated	Continuous[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency

[1] For continuous analyzers, the Discharger shall report documented routine meter maintenance activities, including date, time of day, and duration, in which the analyzer(s) is not in operation.

[2] Report daily average turbidity and maximum. If the influent exceeds 10 NTU, collect a sample for total coliform organisms and report the duration of the turbidity exceedance.

[3] The turbidity meter shall be stationed immediately after the filters, prior to the UV disinfection process.

[4] Report daily minimum UV dose, daily average UV dose, and weekly average UV dose. For the daily minimum UV dose, also report associated number of banks, gallons per minute per lamp, and UV transmittance used in the calculation. If effluent discharge has received less than the minimum UV dose and is not diverted from discharging to Rock Creek, report the duration and dose calculation variables associated with each incident.

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, 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.

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this permit, the State Water Board or the 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. The Discharger shall report in the SMR the results for all monitoring specified in this Monitoring and Reporting Program under sections III through IX. The Discharger shall submit monthly SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.

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

Table E-10. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	First day of the calendar month following the permit effective date or on permit effective date if that date is first day of the month.	All	First day of second calendar month following month of sampling.
1/Day	First day of the calendar month following the permit effective date or on permit effective date if that date is first day of the month.	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	First day of second calendar month following month of sampling.
5/Week	First Sunday of the calendar month following the 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.
2/Week	First Sunday of the calendar month following the 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 1 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/Calendar Year	1 January following (or on) permit effective date.	1 January through 31 December	1 February

4. **Reporting Protocols.** The Discharger shall report with each sample result the applicable reported Minimum Level (ML) and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR Part 136.

   The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

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

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

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

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

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

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

6. **Multiple Sample Data.** When determining compliance with an AMEL, AWEL, or MDEL for priority and non-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.

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

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

b. 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.

c. A letter transmitting the SMRs 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.

d. 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

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 Water Board or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). Until such notification is given, the

Discharger shall submit DMRs in accordance with the requirements described below.

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

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

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

D. Other Reports

1. **Progress Reports.** As specified in the compliance time schedules required in the Special Provisions contained in section VI of the Order, 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-11. Reporting Requirements for Special Provisions Progress Reports

Special Provision	Reporting Requirements
Compliance Schedules for Final Effluent Limitations for Ammonia, compliance with final effluent limitations. (Section VI.C.7.a)	**30 June**, annually, until final compliance
Title 22, or Equivalent, Requirements (Section VI.C.7.b)	**30 June**, annually, until final compliance

2. The Discharger shall report the results of any special studies, acute and chronic toxicity testing, TRE/TIE, or Pollution Prevention Plans required by Special Provisions VI.C of this Order. The Discharger shall submit reports with the first monthly SMR scheduled to be submitted on or immediately following the report due date.

3. 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 SIP.

4. 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.

5. **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.

   f. As required by section VI.C.2.b of this Order, the Discharger shall submit a report documenting efforts towards regionalization. The report shall detail progress made towards regionalization over the past year and milestones necessary to complete regionalization with proposed dates for completion. Milestones to be evaluated include, but are not limited to, acquisition of funding, obtaining the necessary approvals from local and regulatory agencies, and completing construction of the regional sewer system. If the proposed dates for milestone completion are not met, the Discharger shall explain why and propose a revised date for completion. This report regarding regionalization must be combined and submitted with the Discharger's annual report.

6. Annual Pretreatment Reporting Requirements

a. The Discharger shall submit annually a report to the Regional Water Board, with copies to USEPA Pacific Southwest Region and the State Water Board, describing its 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, then the Discharger shall also include the reasons for noncompliance and state how and when the Discharger shall comply with such conditions and requirements. This annual report shall cover operations from 1 January through 31 December and is due by **28 February** of each year. The report shall contain, but not be limited to, the following information:

i. A summary of analytical results from representative, flow proportioned, 24-hour composite sampling of the POTW's influent and effluent for those pollutants USEPA has identified under section 307(a) of the CWA which are known or suspected to be discharged by nondomestic users. This will consist of an annual full priority pollutant scan, with quarterly samples analyzed only for those pollutants detected in the full scan. The Discharger is not required to sample and analyze for asbestos. 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 the Discharger believes 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.

ii. A discussion of Upset, Interference, or Pass Through incidents, if any, at the treatment plant which the Discharger knows or suspects were caused by nondomestic users of the POTW system. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of, the nondomestic 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 or interference, or noncompliance with sludge disposal requirements.

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

iv. An updated list of the Discharger's significant industrial users (SIUs) including their names and addresses, and a list of deletions, additions, and SIU name changes keyed to the previously submitted list. The Discharger shall provide

a brief explanation for each change. The list shall identify the SIUs subject to federal categorical standards by specifying which set(s) of standards are applicable to each SIU. The list shall also indicate the SIUs subject to federal categorical standards by specifying which set(s) of standards are applicable to each SIU. The list shall also indicate which SIUs are subject to local discharge limitations.

v. The Discharger shall characterize the compliance status of each SIU through the year of record by providing a list or table which includes the following information for each industrial user:

(a) Name of the SIU;

(b) Category, if subject to federal categorical standards;

(c) The type of wastewater treatment or control processes in place;

(d) The number of samples taken by the Discharger during the year;

(e) The number of samples taken by the SIU during the year;

(f) For an SIU subject to discharge requirements for total toxic organics, whether all required certifications were provided;

(g) Whether the SIU complied with baseline monitoring report requirements (where applicable);

(h) Whether the SIU consistently achieved compliance;

(i) Whether the SIU inconsistently achieved compliance;

(j) A list of the standards violated during the year. Identify whether the violations were for categorical standards or local limits;

(k) Whether the SIU is in significant noncompliance with applicable pretreatment requirements as defined by 40 CFR 403.8(f)(2)(vii);

(l) Whether the SIU complied with schedule to achieve compliance (include the date final compliance is required);

(m) Whether the SIU did not achieve compliance and not on a compliance schedule; and

(n) Whether compliance status unknown.

(o) A summary of enforcement or other actions taken during the year to return the SIU to compliance. Describe the type of action, final compliance date, and the amount of fines and penalties collected, if any. Describe any proposed actions for bringing the SIU into compliance.

A report describing the compliance status of each industrial user characterized by the descriptions in items a. through o. 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.

vi. A brief description of any programs the Discharger implements to reduce pollutants from nondomestic users that are not classified as SIUs.

vii. A brief description of any significant changes in operating the pretreatment program which differ from the previous year 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, or staffing levels.

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

ix. A summary of activities to involve and inform the public of the program including a copy of the newspaper notice, if any, required under 40 CFR 403.8(f)(2)(vii).

x. 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:

(a) 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

(b) the conclusions or results from the inspection or sampling of each industrial user.

xi. 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:

(a) 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.

(b) 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.

(c) 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.

(d) 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.

(e) Assessment of monetary penalties. For each industrial user identify the amount of the penalties.

(f) Restriction of flow to the POTW.

(g) Disconnection from discharge to the POTW.

b. The Discharger shall submit a semi-annual SIU noncompliance status report to the Regional Water Board, USEPA Pacific Southwest Region, and the State Water Board. The report shall cover the period of 1 January through 30 June, and shall be submitted by 31 July. The report shall contain:

i. The name and address of all SIUs which violated any discharge or reporting requirements during the report period;

ii. A description of the violations including whether any discharge violations were for categorical standards or local limits;

iii. A description of the enforcement or other actions that were taken to remedy the noncompliance; and

iv. The status of active enforcement and other actions taken in response to SIU noncompliance identified in previous reports.

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
1001 I Street or P.O. Box 100
Sacramento, CA 95812

and the

Regional Pretreatment Coordinator
CWA Compliance Office (WTR-7)
75 Hawthorne Street
San Francisco, CA 94105-3901

ATTACHMENT F – FACT SHEET

Table of Contents

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 Historical Requirements and Self-Monitoring Report (SMR) Data F-5
D. Compliance Summary F-8
E. Planned Changes F-9
III. Applicable Plans, Policies, and Regulations F-10
A. Legal Authorities F-11
B. California Environmental Quality Act (CEQA) F-11
C. State and Federal Regulations, Policies, and Plans F-11
D. Impaired Water Bodies on CWA 303(d) List F-12
E. Other Plans, Polices and Regulations F-13
IV. Rationale For Effluent Limitations and Discharge Specifications F-13
A. Discharge Prohibitions F-14
B. Technology-Based Effluent Limitations F-15
1. Scope and Authority F-15
2. Applicable Technology-Based Effluent Limitations F-15
C. Water Quality-Based Effluent Limitations (WQBELs) F-16
1. Scope and Authority F-16
2. Applicable Beneficial Uses and Water Quality Criteria and Objectives F-17
3. Determining the Need for WQBELs F-31
4. WQBEL Calculations F-55
5. Whole Effluent Toxicity (WET) F-56
D. Final Effluent Limitations F-58
1. Mass-based Effluent Limitations F-60
2. Averaging Periods for Effluent Limitations F-61
3. Satisfaction of Anti-Backsliding Requirements F-61
4. Satisfaction of Antidegradation Policy F-63
5. Stringency of Requirements for Individual Pollutants F-71
E. Interim Effluent Limitations F-72
F. Land Discharge Specifications – Not Applicable F-76
G. Reclamation Specifications – Not Applicable F-76
V. Rationale for Receiving Water Limitations F-76
A. Surface Water F-77
B. Groundwater – Not Applicable F-79
VI. Rationale for Monitoring and Reporting Requirements F-80
A. Influent Monitoring F-80
B. Effluent Monitoring F-80
C. Whole Effluent Toxicity Testing Requirements F-82
D. Receiving Water Monitoring F-83
1. Surface Water F-83

2. Groundwater – Not Applicable F-84
E. Other Monitoring Requirements F-84
1. Biosolids Monitoring F-84
2. Water Supply Monitoring F-84
VII. Rationale for Provisions F-84
A. Standard Provisions F-84
B. Special Provisions F-85
1. Reopener Provisions F-85
2. Special Studies and Additional Monitoring Requirements F-86
3. Best Management Practices and Pollution Prevention F-90
4. Construction, Operation, and Maintenance Specifications F-92
5. Special Provisions for Municipal Facilities (POTWs Only) F-94
6. Other Special Provisions – Not Applicable F-95
7. Compliance Schedules F-95
VIII. Public Participation F-97
A. Notification of Interested Parties F-97
B. Written Comments F-97
C. Public Hearing F-97
D. Waste Discharge Requirements Petitions F-98
E. Information and Copying F-98
F. Register of Interested Persons F-98
G. Additional Information F-98

List of Tables

Table F-1. Facility Information F-3
Table F-2. Historic Effluent Limitations and Monitoring Data F-5
Table F-3. Summary of Technology-based Effluent Limitations F-16
Table F-4. Basin Plan Beneficial Uses F-19
Table F-5. Copper ECA Evaluation F-26
Table F-6. Lead ECA Evaluation F-28
Table F-7. Effluent and Receiving Water Flow F-29
Table F-8. Salinity Water Quality Criteria/Objectives F-51
Table F-9. Summary of Final Effluent Limitations F-58
Table F-10. Summary of Costs and Rate Increases for Alternatives Analysis F-67
Table F-11. Interim Effluent Limitation Calculation Summary F-76

ATTACHMENT F – FACT SHEET

As described in the Findings 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	5A310104007
Discharger	Placer County Department of Facility Services
Name of Facility	Placer County Sewer Maintenance District 1 Wastewater Treatment Plant
Facility Address	11755 Joeger Road
	Auburn, CA 95603
	Placer County
Facility Contact, Title and Phone	Bryan Kangas, Supervising Plant Operator, (530) 886-1100
Authorized Person to Sign and Submit Reports	Will Dickinson, Deputy Director for Department of Facility Services, (530) 886-4980
Mailing Address	11476 C Avenue, Auburn, CA 95603
Billing Address	Same as Mailing Address
Type of Facility	Publicly Owned Treatment Works (POTW)
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Yes
Reclamation Requirements	N/A
Facility Permitted Flow	2.18 million gallons per day (MGD), average dry weather flow
Facility Design Flow	2.18 MGD, average dry weather flow
Watershed	Upper Coon-Upper Auburn
Receiving Water	Rock Creek
Receiving Water Type	Inland surface water

A. Placer County Department of Facility Services (hereinafter Discharger) is the owner and operator of the Placer County Sewer Maintenance District 1 Wastewater Treatment Plant (hereinafter Facility), a POTW.

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 Rock Creek, a water of the United States, and is currently regulated by Order No. R5-2005-0074 which was adopted on 23 June 2005 and expires on 1 June 2010.

C. The Discharger filed a report of waste discharge and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit on 5 October 2009. Supplemental information was requested on 5 October 2009, 20 October 2009, 22 October 2009, and 14 January 2010 and received on 27 October 2009, 10 November 2009, and 14 January 2010. A site visit was conducted on 5 October 2009 to observe operations and collect additional data to develop permit limitations and conditions.

II. FACILITY DESCRIPTION

The Discharger provides sewerage service for the unincorporated area of North Auburn in Placer County and serves a population of approximately 16,900. The design average dry weather flow capacity of the Facility is 2.18 MGD. As described further in section II.E of this Fact Sheet, the Discharger is planning to either upgrade the treatment process to comply with effluent limitations or to cease the discharge and connect to the City of Lincoln Wastewater Treatment and Reclamation Facility.

A. Description of Wastewater and Biosolids Treatment or Controls

The treatment system at the Facility consists of headworks (influent flow meter, comminution, and aerated grit removal), four rectangular primary clarifiers, three rotating biological contactors (RBCs), two trickling filters, four circular clarifiers, six gravity filters with anthracite media, and chlorine disinfection and dechlorination in three chlorine contact chambers. Magnesium hydroxide is added to the primary clarifier effluent to provide alkalinity required for nitrification. Sludge is treated in primary and secondary digesters and is dewatered using a belt press and sludge drying beds. The dewatered sludge is disposed of at a landfill.

The Facility is designed to provide tertiary treatment for average dry weather flows of 2.18 MGD. However, the Discharger has historically had high levels of infiltration and inflow (I/I) during wet weather events. During severe wet weather events, a portion of the influent bypasses comminution and grit removal and is directed through a bar screen to the primary clarifiers. Typically, only two of the four primary clarifiers are utilized as clarifiers while the other two are utilized for equalization; however, during wet weather conditions, all four are used for clarification. The trickling filters do not have the capacity to treat all wastewater under wet weather conditions, and a portion of the wastewater bypasses the trickling filter and is directed from the RBCs to the secondary clarifier. Furthermore, flows exceeding the capacity of the gravity filters of 3.5 MGD are routed around the gravity filters and flow directly to the chlorine contact basins. Thus, the Facility discharges a combination of secondary and tertiary treated wastewater

during severe wet weather events. Attachment C provides a flow schematic of the Facility.

B. Discharge Points and Receiving Waters

1. The Facility is located in Section 20, T13N, R8E, MDB&M, as shown in Attachment B, a part of this Order.

2. Treated municipal wastewater is discharged at Discharge Point No. 001 to Rock Creek, a water of the United States and a tributary to Dry Creek and, further, the Bear River and the Sacramento River, at a point latitude 38° 57' 56" N and longitude 121° 06' 36" W.

3. Treated municipal wastewater is discharged at Discharge Point No. 002 to Rock Creek, a water of the United States and a tributary to Dry Creek and, further, the Bear River and the Sacramento River, at a point latitude 38° 57' 54" N and longitude 121° 06' 36" W. Discharge Point No. 002 is located approximately 200 feet upstream of Discharge Point No. 001, and is used only when Chlorine Contact Basin No. 3 is temporarily offline for routine maintenance. This maintenance is allowed only at times when daily average plant flows are at or below 2.18 MGD.

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

Effluent limitations contained in Order No. R5-2005-0074 for discharges from Discharge Point No. 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order No. R5-2005-0074 are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Monitoring Data (From July 2005 To August 2009)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Biochemical Oxygen Demand (5-day @ 25°C)	mg/L	10[1]	15[1]	25[1]	4.5	5.6	13.3
		20[2]	30[2]	50[2]			
	lbs/day	182[1,3]	273[1,3]	455[1,3]	62	175	273
		364[2,3]	546[2,3]	910[2,3]			
	% Removal	85	--	--	82.8[4]	--	--
Total Suspended Solids	mg/L	10[1]	15[1]	25[1]	6.2	11.7	23.5
		20[2]	30[2]	50[2]			
	lbs/day	182[1,3]	273[1,3]	455[1,3]	100	397	888
		364[2,3]	546[2,3]	910[2,3]			
	% Removal	85	--	--	82.3[4]	--	--
Total Coliform Organisms	MPN/100 mL	--	2.2[1,5]	23/240[6]	--	--	>1,600
		2.2[2,7]	--				
Turbidity	NTU	--	2[1,8]	5 to 10[1,9]	--	--	4[10]/10.4[11]

Parameter	Units	Effluent Limitation			Monitoring Data (From July 2005 To August 2009)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Alachlor	µg/L	2	--	--	--	--	ND
	lbs/day	0.0364[3]	--	--	--	--	ND
Aluminum	µg/L	58	--	160	--	--	162
	lbs/day	1.1[3]	--	2.9[3]	--	--	4.5
Total Ammonia	mg/L	[12]	[13,14]	[15,16]	--	23.5[17]	28
	lbs/day	[18]	[18]	[18]	--	296[17]	350
Atrazine	µg/L	--	--	1.0[19]	--	--	ND
	lbs/day	--	--	0.0182[3,19]	--	--	ND
Chlorine Residual	mg/L	--	0.01[14]	0.02[16]	--	--	7.5
	lbs/day	--	0.182[3,14]	0.364[3,16]	--	--	83.8
Chloroform	µg/L	1.1	--	--	--	--	99
	lbs/day	0.020[3]	--	--	--	--	1.2
Manganese	µg/L	50	--	--	--	--	64.6
	lbs/day	0.910[3]	--	--	--	--	1.245
Mercury	lbs/day	0.00021[20]	--	--	--	--	0.000054
Methyl tertiary butyl ether	µg/L	5	--	--	--	--	ND
	lbs/day	0.0910[3]	--	--	--	--	ND
Total Nitrate Plus Nitrite (as N)	mg/L	10	--	--	--	--	49
	lbs/day	182[3]	--	--	--	--	736
Nitrite	mg/L	1	--	--	--	--	3.12
	lbs/day	18.2[3]	--	--	--	--	50.48
Oil and Grease	mg/L	10	--	15[19]	--	--	5.4
	lbs/day	182[3]	--	273[3,19]	--	--	NR
Phthalate Acid Esters	µg/L	3.0	--	--	--	--	38
	lbs/day	0.055[3]	--	--	--	--	NR
Persistent Chlorinated Hydrocarbon Pesticides	µg/L	0.00	--	0.0[19]	--	--	ND
	lbs/day	0.0000[3]	--	0.0[3,19]	--	--	ND
Settleable Solids	ml/L	0.1	--	0.2[19]	--	--	ND
Tributyltin	µg/L	0.04	--	0.12	--	--	0.0024
	lbs/day	0.00073[3]	--	0.0020[3]	--	--	NR
Bis (2-ethylhexyl) phthalate	µg/L	1.8[21]	--	--	--	--	22
		--	--	9.11[22]			
	lbs/day	0.0327[3,21]	--	--	--	--	0.283
Bromodichloromethane	µg/L	0.56[21]	--	--	--	--	14
		--	--	5.48[22]			
	lbs/day	0.0102[3,21]	--	--	--	--	NR
Copper	µg/L	[21,23]	--	[21,23]	--	--	10.1
		--	--	6.33[22]			
	lbs/day	[18,21]	--	[18,21]	--	--	0.141

Parameter	Units	Effluent Limitation			Monitoring Data (From July 2005 To August 2009)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Dioxin and Furans[24]	µg/L	1.3×10^{-8} [21]	--	--	--	--	9.41×10^{-10}
		--	--	10.36×10^{-6} [22]			
	lbs/day	2.36×10^{-10} [3,21]	--	--	--	--	NR
Lead	µg/L	[21,25]	--	[21,25]	--	--	1.24
		--	--	4.25[22]			
	lbs/day	[18,21]	--	[18,21]	--	--	0.014
Polychlorinated Biphenyls[26]	µg/L	1.7×10^{-4} [21]	--	--	--	--	ND
		--	--	17.73[22]			
	lbs/day	3.09×10^{-6} [3,21]	--	--	--	--	ND
PCB Aroclor 1016	µg/L	--	--	0.81	--	--	ND
PCB Aroclor 1221	µg/L	--	--	17.73	--	--	ND
PCB Aroclor 1260	µg/L	--	--	0.24	--	--	ND
Silver	µg/L	[21,27]	--	[21,27]	--	--	0.02
		--	--	3.14[22]			
	lbs/day	[18,21]	--	[18,21]	--	--	0.0002
Zinc	µg/L	[21,28]	--	[21,28]	--	--	48
		--	--	60.72[22]			
	lbs/day	[18,21]	--	[18,21]	--	--	1.341
pH	standard units	--	--	[29]	--	--	6 – 7.8
Flow	million gallons	--	--	[30]	--	--	8.26
Acute Toxicity	% Survival	--	--	[31]	--	--	60[4]

Parameter	Units	Effluent Limitation			Monitoring Data (From July 2005 To August 2009)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge

NR – Not reported.
ND – Not detected.
[1] Applies when flow is less than or equal to 3.5 MGD.
[2] Applies when wet weather flow is greater than 3.5 MGD and the 7-day median receiving water temperature at RSW-001 is less than 60°F.
[3] Based upon the design dry weather flow rate of 2.18 MGD (*x* mg/L x 8.345 x 2.18 MGD = *y* lbs/day).
[4] Represents the minimum value reported.
[5] 7-day median based on previous seven daily sample results.
[6] In a 30-day period, only a single sample may exceed 23 MPN/100 mL, and no sample shall exceed 240 MPN/100 mL.
[7] 30-day median based on previous 30 daily sample results.
[8] Applied as a 24-hour average effluent limitation.
[9] May not exceed 5 NTU more than 5% of the time in any 24-hour period and at no time exceed 10 NTU.
[10] Represents the maximum reported daily average turbidity value.
[11] Represents the maximum reported turbidity value.
[12] Floating effluent limitation calculated in accordance with Attachment E of Order No. R5-2005-0074.
[13] Floating effluent limitation calculated in accordance with Attachment D of Order No. R5-2005-0074.
[14] Applied as a 4-day average effluent limitation.
[15] Floating effluent limitation calculated in accordance with Attachment C of Order No. R5-2005-0074.
[16] Applied as a 1-hour average effluent limitation.
[17] Represents the maximum reported 4-day average value.
[18] Based upon the design dry weather flow rate of 2.18 MGD (*x* mg/L x 8.345 x 2.18 MGD = *y* lbs/day), where *x* is the value obtained from Attachment C through I, as specified above.
[19] Applied as an instantaneous maximum effluent limitation.
[20] Calculated from the maximum average flow rate of 2.56 MGD and maximum reported mercury concentration of 0.00987 µg/L (0.00000987 mg/L x 8.345 x 2.56 MGD) = 0.00021 lbs/day.
[21] Final effluent limitation effective 30 March 2010.
[22] Interim effluent limitation effective until 30 March 2010.
[23] Floating effluent limitation calculated in accordance with Attachment F of Order No. R5-2005-0074.
[24] Applies to the sum of all dioxins and furans.
[25] Floating effluent limitation calculated in accordance with Attachment G of Order No. R5-2005-0074.
[26] Applies to the sum of all aroclors.
[27] Floating effluent limitation calculated in accordance with Attachment H of Order No. R5-2005-0074.
[28] Floating effluent limitation calculated in accordance with Attachment I of Order No. R5-2005-0074.
[29] The discharge shall not have a pH less than 6.5 nor greater than 8.5.
[30] The average daily dry weather discharge flow shall not exceed 2.18 million gallons.
[31] 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%

D. Compliance Summary

1. The Regional Water Board issued Administrative Civil Liability (ACL) Complaint No. R5-2008-0537 on 20 June 2008, which proposed to assess an administrative civil liability of $36,000 against the Discharger for violations of Order Nos. 97-113 and

R5-2005-0074 between 1 January 2001 and 31 December 2007. The Discharger paid the mandatory minimum penalties.

2. On 12 May 2009, the Regional Water Board issued the Discharger a Notice of Violation and draft Record of Violations for effluent limitation violations for the period from 1 January 2008 through 31 December 2008. The Regional Water Board issued ACL Complaint No. R5-2009-0556 on 16 July 2009, which proposed to assess an administrative civil liability of $6,000 against the Discharger for violations of Order No. R5-2005-0074 between 1 January 2008 and 31 December 2008. The Discharger paid the mandatory minimum penalties.

3. On 8 October 2009, the Regional Water Board issued the Discharger a Notice of Violation and draft Record of Violations for effluent limitation violations for the period from 1 January 2009 through 31 July 2009. The Regional Water Board issued ACL Complaint No. R5-2009-0567 on 12 November 2009, which proposed to assess an administrative civil liability of $24,000 against the Discharger for violations of Order No. R5-2005-0074 between 1 January 2009 through 31 July 2009. The Discharger paid the mandatory minimum penalties.

4. An inspection of the Facility was conducted on 27 May 2008. The following is a summary of the major findings from the inspection report:

a. Composite effluent samples were stored too cold, in violation of the Standard Provisions.

b. Maintenance tasks were not completed according to the Discharger's maintenance schedules. It was recommended that the Discharger improve its maintenance program to make sure that all scheduled maintenance is conducted in order to avoid a violation caused by mechanical failure.

c. Daily grab samples were always collected in the morning, contrary to the intent of the Monitoring and Reporting Program. It was recommended that the Discharger vary the sample time by more than several minutes.

5. An inspection of the Facility was conducted on 26 March 2009. The following is a summary of the major findings from the inspection report:

a. Documentation of the analysts performing analyses was not included in Excelchem Environmental Laboratory's records.

b. For industrial storm water, no Notice of Intent or storm water pollution prevention plan was available for review during the inspection.

E. Planned Changes

Prior to the adoption of Order No. R5-2005-0074, the Discharger began to pursue regionalization with the City of Lincoln Wastewater Treatment and Reclamation Facility. As stated in Finding No. 11 of Order No. R5-2005-0074, the Discharger committed to

making a determination by 2 January 2008 regarding whether to regionalize or complete and implement measures to comply with effluent limitations. If, after 2 January 2008, wastewater regionalization was not the selected compliance alternative, the Discharger agreed that sufficient time remained to complete and implement measures to come into compliance with the Order by March 2010. The Discharger has not yet connected to the City of Lincoln Wastewater Treatment and Reclamation Facility or completed measures to come into compliance with permit requirements.

The Discharger has indicated that it plans to upgrade the treatment process to comply with permit requirements in the report of waste discharge because the estimated cost to participate in regionalization is $41 million greater than the cost to upgrade the Facility. In addition to upgrading the Facility, the Discharger submitted a report titled *Antidegradation Analysis for the Placer County SMD1 Wastewater Treatment Plant, October 2009* (*Robertson-Bryan, Inc.*) on 10 November 2009 for an increased discharge to the receiving water from 2.18 MGD to 2.7 MGD (average dry weather flow). The Discharger stated that the increased discharge is necessary to accommodate wastewater flows by 2034 based on a review of planned growth within the service area. The proposed upgrade and expansion of the treatment process would consist of a new headworks with improved grit removal equipment, new primary clarifiers, possible flow equalization facilities, new biological nutrient removal facilities (including anoxic/aeration basins), new secondary clarifiers and tertiary filters (or membrane bioreactor facilities), new disinfection facilities (replacing chlorine disinfection), possible post-disinfection effluent aeration facilities, new operations/laboratory building, and new or renovated solids handling facilities. According to the report of waste discharge, construction would begin in early 2011 and would be completed by December 2014.

The Regional Water Board adopted Resolution No. R5-2009-0028 in Support of Regionalization, Reclamation, Recycling, and Conservation for Wastewater Treatment Plants on 23 April 2009, which requires the Regional Water Board to facilitate opportunities for regionalization and consider innovative permitting options when existing NPDES permit requirements, waste discharge requirements, and/or enforcement Orders inhibit the ability to implement regionalization. The Discharger reported at the April 2009 Board Meeting, and in a subsequent semi-annual progress report submitted 1 June 2009, that the Discharger is continuing to actively pursue regionalization.

As described further in section IV.D.4 of this Fact Sheet, this Order does not authorize the Discharger's proposed increase. This Order contains a reopener provision to reconsider the proposed increase upon availability of additional information indicating that an increase in discharge to Rock Creek is consistent with the antidegradation provisions of 40 CFR 131.12 and Resolution No. 68-16.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the applicable plans, policies, and regulations identified in the Findings in section II of this Order. The applicable plans, policies, and regulations relevant to the discharge include the following:

A. Legal Authorities

This Order is issued pursuant to regulations in the Clean Water Act (CWA) and the California Water Code (CWC) as specified in the Finding contained at section II.C of this Order.

B. California Environmental Quality Act (CEQA)

This Order meets the requirements of CEQA as specified in the Finding contained at section II.E of this Order.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** This Order implements the following water quality control plans as specified in the Finding contained at section II.H of this Order.

   a. *Water Quality Control Plan, Fourth Edition (Revised September 2009), for the Sacramento and San Joaquin River Basins* (Basin Plan)

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** This Order implements the NTR and CTR as specified in the Finding contained at section II.I of this Order.

3. **State Implementation Policy (SIP).** This Order implements the SIP as specified in the Finding contained at section II.J of this Order.

4. **Alaska Rule.** This Order is consistent with the Alaska Rule as specified in the Finding contained at section II.L of this Order.

5. **Antidegradation Policy.** As specified in the Finding contained at section II.N of this Order and as discussed in detail in this Fact Sheet (Section IV.D.4.), the discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board (State Water Board) Resolution 68-16.

6. **Anti-Backsliding Requirements.** This Order is consistent with anti-backsliding policies as specified in the Finding contained at section II.O of this Order. Compliance with the anti-backsliding requirements is discussed in this Fact Sheet (Section IV.D.3).

7. **Emergency Planning and Community Right to Know Act**

   Section 13263.6(a) of the CWC, 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 (RPA) 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.

8. Storm Water 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 storm water program and are obligated to comply with the federal regulations. The Discharger submitted a Notice of Intent for coverage under the State Water Board's Industrial Stormwater General Order on 27 February 1998. Therefore, this Order does not regulate storm water at the Facility.

9. Endangered Species Act. This Order is consistent with the Endangered Species Act as specified in the Finding contained at section II.P of this Order.

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

1. Under section 303(d) of the 1972 CWA, 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 Part 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*." Rock Creek is not listed on the 303(d) list of impaired water

bodies. Downstream water bodies listed on the 303(d) list of impaired water bodies include the Sacramento River from Knights Landing to the Delta (mercury and unknown toxicity), the Lower Bear River (diazinon), and Camp Far West Reservoir (mercury).

2. **Total Maximum Daily Loads (TMDLs).** USEPA requires the Regional Water Board to develop TMDLs for each 303(d) listed pollutant and water body combination. TMDLs have not been adopted for Rock Creek, the Sacramento River from Knights Landing to the Delta, the Lower Bear River, or Camp Far West Reservoir.

3. The 303(d) listings and TMDLs have been considered in the development of the Order. Due to the pending development of the proposed Sacramento-San Joaquin Delta Mercury TMDL, effluent limitations for mercury are included in this Order. A pollutant-by-pollutant evaluation of each pollutant of concern is described in section VI.C.3 of this Fact Sheet.

E. Other Plans, Polices and Regulations

1. **Title 27, California Code of Regulations (CCR), section 20005 et seq. (hereafter Title 27).** Discharges of wastewater to land, including but not limited to evaporation ponds or percolation ponds, are exempt from the requirements of Title 27, CCR, based on section 20090 et seq. The Facility does not contain unlined treatment or storage facilities.

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 CWA and amendments thereto are applicable to the discharge.

The 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 dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States.

The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 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 WQBELs 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 Basin Plan at 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 includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, discoloration, radionuclides, 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.) 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 narrative chemical constituents objective states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At a 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 Basin Plan further states that, to protect all beneficial uses, the Regional Water Board may apply limits more stringent than MCLs. 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*."

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, provided that the bypass does not cause violation of effluent and/or receiving water limitations.

2. Order No. R5-2005-0074 prohibited the discharge or storage of waste classified as 'hazardous' or 'designated', as defined in Section 2521(a) and 2522(a) of Title 27. This prohibition is retained in this Order.

3. Wastewater is discharged at Discharge Point No. 002 to Rock Creek when Chlorine Contact Basin No. 3 is temporarily offline for routine maintenance. This maintenance is allowed only at times when daily average plant flows are at or below 2.18 MGD. This Order prohibits the discharge of wastewater to Rock Creek at Discharge Point No. 002 except when Chlorine Contact Basin No. 3 is temporarily offline for routine maintenance.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at 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.

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. However, as described in section IV.C.3.c.xi, this Order requires water quality-based effluent limitations (WQBELs) more stringent than the applicable technology-based effluent limitations which are based on

tertiary treatment, which is necessary to protect the beneficial uses of the receiving stream.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. This Order contains a limitation requiring an average of 85 percent removal of BOD_5 and TSS over each calendar month.

b. Flow. The Facility was designed to provide a tertiary level of treatment for up to a design average dry weather flow of 2.18 MGD. This Order requires that the average dry weather flow shall not exceed 2.18 MGD.

c. pH. The secondary treatment regulations at 40 CFR Part 133 also require that pH be maintained between 6.0 and 9.0 standard units.

Table F-3. Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	2.18[1]	--	--	--	--
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	30	45	--	--	--
	lbs/day[2]	545	818	--	--	--
	% Removal	85	--	--	--	--
Total Suspended Solids	mg/L	30	45	--	--	--
	lbs/day[2]	545	818	--	--	--
	% Removal	85	--	--	--	--
pH	standard units	--	--	--	6.0	9.0

[1] The average dry weather discharge flow shall not exceed 2.18 MGD. The average dry weather discharge 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 three consecutive dry weather months (i.e., July, August, and September).

[2] Based on a design flow of 2.18 MGD.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

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, more stringent than secondary treatment requirements that are necessary to meet applicable water quality standards. The rationale for these requirements, which consist of tertiary treatment or equivalent requirements, is discussed in section IV.C.3.c.xi of this 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, 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).

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

The Basin Plan 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, the Basin Plan implements 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.

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 be regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish 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.

a. **Receiving Water and Beneficial Uses.** Rock Creek converges with Dry Creek approximately 200 feet downstream of Discharge Point No. 001. In approximately 1.7 miles, Dry Creek merges with Orr Creek and is called Coon Creek. On Coon Creek, approximately 0.9 miles downstream of the confluence of Dry Creek and Orr Creek, the Nevada Irrigation District operates a diversion dam.

Downstream of the diversion dam in western Placer County and eastern Sutter County, Coon Creek flows approximately 25 miles through a relatively flat area where the flow meanders and splits into several channels, including Main Canal, Bunkham Slough, Markham Ravine, and East Side Canal. Flow from these channels eventually enters the Natomas Cross Canal. Flow from Natomas Cross Canal enters the Sacramento River just below the confluence with the Feather River.

The diversion dam pulls water from Coon Creek into the Camp Far West Ditch or Canal. Water from Camp Far West Ditch follows several paths to the Bear River, which is tributary to the Feather River and the Sacramento River. The majority of the water in Camp Far West Ditch flows into Yankee Slough, which flows directly to the Bear River just upstream of the confluence with the Feather River. A small volume of water in Camp Far West Ditch flows into Camp Far West Reservoir via Renken, Forbes, and Church Canals. Camp Far West Reservoir is constructed on the Bear River.

The Basin Plan at 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 Rock Creek, but does identify present and potential uses for bodies of water to which Rock Creek is tributary.

In western Placer County and eastern Sutter County, Rock Creek, Dry Creek, and Coon Creek are tributary to Natomas Cross Canal and the Sacramento River. The discharge enters a section of the Sacramento River between the Colusa Basin Drain and I Street Bridge, the first body of water downstream of Rock Creek, via Natomas Cross Canal, for which the Basin Plan has identified existing beneficial uses. The beneficial uses of the Sacramento River from the Colusa Basin Drain to the I Street Bridge, as identified in Table II-1 of the Basin Plan, are municipal and domestic supply (MUN); agricultural supply, including irrigation (AGR); water contact recreation, including canoeing and rafting (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); migration of aquatic organisms, warm and cold (MIGR); spawning, reproduction, and/or early development, warm and cold (SPWN); wildlife habitat (WILD); and navigation (NAV).

Rock Creek, Dry Creek, and Coon Creek are also tributary to Camp Far West Reservoir and the Bear River via Camp Far West Ditch. The Bear River is the first body of water downstream of Rock Creek, for which the Basin Plan has identified existing beneficial uses. The beneficial uses of the Bear River, as

identified in Table II-1 of the Basin Plan, are MUN; AGR; hydropower generation (POW); REC-1; REC-2; WARM; COLD; warm and cold MIGR (potential); warm and cold SPWN (potential); and WILD.

Thus, beneficial uses applicable to Rock Creek, which are composed of the combination of uses of the Sacramento River from the Colusa Basin Drain to the I Street Bridge and the Bear River are as follows:

Table F-4. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001 and 002	Rock Creek	Existing: Municipal and domestic supply (MUN); agricultural supply, including irrigation and stock watering (AGR); hydropower generation (POW); water contact recreation, including canoeing and rafting (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); migration of aquatic organisms, warm and cold (MIGR); spawning, reproduction, and/or early development, warm and cold (SPWN); wildlife habitat (WILD); and navigation (NAV).

In reviewing whether the existing and/or potential uses of the Sacramento River from the Colusa Basin Drain to the I Street Bridge and the Bear River apply to Rock Creek, the Regional Water Board has considered the following facts:

i. Municipal and Domestic Supply and Agricultural Irrigation and Stock Watering

Municipal, domestic, and food crop irrigation beneficial uses have been site-specifically confirmed for waters downstream of the Facility. State Water Board Resolution No. 88-63, a part of the Basin Plan pursuant to Regional Water Board Resolution 89-056, requires the Regional Water Board to assign the beneficial uses of municipal and domestic supply to Rock Creek.

The State Water Board has issued numerous water rights, for domestic and irrigation uses, on Main Canal and downstream waters, the Sacramento River, the Bear River, and the Feather River, downstream of the discharge. Many of the waterways downstream of the discharge are managed by irrigation districts and retain the domestic and irrigation beneficial uses. Nevada Irrigation District controls the flows in Dry Creek, Coon Creek, and Camp Far West Ditch. Nevada Irrigation District staff confirmed the existence of domestic uses of this water by reporting that water from Camp Far West Ditch is utilized for in-home use. The Nevada Irrigation District requires the homeowner to purchase 5 gallons of bottled drinking water per month. The Nevada Irrigation District sells water from Coon Creek and Camp Far West Ditch and has assessed the principal uses as family garden use and pasture irrigation. Over a distance of approximately 25 miles on Camp Far West Ditch, there are 37 irrigation customers, two of whom have irrigation water

connected to their homes. Riparian rights, for landowners along streams and rivers, are not recorded with the State Water Board and have precedence over other water rights and may include domestic and municipal uses. The wastewater discharge occurs in a residential area and the effluent immediately flows through numerous yards bordering Dry Creek. Home garden irrigation has been identified as an existing beneficial use of the stream.

Rock Creek and Dry Creek are low flow streams and may provide groundwater recharge during periods of low flow. Groundwater is a source of drinking water. In addition to the existing water uses, growth in the area downstream of the discharge is expected to continue, creating potential for increased domestic and agricultural uses of the water downstream of the discharge.

ii. Hydropower Generation

The discharge of treated wastewater to Rock Creek will not impact the power supply beneficial use of the downstream waters.

iii. Water Contact and Non-contact Water Recreation

Regional Water Board staff previously surveyed the residents along Dry Creek and found recreational and irrigation use of the receiving stream commonly cited. Several swimming and picnic areas were observed on the banks of Dry Creek and Coon Creek. Properties along Dry Creek and upper Coon Creek are single-family dwellings. The properties have relatively flat terrain that slopes down to the creeks in their back yards. The Regional Water Board finds that there is public access to Rock Creek, Dry Creek, Coon Creek, Camp Far West Ditch, Camp Far West Reservoir, the Bear River, the Feather River, and to the sloughs and canals that are downstream of Coon Creek, Natomas Cross Canal, and the Sacramento River. Public use is likely to increase as the population increases. Exclusion or restriction of public use is unrealistic.

Hikers and campers, in the relatively uninhabited areas near the discharge point, Rock Creek, Dry Creek, upper Coon Creek, and Camp Far West Ditch have a reasonable expectation that those waters are as unpolluted as similar streams in the vicinity.

Camp Far West Reservoir, the Bear River, the Feather River, and the Sacramento River are also used extensively for contact and non-contact recreation.

iv. Warm and Cold Freshwater Habitats, Warm and Cold Spawning Habitats, Warm and Cold Migration Habitats, and Wildlife Habitat

The wastewater is discharged into Rock Creek, which flows into Dry Creek, Coon Creek, and downstream waters. The California Department of Fish and Game (DFG) has verified the presence of fish species consistent with both warm water fisheries and cold water fisheries for salmonids. Fish surveys have not been extensively conducted in the immediate receiving streams, however DFG staff have confirmed that oversummering of cold water fish species in deeper pools within Rock Creek and Dry Creek is reasonable. Riparian habitats are also a by-product of drainages and canals and provide numerous habitats for birds and mammals.

The Basin Plan (Table II-1) designates the Sacramento River and the Bear River as both cold and warm freshwater habitat. Therefore, pursuant to the Basin Plan (Table II-1, Footnote 2), the cold beneficial use designation applies to Rock Creek, Dry Creek, and Coon Creek. The cold water habitat designation necessitates that the in-stream dissolved oxygen concentration be maintained at, or above, 7.0 mg/L. This Order requires the discharge not cause the instream dissolved oxygen level to fall below 7.0 mg/L.

The U.S. Fish and Wildlife Service has designated the streams and rivers in the Sierra foothills, including Rock Creek, Dry Creek, Coon Creek, and Camp Far West Ditch, to be potential habitat for Red-Legged Frogs. DFG confirmed that the same drainages maintain habitat for Foothill Yellow-Legged Frogs and Western Pond Turtles (species of concern) and a variety of macro invertebrates.

The area surrounding the watersheds containing Rock Creek, Dry Creek, upper Coon Creek, Camp Far West Ditch, and downstream waters, provides a wide variety of habitat for wildlife.

v. Navigation

The discharge of treated wastewater to Rock Creek will not impact the navigation beneficial use of the downstream waters.

vi. Groundwater Recharge

In areas where the groundwater elevation is below the bottom of a stream, water from the stream will percolate to the groundwater. Rock Creek and Dry Creek are low flow streams at times and it is reasonable to assume that as stream water is lost by evaporation, the remaining flow downstream and percolation to groundwater will provide a source of municipal and domestic supply and irrigation water supply.

vii. Freshwater Replenishment

There is hydraulic continuity between Rock Creek and the Sacramento River and the Bear River. The discharge to Rock Creek contributes to the quantity and may impact the quality of the water in the downstream waters, including Camp Far West Reservoir, and the Bear River, Feather River, and Sacramento River.

Upon review of the flow conditions, habitat values, and beneficial uses of Rock Creek and Dry Creek, and the facts described above, 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 and the Bear River are applicable to Rock Creek and Dry Creek.

b. Effluent and Ambient Background Data. The RPA, as described in section IV.C.3 of this Fact Sheet, was based on data from July 2006 through June 2009, which includes effluent and ambient background data submitted in self-monitoring reports (SMRs) and annual priority pollutant monitoring. The Discharger implemented "clean" sampling procedures for phthalate acid esters (PAEs) in January 2007. Therefore, the RPA for PAEs was conducted using data from January 2007 through June 2009.

c. Hardness-Dependent CTR Metals Criteria. The *California Toxics Rule* and the *National Toxics Rule* contain water quality criteria for seven metals that vary as a function of hardness. The lower the hardness the lower the water quality criteria. The metals with hardness-dependent criteria include cadmium, copper, chromium III, lead, nickel, silver, and zinc.

This Order has established the criteria for hardness-dependent metals based on the reasonable worst-case ambient hardness as required by the SIP[1], the CTR[2] and State Water Board Order No. WQO 2008-0008 (City of Davis). The SIP and the CTR require the use of "receiving water" or "actual ambient" hardness, respectively, to determine effluent limitations for these metals. (SIP, § 1.2; 40 CFR § 131.38(c)(4), Table 4, note 4.) The CTR does not define whether the term "ambient," as applied in the regulations, necessarily requires the consideration of upstream as opposed to downstream hardness conditions. In some cases, the hardness of effluent discharges changes the hardness of the ambient receiving water. Therefore, where reliable, representative data are available, the hardness value for calculating criteria can be the downstream receiving water hardness, after mixing with the effluent (Order WQO 2008-0008,

[1] The SIP does not address how to determine the hardness for application to the equations for the protection of aquatic life when using hardness-dependent metals criteria. It simply states, in Section 1.2, that the criteria shall be properly adjusted for hardness using the hardness of the receiving water.

[2] The CTR requires that, for waters with a hardness of 400 mg/L (as $CaCO_3$), or less, the actual ambient hardness of the surface water must be used. It further requires that the hardness values used must be consistent with the design discharge conditions for design flows and mixing zones.

p. 11). The Regional Water Board thus has considerable discretion in determining ambient hardness (*Id.*, p.10.).

The hardness values must also be protective under all flow conditions (*Id.*, pp. 10-11). As discussed below, scientific literature provides a reliable method for calculating protective hardness-dependent CTR criteria, considering all discharge conditions. This methodology produces criteria that ensure these metals do not cause receiving water toxicity, while avoiding criteria that are unnecessarily stringent.

i. Reasonable Potential Analysis

The SIP in Section 1.3 states, "*The RWQCB shall…determine whether a discharge may: (1) cause, (2) have a reasonable potential to cause, or (3) contribute to an excursion above any applicable priority pollutant criterion or objective*." Section 1.3 provides a step-by-step procedure for conducting the RPA. The procedure requires the comparison of the maximum effluent concentration (MEC) and maximum receiving water background concentration to the applicable criterion that has been properly adjusted for hardness. Unless otherwise noted, for the hardness-dependent CTR metals criteria the following procedures were followed for properly adjusting the criterion for hardness when conducting the RPA.

(a) For comparing the MEC to the applicable criterion, in accordance with the SIP, CTR, and Davis Order, the reasonable worst-case downstream hardness was used to adjust the criterion. In this evaluation the portion of the receiving water affected by the discharge is analyzed. For hardness-dependent criteria, the hardness of the effluent has an impact on the determination of the applicable criterion in areas in the receiving water affected by the discharge. Therefore, for this situation it is necessary to consider the hardness of the effluent in determining the applicable hardness to adjust the criterion. The procedures for determining the applicable criterion after proper adjustment using the reasonable worst-case downstream hardness is outlined in subsection ii. below.

(b) For comparing the maximum receiving water background concentration to the applicable criterion, in accordance with the SIP, CTR, and Davis Order, the reasonable worst-case upstream hardness was used to adjust the criterion. In this evaluation the area outside the influence of the discharge is analyzed. For this situation, the discharge does not impact the upstream hardness. Therefore, the effect of the effluent hardness was not included in this evaluation.

The upstream receiving water hardness in Rock Creek ranged from 20 mg/L to 98 mg/L, based on 39 samples from July 2006 to June 2009. Thus, a minimum upstream receiving water hardness of 20 mg/L (as $CaCO_3$) represents the reasonable worst-case upstream hardness and was used to

adjust the criterion when comparing the maximum receiving water background concentration to the criterion. For comparing the MEC to the applicable criterion, in accordance with the SIP, CTR, and Davis Order, the reasonable worst-case downstream hardness was used to adjust the criterion. The procedures for determining the applicable criterion after proper adjustment using the reasonable worst-case downstream hardness is outlined in subsection ii. below.

ii. Effluent Concentration Allowance (ECA) Calculation

A 2006 Study[1] developed procedures for calculating the effluent concentration allowance (ECA)[2] for CTR hardness-dependent metals. The 2006 Study demonstrated that it is necessary to evaluate all discharge conditions (e.g., high and low flow conditions) and the hardness and metals concentrations of the effluent and receiving water when determining the appropriate ECA for these hardness-dependent metals. Simply using the lowest recorded upstream receiving water hardness to calculate the ECA may result in over or under protective WQBELs.

The equation describing the total recoverable regulatory criterion, as established in the CTR, is as follows:

$$\text{CTR Criterion} = \text{WER} \times (e^{m[\ln(H)]+b}) \qquad \text{(Equation 1)}$$

Where:

H = hardness (as $CaCO_3$)
WER = water-effect ratio
m, b = metal- and criterion-specific constants

In accordance with the CTR, the default value for the WER is 1. A WER study must be conducted to use a value other than 1. The constants “m” and “b” are specific to both the metal under consideration, and the type of total recoverable criterion (i.e., acute or chronic). The metal-specific values for these constants are provided in the CTR at paragraph (b)(2), Table 1.

The equation for the ECA is defined in Section 1.4, Step 2, of the SIP and is as follows:

$$\text{ECA} = C \text{ (when } C \leq B)^{3} \qquad \text{(Equation 2)}$$

[1] Emerick, R.W.; Borroum, Y.; & Pedri, J.E., 2006. California and National Toxics Rule Implementation and Development of Protective Hardness Based Metal Effluent Limitations. WEFTEC, Chicago, Ill.
[2] The ECA is defined in Appendix 1 of the SIP (page Appendix 1-2). The ECA is used to calculate water quality-based effluent limitations in accordance with Section 1.4 of the SIP
[3] The 2006 Study assumes the ambient background metals concentration is equal to the CTR criterion (i.e., C ≤ B).

Where:

C = the priority pollutant criterion/objective, adjusted for hardness (see Equation 1, above)

B = the ambient background concentration

The 2006 Study demonstrated that the relationship between hardness and the calculated criteria is the same for some metals, so the same procedure for calculating the ECA may be used for these metals. The same procedure can be used for chronic cadmium, chromium III, copper, nickel, and zinc. These metals are hereinafter referred to as "Concave Down Metals". "Concave Down" refers to the shape of the curve represented by the relationship between hardness and the CTR criteria in Equation 1. Another similar procedure can be used for determining the ECA for acute cadmium, lead, and acute silver, which are referred to hereafter as "Concave Up Metals".

ECA for Concave Down Metals – For Concave Down Metals (i.e., chronic cadmium, chromium III, copper, nickel, and zinc) the 2006 Study demonstrates that when the effluent is in compliance with the CTR criteria and the upstream receiving water is in compliance with the CTR criteria, any mixture of the effluent and receiving water will always be in compliance with the CTR criteria. Therefore, based on any observed ambient background hardness, no receiving water assimilative capacity for metals (i.e., ambient background metals concentrations are at their respective CTR criterion) and the minimum effluent hardness, the ECA calculated using Equation 1 with a hardness equivalent to the minimum effluent hardness is protective under all discharge conditions (i.e., high and low dilution conditions and under all mixtures of effluent and receiving water as the effluent mixes with the receiving water). This is applicable whether the effluent hardness is less than or greater than the ambient background receiving water hardness.

The effluent hardness ranged from 141 mg/L to 301 mg/L (as $CaCO_3$), based on 23 samples from July 2006 to June 2009. The upstream receiving water hardness varied from 20 mg/L to 98 mg/L (as $CaCO_3$), based on 39 samples from July 2006 to June 2009. Using a hardness of 141 mg/L (as $CaCO_3$) to calculate the ECA for all Concave Down Metals will result in WQBELs that are protective under all potential effluent/receiving water mixing scenarios and under all known hardness conditions, as demonstrated in the example using copper shown in Table F-5, below. This example assumes the following conservative conditions for the upstream receiving water:

- The upstream receiving water is always at the lowest observed upstream receiving water hardness (i.e., 20 mg/L as $CaCO_3$)
- The upstream receiving water copper concentration is always at the CTR criteria (i.e., no assimilative capacity). Based on available data, the

receiving water never exceeded the CTR criteria for any metal with hardness-dependent criteria.

As demonstrated in Table F-5, using a hardness of 141 mg/L (as $CaCO_3$) to calculate the ECA for Concave Down Metals ensures the discharge is protective under all discharge and mixing conditions. In this example, the effluent is in compliance with the CTR criteria and any mixture of the effluent and receiving water is in compliance with the CTR criteria. Therefore, in this Order the ECA for all Concave Down Metals has been calculated using Equation 1 with a hardness of 141 mg/L (as $CaCO_3$).

Table F-5. Copper ECA Evaluation

Minimum Observed Effluent Hardness			**141 mg/L (as $CaCO_3$)**
Minimum Observed Upstream Receiving Water Hardness			**20 mg/L (as $CaCO_3$)**
Maximum Assumed Upstream Receiving Water Copper Concentration			**2.4 µg/L[1]**
Copper $ECA_{chronic}$[2]			**13 µg/L**
Effluent Fraction	**Mixed Downstream Ambient Concentration**		
	Hardness[3] (mg/L) (as $CaCO_3$)	**CTR Criteria[4] (µg/L)**	**Copper[5] (µg/L)**
1%	21	2.5	2.5
5%	26	3.0	2.9
15%	38	4.1	3.9
25%	50	5.2	4.9
50%	81	7.8	7.4
75%	111	10	10
100%	141	13	13

1 Maximum assumed upstream receiving water copper concentration calculated using Equation 1 for chronic criterion at a hardness of **20 mg/L (as $CaCO_3$)**.

2 ECA calculated using Equation 1 for copper criterion at a hardness of **141 mg/L (as $CaCO_3$)**.

3 Mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction.

4 Mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.

5 Mixed downstream ambient copper concentration is the mixture of the receiving water and effluent copper concentrations at the applicable effluent fraction.

<u>ECA for Concave Up Metals</u> – For Concave Up Metals (i.e., acute cadmium, lead, and acute silver), the 2006 Study demonstrates that due to a different relationship between hardness and the metals criteria, the effluent and upstream receiving water can be in compliance with the CTR criteria, but the resulting mixture may be out of compliance. Therefore, the 2006 Study provides a mathematical approach to calculate the ECA to ensure that any mixture of effluent and receiving water is in compliance with the CTR criteria (see Equation 3, below). The ECA, as calculated using Equation 3, is based

on the reasonable worst-case ambient background hardness, no receiving water assimilative capacity for metals (i.e., ambient background metals concentrations are at their respective CTR criterion), and the minimum observed effluent hardness. The reasonable worst-case ambient background hardness depends on whether the effluent hardness is greater than or less than the upstream receiving water hardness. There are circumstances where the conservative ambient background hardness assumption is to assume that the upstream receiving water is at the highest observed hardness concentration. The conservative upstream receiving water condition as used in the Equation 3 below is defined by the term H_{rw}.

$$ECA = \left(\frac{m(H_e - H_{rw})\left(e^{m\{\ln(H_{rw})\}+b}\right)}{H_{rw}} \right) + e^{m\{\ln(H_{rw})\}+b} \qquad \text{(Equation 3)}$$

Where:

m, b = criterion specific constants (from CTR)

H_e = minimum observed effluent hardness

H_{rw} = minimum observed upstream receiving water hardness when the minimum effluent hardness is always greater than observed upstream receiving water hardness ($H_{rw} < H_e$)

-or-

maximum observed upstream receiving water hardness when the minimum effluent hardness is always less than observed upstream receiving water hardness ($H_{rw} > H_e$)[1]

A similar example as was done for the Concave Down Metals is shown for lead, a Concave Up Metal, in Table F-6, below. As previously mentioned, the minimum effluent hardness is 141 mg/L (as $CaCO_3$), while the upstream receiving water hardness ranged from 20 mg/L to 98 mg/L (as $CaCO_3$). In this case, the minimum effluent concentration is greater than the range of observed upstream receiving water hardness concentrations. Thus, the ECA was calculated (Equation 3) based on the minimum observed upstream receiving water hardness, no receiving water assimilative capacity for lead (i.e., ambient background lead concentration is at the CTR chronic criterion) and the minimum effluent hardness.

[1] When the minimum effluent hardness falls within the range of observed receiving water hardness concentrations, Equation 3 is used to calculate two ECAs, one based on the minimum observed upstream receiving water hardness and one based on the maximum observed upstream receiving water hardness. The minimum of the two calculated ECAs represents the ECA that ensures any mixture of effluent and receiving water is in compliance with the CTR criteria.

Using Equation 3 to calculate the ECA for all Concave Up Metals will result in WQBELs that are protective under all potential effluent/receiving water mixing scenarios and under all known hardness conditions, as demonstrated in Table F-6, for lead. In this example, the effluent is in compliance with the CTR criteria and any mixture of the effluent and receiving water is in compliance with the CTR criteria. Use of a lower ECA (e.g., calculated based solely on the lowest upstream receiving water hardness) is also protective, but would lead to unreasonably stringent effluent limits considering the known conditions. Therefore, Equation 3 has been used to calculate the ECA for all Concave Up Metals in this Order.

Table F-6. Lead ECA Evaluation

Minimum Observed Effluent Hardness			**141 mg/L (as $CaCO_3$)**
Minimum Observed Upstream Receiving Water Hardness			**20 mg/L (as $CaCO_3$)**
Maximum Assumed Upstream Receiving Water Lead Concentration			**0.4 µg/L[1]**
Lead $ECA_{chronic}$[2]			**3.6 µg/L**
Effluent Fraction	**Mixed Downstream Ambient Concentration**		
	Hardness[3] (mg/L) (as $CaCO_3$)	**CTR Criteria[4] (µg/L)**	**Lead[5] (µg/L)**
1%	21	0.44	0.44
5%	26	0.57	0.57
15%	38	0.93	0.88
25%	50	1.3	1.2
50%	81	2.4	2.0
75%	111	3.6	2.8
100%	141	4.9	3.6

1 Minimum assumed upstream receiving water lead concentration calculated using Equation 1 for chronic criterion at a hardness of **20 mg/L (as $CaCO_3$)**.

2 ECA calculated using Equation 3 for chronic criteria.

3 Mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction.

4 Mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.

5 Mixed downstream ambient lead concentration is the mixture of the receiving water and effluent lead concentrations at the applicable effluent fraction.

d. Conversion Factors. The CTR contains aquatic life criteria for arsenic, cadmium, chromium III, chromium VI, copper, lead, nickel, silver, and zinc which are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The default USEPA conversion factors contained in Appendix 3 of the SIP were used to convert the applicable dissolved criteria to total recoverable criteria.

e. **Assimilative Capacity/Mixing Zone.** Upstream of the discharge from the Facility, flows in Rock Creek and Dry Creek are both dependent on the flows released from the upstream reservoirs Rock Creek Lake and Halsey Afterbay, respectively. General information, from U.S. Geological Survey maps and site visits, indicates that Rock Creek and Dry Creek were intermittent streams prior to the year-round discharge. Based on the available information, Rock Creek and Dry Creek currently are low-flow or intermittent streams in the absence of the discharge from the Facility and the upstream reservoirs. The beneficial uses of Rock Creek and Dry Creek must be protected. Due to the low-flow/intermittent nature of the flows in Rock Creek and Dry Creek, no credit for receiving water dilution is available. Although the discharge flows may maintain aquatic habitat during low-flow conditions, constituents may not be discharged that may cause harm to aquatic life. At other times, natural flow and released flows help support cold water aquatic life. Dry weather and low flow conditions occur primarily in the summer months but also occur throughout the year, particularly in low rainfall years. Significant dilution may occur during and after high rainfall events. However, the lack of available dilution during low-flow periods results in more stringent effluent limitations to protect recreational uses, drinking water supplies, agricultural irrigation supplies, and aquatic life.

At times, treated wastewater may be the main, or only, source of stream flow, with little or no dilution from natural flow, particularly in Rock Creek. The worst-case dilution in Rock Creek and Dry Creek is assumed to be zero to provide protection for the receiving water beneficial uses. The impact of assuming zero dilution within the receiving water is that discharge limitations must be end-of-pipe limits, rather than allowing for dilution provided by the receiving water. Therefore, this Order contains end-of-pipe effluent limitations.

f. **Assimilative Capacity/Mixing Zone for Nitrate Plus Nitrite.** The Discharger submitted a *Sewer Maintenance District No. 1 Wastewater Treatment Plant Mixing Zone Study for Nitrate and Nitrite* (Robertson-Bryan, Inc.) on 5 October 2009 requesting a mixing zone and dilution ratio for nitrate plus nitrite. Because the applicable water quality objective for nitrate plus nitrite is based on the Primary MCL, the Discharger proposed a dilution ratio of 0.98:1 based on the lowest observed monthly ratio of the minimum combined average monthly receiving water flows for Rock Creek and Dry Creek and the maximum monthly average effluent flows as shown in Table F-7. Based on a review of the study, the Regional Water Board is not allowing for the proposed mixing zone or dilution credits.

Table F-7. Effluent and Receiving Water Flow

Month	Maximum Monthly Effluent Flow[1] (MGD)	Minimum Monthly Receiving Water Flow[2] (MGD)	Dilution Ratio (streamflow : effluent)
January	2.6	4.7	1.8 : 1
February	2.3	5.1	2.2 : 1
March	3.4	3.3	0.98 : 1
April	3.1	3.2	1.0 : 1

Month	Maximum Monthly Effluent Flow[1] (MGD)	Minimum Monthly Receiving Water Flow[2] (MGD)	Dilution Ratio (streamflow : effluent)
May	1.8	3.0	1.6 : 1
June	1.6	3.0	1.8 : 1
July	1.6	2.2	1.4 : 1
August	1.4	1.5	1.0 : 1
September	1.4	2.0	1.4 : 1
October	1.5	1.5	1.0 : 1
November	1.6	2.7	1.7 : 1
December	2.8	3.4	1.2 : 1

[1] Maximum monthly average effluent flows observed between 1 July 2005 and 30 June 2009.
[2] Minimum combined monthly average stream flow for Rock Creek and Dry Creek observed between 1 January 1999 and 30 June 2009.

The Discharger's proposed mixing zone is for protection from short-term (monthly) health effects from nitrate based on the Primary MCL. The Discharger's study documents consistency with the requirements of section 1.4.2.2 of the SIP, including (1) the mixing zone is as small as practicable; (2) the mixing zone shall not compromise the integrity of the entire water body, dominate the receiving water body, or overlap a mixing zone from different outfalls; (3) the mixing zone shall not cause acutely toxic conditions to aquatic life, restrict passage of aquatic life, or adversely impact biologically sensitive or critical habitats; (4) the mixing zone shall not produce undesirable or nuisance aquatic life; (5) the mixing zone shall not result in floating debris, oil or scum, produce objectionable color, odor, taste, or turbidity; and (6) the mixing zone shall not be allowed at or near any drinking water intake.

Available upstream receiving water monitoring includes four data points for nitrate plus nitrite from 2002 in Rock Creek and Dry Creek. Nitrogen continuously cycles in the aquatic environment. The rate of cycling is temperature-controlled and thus very seasonal. As shown in Table F-7 above, effluent and receiving water flows also vary seasonally. The Discharger's study provides only a limited data set for nitrate plus nitrite, which may or may not be representative of current background receiving water conditions. Furthermore, the Discharger's study did not adequately consider the seasonality of nutrient cycling, concluding that the mixing zone would not contribute to a nuisance biostimulation condition based only on the lack of complaints from residents downstream and visual inspection of the creek. Excess nutrients in the receiving water can have many detrimental effects on beneficial uses, including municipal and domestic supply, contact recreation, and aquatic life. Based on the limited data set for nitrate plus nitrite to determine assimilative capacity, and the lack of analysis demonstrating that granting a mixing zone would not adversely impact biologically sensitive aquatic resources or critical habitats, or produce undesirable or nuisance conditions, it is not appropriate to grant dilution credits for nitrate plus nitrite at this time. Should the Discharger submit an approved Dilution/Mixing Zone Study that meets the requirements of Section 1.4.2.2 of the SIP, including sufficient data demonstrating that assimilative capacity is available and that granting a mixing zone would not adversely impact biologically sensitive

aquatic resources or critical habitats, or produce undesirable or nuisance conditions, the Regional Water Board may reopen this Order to include effluent limitations based on an appropriate dilution factor for the protection of beneficial uses.

3. Determining the Need for WQBELs

a. 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, except for non-CTR constituents where the MCL is the applicable water quality objective and as otherwise described in sections IV.C.3.b and IV.C.3.c of this Fact Sheet. The RPA was based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs.

b. Constituents with No Reasonable Potential. WQBELs are not included in this Order for constituents that do not demonstrate reasonable potential (see Attachment G); however, monitoring for those pollutants is established in this Order as required by the SIP. If the results of effluent monitoring demonstrate reasonable potential, this Order may be reopened and modified by adding an appropriate effluent limitation. Based on new data and the procedures established in Section 1.3 of the SIP for determining reasonable potential, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion for the following constituents:

i. Alachlor. Order No. R5-2005-0074 established an effluent limitation for alachlor based on the Primary MCL of 2 µg/L and implementing the Basin Plan's chemical constituents objective. Alachlor was not detected in 22 effluent samples collected between July 2006 and June 2009. Therefore, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan water quality objective for chemical constituents for alachlor.

ii. Atrazine. Order No. R5-2005-0074 established an effluent limitation for atrazine based on the National Ambient Water Quality Criteria (NAWQC) for protection of freshwater aquatic life of 1 µg/L and implementing the Basin Plan's narrative toxicity objective. Atrazine was not detected in 21 effluent samples collected between July 2006 and June 2009. Therefore, the discharge does not demonstrate reasonable potential to cause or contribute

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

to an in-stream excursion above the Basin Plan water quality objective for toxicity for atrazine.

iii. **Bis (2-ethylhexyl) Phthalate.** Order No. R5-2005-0074 established effluent limitations for bis (2-ethylhexyl) phthalate based on the CTR criterion for human health protection for consumption of water and aquatic organisms of 1.8 µg/L. 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 Discharger implemented "clean" sampling procedures for bis (2-ethylhexyl) phthalate in January 2007. Bis (2-ethylhexyl) phthalate has not been detected in 18 effluent samples since January 2007. Therefore, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for bis (2-ethylhexyl) phthalate.

iv. **Chloroform.** Order No. R5-2005-0074 established effluent limitations for chloroform based on the California Environmental Protection Agency (Cal/EPA) Office of Environmental Health Hazard Assessment (OEHHA) cancer potency factor represented by the one-in-a-million cancer risk level in drinking water of 1.1 µg/L. However, there are no immediate municipal uses downstream of the discharge and it is not appropriate to apply the OEHHA cancer potency factor to determine reasonable potential to exceed the Basin Plan's narrative chemical constituent objective. This interpretation of the narrative objective is consistent with other recently adopted permits in the Central Valley Region.

There are no applicable CTR criteria or MCLs for chloroform. However, DPH has developed a Primary MCL of 80 µg/L for total trihalomethanes, including chloroform, which can be used to interpret the narrative chemical constituent objective. The maximum annual average receiving water and effluent concentrations were used to evaluate reasonable potential to exceed the Primary MCL based on input from the DPH and the fact that MCLs are designed to protect human health over long exposure periods. Therefore, it was considered appropriate to analyze reasonable potential based on an annual average concentration. The maximum observed annual average effluent concentration for chloroform was 41 µg/L. Therefore, the discharge does not have reasonable potential to cause or contribute to the Basin Plan's narrative chemical constituent objective and effluent limitations for chloroform will not be retained in this Order.

v. **Manganese.** Order No. R5-2005-0074 established effluent limitations for manganese based on the Secondary MCL of 50 µg/L and implementing the Basin Plan's chemical constituents objective. The maximum annual average receiving water and effluent concentrations were used to evaluate reasonable potential to exceed the Secondary MCL based on input from the DPH and the fact that MCLs are designed to protect human health over long exposure

periods. Therefore, it was considered appropriate to analyze reasonable potential based on an annual average concentration. The maximum observed annual average effluent concentration for manganese was 29 µg/L. Therefore, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan water quality objective for chemical constituents for manganese.

vi. **Methyl Tertiary Butyl Ether.** Order No. R5-2005-0074 established effluent limitations for methyl tertiary butyl ether based on the Secondary MCL of 5 µg/L and implementing the Basin Plan's chemical constituent objective. Methyl tertiary butyl ether was not detected in 21 effluent samples collected between July 2006 and June 2009. Therefore, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan water quality objective for chemical constituents for methyl tertiary butyl ether.

vii. **Oil and Grease.** Order No. R5-2005-0074 established effluent limitations for oil and grease based on the Basin Plan's narrative water quality objective, which states, "[w]*aters shall not contain oils, greases, waxes, or other materials in such 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.*" Oil and grease was not detected in 17 effluent samples collected between July 2006 and June 2009. Oil and grease used to be a problem at many POTWs and was a necessary effluent limit to protect the treatment plant and receiving waters. However, implementation of fats oils and grease (FOG) and pretreatment programs, in conjunction with improved levels of treatment, have resulted in an overall reduction of oil and grease in wastewater treatment plant effluent. Therefore, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan water quality objective for oil and grease.

viii. **Phthalate Acid Esters.** Order No. R5-2005-0074 established effluent limitations for phthalate acid esters based on the NAWQC for protection of freshwater aquatic life of 3 µg/L and implementing the Basin Plan's narrative toxicity objective. Phthalate acid esters represent a large family of chemicals widely used as plasticizers, primarily in the production of polyvinyl chloride (PVC) resins. Sources of the detected phthalate acid esters may be from plastics used for sampling or analytical equipment. The Discharger implemented "clean" sampling procedures for phthalate acid esters in January 2007. Phthalate acid esters have not been detected in 18 effluent samples since January 2007. Therefore, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan water quality objective for toxicity for phthalate acid esters.

ix. **Persistent Chlorinated Hydrocarbon Pesticides.** Order No. R5-2005-0074 established effluent limitations for persistent chlorinated hydrocarbon pesticides based on the Basin Plan's narrative water quality objective, which

states, "[t]*otal identifiable persistent chlorinated hydrocarbon pesticides shall not be present in the water column at concentrations detectable within the accuracy of analytical methods approved by the Environmental Protection Agency or the Executive Officer.*" Persistent chlorinated hydrocarbon pesticides include: aldrin, dieldrin, chlordane, endrin, endrin aldehyde, heptachlor, heptachlor epoxide, hexachlorocyclohexane (alpha-BHC, beta-BHC, delta-BHC, and gamma-BHC or lindane), endosulfan (alpha and beta), endosulfan sulfate, toxaphene, 4,4'DDD, 4,4'DDE, and 4,4'DDT. Persistent chlorinated hydrocarbon pesticides were not detected in 26 effluent samples collected between July 2006 and June 2009. Therefore, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan water quality objective for persistent chlorinated hydrocarbon pesticides.

x. **Polychlorinated Biphenyls.** Order No. R5-2005-0074 established effluent limitations for polychlorinated biphenyls based on the CTR criterion for human health protection for consumption of water and aquatic organisms of 0.00017 µg/L. Polychlorinated biphenyls include Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260. Polychlorinated biphenyls were not detected in 24 effluent samples collected between July 2006 and June 2009. Therefore, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for polychlorinated biphenyls.

xi. **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. R5-2005-0074 established an AMEL of 0.1 ml/L and an instantaneous maximum effluent limitation of 0.2 ml/L for settleable solids. Settleable solids were not detected in the effluent based on 1,095 samples collected between July 2006 and June 2009. Therefore, the discharge from the Facility does not have a reasonable potential to cause or contribute to an excursion above the Basin Plan's narrative objective for settleable solids and effluent limitations for settleable solids are not included in this Order.

xii. **Silver.** Order No. R5-2005-0074 established floating effluent limitations for silver based on the CTR criterion for protection of freshwater aquatic life and dependent on hardness. Silver was detected in the effluent once at a concentration of 0.02 µg/L, based on 19 samples collected between July 2006 and June 2009. Background receiving water monitoring for silver is not available. As described in section IV.C.2.c.i of this Fact Sheet, for comparing the MEC to the applicable criterion, in accordance with the SIP, CTR, and Davis Order, the reasonable worst-case downstream hardness was used to adjust the criterion. Using the procedures for determining the applicable criterion after proper adjustment using the reasonable worst-case downstream hardness for Concave Up Metals outlined in section IV.C.2.c.ii of this Fact Sheet, the applicable acute (1-hour average) criterion is 2.9 µg/L.

This criterion was calculated using Equation 3 (defined in section IV.C.2.c.ii of this Fact Sheet) based on the minimum observed upstream receiving water hardness, no receiving water assimilative capacity for silver (i.e., ambient background silver concentration is at the CTR acute criterion) and the minimum effluent hardness. Because concentrations of silver in the effluent do not exceed the applicable acute criterion, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for protection of freshwater aquatic life for silver.

xiii. **TCDD-Equivalents.** Order No. R5-2005-0074 established effluent limitations for dioxins and furans, or TCDD-equivalents, based on the CTR criterion for protection of human health for consumption of water and aquatic organisms for 2,3,7,8-TCDD of 1.3×10^{-8} µg/L and implementing the Basin Plan's narrative toxicity objective. Based on 10 samples collected between July 2006 and June 2009, the MEC for TCDD-equivalents was 9.41×10^{-10} µg/L, based on a sample collected on 26 March 2009. Therefore, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan water quality objective for toxicity.

xiv. **Total Petroleum Hydrocarbons.** As required by Order No. R5-2005-0074, the Discharger performed a study evaluating the presence of total petroleum hydrocarbons in the gasoline (TPH_G), kerosene (TPH_K), and diesel (TPH_D) ranges in the effluent. The Discharger submitted their study results in a report titled *County of Placer Sewer Maintenance District No. 1 Effluent Assessment of Total Petroleum Hydrocarbons, September 2006* (Robertson-Bryan, Inc.). Because no applicable water quality criteria have been developed for TPH_G, TPH_K, and TPH_D, the study compared effluent levels of TPH_G to a taste and odor threshold of 5 µg/L and of TPH_K and TPH_D to the USEPA Suggested No Adverse Response Level (SNARL) for taste and odor of 100 µg/L. TPH_G was detected above the taste and odor threshold in four of 11 effluent samples (three of the four were estimated values). TPH_K was detected above the SNARL in one of 11 effluent samples, while TPH_D was detected above the SNARL in all 11 effluent samples. However, there are no immediate municipal uses downstream of the discharge and it is not appropriate to apply taste and odor thresholds or the SNARL to determine reasonable potential to exceed the Basin Plan's narrative taste and odor objective. This interpretation of the narrative taste and odor objective is consistent with other recently adopted permits in the Central Valley Region. In the absence of any applicable water quality criteria for TPH_G, TPH_K, and TPH_D, reasonable potential to cause or contribute to water quality objectives cannot be determined. Therefore, effluent limitations are not being established in this Order.

xv. **Tributyltin.** Order No. R5-2005-0074 established effluent limitations for tributyltin based on the NAWQC for protection of freshwater aquatic life of

0.072 µg/L and implementing the Basin Plan's narrative toxicity objective. The MEC for tributyltin was 0.0024 µg/L, based on 23 samples collected between July 2006 and June 2009. Because concentrations of tributyltin in the effluent do not exceed the applicable aquatic life criterion, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan water quality objective for toxicity.

xvi. Zinc. Order No. R5-2005-0074 established floating effluent limitations for zinc based on the CTR criterion for protection of freshwater aquatic life and dependent on hardness. The MEC for zinc was 48 µg/L, based on 19 samples collected between July 2006 and June 2009. Background receiving water monitoring for zinc is not available. As described in section IV.C.2.c.i of this Fact Sheet, for comparing the MEC to the applicable criterion, in accordance with the SIP, CTR, and Davis Order, the reasonable worst-case downstream hardness was used to adjust the criterion. Using the procedures for determining the applicable criterion after proper adjustment using the reasonable worst-case downstream hardness for Concave Down Metals outlined in section IV.C.2.c.ii of this Fact Sheet, the applicable chronic (4-day average) criterion is 160 µg/L. This criterion was calculated using Equation 1 (defined in section IV.C.2.c.ii of this Fact Sheet) based on the minimum effluent hardness. Because concentrations of zinc in the effluent do not exceed the applicable chronic criterion, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for protection of freshwater aquatic life for zinc.

c. Constituents with Reasonable Potential. 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, arsenic, chlorine residual, chlorodibromomethane, copper, dichlorobromomethane, electrical conductivity, lead, mercury, nitrate plus nitrite, nitrite, pathogens, and pH. WQBELs for these constituents are included in this Order. A summary of the RPA is provided in Attachment G, and a detailed discussion of the RPA for each constituent is provided below.

i. Aluminum

(a) WQO. USEPA developed NAWQC 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, for waters with a pH of 6.5 to 9.0. USEPA recommends that the ambient criteria are protective of the aquatic beneficial uses of receiving waters in lieu of site-specific criteria. The most stringent of these criteria, the chronic criterion of 87 ug/L, is based on studies conducted on waters with low pH (6.5 to 6.8 pH units) and hardness (<10 mg/L as $CaCO_3$). The upstream receiving water pH ranged from 6.3 – 9.5. The upstream receiving water hardness ranged from 20 mg/L to 98 mg/L. The minimum observed effluent hardness was 141 mg/L. The high hardness

of the effluent is due to the addition of magnesium hydroxide in the primary clarifier effluent to provide alkalinity for nitrification, as reported in Table B-1 in Addendum B – Form 2A Part B, section B.3 of the Report of Waste Discharge. Although the effluent hardness may currently increase the downstream hardness, future modifications of the treatment process may result in changes in magnesium hydroxide use. These changes may reduce the effluent hardness and, consequently, the downstream receiving water hardness to levels supportive of the applicability of the NAWQC chronic criteria for aluminum. Therefore, without further site-specific and aluminum-specific information (i.e. Water Effect Ratio testing), the low pH values and low hardness observed (within 10 mg/L as $CaCO_3$) in the receiving water is supportive of the applicability of the NAWQC chronic criteria for aluminum, according to USEPA's development document.

(b) RPA Results. The MEC for aluminum was 162 µg/L. Background receiving water data for aluminum is not available. Therefore, aluminum in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

(c) WQBELs. This Order contains a final AMEL and MDEL for aluminum as shown in Table F-9 of this Fact Sheet based on protection of the Basin Plan's narrative toxicity objective.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the MEC of 162 µg/L is greater than applicable WQBELs. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. New or modified control measures are 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 aluminum are not a new regulatory requirement within this permit; the previous permit, Order No. 2005-0074, and previous Cease and Desist Order No. 2005-0075 contained final effluent limitations based on the chronic criteria of 87 ug/L, and a 5-year compliance schedule for the discharger to comply with the limitations. Therefore, a compliance time schedule for compliance with the aluminum effluent limitations is established in Cease and Desist Order (CDO) No. R5-2010-**XXXX** in accordance with CWC section 13300, that requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

ii. Ammonia

(a) WQO. The NAWQC for the protection of freshwater aquatic life for total ammonia, recommends acute (1-hour average; criteria maximum concentration or CMC) standards based on pH and chronic (30-day average; criteria continuous concentration or CCC) standards based on pH and temperature. USEPA also recommends that no 4-day average concentration should exceed 2.5 times the 30-day CCC. 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 Rock Creek has a beneficial use of cold freshwater habitat and the presence of salmonids and early fish life stages in the downstream receiving waters is well-documented, the recommended criteria for waters where salmonids and early life stages are present were used.

The maximum permitted effluent pH is 8.2. The Basin Plan objective for pH in the receiving stream is the range of 6.5 to 8.5. In a letter dated 22 February 2010, the Discharger requested an instantaneous maximum effluent pH limitation of 8.2 which reflects a level consistently achievable by the Facility. Data collected over the previous permit term indicate that pH in the effluent never exceeded 8.2, with a maximum reported pH value of 7.8. Therefore, at the request of the Discharger, this Order establishes a more stringent instantaneous maximum pH limitation of 8.2. In order to protect against the worst-case short-term exposure of an organism, the permitted instantaneous maximum pH limitation of 8.2 was used to derive the acute criterion. The resulting acute criterion is 3.83 mg/L.

A chronic criterion was calculated for each day when paired temperature and pH were measured using downstream receiving water data for temperature and pH data from the Discharger's monthly monitoring reports from July 2006 through June 2009. Rolling 30-day average criteria were calculated using the criteria calculated for each day and the minimum observed 30-day average criterion was established as the applicable 30-day average chronic criterion, or 30-day CCC. The resulting lowest 30-day CCC is 2.30 mg/L (as N). The use of downstream receiving water monitoring for the calculation of the 30-day chronic criterion results in a more stringent criterion than using effluent monitoring. The 4-day average concentration is derived in accordance with the USEPA criterion as 2.5 times the 30-day CCC. Based on the 30-day CCC of 2.30 mg/L (as N), the 4-day average concentration that should not be exceeded is 5.75 mg/L (as N).

(b) RPA Results. 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 achieves some nitrification in the RBCs and trickling filters, but is unable to achieve complete nitrification. 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. The MEC for ammonia was 15.1 µg/L. Background receiving water data for ammonia is not available. Because domestic wastewater contains ammonia and the MEC for ammonia exceeds the NAWQC, ammonia in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

(c) WQBELs. The Regional Water Board calculates WQBELs in accordance with 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 CCC. 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 CCC was calculated assuming a 30-day averaging period. The lowest LTA representing the acute, 4-day CCC, and 30-day CCC is then selected for deriving the AMEL and 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 as shown in Table F-9 of this Fact Sheet, based on protection of the Basin Plan's narrative toxicity objective.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the MEC of 15.1 µg/L is greater than applicable WQBELs. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. The Discharger submitted an infeasibility analysis on 4 May 2010. As discussed in section IV.E of this Fact Sheet, a compliance schedule has been included in this Order.

iii. Arsenic

(a) WQO. The Primary MCL for arsenic is 10 µg/L, which is used to interpret the Basin Plan's chemical constituent objective for the protection of the MUN beneficial use and is implemented as a monthly average.

(b) RPA Results. The maximum monthly average receiving water and effluent concentrations were used to evaluate reasonable potential to exceed the Primary MCL based on input from the DPH and the fact that MCLs are designed to protect human health over long exposure periods. The maximum observed monthly average effluent concentration of arsenic was 21.5 µg/L. Background receiving water data for arsenic is not available. Therefore, arsenic in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Primary MCL.

(c) WQBELs. This Order contains a monthly average effluent limitation for arsenic as shown in Table F-9 of this Fact Sheet, based on the Basin Plan's narrative chemical constituent objective for protection of the MUN beneficial use.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the MEC of 21.5 µg/L is greater than applicable WQBELs. However, the remaining effluent concentrations were below the Primary MCL and the new limitation does not appear to put the Discharger in immediate non-compliance.

iv. Chlorine Residual

(a) WQO. USEPA developed NAWQC for protection of freshwater aquatic life for chlorine residual. The recommended 4-day average (chronic) and 1-hour average (acute) criteria for chlorine residual are 0.011 µg/L and 0.019 µg/L, respectively. These criteria are protective of the Basin Plan's narrative toxicity objective.

(b) RPA Results. The Discharger uses chlorine for disinfection, which is extremely toxic to aquatic organisms. The Discharger uses a sulfur dioxide process to dechlorinate the effluent prior to discharge to Rock 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 NAWQC.

(c) WQBELs. 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. This Order contains a 4-day average effluent limitation and 1-hour average effluent limitation for chlorine residual of 0.011 µg/L and 0.019 µg/L, respectively, based on USEPA's NAWQC, which implements the Basin Plan's narrative toxicity objective for protection of aquatic life. The Discharger is planning to

upgrade the Facility during the term of this permit to replace the existing chlorine disinfection system with a new ultraviolet light (UV) disinfection system. Therefore, monitoring requirements for chlorine residual may be discontinued upon completion of the UV disinfection system.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that concentrations of chlorine residual are consistently less than the applicable WQBELs. The Regional Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

v. Chlorodibromomethane

(a) WQO. The CTR includes a criterion of 0.41 µg/L for chlorodibromomethane for the protection of human health for waters from which both water and organisms are consumed.

(b) RPA Results. The MEC for chlorodibromomethane was 0.97 µg/L. Background receiving water data for chlorodibromomethane is not available. Therefore, chlorodibromomethane in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of human health.

(c) WQBELs. This Order contains a final AMEL and MDEL for chlorodibromomethane, as shown in Table F-9 of this Fact Sheet, based on the CTR criterion for the protection of human health.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the MEC of 0.97 µg/L is greater than applicable WQBELs. 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 chlorodibromomethane are a new 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 for compliance with the chlorodibromomethane effluent limitations is established in CDO No. R5-2010-**XXXX** in accordance with CWC section 13300, that requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

vi. Copper

(a) WQO. The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for copper. Section 1.3 of the SIP contains requirements for conducting the RPA for CTR constituents. Step 1 of the RPA requires that CTR criteria be adjusted for hardness, as applicable. In

this case, the minimum observed effluent hardness was used to adjust the CTR criteria for copper when comparing the MEC to the criteria and the minimum observed receiving water hardness was used when comparing the maximum background receiving water copper concentrations to the criteria. Using the default conversion factors and reasonable worst-case measured hardness of the effluent, the applicable acute (1-hour average) and chronic (4-day average) criteria for the effluent are 19 µg/L and 13 µg/L, respectively, as total recoverable. Using the default conversion factors and reasonable worst-case measured hardness of the receiving water, the applicable acute (1-hour average) and chronic (4-day average) criteria for the receiving water are 3.1 µg/L and 2.4 µg/L, respectively, as total recoverable.

(b) RPA Results. The MEC for copper was 21.9 µg/L (as total recoverable), which was observed on 4 January 2008. The Discharger concluded in Table 3.5 of the Report of Waste Discharge that this sample was an outlier because the concentration exceeds the 99th percentile of observed copper concentrations. The next highest effluent copper concentration observed was 10.1 µg/L. The report from the laboratory, Excelchem Environmental Labs, dated 21 January 2008, does not indicate that the 4 January 2008 sample result was caused by any laboratory error. Therefore, the sample is considered to be representative of the discharge and was used to conduct the RPA. Background receiving water data for copper is not available. Because the MEC exceeds the chronic criterion for the effluent, copper in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of freshwater aquatic life.

(c) WQBELs. As described in section IV.C.2.c.ii of the Fact Sheet, the ECA_{acute} and $ECA_{chronic}$ were determined using the minimum observed effluent hardness, which is protective under all discharge and mixing conditions. This results in an ECA_{acute} and an $ECA_{chronic}$ for copper of 19 µg/L and 13 µg/L, respectively. This Order contains a final AMEL and MDEL for copper as shown in Table F-9 of this Fact Sheet, based on the CTR criterion for the protection of freshwater aquatic life.

(d) Plant Performance and Attainability. The Discharger reported in a letter dated 22 February 2010 that it anticipates consistent compliance with the new effluent limitations for copper and that a compliance schedule is unnecessary.

vii. Dichlorobromomethane

(a) WQO. The CTR includes a criterion of 0.56 µg/L for dichlorobromomethane for the protection of human health for waters from which both water and organisms are consumed.

(b) RPA Results. The MEC for dichlorobromomethane was 14 µg/L. Background receiving water data for dichlorobromomethane is not available. Therefore, dichlorobromomethane in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of human health.

(c) WQBELs. This Order contains a final AMEL and MDEL for dichlorobromomethane, as shown in Table F-9 of this Fact Sheet, based on the CTR criterion for the protection of human health.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the MEC of 14 µg/L is greater than applicable WQBELs. 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 dichlorobromomethane are a new 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 for compliance with the dichlorobromomethane effluent limitations is established in CDO No. R5-2010-**XXXX** in accordance with CWC section 13300, that requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

viii. Lead

(a) WQO. The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for lead. Section 1.3 of the SIP contains requirements for conducting the RPA for CTR constituents. Step 1 of the RPA requires that CTR criteria be adjusted for hardness, as applicable. In this case, the minimum observed upstream receiving water hardness, no receiving water assimilative capacity for lead (i.e., ambient background lead concentration is at the CTR chronic criterion), and the minimum effluent hardness were used to adjust the CTR criterion when comparing the MEC to the criteria and the minimum observed receiving water hardness was used when comparing the maximum background receiving water lead concentrations to the criteria. Using the minimum observed upstream receiving water hardness, no receiving water assimilative capacity for lead (i.e., ambient background lead concentration is at the CTR chronic criterion) and the minimum effluent hardness, the applicable acute (1-hour average) and chronic (4-day average) criteria for the effluent are 92 µg/L and 3.6 µg/L, respectively, as total recoverable. Using the default conversion factors and reasonable worst-case measured hardness of the receiving water, the applicable acute (1-hour average) and chronic

(4-day average) criteria for the receiving water are 11 µg/L and 0.41 µg/L, respectively.

(b) RPA Results. The MEC for lead was 25.2 µg/L (as total recoverable), which was observed on 4 January 2008. The Discharger concluded in Table 3.5 of the Report of Waste Discharge that this sample was an outlier because the concentration exceeds the 99th percentile of observed lead concentrations. The next highest effluent lead concentration observed was 1.24 µg/L. The report from the laboratory, Excelchem Environmental Labs, dated 21 January 2008, does not indicate that the 4 January 2008 sample result was caused by any laboratory error. Therefore, the sample is considered to be representative of the discharge and was used to conduct the RPA. Background receiving water data for lead is not available. Because the MEC exceeds the chronic criterion for the effluent, lead in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of freshwater aquatic life.

(c) WQBELs. As described in section IV.C.2.c.ii of the Fact Sheet, the ECA_{acute} and $ECA_{chronic}$ were determined using the minimum observed upstream receiving water hardness, no receiving water assimilative capacity for lead (i.e., ambient background lead concentration is at the CTR chronic criterion) and the minimum effluent hardness, which is protective under all discharge and mixing conditions. This results in an ECA_{acute} and an $ECA_{chronic}$ for lead of 92 µg/L and 3.6 µg/L, respectively. This Order contains a final AMEL and MDEL for lead as shown in Table F-9 of this Fact Sheet, based on the CTR criterion for the protection of freshwater aquatic life.

(d) Plant Performance and Attainability. The Discharger reported in a letter dated 22 February 2010 that it anticipates consistent compliance with the new effluent limitations for lead and that a compliance schedule is unnecessary.

ix. Mercury

(a) WQO. The current NAWQC 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 (based on a threshold dose level causing neurological effects in infants) 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.

(b) RPA Results. The maximum observed effluent mercury concentration was 0.00323 µg/L. Mercury bioaccumulates in fish tissue and, therefore, the discharge of mercury to the receiving water may contribute to exceedances of the narrative toxicity objective and impact beneficial uses. The discharge of mercury to surface waters in the Central Valley draining to the Sacramento San Joaquin Delta is being limited in order to protect the beneficial uses of the Delta.

(c) WQBELs. This Order contains a performance-based mass effluent limitation of 0.0018 lbs/month for mercury for the effluent discharged to the receiving water. This limitation is based on maintaining the mercury loading at the current level until a TMDL for the Delta waters 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 and the design average dry weather flow rate of the current treatment plant (2.18 MGD):

Effluent concentration (mg/L) * Design average dry weather flow rate * 8.34 (conversion factor) * [365 days / 12 months] = lbs/month

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

(d) Plant Performance and Attainability. The effluent limitations for mercury are based on treatment plant performance. The Regional Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

x. Nitrate and Nitrite

(a) WQO. DPH has adopted Primary MCLs for the protection of human health for nitrite and nitrate that are equal to 1 mg/L and 10 mg/L (measured as nitrogen), respectively. DPH has also adopted a primary MCL of 10,000 µg/L for the sum of nitrate and nitrite, measured as nitrogen.

USEPA has developed a primary MCL and an MCL goal of 1,000 µg/L for nitrite (as nitrogen). For nitrate, USEPA has developed Drinking Water Standards (10,000 µg/L as Primary MCL) and NAWQC for protection of human health (10,000 µg/L for non-cancer health effects). Recent toxicity studies have indicated a possibility that nitrate is toxic to aquatic organisms.

(b) RPA Results. 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 does not currently provide denitrification. Nitrate and nitrite are known to cause adverse health effects in humans. Inadequate or incomplete denitrification may result in the discharge of nitrate and/or nitrite to the receiving stream. The conversion of ammonia to nitrites and the conversion of nitrites to nitrates present a reasonable potential for the discharge to cause or contribute to an in-stream excursion above the Primary MCLs for nitrite and nitrate.

(c) WQBELs. As described further in section IV.C.2.f of this Fact Sheet, dilution credits are not being considered for the calculation of effluent limitations for nitrate plus nitrite. Consistent with Order No. R5-2005-0074, this Order contains a final AMEL for nitrate plus nitrite of 10 mg/L and an AMEL for nitrite of 1 mg/L, based on the protection of the Basin Plan's narrative chemical constituents objective and to assure the treatment process adequately nitrifies and denitrifies the waste stream.

(d) Plant Performance and Attainability. The Discharger does not currently provide denitrification and, 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 nitrate plus nitrite and nitrite are a new 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 for compliance with the nitrate plus nitrite and nitrite effluent limitations is established in CDO No. R5-2010-**XXXX** in accordance with CWC section 13300, that requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

xi. Pathogens

The Regional Water Board, when developing NPDES permits, implements recommendations by DPH for the appropriate disinfection requirements for the protection of MUN, REC-1 and AGR. The disinfection requirements in the proposed Order implement the DPH recommendations and are fully protective of the beneficial uses of the receiving water.

(a) WQO. 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. The measure of coliform organisms is utilized as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing other pathogens.

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 the 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.

Total coliform organisms are an indicator of the level of pathogens in the effluent. Therefore, effluent limitations for total coliform organisms are necessary to control the discharge of pathogens, and have been included in this Order. In site-specific situations where a discharge is occurring to a stream with a downstream water intake used as a domestic water supply without treatment, the DPH has recommended the same Title 22 tertiary treatment requirements for the protection of MUN, as well as protecting REC-1 and AGR. DPH has also recommended a 20:1 dilution ratio in addition to the Title 22 tertiary treatment requirement where there are existing domestic water users of raw water near the treatment plant outfall. In this case, there are no such known uses that could be affected by the discharge, so tertiary treatment plus 20:1 dilution is not necessary to protect the MUN, REC-1 or AGR uses.

The chemical constituents narrative objective in the Basin Plan states, "[w]*aters shall not contain chemical constituents in concentrations that adversely affect beneficial uses*." The narrative toxicity objective states, "[a]*ll waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" When necessary, the Regional Water Board adopts numeric effluent limitations to implement these objectives on a case-by-case basis implementing relevant numerical criteria and guidelines developed and/or published by other agencies and organizations (e.g., State Water Board, DPH, OEHHA, California Department of Toxic Substances Control, University of California Cooperative Extension, California Department of Fish and Game, USEPA, U.S. Food and Drug Administration, National Academy of Sciences, U.S. Fish and Wildlife

Service, Food and Agricultural Organization of the United Nations). In considering such criteria, the Regional Water Board evaluates whether the specific numerical criteria, which are available through these sources and through other information supplied to the Regional Water Board, are relevant and appropriate to the situation at hand and, therefore, should be used in determining compliance with the narrative objective."

For public water supplies, State and federal law require residual chlorine and/or UV disinfection of surface water. (*See, e.g.,* Surface Water Treatment Rule, 40 C.F.R. Part 141, Subpart H; Cal. Code of Regs. Title 22, section 64447.) Treating pathogens to a level more stringent than tertiary treatment requires a chlorine residual in the effluent that is toxic to aquatic life in the receiving water. Pathogens are not bio-accumulative, so discharges at the permitted levels in this Order do not threaten potential uses of the receiving water for untreated domestic use. Therefore, the requirement to implement tertiary treatment only when 20:1 dilution is not available adequately protects beneficial uses and is appropriate for this discharge under the case-by-case approach.

(b) RPA Results. The beneficial uses of Rock Creek include MUN, REC-1, and AGR, 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 method of treatment is not prescribed by this Order; however, wastewater must be treated to a level equivalent to that recommended by DPH.

(c) WQBELs

In accordance with the requirements of Title 22, this Order includes effluent limitations for total coliform organisms of 2.2 MPN/100 mL as a 7-day median; 23 MPN/100 mL, not to be exceeded more than once in a 30-day period; and 240 MPN/100 mL as an instantaneous maximum.

In addition to coliform testing, an operational specification for turbidity has been included to monitor the effectiveness of treatment filter performance, and to immediately signal the Discharger to implement operational procedures to correct deficiencies in filter performance. Higher effluent turbidity measurements do not necessarily indicate that the effluent discharge exceeds the water quality criteria/objectives for pathogens (i.e., bacteria, parasites, and viruses), which are the principal infectious agents that may be present in raw sewage. Since turbidity is not a valid indicator parameter for pathogens, the turbidity limitations in Order No. R5-2005-0074 are not imposed to protect the receiving water from excess turbidity. The former turbidity limitations were not technology-based effluent limitations or WQBELs for either pathogens or turbidity. WQBELs are not required because the effluent does not have a reasonable potential to

cause or contribute to an exceedance of the applicable water quality objectives for turbidity.

The tertiary treatment process, or equivalent, is capable of reliably treating wastewater to a turbidity level 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. 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 specifications are impracticable for turbidity. This Order includes operational specifications for turbidity of 2 NTU as a daily average; 5 NTU, not to be exceeded more than 5 percent of the time within a 24-hour period; and 10 NTU as an instantaneous maximum.

Final WQBELs for BOD_5 and TSS are based on the technical capability of the tertiary process, which is necessary to protect the beneficial uses of the receiving water. BOD_5 is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The tertiary treatment standards for BOD_5 and TSS are indicators of the effectiveness of the tertiary treatment process. 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. The application of tertiary treatment processes results in the ability to achieve lower levels for BOD_5 and TSS than the secondary standards currently prescribed. Therefore, this Order requires AMELs for BOD_5 and TSS of 10 mg/L, which is technically based on the capability of a tertiary system. In addition to the average weekly and average monthly effluent limitations, a daily maximum effluent limitation for BOD_5 and TSS is included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities.

This Order contains effluent limitations for BOD_5, total coliform organisms, and TSS, and requires a tertiary level of treatment, or equivalent, necessary to protect the beneficial uses of the receiving water. The Regional Water Board previously considered the factors in CWC section 13241 in establishing these requirements in Order No. R5-2005-0074.

DPH submitted a letter to the Regional Water Board on 15 July 2003 after a review of plant performance and related effluent quality, expected seasonality of contact recreation and irrigation, high wet weather flow rates, costs to expand to year-round tertiary treatment, and high influent flow rates at the Facility. The 15 July 2003 letter noted several exceptions to the requirement for tertiary treatment at the Facility, as follows:

"1. The plant is subject to very high flow rates during, and immediately following storm events. Plant flow that exceeds the capacity of the filters can be allowed to bypass the filtration process during these events, provided the filter capacity is at least 30% greater than the permitted average dry weather flow.

2. A 30-day median coliform bacteria count of 2.2 MPN/100 mL can be allowed during the cold weather season. This season can be defined either on the basis of months (e.g., November 1 through April 30), or by receiving water temperature. If you decide to implement the latter, we recommend that the 'cold weather season' be defined as beginning when the seven day median receiving water temperature first falls below 60°F, and ending when the seven-day median receiving water temperature first rises above 60°F."

A discharge in accordance with the DPH recommendation may not protect contact recreation, food crop irrigation, and will not protect the beneficial uses of domestic and municipal supply during periods when the receiving water temperature is less than 60°F and treatment plant effluent flows exceed 3.5 MGD. The beneficial uses of the receiving waters immediately downstream of the discharge have been well documented. It is unknown to what degree water contact recreational activities decrease at 60°F. The nearby American River has well documented periods of contact recreational activity when water temperatures are below 60°F. The discharge of blended secondary effluent, compared to a full tertiary discharge, will result in the discharge of additional pollutants. The RPA was based on tertiary treatment, and the blended discharge may not comply with the effluent limitations established in this Order. Domestic uses have been documented to exist downstream of Facility. Therefore, a tertiary level of treatment, or equivalent, is necessary under all discharge conditions to protect the beneficial uses of the receiving stream. This Order requires that the wastewater be disinfected and adequately treated to prevent disease (i.e., tertiary treatment) for all discharges regardless of flow.

(d) Plant Performance and Attainability. The Facility is not designed to provide full tertiary treatment for wet weather flows exceeding 3.5 MGD and discharges a blend of secondary and tertiary wastewater under those conditions. Therefore, the Discharger cannot currently comply with the effluent limitations for BOD_5, total coliform organisms, or TSS for all discharges. As discussed in section IV.E of this Fact Sheet, a compliance schedule has been included in this Order for compliance with Title 22 (or equivalent) requirements when the influent flow exceeds 3.5 MGD and the 7-day median receiving water temperature is less than 60°F.

xii. pH

(a) WQO. 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."*

(b) RPA Results. The discharge of municipal wastewater has a reasonable potential to cause or contribute to an excursion above the Basin Plan's numeric objectives for pH.

(c) WQBELs. An effluent limitation for pH of 6.5 as an instantaneous minimum is included in this Order based on protection of the Basin Plan objective for pH. In a letter dated 22 February 2010, the Discharger requested an instantaneous maximum pH limitation of 8.2 which reflects a level consistently achievable by the Facility. Data collected over the previous permit term indicate that pH in the effluent never exceeded 8.2, with a maximum reported pH value of 7.8. Therefore, at the request of the Discharger, this Order establishes a more stringent instantaneous maximum pH limitation of 8.2.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the pH of the effluent is consistently between 6.5 to 8.2. The Regional Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

xiii. Salinity

(a) WQO. There are no USEPA water quality criteria for the protection of aquatic organisms for electrical conductivity (EC), total dissolved solids (TDS), sulfate, and chloride. The Basin Plan contains a chemical constituent objective that incorporates state MCLs, contains a narrative objective, and contains numeric water quality objectives for electrical conductivity, total dissolved solids, sulfate, and chloride.

Table F-8. Salinity Water Quality Criteria/Objectives

Parameter	Agricultural WQ Goal[1]	Secondary MCL[2]	Effluent[3]	
			Average	Maximum
EC (µmhos/cm)	Varies[4]	900, 1600, 2200	650	1,090
TDS (mg/L)	Varies	500, 1000, 1500	374	486
Sulfate (mg/L)	Varies	250, 500, 600	32	36.1
Chloride (mg/L)	Varies	250, 500, 600	70.1	70.1

Parameter	Agricultural WQ Goal[1]	Secondary MCL[2]	Effluent[3]	
			Average	Maximum

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

[3] Average and maximum values based on monitoring data collected between July 2006 and June 2009.

[4] 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.

(1) 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.

(2) Electrical Conductivity. The secondary MCL for EC is 900 µmhos/cm as a recommended level, 1600 µmhos/cm as an upper level, and 2200 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. These crops are either currently grown in the area or may be grown in the future. 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.

(3) 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.

(4) Total Dissolved Solids. The secondary MCL for TDS is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 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.

(b) RPA Results.

(1) Chloride. The MEC for chloride was 70.1 mg/L, based on one sample collected on 9 October 2008, which does not exceed the agricultural water goal. Background receiving water data for chloride is not available.

(2) Electrical Conductivity. As required by Order No. R5-2005-0074, the Discharger submitted a report titled *County of Placer Sewer Maintenance District No. 1 Electrical Conductivity and Total Dissolved Solids Assessment, November 2006* (Robertson-Bryan, Inc.) evaluating the potential effects of EC and TDS in the receiving water. Based on the study, the Discharger concluded that 30-day average effluent concentrations never exceeded the Secondary MCL and occasionally exceeded the agricultural water quality goal. The Discharger further concluded that receiving water concentrations downstream of the discharge in Rock Creek and Dry Creek did not exceed either the Secondary MCL or the agricultural goal.

A review of the Discharger's monitoring reports submitted since the submittal of the report shows a maximum 12-month rolling average effluent EC concentration of 650 µmhos/cm, with a range from 332 µmhos/cm to 1,090 µmhos/cm. The maximum 12-month rolling average effluent EC concentration does not exceed the agricultural water quality goal of 700 µmhos/cm. The background receiving water EC averaged 109 µmhos/cm.

(3) Sulfate. Sulfate concentrations in the effluent ranged from 28.6 mg/L to 36.1 mg/L, with an average of 32 mg/L. These levels do not exceed

the secondary MCL. Background receiving water data for sulfate is not available.

(4) Total Dissolved Solids. The average TDS effluent concentration was 374 mg/L with concentrations ranging from 54 mg/L to 486 mg/L. These levels do not exceed the applicable water quality objectives. Background receiving water data for TDS is not available.

(c) WQBELs. 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 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 Rock Creek, a tributary of the Sacramento River, the Bear River, and eventually the Sacramento-San Joaquin Delta, of additional

concern is the salt contribution to Delta waters. Allowing the Discharger to increase its current salt loading may be contrary to the Region-wide effort to address salinity in the Central Valley. Therefore, to limit the discharge of salinity to current levels, this Order includes a final effluent limitation of 700 µmhos/cm to be applied as an annual average.

In order to ensure that the Discharger will continue to control the discharge of salinity, this Order includes a requirement to develop and implement a salinity evaluation and minimization plan. Also water supply monitoring is required to evaluate the relative contribution of salinity from the source water to the effluent.

(d) Plant Performance and Attainability. The maximum annual average effluent EC concentration was 680 µmhos/cm, which occurred in 2007. The Regional Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

4. WQBEL Calculations

a. This Order includes WQBELs for aluminum, ammonia, arsenic, chlorine residual, chlorodibromomethane, copper, dichlorobromomethane, electrical conductivity, lead, mercury, nitrate plus nitrite, nitrite, pH, and total coliform organisms. The general methodology for calculating WQBELs based on the different criteria/objectives is described in subsections IV.C.4.b through e, below. See Attachment H for the WQBEL calculations.

b. Effluent Concentration Allowance. For each water quality criterion/objective, the ECA is calculated using the following steady-state mass balance equation from Section 1.4 of the SIP:

$ECA = C + D(C - B)$ *where* $C>B$*, and*
$ECA = C$ *where* $C \leq B$

<u>where:</u>
ECA = effluent concentration allowance
D = dilution credit
C = the priority pollutant criterion/objective
B = the ambient background concentration.

According to the SIP, the ambient background concentration (B) in the equation above 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 arithmetic mean concentration of the ambient background samples. For ECAs based on MCLs, which implement the Basin Plan's chemical constituents objective and are applied as annual averages, an arithmetic mean is also used for B due to the long-term basis of the criteria.

c. **Basin Plan Objectives and MCLs.** For WQBELs based on site-specific numeric Basin Plan objectives or MCLs, the effluent limitations are applied directly as the ECA as either an MDEL, AMEL, or average annual effluent limitations, depending on the averaging period of the objective.

d. **Aquatic Toxicity Criteria.** WQBELs based on acute and chronic aquatic toxicity criteria are calculated in accordance with Section 1.4 of the SIP. The ECAs are converted to equivalent long-term averages (i.e., LTA_{acute} and $LTA_{chronic}$) using statistical multipliers and the lowest LTA is used to calculate the AMEL and MDEL using additional statistical multipliers.

e. **Human Health Criteria.** WQBELs based on human health criteria are also calculated in accordance with Section 1.4 of the SIP. The AMEL is set equal to the ECA and a statistical multiplier was 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:
multAMEL = statistical multiplier converting minimum LTA to AMEL
multMDEL = statistical multiplier converting minimum LTA to MDEL
MA = statistical multiplier converting acute ECA to LTA_{acute}
MC = statistical multiplier converting chronic ECA to $LTA_{chronic}$

See Section IV.D of this Fact Sheet for a summary of WQBELs contained in this Order.

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 chronic toxicity. The Order also 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 page 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.*" Consistent with Order No. R5-2005-0074,, 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 page III-8.00.) Based on chronic WET testing performed by the Discharger during the term of Order No. R5-2005-0074, as summarized in Addendum EC (Chronic Toxicity) – Form 2A Part E of the Report of Waste Discharge, the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

No dilution has been granted in this Order for the chronic condition. Chronic toxicity testing results exceeding 1 chronic toxicity unit (TUc) demonstrates that the discharge has a reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective. Therefore, this Order includes a narrative chronic toxicity effluent limitation.

Numeric chronic WET effluent limitations have not been included in this Order. The SIP contains implementation gaps regarding the appropriate form and implementation of chronic toxicity limits. This has resulted in the petitioning of a NPDES permit in the Los Angeles Region[1] that contained numeric chronic

[1] In the Matter of the Review of Own Motion of Waste Discharge Requirements Order Nos. R4-2002-0121 [NPDES No. CA0054011] and R4-2002-0123 [NPDES NO. CA0055119] and Time Schedule Order Nos. R4-2002-0122 and R4-2002-0124 for Los Coyotes and Long Beach Wastewater Reclamation Plants Issued by the California Regional Water Quality Control Board, Los Angeles Region SWRCB/OCC FILES A-1496 AND 1496(a).

toxicity effluent limitations. To address the petition, the State Water Board adopted WQO 2003-012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-012, "*In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits."* The process to revise the SIP is currently underway. Proposed changes include clarifying the appropriate form of effluent toxicity limits in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process. Since the toxicity control provisions in the SIP are under revision it is infeasible to develop numeric effluent limitations for chronic toxicity. Therefore, this Order requires that the Discharger meet best management practices for compliance with the Basin Plan's narrative toxicity objective, as allowed under 40 CFR 122.44(k).

To ensure compliance with the Basin Plan's narrative toxicity objective, the Discharger is required to conduct chronic WET testing, as specified in the Monitoring and Reporting Program (Attachment E, section V.). Furthermore, the Special Provision contained at VI.C.2.a of this Order requires the Discharger to investigate the causes of, and identify and implement corrective actions to reduce or eliminate effluent toxicity. If the discharge demonstrates a pattern of toxicity exceeding the numeric toxicity monitoring trigger, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE) in accordance with an approved TRE workplan. The numeric toxicity monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to perform accelerated chronic toxicity monitoring, as well as, the threshold to initiate a TRE if a pattern of effluent toxicity has been demonstrated.

D. Final Effluent Limitations

Table F-9. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Average Dry Weather Flow	MGD	2.18[2]	--	--	--	--	DC
Conventional Pollutants							
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	25	--	--	TTC
	lbs/day[3]	182	273	455	--	--	
	% Removal	85	--	--	--	--	CFR

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Total Suspended Solids	mg/L	10	15	25	--	--	TTC
	lbs/day[3]	182	273	455	--	--	
	% Removal	85	--	--	--	--	CFR
pH	standard units	--	--	--	6.5	8.2	BP, PB
Priority Pollutants							
Arsenic, Total Recoverable	µg/L	10	--	--	--	--	MCL
Chlorodibromomethane	µg/L	0.41	--	0.82	--	--	CTR
Copper, Total Recoverable	µg/L	7.6	--	19	--	--	CTR
Dichlorobromomethane	µg/L	0.56	--	1.5	--	--	CTR
Lead, Total Recoverable	µg/L	2.3	--	6.5	--	--	CTR
Mercury, Total Recoverable	lbs/month	0.0018[4]	--	--	--	--	PB
Non-Conventional Pollutants							
Acute Toxicity	% Survival	--	--	[5]	--	--	BP
Aluminum, Total Recoverable	µg/L	68	--	151	--	--	NAWQC
Ammonia Nitrogen, Total (as N)	mg/L	1.4	--	3.9	--	--	NAWQC
	lbs/day[3]	25	--	71	--	--	
Chlorine, Total Residual	mg/L	--	0.011[6]	0.019[7]	--	--	NAWQC
Chronic Toxicity	TUc	--	--	[8]	--	--	BP
Electrical Conductivity @ 25°C	µmhos/cm	700[9]	--	--	--	--	PB
Nitrate Plus Nitrate (as N)	mg/L	10	--	--	--	--	MCL
Nitrite Nitrogen, Total (as N)	mg/L	1.0	--	--	--	--	MCL
Total Coliform Organisms	MPN/100 mL	--	2.2[10]	23[11]	--	240	Title 22

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	

[1] DC – Based on the design capacity of the Facility.
TTC – Based on tertiary treatment capability. These effluent limitations reflect the capability of a properly operated tertiary treatment plant.
CFR – Based on secondary treatment standards contained in 40 CFR Part 133.
BP – Based on water quality objectives contained in the Basin Plan.
MCL – Based on the Primary Maximum Contaminant Level.
CTR – Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.
PB – Based on the performance of the treatment system.
NAWQC – Based on USEPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
PO – Based on effluent limitations established in Order No. R5-2005-0074.
Title 22 – Based on CA Department of Public Health Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22).

[2] The average dry weather discharge flow shall not exceed 2.18 MGD. The average dry weather discharge 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 three consecutive dry weather months (i.e., July, August, and September).

[3] Based on a design flow of 2.18 MGD.

[4] The total monthly mass discharge of mercury from the Facility shall not exceed 0.0018 lbs.

[5] 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%

[6] Applied as a 4-day average effluent limitation.

[7] Applied as a 1-hour average effluent limitation.

[8] There shall be no chronic toxicity in the effluent discharge.

[9] For a calendar year, the annual average effluent electrical conductivity shall not exceed 700 µmhos/cm.

[10] Applied as a 7-day median effluent limitation.

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

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 have been established in this Order for BOD_5, TSS, and ammonia, because they are oxygen-demanding substances. Mass-based effluent limitations have been established for mercury because it is a bioaccumulative pollutant and because the Sacramento – San Joaquin Delta is listed as impaired due to mercury. Mass-based effluent limitations were calculated based upon the permitted average dry weather effluent flow allowed in Section IV.A.1.f of the Limitations and Discharge Requirements.

Except for the pollutants listed above, mass-based effluent limitations are not included in this Order for pollutant parameters for which effluent limitations are based on water quality objectives and criteria that are concentration-based.

2. Averaging Periods for Effluent Limitations

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, 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 MDELs in lieu of average weekly effluent limitations for aluminum, ammonia, chlorodibromomethane, copper, dichlorobromomethane, and lead 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 BOD_5, TSS, pH, chlorine residual, and total coliform organisms, 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 section IV.C.3 of this Fact Sheet.

For effluent limitations based on Primary and Secondary MCLs, except nitrate plus nitrite and nitrite, this Order includes annual average effluent limitations. The Primary and Secondary MCLs are drinking water standards contained in Title 22 of the California Code of Regulations. Title 22 requires compliance with these standards on an annual average basis (except for nitrate and nitrite), when sampling at least quarterly. Since it is necessary to determine compliance on an annual average basis, it is impracticable to calculate average weekly and average monthly effluent limitations.

3. Satisfaction of Anti-Backsliding Requirements

The CWA specifies that a revised permit may not include effluent limitations that are less stringent than the previous permit unless a less stringent limitation is justified based on exceptions to the anti-backsliding provisions contained in CWA sections 402(o) or 303(d)(4), or, where applicable, 40 CFR 122.44(l).

The effluent limitations in this Order are at least as stringent as the effluent limitations in Order No. R5-2005-0074, with the exception of effluent limitations for alachlor, atrazine, bis (2-ethylhexyl) phthalate, chloroform, manganese, methyl tertiary butyl ether, oil and grease, persistent chlorinated hydrocarbon pesticides, phthalate acid esters, polychlorinated biphenyls, settleable solids, silver, TCDD-equivalents, tributyltin, and zinc. Effluent limitations for these parameters

have not been retained from Order No. R5-2005-0074. Based on updated monitoring data that was not available at the time Order No. R5-2005-0074 was issued, these parameters do not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. Removal of the WQBELs in the previous permit is in accordance with CWA sections 303(d)(4) and 402(o), which allow for the removal of WQBELs for attainment waters where antidegradation requirements are satisfied. Removal of the WQBELs is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. Therefore, the modifications to these effluent limitations do not violate anti-backsliding requirements.

Order No. R5-2005-0074 contained effluent limitations for turbidity. The prior limitations were solely an operational check to ensure the treatment system was functioning properly and could meet the limits for solids and coliform. The prior effluent limitations were not intended to regulate turbidity in the receiving water. Rather, turbidity is an operational parameter to determine proper system functioning and not a WQBEL.

This Order contains performance-based operational turbidity specifications to be met in lieu of effluent limitations. The revised Order does not include effluent limitations for turbidity. However, the performance-based specification in this Order is an equivalent limit that is not less stringent, and therefore does not constitute backsliding.

The revised operational specifications for turbidity are the same as the effluent limitations in Order No. R5-2005-0074. These revisions are consistent with State regulations implementing recycled water requirements.

The revision in the turbidity limitation is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16 because this Order imposes equivalent or more stringent requirements than Order No. R5-2005-0074 and therefore does not allow degradation.

Order No. R5-2005-0074 established final mass-based effluent limitations for aluminum, bromodichloromethane, chlorine residual, copper, and lead. 40 CFR 122.45(f)(1)(ii) states that mass limitations are not required when applicable standards and limitations are expressed in terms of other units of measurement. The numerical effluent limitations for aluminum, bromodichloromethane, chlorine residual, copper, and lead established in this Order are based on water quality standards and objectives, which are expressed in terms of concentration. Pursuant to 40 CFR 122.25(f)(1)(ii), expressing the effluent limitations in terms of concentration is in accordance with Federal Regulations. Compliance with the concentration-based limits will ensure that significantly less mass of the pollutants is discharged to the receiving water. Discontinuing mass-based effluent limitations for these parameters is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16. Any impact on existing

water quality will be insignificant. Therefore, relaxation of effluent limitations is allowed under CWA section 303(d)(4).

4. Satisfaction of Antidegradation Policy

The Discharger developed a report titled, *Antidegradation Analysis for the Placer County SMD1 Wastewater Treatment Plant, October 2009* (Robertson-Bryan Inc.), that provides an antidegradation analysis following the guidance provided by State Water Board APU 90-004. Pursuant to the guidelines, the Antidegradation Analysis evaluated whether changes in water quality resulting from the proposed increase in discharge to Rock Creek (from 2.18 MGD to 2.7 MGD of tertiary treated wastewater) 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 provides protection for existing in-stream uses and water quality necessary to protect those uses. Findings from the Antidegradation Analysis are summarized below.

a. Water quality parameters and beneficial uses which will be affected by the proposed expansion and the extent of the impact. 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 does not provide 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 of the increase in discharge on water quality in Rock Creek, as assessed in the Antidegradation Analysis:

i. Rock Creek was designated as a Tier 1 receiving water for aluminum, bis (2-ethylhexyl) phthalate, and iron because these constituents were detected

in the receiving water above water quality criteria. The SIP requires effluent limitations for pollutants when background concentrations exceed the applicable water quality criteria and the pollutant is detected in the effluent. Effluent limitations are included in this Order for aluminum. As discussed in section IV.C.3.b.iii of this Fact Sheet, bis (2-ethylhexyl) phthalate has not been detected in the effluent since the Discharger implemented "clean" sampling techniques and effluent limitations are not included in this Order. Effluent monitoring data for iron is not available at this time, and effluent limitations are not included in this Order. The proposed increase in discharge will not significantly lower water quality for these pollutants in Rock Creek or Dry Creek relative to the current conditions and will not impact Tier 1 designations.

ii. The proposed increase in discharge would use less than 10 percent of available assimilative capacity for all constituents assessed. Thus, the proposed increased discharge will be protective of beneficial uses, will maintain greater than 90 percent of assimilative capacity in Rock Creek, and will not change the Tier 2 designations.

iii. The proposed increase in discharge would use less than 10 percent of available assimilative capacity on a mass loading basis for total dissolved solids and the bioaccumulative constituents mercury and selenium, and will not change the Tier 2 designations.

b. Scientific Rationale for Determining Potential Lowering of Water Quality. The rationale used in the Antidegradation Analysis is based on 40 CFR 131.12, USEPA memorandum Regarding Tier 2 Antidegradation Reviews and Significance Thresholds (USEPA 2005), USEPA Region 9 Guidance on Implementing the Antidegradation Provisions of 40 CFR 131.12 (USEPA 1987), State Water Board Resolution No. 68-16, a State Water Board 1987 policy memorandum to the Regional Water Boards, 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 determine the reduction of assimilative capacity. Assimilative capacity was calculated on a mass-balanced, concentration basis and, for bioaccumulative constituents, calculated on a mass loading basis. This approach is consistent with recent USEPA guidance and 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). USEPA has recommended ten (10) percent as a measure of significance for identifying those substantial lowerings of water quality that should receive a full tier 2 antidegradation review. APU 90-004 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 increase in discharge from 2.18 MGD to 2.7 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 increase 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.

The Regional Water Board concurs with this scientific approach.

c. **Alternative Control Measures Considered.** Resolution 68-16 requires that degradation of water quality be consistent with maximum benefit to the people of the State. APU 90-004 identifies factors to be considered for regulatory actions "*that, in the Regional Board's judgement* [sic]*, will result in a significant increase in pollutant loadings"* (i.e., when a complete antidegradation analysis is required) when determining whether the discharge is necessary to accommodate social or economic development and is consistent with maximum public benefit. USEPA has recommended ten (10) percent as a measure of significance for identifying those substantial lowerings of water quality that should receive a full tier 2 antidegradation review. The Regional Water Board is exercising its judgment to require a complete antidegradation analysis and implementation of feasible alternative control measures which might reduce, eliminate, or compensate for negative impacts.

i. **Alternative Control Measures in Antidegradation Analysis.** The Discharger considered several alternatives that would reduce or eliminate the lowering of water quality resulting from the proposed increase in discharge from 2.18 MGD to 2.7 MGD. A number of 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 increase in discharge from 2.18 MGD to 2.7 MGD. These alternatives are summarized below.

(a) Higher level of treatment using microfiltration – The Discharger evaluated additional treatment through advanced treatment using microfiltration, in addition to the planned upgrades. The Discharger concluded that installation of advanced treatment facilities designed to eliminate all incremental changes in downstream water quality is not a feasible alternative as it would be very costly and would result in new environmental concerns associated with increased energy use.

(b) Zero discharge (i.e., 100% recycling of effluent) – The Discharger evaluated recycling the additional wastewater through landscape irrigation with storage during the non-irrigation season. In particular, the Discharger

evaluated recycling of wastewater for the irrigation of agricultural land in the southwest portion of Placer County; however, no viable water reuse customers have been identified by the Discharger. The reuse of wastewater for a hypothetical golf course irrigation project was also considered. However, the Discharger concluded that this alternative is not currently feasible due to the costs associated with construction and maintenance of the golf course, storage facilities, and delivery system and the lack of sufficient land to construct storage facilities.

(c) Flow restricted discharge – The Discharger considered a flow-restricted discharge. However, the Discharger concluded that this option is not viable due to the lack of available dilution for most of the year and the associated costs of finding additional land suitable for expanding storage capacity to accommodate periods of no discharge.

(d) Pollutant source minimization – The Discharger stated in the Antidegradation Analysis that pollutant source minimization is ongoing at the Facility. The Discharger submitted an Industrial Pretreatment Program to monitor and control sources of industrial pollutants entering the collection system in 2005. The Discharger proposed that these activities would be continued in addition to the planned upgrades to the Facility.

(e) Connection to other wastewater facilities in the region (i.e., regionalization) – The Discharger evaluated construction of a pumping station, wastewater storage facility, and regional pipeline to connect to the City of Lincoln Wastewater Treatment and Reclamation Facility in lieu of the proposed upgrades. Due to the high costs associated with regionalization, the Discharger determined that regionalization is not currently a feasible alternative.

(f) Change in drinking water source – The Discharger considered changing the source of drinking water. The current water source is surface water purchased through the Nevada Irrigation District and Placer County Water Agency that originates as Sierra snowpack and is taken from the Yuba River and Bear River watersheds or through Lake Spaulding. The source water quality is very high, with low turbidity and total dissolved solids. Therefore, the Discharger concluded that changing drinking water sources is not a feasible alternative to improve post-expansion receiving water quality.

The Discharger evaluated each of these alternatives in detail in the Antidegradation Analysis and submitted a summary of costs and rate increases associated with each alternative, as shown in Table F-10. As described above, the Discharger concluded that additional treatment or treatment at alternative facilities, recycling, a flow-restricted discharge, regionalization, and changing drinking water sources were infeasible.

Table F-10. Summary of Costs and Rate Increases for Alternatives Analysis

Alternative	Plan Elements	Construction Cost	Operations Cost	Annual Rate Increase	Annual Rate Increase Over Proposed Expansion
Proposed upgrade/expansion[1]	Flow equalization, biological nutrient removal, and UV disinfection system	$87,000,000	$10,321,000	$432	--
Higher level of treatment	Microfiltration added to proposed project	$5,600,000	$280,000	$468	$36
Zero discharge	181 million gallons of storage, 5 miles of pipeline, customers added to proposed project	$37,200,000	$960,000	$689	$257
Flow-restricted discharge[2]	--	--	--	--	--
Regionalization	Pipeline, reimbursements to the City of Lincoln for wastewater treatment plant expansion and collection system oversizing	$141,000,000	$11,199,095	$816	$384
Change in water supply[3]	--	--	--	--	--

[1] Past cost estimates are based on an expansion to 3.0 MGD, while the Discharger's proposed expansion would only be to 2.7 MGD. Given the current costs for construction and financing, the Discharger concludes that the past cost estimates for an expansion to 3.0 MGD are representative of the current anticipated costs for an expansion to 2.7 MGD.

[2] The Discharger did not provide cost information for this alternative because flow conditions are too infrequent or unreliable to provide any significant benefit.

[3] The Discharger did not provide cost information for this alternative because the Discharger already uses a high quality water source.

ii. Additional Information Considered by the Regional Water Board. Table 3-1 of the Report of Waste Discharge summarized the existing and projected demands within the service area. As shown in Table 3-1, the projected demand will not surpass the current treatment capacity of 2.18 MGD until after 2020. Furthermore, the projected demand of 2.7 MGD on which the Discharger's request is based is not expected until 2034. Based on the information provided in the Report of Waste Discharge, demand is not expected to exceed the current treatment capacity of the Facility within the term of this permit. However, in a letter dated 22 February 2010, the Discharger expressed the need to expand the Facility capacity concurrent with implementing the upgrades necessary to achieve compliance with this Order for economical and logistical reasons.

The Discharger reported at the April 2009 Board Meeting, and in a subsequent semi-annual progress report submitted 1 June 2009, that the Discharger is continuing to actively pursue regionalization. In a letter dated 22 February 2010, the Discharger indicated that the regionalization project

would take at least 2 years to complete beyond the 5 years requested for the proposed expansion project (i.e., in 7 years) due to delays associated with the slow pace of acquiring federal funding and the need to resolve complex issues between the Discharger and other local entities.

The Regional Water Board adopted Resolution No. R5-2009-0028 in Support of Regionalization, Reclamation, Recycling, and Conservation for Wastewater Treatment Plants on 23 April 2009, which requires the Regional Water Board to facilitate opportunities for regionalization and consider innovative permitting options when existing NPDES permit requirements, waste discharge requirements, and/or enforcement Orders inhibit the ability to implement regionalization. Resolution No. R5-2009-0028 identifies a number of potential benefits to regionalization including the following:

- "*Reducing discharges of wastewater into seasonal or ephemeral streams reduces habitat changes to the waterbodies that occur when wastewater is discharged into stream channels at locations, volumes or times when flow is not naturally present in the streams*."

- "*The costs of constructing, expanding, upgrading and maintaining wastewater collection and treatment systems are large, and can be a severe impact on small communities and small economically disadvantaged communities. Increased rates on most communities, but especially for the small communities in particular, result in the likelihood of a successful Proposition 218 challenge to rate increases, which may make compliance with regulations and improvements in water quality difficult or impossible for some communities. While the capital investment for regionalization of wastewater collection and treatment systems may result in a higher initial cost of upgrading an existing facility to meet current regulatory requirements, costs associated with meeting future regulatory requirements and system upgrades can be spread over a larger population and will ultimately reduce the per capita costs of wastewater treatment and disposal. Regionalization will also increase the technical and economical feasibility of a higher level of wastewater treatment, allowing the treated water to be a "resource" and not merely a "waste.*"

The Discharger has stated that current financial projections do not support a finding that there is a future economic benefit to ratepayers through regionalization. As shown in Table F-10 (taken from the Antidegradation Analysis), both the capital cost and the ongoing operational cost of regionalization are higher than the proposed upgrade and expansion cost.

Furthermore, Resolution No. R5-2009-0028 makes several findings including:

- "*Coordinated management of water supplies and wastewaters on a regional basis must be promoted to achieve efficient utilization of water."*

- "*Evaluating regionalization, reclamation, recycling and/or conservation opportunities requires a balancing of these and many other considerations, including impacts to water quality, costs, authority to implement and other factors necessary to determine if regionalization, reclamation, recycling and/or conservation are feasible and practicable for the specific facility(ies).*"

- "*Focused, long-range planning is necessary to identify and implement regionalization, reclamation, recycling and/or conservation opportunities. This is a continuing process in that certain projects may not be technically or fiscally feasible at this time, but may become feasible as the community grows, treatment systems are upgraded, or other factors change with time.*"

As an example of the potential to treat the discharge as resource rather than a waste, through regionalization, the City of Lincoln Wastewater Treatment and Reclamation Facility has a Master Reclamation Permit (Order No. R5-2005-0040) to use recycled water for the irrigation of fodder crops, rice, impoundments, industrial process cooling, and other purposes in the local community, whereas the Discharger determined that reclamation of its wastewater is not feasible at this time, as described in section IV.D.4.c, above.

In order to continue evaluating the feasibility of regionalization, this Order requires annual reporting on the Discharger's efforts towards regionalization concurrent with the upgrade and expansion project.

d. Socioeconomic Evaluation. The objective of the socioeconomic analysis was to determine if the lowering of water quality in Rock Creek and Dry Creek is in the maximum interest of the people of the State. The socioeconomic evaluation considered:

i. The social benefits and costs based on the ability to accommodate socioeconomic development in the Placer County General Plan.

ii. The magnitude of the change in water quality from existing conditions, the water quality impacts, and expected effects on beneficial uses of Rock Creek, Dry Creek, and downstream waters.

iii. The feasibility and effectiveness of reducing the lowering of water quality by implementing alternatives to lowering of Rock Creek and Dry Creek water quality.

iv. The economic costs for alternatives and assessed alternative costs against the current project expansion cost estimate of $87 million, the increased cost for ratepayers, and the magnitude of the change in ratepayer costs.

e. Justification for Allowing Degradation

i. **Antidegradation Analysis Rationale.** The Antidegradation Analysis provided the following rationale to justify the proposed increase in discharge to the receiving water:

(a) Having new development in the region independently treat its wastewater in an effort to eliminate any incremental degradation of water quality in Rock Creek and Dry Creek would not be cost-effective, may not reduce loadings to downstream portions of the watershed (e.g., the Sacramento River), and may not improve water quality on a constituent concentration basis throughout Rock Creek and Dry Creek. Moreover, disposal of the new development's wastewater elsewhere may simply cause similar and possibly new forms of degradation elsewhere in Rock Creek and Dry Creek, in other surface waters,

(b) An evaluation of several alternatives, and their effects on water quality impacts and beneficial use protection, did not identify any feasible alternative control measures that would more effectively accommodate the planned and approved growth that would result from implementing the alternative, relative to implementing the proposed upgrade and expansion project. The alternatives were found to be infeasible for cost or logistic concerns, or both, when compared to the proposed upgrade project.

(c) The Discharger has sought to identify customers for use of recycled water. Currently, prospective customers can obtain water from the Nevada Irrigation District at a cheaper cost; however, the Discharger continues to pursue potential recycled water use opportunities to minimize discharges to surface waters.

(d) The Discharger will continue to operate a treatment system that meets and exceeds BPTC and will facilitate greater use of recycled water, upon demand for such water developing in the area.

(e) The limited degradation in receiving water quality that may occur as a result of planned increase in discharge is not significant and would accommodate important socioeconomic development in the service area while maintaining full protection of the beneficial uses of Rock Creek and Dry Creek.

(f) Downstream water quality, within Rock Creek and Dry Creek, resulting from the proposed increase in discharge would not cause a nuisance and would continue to be protective of all beneficial uses within Rock Creek, as well as uses of downstream waters.

ii. **Regional Water Board Rationale.** Potential degradation identified in the Antidegradation Analysis due to the increase in discharge from the currently regulated effluent flow is not justified by the following considerations:

(a) Projected demand for treatment will not exceed the current treatment capacity of 2.18 MGD until 2020, which is 5 years after the term of this permit; and

(b) The Discharger continues to pursue the regionalization alternative concurrent with the proposed expansion, and estimates that regionalization could be complete in 7 years, should funding become available and make this project feasible, which is before the demand in the service area is projected to approach the current permitted capacity, but after final effluent limitations in this Order become effective.

Given that projected demand for treatment will not exceed the treatment capacity of 2.18 MGD until 2020 and that regionalization continues to be a feasible option, provided that adequate funding options are available, the Regional Water Board finds that the increased flows associated with the expansion cannot be permitted. This Order includes a reopener that will allow the Regional Water Board to reopen the Order to allow an increased discharge to Rock Creek upon availability of additional information indicating that an increase in flow to Rock Creek is in the best interest of the people of the State.

This Order removes existing effluent limitations for constituent in which new monitoring data demonstrates that the effluent does not cause or contribute to an exceedance to a water quality criteria or objective. The Regional Water Board finds that the additional degradation associated with the removal of the corresponding effluent limitations does not reasonably affect the present and anticipated beneficial uses of the receiving waters, and allowing such degradation is to the maximum social and economical benefit of the people of the State.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on flow and percent removal requirements for BOD_5 and TSS. The WQBELs consist of restrictions on aluminum, ammonia, arsenic, chlorine residual, chlorodibromomethane, copper, dichlorobromomethane, electrical conductivity, lead, mercury, nitrate plus nitrite, nitrite, and pH. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order includes effluent limitations for BOD_5, total coliform organisms, and TSS 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 WQBELs 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 for priority pollutants are based on the CTR-SIP, which was approved by USEPA on 18 May 2000. 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 CWA" pursuant to 40 CFR 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

E. Interim Effluent Limitations

1. **Compliance Schedules for Ammonia and Title 22 (or Equivalent) Requirements.** The permit limitations for ammonia are more stringent than the limitations previously imposed. These new limitations are based on a new interpretation of the narrative objective for toxicity. The floating ammonia effluent limitations included in the existing Order No. R5-2005-0074 were applied directly as 1-hour average, 4-day average, and 30-day average effluent limitations which vary based on pH and temperature at the time of sampling. The fixed effluent limitations in the proposed NPDES Permit are applied as an MDEL and AMEL and are based on water quality criteria conservatively determined using worst-case pH and temperature conditions observed over the term of Order No. R5-2005-0074, as discussed in section IV.C.3.c.ii.

   In order to further determine whether the "newly interpreted water quality objective or criterion in a water quality standard" (i.e., the new, fixed effluent limitations for ammonia) results in a numeric permit limitation more stringent than the limit in the prior NPDES Permit issued to the Discharger, Central Valley Water Board staff evaluated the Discharger's ability to comply with the effluent limitations in Order No. R5-2005-0074 and the proposed NPDES Permit.

   Finding No. 36 of Order No. R5-2005-0074 stated that the Discharger claimed that the Facility was capable of adequately nitrifying the waste stream. A compliance schedule for the effluent limitations for ammonia was not necessary and was not included in Order No. R5-2005-0074 or CDO No. R5-2005-0075. Table 3.2 of the Discharger's Report of Waste Discharge indicates that the discharge exceeded the effluent limitations in Order No. R5-2005-0074 only twice out of 1,094 sampling events, based on monitoring data collected between 1 July 2006 and 30 June 2009. Therefore, the Discharger was consistently capable of achieving compliance with the floating effluent limitations in Order No. R5-2005-0074 for ammonia.

   Monitoring data collected between 1 July 2006 and 30 June 2009 indicates that the Discharger would be out of compliance with the fixed MDEL in this Order 258 times out of 1,095 samples, or 24 percent of the time. Based on the same data set, the Discharger would be out of compliance with the fixed AMEL in this Order 20 times out of 36 months, or 56 percent of the time. Based on monitoring data collected between 1 July 2006 and 30 June 2009, the new, fixed effluent limitations for

ammonia result in numeric permit limitations more stringent than the limit in the prior NPDES Permit issued to the Discharger.

The establishment of Title 22 (or equivalent) requirements has not been previously required for this discharge when the influent flow exceeds 3.5 MGD and the 7-day median receiving water temperature at RSW-001 is less than 60°F. This Order requires the Discharger to meet Title 22 (or equivalent) requirements for all flows, which represents a newly interpreted water quality objective that results in a permit limitation more stringent than the limitation previously imposed.

The Discharger has complied with the application requirements in paragraph 4 of the State Water Board's Compliance Schedule Policy, and the Discharger's application demonstrates the need for additional time to implement actions to comply with the new limitations, as described below. Therefore, a compliance schedule for compliance with the effluent limitations for ammonia and Title 22 (or equivalent) requirements is established in the Order.

a. **Demonstration that the Discharger needs time to implement actions to comply with a more stringent permit limitation specified to implement a new, revised, or newly interpreted water quality objective or criterion in a water quality standard.** Table 1 of the Infeasibility Report identifies constituents with the potential to exceed effluent limitations in the proposed NPDES Permit based on monitoring data collected between July 2005 and June 2009, including ammonia, BOD_5, total coliform organisms, and TSS. The Discharger states that the requested compliance schedules are driven primarily by the need to construct treatment plant upgrades.

b. **Diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream, and the results of those efforts.** The Infeasibility Report states that the Discharger has conducted a number of studies and prepared a number of reports that address potential sources of pollutants. Table 2 and sections 3.2, 3.3, 3.7, and 3.9 of the Infeasibility Report indicate that potential sources of these parameters include domestic and non-domestic sources. Table 2 also identifies sediments containing suspended solids entering the collection system with I/I as a potential source of TSS.

c. **Source control efforts are currently underway or completed, including compliance with any pollution prevention programs that have been established.** Section 4 of the Infeasibility Report states that the Discharger has not conducted pollution prevention activities because the Facility service area contains primarily residential and commercial users. However, the Discharger states that the County Code includes prohibitions against discharges to the sewer system that contain substances or have characteristics that would impact the Facility. The Infeasibility Report also states that the County Code sets uniform requirements for discharges into the collection system, including the disposal of industrial wastes.

d. **A proposed schedule for additional source control measures or waste treatment.** Table 4 of the Infeasibility Report provided a proposed compliance schedule, which includes design of improvements and preparation of a California Environmental Quality Act (CEQA) document, completion of final design, and completion of CEQA documentation by 31 July 2011; obtaining bids and project funding and awarding of construction contract by 31 December 2011; construction of improvements by 31 December 2014; completion of start-up and performance testing by 30 April 2015; and full compliance with effluent limitations by 1 May 2015.

e. **Data demonstrating current treatment facility performance to compare against existing permit effluent limits, as necessary to determine which is the more stringent interim permit effluent limit to apply if a schedule of compliance is granted.** This item was not addressed in the Infeasibility Report. However, interim effluent limitations must be based on current treatment plant performance or existing permit limitations, whichever is more stringent. The Discharger can consistently comply with the effluent limitations for ammonia, BOD_5, total coliform organisms, and TSS required by Order No. R5-2005-0074. Therefore, the proposed NPDES Permit requires compliance with interim effluent limitations based on the effluent limitations required by Order No. R5-2005-0074.

f. **The highest discharge quality that can reasonably be achieved until final compliance is attained.** This item was not addressed in the Infeasibility Report. However, compliance with the interim effluent limitations will ensure that the Discharger maintains the discharge at levels permitted by Order No. R5-2005-0074.

g. **The proposed compliance schedule is as short as possible, given the type of facilities being constructed or programs being implemented, and industry experience with the time typically required to construct similar facilities or implement similar programs.** The Discharger determined in the Infeasibility Report that the compliance schedule is as short as possible. The estimated durations for each task and estimated completion dates were included in Table 4 of the Infeasibilty Report. The Discharger stated that, since the project may be at least partially funded using a State Revolving Fund (SRF) loan, a duration of 5 months is proposed for obtaining bids and receiving approval-to-award and an SRF loan agreement from the State Water Board. The Infeasibility Report proposed a 36-month construction period because the upgrades must be constructed sequentially while the existing facilities remain in service. The proposed schedule also allowed 4 months after completion of construction for start-up, testing, and optimization of the treatment process.

Interim performance-based limitations have been established in this Order. The interim limitations were determined as described in section IV.E.2, below, and are in effect until the final limitations take effect. In addition, the Discharger shall prepare and implement a pollution prevention plan that is in compliance with CWC section 13263.3(d)(3). The interim numeric effluent limitations and source control measures

will result in the highest discharge quality that can reasonably be achieved until final compliance is attained.

2. **Interim Limitations for Ammonia and Title 22 (or Equivalent) Requirements.** The Compliance Schedule Policy requires the Regional Water Board to establish interim requirements and dates for their achievement in the NPDES permit. Interim numeric effluent limitations are required for compliance schedules longer than 1 year. Interim effluent limitations must be based on current treatment plant performance or existing permit limitations, whichever is more stringent.

   The interim limitations for ammonia in this Order are based on the current treatment plant performance and the final effluent limitations included in Order No. R5-2005-0074. Therefore, this Order includes interim floating 1-hour average limitations with a performance-based cap of 15.1 mg/L, reflecting the maximum observed effluent concentration from the Facility. In developing the interim limitation, where there are 10 sampling data points or more, sampling and laboratory variability is accounted for by establishing interim limits that are based on normally distributed data where 99.9% of the data points will lie within 3.3 standard deviations of the mean (Basic Statistical Methods for Engineers and Scientists, Kennedy and Neville, Harper and Row). Therefore, the interim limitations in this Order are established as the mean plus 3.3 standard deviations of the available data.

   When there are less than 10 sampling data points available, the EPA *Technical Support Document for Water Quality-based Toxics Control* (EPA/505/2-90-001), or TSD, recommends a coefficient of variation of 0.6 be utilized as representative of wastewater effluent sampling. The TSD recognizes that a minimum of 10 data points is necessary to conduct a valid statistical analysis. The multipliers contained in Table 5-2 of the TSD are used to determine a maximum daily limitation based on a long-term average objective. In this case, the long-term average objective is to maintain, at a minimum, the current plant performance level. Therefore, when there are less than 10 sampling points for a constituent, interim limitations are based on 3.11 times the maximum observed effluent concentration to obtain the daily maximum interim limitation (TSD, Table 5 2).

   Interim limitations for Title 22 (or equivalent) requirements (i.e., for BOD_5, total coliform organisms, and TSS) are established at the levels allowed by Order No. R5-2005-0074 when influent flows exceed 3.5 MGD and the 7-day median receiving water temperature at RSW-001 is less than 60°F.

   The Regional Water Board finds that the Discharger can undertake source control and treatment plant measures to maintain compliance with the interim limitations included in this Order. Interim limitations are established when compliance with final effluent limitations cannot be achieved by the existing discharge. Discharge of constituents in concentrations in excess of the final effluent limitations, but in compliance with the interim effluent limitations, can significantly degrade water quality and adversely affect the beneficial uses of the receiving stream on a long-term basis. The interim limitations, however, establish an enforceable ceiling

concentration until compliance with the effluent limitation can be achieved. The limited, short-term degradation associated with the compliance schedule is consistent with State and federal policies and is authorized by 40 CFR 122.47 and the Compliance Schedule Policy.

The following table summarizes the calculations of the interim effluent limitations for ammonia and Title 22 (or equivalent) requirements:

Table F-11. Interim Effluent Limitation Calculation Summary

Parameter	Units	MEC	Mean	Std. Dev.	# of Samples	Interim Maximum Daily Effluent Limitation
Ammonia Nitrogen, Total (as N)	mg/L	15.1	2.4	3.0	1,095	[1]
Biochemical Oxygen Demand	mg/L	--	--	--	--	[2]
Total Coliform Organisms	MPN/100 mL	--	--	--	--	[2]
Total Suspended Solids	mg/L	--	--	--	--	[2]

[1] Because the MEC for ammonia was greater than the statistically calculated effluent limitation, the interim performance-based cap was established at the MEC. The interim limitations in this Order include a 1-hour average effluent limitation with a performance-based cap of 15.1 mg/L as determined in Attachment J; a 4-day average effluent limitation as determined in Attachment K, and a 30-day average effluent limitation as determined in Attachment L.

[2] Interim limitations established at the levels allowed by Order No. R5-2005-0074 when influent flows exceed 3.5 MGD and the 7-day median receiving water temperature at RSW-001 is less than 60°F.

F. Land Discharge Specifications – Not Applicable

G. Reclamation Specifications – Not Applicable

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, suspended sediment, settleable substances, suspended material, tastes and odors, temperature, toxicity, and turbidity.

   a. **pH.** Order No. R5-2005-0030 established a receiving water limitation for pH specifying that discharges from the Facility shall not cause the ambient pH to change by more than 0.5 units based on the water quality objective for pH in the Basin Plan, and allowed a 1-month averaging period for calculating pH change. The Regional Water Board adopted Resolution No. R5-2007-0136 on 25 October 2007, amending the Basin Plan to delete the portion of the pH water quality objective that limits the change in pH to 0.5 units and the allowance of averaging periods for pH. The Basin Plan amendment has been approved by the State Water Board, the Office of Administrative Law, and USEPA. Consistent with the revised water quality objective in the Basin Plan, this Order does not require a receiving water limitation for pH change.

      In Finding No. 14 of Resolution No. R-52007-0136 the Regional Water Board found that the change in the pH receiving water objective is consistent with the State Water Board Resolution No. 68-16, in that the changes to water quality objectives (i) consider maximum benefit to the people of the state, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (Code of Federal Regulations, title 40, section 131.12).

      Ammonia is the only constituent in the discharge regulated by this Order directly related to pH. The fixed ammonia effluent limitations in this Order are based on reasonable worse-case conditions. Although ammonia criteria is based on pH, and the pH receiving water limitations are more lenient in this Order than in the previous permit, the fixed ammonia limits are more stringent than the previous floating ammonia limits, and are developed to protect under worse case pH conditions. Therefore the relaxation of the pH receiving water limitation will protect aquatic life and other beneficial uses and will not unreasonably affect present and anticipated beneficial uses nor result in water quality less than described in applicable policies. The relaxation of the receiving water limitation is not expected to cause other impacts on water quality. The Regional Water

Board finds that the relaxation of the pH receiving water limitation is to the maximum benefit to the people of the state, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (40 CFR 131.12).

The revised receiving water limitation for pH, which is based on the amendment to the Basin Plan's pH water quality objective, reflects current scientifically supported pH requirements for the protection of aquatic life and other beneficial uses. The revised receiving water limitation for pH is more consistent with the current USEPA recommended criteria and is fully protective of aquatic life and the other beneficial uses listed in the Basin Plan. Changes in pH when pH is maintained within the range of 6.5 to 8.5 are neither beneficial nor adverse and, therefore, are not considered to be degradation in water quality. Attempting to restrict pH changes to 0.5 pH units would incur substantial costs without demonstrable benefits to beneficial uses. Thus, any changes in pH that would occur under the revised pH limitation would not only be protective of beneficial uses, but also would be consistent with maximum benefit to people of the State. Therefore the proposed amendment will not violate antidegradation policies.

b. **Turbidity.** Order No. R5-2005-0030 established a receiving water limitation for turbidity specifying that discharges from the Facility shall not cause the turbidity to increase more than 1 NTU where natural turbidity is between 0 and 5 NTU based on the water quality objective for turbidity in the Basin Plan. The Regional Water Board adopted Resolution No. R5-2007-0136 on 25 October 2007, amending the Basin Plan to limit turbidity to 2 NTU when the natural turbidity is less than 1 NTU. The Basin Plan amendment has been approved by the State Water Board, the Office of Administrative Law, and USEPA. Consistent with the revised water quality objective in the Basin Plan, this Order limits turbidity to 2 NTU when the natural turbidity is less than 1 NTU.

In Finding No. 14 of Resolution No. R5-2007-0136 the Regional Water Board found that the change in the turbidity receiving water objective is consistent with the State Water Board Resolution No. 68-16, in that the changes to water quality objectives (i) consider maximum benefit to the people of the state, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (40 CFR 131.12).

This Order includes operational specifications that require the Discharger to operate the treatment system to insure that turbidity shall not exceed 2 NTU as a daily average, and 5 NTU more than 5 percent of the time within a 24 hour period, and 10 NTU, at any time. Because this Order limits the average daily discharge of turbidity to 2 NTU, the Order will be protective of the receiving water under all natural background conditions as defined in the Basin Plan's revised water quality objective for turbidity. The relaxation of the turbidity receiving water limitation will protect aquatic life and other beneficial uses and will not

unreasonably affect present and anticipated beneficial uses nor result in water quality less than described in applicable policies. The relaxation of the receiving water limitation is not expected to cause other impacts on water quality. The Regional Water Board finds that the relaxation of the turbidity receiving water limitation is to the maximum benefit to the people of the State, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (40 CFR 131.12).

The revised receiving water limitation for turbidity, which is based on the amendment to the Basin Plan's turbidity water quality objective, reflects current scientifically supported turbidity requirements for the protection of aquatic life and other beneficial uses and, therefore, will be fully protective of aquatic life and the other beneficial uses listed in the Basin Plan. Changes in turbidity allowed by the revised receiving water limitation, when ambient turbidity is below 1 NTU, would not adversely affect beneficial uses and would maintain water quality at a level higher than necessary to protect beneficial uses. Restricting low-level turbidity changes further may require costly upgrades, which would not provide any additional protection of beneficial uses. Thus, any changes in turbidity that would occur under the amended turbidity receiving water limitation would not only be protective of beneficial uses, but also would be consistent with maximum benefit to people of the State. Therefore, the relaxed receiving water limitations for turbidity will not violate antidegradation policies.

B. Groundwater

1. The beneficial uses of the underlying ground water 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 of 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 ground waters designated as municipal supply. These include, at a minimum, compliance with MCLs in Title 22 of the CCR. The bacteria objective prohibits fecal 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. The Discharger contains all wastewater flows in systems that do not utilize land disposal. All wastewater is contained in treatment units. The wastewater collection and treatment systems do not threaten groundwater quality. Consistent with Order No. R5-2005-0074, this Order includes a groundwater limitation requiring that the discharge from the Facility shall not cause the underlying groundwater to be degraded.

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 (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 Monitoring and Reporting Program for the 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 monitoring frequencies for flow (continuous), BOD_5 (five times per week), and TSS (five times per week) have been retained from Order No. R5-2005-0074.

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 and groundwater.

2. **Monitoring Location EFF-001**

   a. Effluent monitoring frequencies and sample types for flow (continuous), turbidity (continuous), chlorine residual (continuous), temperature (daily), electrical conductivity (daily), pH (daily), total coliform organisms (daily), ammonia (daily), nitrate plus nitrite (daily), nitrite (daily), BOD_5 (five times per week), TSS (five times per week), and total dissolved solids (monthly) have been retained from Order No. R5-2005-0074 to characterize the effluent and determine compliance with applicable effluent limitations. In a letter dated 22 February 2010, the Discharger requested reduced monitoring frequencies for total coliform organisms (five times per week), temperature (five times per week), pH (five times per week), ammonia (weekly), and electrical conductivity (twice per week). However, based on the Discharger's compliance history during the term of Order No. R5-2005-0074 and because the Facility is not designed to provide full tertiary treatment or nitrification/denitrification, the monitoring frequencies established in

this Order, which are consistent with Order No. R5-2005-0074, are considered appropriate and necessary for characterization of the effluent and determining compliance with applicable effluent limitations.

b. The Discharger requested in a letter dated 15 April 2010 that the monitoring frequency for nitrate plus nitrite and nitrite be reduced from daily to twice per week to reduce operating costs. Because the final effluent limitations for nitrate plus nitrite and nitrite in this Order that are necessary to protect beneficial uses are regulated on an average monthly basis, monitoring twice per week will provide sufficient monitoring data to determine compliance with the final effluent limitations. A compliance schedule with interim MDELs is included in CDO No. R5-2010-XXXX because the Facility is not designed to provide full denitrification and the Discharger cannot comply with the final effluent limitations in this Order. Due to the costs of monitoring and the purpose of the interim MDELs, which are designed to limit the discharge at existing levels, daily monitoring for nitrate plus nitrite and nitrite is unnecessary. Therefore, this Order reduces the monitoring frequency for nitrate plus nitrite and nitrite from daily to twice per week.

c. Monitoring data collected over the term of Order No. R5-2005-0074 for oil and grease, iron, manganese, silver, tributyltin, zinc, bis (2-ethylhexyl) phthalate, chloroform, persistent chlorinated hydrocarbon pesticides, methyl tertiary butyl ether, alachlor, atrazine, TCDD-equivalents, phthalate acid esters, polychlorinated biphenyls, and settleable solids did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific monitoring requirements for these parameters have not been retained from Order No. R5-2005-0074.

d. In order to determine compliance with effluent limitations for aluminum, copper, lead, mercury, and dichlorobromomethane, Order No. R5-2005-0074 established quarterly effluent monitoring requirements. Consistent with the monitoring requirements for other toxic pollutants in this Order and in recently adopted permits in the Central Valley Region, this Order revises the monitoring frequency from quarterly to monthly for these parameters. In a letter dated 22 February 2010, the Discharger requested that the monitoring frequency for these parameters be reduced to quarterly. However, because these parameters continue to exhibit reasonable potential to cause or contribute to exceedances of water quality objectives, monthly monitoring is considered appropriate and necessary for characterization of the effluent and determining compliance with applicable effluent limitations.

e. Monitoring data collected over the term of Order No. R5-2005-0074 for arsenic and chlorodibromomethane indicates reasonable potential to exceed water quality criteria and effluent limitations have been established in this Order. Therefore, monthly effluent monitoring for arsenic and chlorodibromomethane has been established in this Order to determine compliance with effluent limitations. In a letter dated 22 February 2010, the Discharger requested that the monitoring frequency be reduced to quarterly. However, because these

constituents exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives, monthly monitoring is considered appropriate and necessary for characterization of the effluent and determining compliance with applicable effluent limitations.

f. This Order establishes monthly effluent monitoring for hardness in order to collect adequate information to determine protective aquatic life criteria for hardness-based metals.

g. Priority pollutant data for the effluent has been provided by the Discharger over the term of Order No. R5-2005-0074, and was used to conduct a meaningful RPA. In accordance with Section 1.3 of the SIP, periodic monitoring for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order retains annual priority pollutant monitoring from Order No. R5-2005-0074 in order to collect data to conduct an RPA for the next permit renewal and to be consistent with pretreatment program requirements that require annual effluent monitoring. See Attachment I for more detailed requirements related to performing priority pollutant monitoring.

h. The Facility is designed to provide tertiary treatment for average dry weather flows of 2.18 MGD. However, the Discharger has historically had high levels of I/I during wet weather events. When influent flows are greater than the capacity of the filters of 3.5 MGD, the gravity filters are bypassed and the discharge consists of some combination of secondary and tertiary treated wastewater. This Order requires additional effluent monitoring for filter effluent flow, chlorine contact basin influent flow, and turbidity from the effluent outfall when the filters are bypassed, the influent flow is greater than 3.5 MGD, and the receiving water temperature at RSW-001 is less than 60°F.

3. Monitoring Location EFF-002

a. Treated municipal wastewater is periodically discharged at Discharge Point No. 002 when Chlorine Contact Basin No. 3 is temporarily offline for routine maintenance. This maintenance is allowed only at times when daily average plant flows are at or below 2.18 MGD. This Order establishes monitoring requirements at Monitoring Location EFF-002 consistent with those required at Monitoring Location EFF-001 to determine compliance with applicable effluent limitations at Discharge Point No. 002.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Quarterly 96-hour bioassay testing, consistent with Order No. R5-2005-0074, is required to demonstrate compliance with the effluent limitation for acute toxicity.

2. **Chronic Toxicity.** Quarterly chronic WET testing, consistent with Order No. R5-2005-0074, is required 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.

b. Receiving water monitoring frequencies (daily) and sample types (grab) for pH, temperature, electrical conductivity, and fecal coliform organisms (monthly) have been retained from Order No. R5-2005-0074. In a letter dated 22 February 2010, the Discharger requested that the monitoring frequency for pH be reduced to twice per week and the monitoring frequency for temperature be reduced to five times per week. Monitoring for pH and temperature are necessary to determine appropriate water quality criteria for ammonia. Therefore, this Order retains daily monitoring for pH and temperature, consistent with the monitoring frequency for effluent ammonia. The Discharger also requested that the monitoring frequency for fecal coliform organisms be discontinued because compliance with the effluent limitations for total coliform organisms would ensure that the Facility would not cause or contribute to an exceedance of the receiving water limitations for fecal coliform organisms. However, due to exceedances of the effluent limitations for total coliform organisms during the term of Order No. R5-2005-0074 and because the Facility does not provide full tertiary treatment for all discharges, monthly receiving water monitoring for fecal coliform organisms is considered appropriate and necessary to determine compliance with applicable receiving water limitations.

c. In a letter dated 22 February 2010, the Discharger requested that the monitoring frequency for dissolved oxygen and turbidity be reduced to twice per week. As requested, the monitoring frequency for dissolved oxygen and turbidity have been reduced to twice per week.

d. This Order discontinues annual receiving water monitoring for radionuclides, as it is no longer necessary to characterize the receiving water or determine compliance with receiving water limitations.

e. The Facility is designed to provide tertiary treatment for average dry weather flows of 2.18 MGD. However, the Discharger has historically had high levels of I/I during wet weather events. When influent flows are greater than the capacity of the gravity filters of 3.5 MGD, the gravity filters are bypassed and the discharge is some combination of secondary and tertiary treated wastewater. Therefore, when discharging commingled wastewater, additional daily receiving water monitoring is required for total coliform organisms and *Escherichia coli* to ensure that downstream beneficial uses are protected.

f. This Order requires monthly receiving water monitoring for hardness in order to collect adequate information to determine protective aquatic life criteria for hardness-based metals.

g. Consistent with the effluent monitoring requirements, annual monitoring for priority pollutants upstream of Discharge Point No. 001 at RSW-001 is required to collect the necessary data to determine reasonable potential as required in section 1.2 of the SIP. The hardness (as $CaCO_3$) of the upstream receiving water shall also be monitored concurrently with the priority pollutants as well as pH to ensure the water quality criteria/objectives are correctly adjusted for the receiving water when determining reasonable potential as specified in section 1.3 of the SIP. See Attachment I for more detailed requirements related to performing priority pollutant monitoring.

2. Groundwater – Not Applicable

E. Other Monitoring Requirements

1. Biosolids Monitoring

Biosolids monitoring is required to ensure compliance with the biosolids disposal requirements contained in the Special Provision contained in section VI.C.5.b of this Order. Biosolids disposal requirements are imposed pursuant to 40 CFR Part 503 to protect public health and prevent groundwater degradation.

2. Water Supply Monitoring

Water supply monitoring is required to evaluate the source of constituents in the wastewater. This Order increases the monitoring frequency from annually to quarterly for electrical conductivity and total dissolved solids to characterize contributions of salinity to the Facility.

3. Ultraviolet Light Disinfection System Monitoring

UV disinfection system specifications and monitoring and reporting is required to ensure that adequate UV dosage is applied to the wastewater to inactivate pathogens (e.g., viruses) in the wastewater. UV disinfection system monitoring requirements are imposed pursuant to requirements established by DPH and the National Water Research Institute (NWRI) and American Water Works Association Research Foundation NWRI/AWWARF's "*Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse*".

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

B. Special Provisions

1. Reopener Provisions

a. **Mercury.** This provision allows the Regional Water Board to reopen this Order in the event mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted. In addition, this Order may be reopened if the Regional Water Board determines that a mercury offset program is feasible for dischargers subject to NPDES permits.

b. **Pollution Prevention.** This Order requires the Discharger prepare a pollution prevention plan following CWC section 13263.3(d)(3) for ammonia. This reopener provision allows the Regional Water Board to reopen this Order for addition and/or modification of effluent limitations and requirements for ammonia based on a review of the pollution prevention plan.

c. **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.

d. **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 copper and lead. 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.

e. **Increased Flow.** The Discharger indicated in the report of waste discharge plans to upgrade the treatment process to comply with permit requirements. In addition to upgrading the Facility, the Discharger submitted a report titled *Antidegradation Analysis for the Placer County SMD1 Wastewater Treatment*

Plant, October 2009 (Robertson-Bryan, Inc.) on 10 November 2009 for an increased discharge to the receiving water from 2.18 MGD to 2.7 MGD (average dry weather flow). As described in section IV.D.4 of this Fact Sheet, allowing an increase in flow to Rock Creek at this time is not consistent with State and federal antidegradation requirements. This reopener allows the Regional Water Board to reopen the Order to authorize an increase in flow upon submission of additional information indicating that a reduction in water quality is consistent with State and federal antidegradation requirements.

f. **Dilution/Mixing Zone Study.** As described in section IV.C.2.f of this Fact Sheet, the Discharger submitted an inadequate dilution/mixing zone study for nitrate plus nitrite and effluent limitations have been established without consideration of dilution credits. Should the Discharger submit an approved Dilution/Mixing Zone Study that meets the requirements of Section 1.4.2.2 of the SIP, including sufficient data demonstrating that assimilative capacity is available and that granting a mixing zone would not adversely impact biologically sensitive aquatic resources or critical habitats, or produce undesirable or nuisance conditions, the Regional Water Board may reopen this Order to include effluent limitations based on an appropriate dilution factor for the protection of aquatic life.

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 page III-8.00.) Based on whole effluent chronic toxicity testing performed by the Discharger from July 2006 through June 2009, the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

This provision requires the Discharger to develop a TRE Workplan in accordance with USEPA guidance. In addition, the provision provides a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as, requirements for TRE initiation if a pattern of toxicity has been 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 toxicity is repeatedly or periodically present before requiring the implementation of a TRE.

The provision requires accelerated monitoring consisting of four chronic toxicity tests in a six-week period (i.e., one test every two weeks) using the species that exhibited toxicity. 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. 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 Workplan in accordance with USEPA guidance. Numerous guidance documents are available, as identified below:

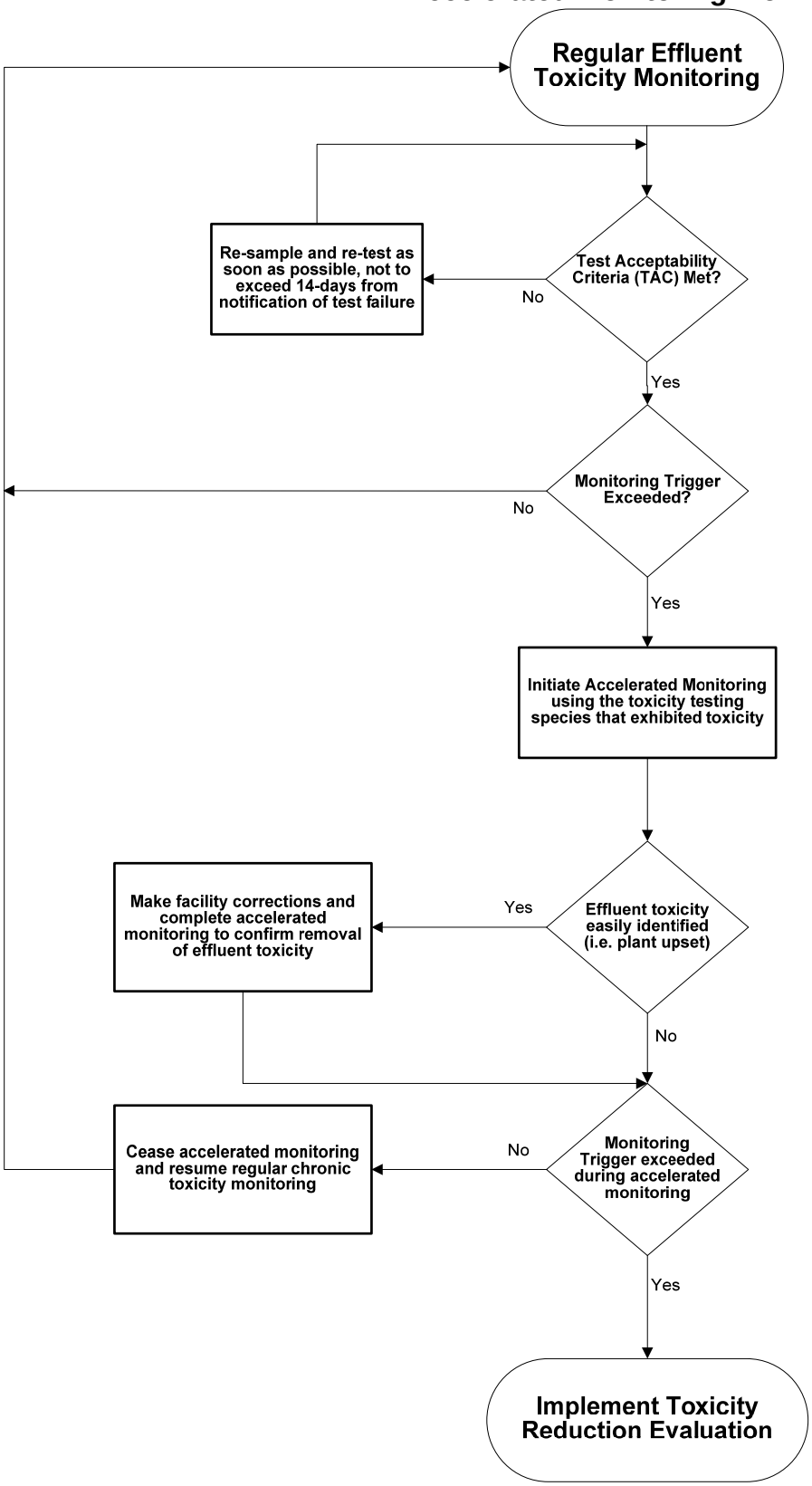
- Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants, EPA/833-B-99/002, August 1999.
- Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs), EPA/600/2-88/070, April 1989.
- Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures, Second Edition, EPA 600/6-91/003, 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. **Regionalization.** The Regional Water Board adopted Resolution No. R5-2009-0028 in Support of Regionalization, Reclamation, Recycling, and Conservation for Wastewater Treatment Plants on 23 April 2009, which requires the Regional Water Board to facilitate opportunities for regionalization and consider innovative permitting options when existing NPDES permit requirements, waste discharge requirements, and/or enforcement Orders inhibit the ability to implement regionalization. As described in section IV.D.4 of this Fact Sheet, Resolution No. R5-2009-0028 identifies a number of benefits to regionalization. The Discharger reported at the April 2009 Board Meeting and in a subsequent semi-annual progress report submitted 1 June 2009 that the Discharger is continuing to actively pursue regionalization. However, in a letter dated 22 February 2010, the Discharger indicated that the regionalization project would take at least 2 years to complete beyond the 5 years requested for the proposed expansion project (i.e., in 7 years) due to delays associated with the slow pace of acquiring federal funding and the need to resolve complex issues between the Discharger and other local entities. The Regional Water Board is supportive of the Discharger's efforts towards regionalization. Therefore, this Order requires the Discharger to report annually on efforts taken towards regionalization. The report shall detail progress made towards regionalization over the past year and milestones necessary to complete regionalization with proposed dates for completion. Milestones to be evaluated include, but are not limited to, acquisition of funding, obtaining the necessary approvals from local and regulatory agencies, and completing construction of the regional sewer system. If the proposed dates for milestone completion are not met, the Discharger shall explain why and propose a revised date for completion.

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 Rock Creek. Order No. R5-2005-0074 contained a provision requiring the Discharger to "*use the best practicable treatment or control technique currently available to limit mineralization to no more than a reasonable increment*." This requirement is not retained in this Order, however the development of a salinity evaluation and minimization plan should also ensure that mineralization is minimized.

b. **Infiltration and Inflow (I/I) Reduction Program.** The Discharger's wastewater collection system is subject to high flows due to I/I. When influent levels exceed the Facility's peak wet weather design capacity of 3.5 MGD due to I/I, effluent is discharged that is some combination of secondary and tertiary treated wastewater. I/I is typically due to faulty construction or inadequate maintenance. Reductions in I/I are necessary to reduce or eliminate discharges to Rock Creek that do not receive full tertiary treatment.

Provision F.9.c of Order No. R5-2005-0074 established a compliance schedule for an I/I reduction program. Pursuant to the requirement, the Discharger submitted a priority list for I/I reduction and an implementation schedule in the *WDR. F.9.c I&I Priority Improvement List and Schedule*, July 2007 (July 2007 Report). In accordance with the July 2007 Report, the Discharger implemented repairs and assessed the effectiveness of the program in the *Report on I/I Program Effectiveness Evaluation*, January 2010 (January 2010 Report).

The Discharger reported in the January 2010 Report that they have spent approximately $500,000 to reduce I/I by using in-pipe cameras and smoke testing to check the sewer for leaks or cross-connections, and by repairing manholes and pipelines. The Discharger repaired approximately 77 percent of the manholes and approximately 93 percent of the pipelines identified on the priority list submitted in the July 2007 Report. The Discharger also repaired additional manholes and pipelines that were not on the priority list.

Despite efforts to reduce I/I, the Discharger found in the January 2010 Report that a conclusive reduction in I/I as a result of repairs since February 2008 could not be demonstrated due to limited pre- and post-project data. The Discharger indicated that an additional 3 to 4 years would be necessary to collect the necessary data during precipitation events to characterize the relationship between precipitation and I/I.

Based on a review of the Discharger's January 2010 Report, additional measures are necessary to reduce levels of I/I in the Discharger's collection system. This Order requires the Discharger to complete the repairs identified in the priority list from the July 2007 Report. The Discharger must also re-evaluate the collection system and submit an updated priority list and implementation schedule for additional repairs within 6 months of adoption of this Order. The Discharger is required to maintain a log and shall submit an annual report with tabular summaries of work completed and work remaining to complete the repairs identified in the updated priority list. The Discharger shall complete repairs of the collection system in accordance with the updated priority list and implementation schedule within 18 months of adoption of this Order. The July 2007 Report indicates that defects on private property have been identified. These defects shall be corrected within 1 year and any new private sector defects discovered by the Discharger through ongoing sewer system investigations shall be corrected within 12 months of their discovery. With regard to these private sector defects, the annual report describing the Discharger's I/I correction activities in the previous year shall identify the types and locations of private sector defects identified within that year and private sector defects discovered in prior years that have not yet been corrected. The annual report shall then identify those defects subsequently corrected within that year. The annual report shall indicate the follow-up actions the Discharger intends to take within the next 12 months to correct those private sector defects identified but not yet repaired. The results of the Discharger's follow-up actions to correct the discovered but unrepaired

private sector defects shall then be reported in the annual report the following year.

In order to collect the information needed to assess the effectiveness of efforts to reduce I/I, the Discharger should conduct additional flow metering using appropriate equipment and data analysis techniques that recognize the variations in I/I rates associated with changes in antecedent moisture conditions and varying rainfall rates. As indicated in the January 2010 Report, flow metering is conducted using a portable flume flow meter. The use of a flume-type meter can be problematic in sewer systems with high rates of I/I because they can be difficult to calibrate across wide flow ranges and can be flooded out by high I/I rates, particularly if the sewer becomes surcharged. Due to the problems associated with this type of flow meter for the purposes of the Discharger's assessment, the Discharger shall evaluate the use of alternative flow metering devices, including Doppler type depth/velocity meters, which are traditionally used for I/I analysis.

In order to collect the information needed to assess the effectiveness of efforts to reduce I/I, the Discharger shall also analyze a series of individual storm events to determine the effectiveness of I/I repairs. Flow rate and volume comparisons should be between storms having similar rainfall patterns occurring before and after completion of repairs. This analysis should include several storm events, and at least one before/after pair of light, medium, and heavy intensity rainfalls. The Discharger shall identify areas within the collection system where significant pre-project data is available for comparison with post-project data after repairs have been completed.

The Discharger shall collect the information needed to assess the effectiveness of efforts to reduce I/I both before and after repairs have been made. A final report assessing the effectiveness of efforts to reduce I/I shall be submitted within 3 years of adoption of this Order.

4. Construction, Operation, and Maintenance Specifications

a. Turbidity Operational Requirements. Turbidity is included as an operational specification as an indicator of the effectiveness of the treatment process and to assure compliance with effluent limitations for total coliform organisms. The tertiary treatment process utilized at this Facility is capable of reliably meeting a turbidity limitation of 2 NTU as a daily average. Failure of the treatment 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. The operational specification requires that turbidity shall not exceed 2 NTU as a daily average; 5 NTU, more than 5 percent of the time within a 24-hour period, and an instantaneous maximum of 10 NTU. Turbidity specifications are included as operating criteria in section VI.C.4.a of this Order to ensure that adequate disinfection of wastewater is achieved.

b. This Order requires that wastewater be oxidized, coagulated, filtered, and adequately disinfected pursuant to DPH reclamation criteria, CCR, Title 22, division 4, chapter 3, (Title 22), or equivalent.

c. Consistent with Order No. R5-2005-0074, this Order requires that the treatment facilities be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

d. Ultraviolet Light (UV) Disinfection System Operating Specifications. UV disinfection system specifications and monitoring and reporting requirements are required to ensure that adequate UV dosage is applied to the wastewater to inactivate pathogens (e.g., viruses) in the wastewater. UV dosage is dependent on several factors such as UV transmittance, UV power setting, wastewater turbidity, and wastewater flow through the UV disinfection system. Monitoring and reporting of these parameters is necessary to determine compliance with minimum dosage requirements established by DPH and the National Water Research Institute (NWRI) and American Water Works Association Research Foundation NWRI/AWWARF's "*Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse*" first published in December 2000 and revised as a Second Edition dated May 2003. In addition, a memorandum dated 1 November 2004 issued by DPH to Regional Water Board executive officers recommended that provisions be included in permits to water recycling treatment plants employing UV disinfection requiring dischargers to establish fixed cleaning frequency of quartz sleeves as well as include provisions that specify minimum delivered UV dose that must be maintained (as recommended by the NWRI/AWWARF UV Disinfection Guidelines).

As described in section VII.B.4.a above, turbidity is included as an operational specification as an indicator of the effectiveness of the treatment process and to assure compliance with effluent limitations for total coliform organisms. The operational specification requires that, if using non-membrane filtration (e.g., granular, cloth, or other synthetic media) as part of the treatment process upstream of the UV disinfection system, turbidity prior to disinfection shall not exceed 2 NTU as a daily average; 5 NTU, more than 5 percent of the time within a 24-hour period, and an instantaneous maximum of 10 NTU. If using membrane filtration (e.g., microfiltration or ultrafiltration) as part of the treatment process upstream of the UV disinfection system, turbidity prior to disinfection shall not exceed 0.2 NTU more than 5 percent of the time within a 24-hour period, and 0.5 NTU at any time.

Minimum UV dosage and turbidity specifications are included as operating criteria in section VI.C.4.d of this Order and section IX.C of the Monitoring and Reporting Program (Attachment E) to ensure that adequate disinfection of wastewater is achieved.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Pretreatment Requirements.

i. USEPA Region 9 staff conducted inspections of significant industrial users (SIUs) and metal finishing operations within the Discharger's service area in May 2003. As a result of those inspections two industrial users were issued Findings of Violation and Administrative Orders, while another was issued a Request for Information and Self-Monitoring Order. Other industries were identified within the Discharger's service area that may discharge constituents of concern. Therefore, Order No. R5-2005-0074 required the Discharger to submit for approval an Industrial Pretreatment Program. The Discharger submitted their Industrial Pretreatment Program to USEPA Region 9 and the Regional Water Board on 25 August 2005. USEPA Region 9 and the Regional Water Board have not yet approved the Discharger's submission. This Order does not require the Discharger to update their pretreatment program submission unless directed by USEPA or the Regional Water Board; however this Order does require implementation of the pretreatment program regardless of approval.

ii. The Discharger requested in a letter dated 22 February 2010 that pretreatment program requirements be discontinued based on the limited number of industrial users discharging to the Facility and because the design flow is less than 5 MGD. 40 CFR 403.8 allows USEPA and the Regional Water Board to require a POTW with a design flow of 5 MGD or less to develop a pretreatment program if it is found that circumstances warrant an order to prevent interference with the POTW or pass through. As described above, USEPA identified industries within the Discharger's service area that may discharge constituents of concern to the Facility. Because development of a pretreatment program was required by USEPA, this Order continues to require implementation of the Discharger's pretreatment program.

iii. The federal CWA section 307(b), and federal regulations, 40 CFR Part 403, require POTWs 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.

iv. The Discharger shall implement and enforce its pretreatment program, which 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 USEPA may take enforcement actions against the Discharger as authorized by the CWA.

b. The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ (General Order) on 2 May 2006. The General Order requires public agencies that own or operate sanitary sewer systems with greater than 1 mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), among other requirements and prohibitions.

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

c. Continuous Monitoring Systems. This Order, and the Monitoring and Reporting Program which is a part of this Order, requires that certain parameters be monitored on a continuous basis. The Facility is typically staffed from 6:30 a.m. to 3:30 p.m. daily and unattended for 15 hours per day. Permit violations or system upsets can go undetected during this period. The Discharger has a system in place to automatically contact Facility operators in the event of alarms generated at the wastewater treatment plant. The Discharger is required to establish an electronic system for operator notification based on continuous recording device alarms. For any future facility upgrades, the Discharger shall upgrade the continuous monitoring and notification system simultaneously.

6. Other Special Provisions – Not Applicable

7. Compliance Schedules

a. The Discharger submitted a request, and justification (dated 4 May 2010), for a compliance schedule for ammonia. The compliance schedule justification included all items specified in paragraph 4 of the Compliance Schedule Policy, as discussed in section IV.E of this Fact Sheet. This Order establishes a compliance schedule for the new, final, WQBELs for ammonia and requires full compliance by 1 September 2015.

b. A pollution prevention plan for ammonia is required in this Order per CWC section 13263.3(d)(1)(C). In accordance with CWC section 13263.3(d)(3), the pollution prevention plan for ammonia shall, at a minimum, meet the following requirements:

i. An estimate of all of the sources of a pollutant contributing, or potentially contributing, to the loadings of a pollutant in the treatment plant influent.

ii. An analysis of the methods that could be used to prevent the discharge of the pollutants into the Facility, including application of local limits to industrial or commercial dischargers regarding pollution prevention techniques, public education and outreach, or other innovative and alternative approaches to reduce discharges of the pollutant to the Facility. The analysis also shall identify sources, or potential sources, not within the ability or authority of the Discharger to control, such as pollutants in the potable water supply, airborne pollutants, pharmaceuticals, or pesticides, and estimate the magnitude of those sources, to the extent feasible.

iii. An estimate of load reductions that may be attained through the methods identified in subparagraph ii.

iv. A plan for monitoring the results of the pollution prevention program.

v. A description of the tasks, cost, and time required to investigate and implement various elements in the pollution prevention plan.

vi. A statement of the Discharger's pollution prevention goals and strategies, including priorities for short-term and long-term action, and a description of the Discharger's intended pollution prevention activities for the immediate future.

vii. A description of the Discharger's existing pollution prevention programs.

viii. An analysis, to the extent feasible, of any adverse environmental impacts, including cross-media impacts or substitute chemicals that may result from the implementation of the pollution prevention program.

ix. An analysis, to the extent feasible, of the costs and benefits that may be incurred to implement the pollution prevention program.

c. Title 22, or Equivalent, Requirements. Order No. R5-2005-0074 required a Title 22, or equivalent, level of treatment for flows less than 3.5 MGD, but did not require a Title 22, or equivalent, level of treatment when the influent flow is greater than 3.5 MGD and the 7-day median receiving water temperature is less than 60°F. This Order requires that all wastewater discharged to Rock Creek be oxidized, coagulated, filtered, and adequately disinfected pursuant to DPH reclamation criteria, Title 22 CCR, Division 4, Chapter 3, (Title 22), or equivalent. The Facility is not designed to provide full tertiary treatment for wet weather flows exceeding 3.5 MGD, and discharges a blend of secondary and tertiary wastewater under those conditions. In order to provide the time necessary for the Discharger to complete the necessary upgrades, a compliance schedule has been included. The compliance schedule allows the Discharger until 1 September 2015 to complete the necessary upgrades and come into

compliance with Title 22, or equivalent, requirements. This Order also requires compliance with the final effluent limitations for BOD_5, total coliform organisms, and TSS by **1 September 2015**. As part of this compliance schedule, the Discharger will be required to provide interim status reports to the Regional Water Board regarding progress on the actual construction of the upgrades.

VIII. PUBLIC PARTICIPATION

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

A. Notification of Interested Parties

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through the Central Valley Water Board website and publication in the Auburn Journal.

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 must be received at the Regional Water Board offices by 5:00 p.m. on **9 August 2010**.

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: 23/24 September 2010
Time: 8:30 a.m.
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 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 Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

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

E. Information and Copying

The Report of Waste Discharge, related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., 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 Cliff Raley at (916) 464-4836 or ceraley@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, Total Recoverable	µg/L	162	NA	87	750[1]	87[2]	--	--	--	200	Yes
Ammonia Nitrogen, Total (as N)	mg/L	15.1	NA	2.30	3.83[1]	2.30[3]	--	--	--	--	Yes
Antimony, Total Recoverable	µg/L	0.481	NA	6	--	--	14	4,300	--	6	No
Arsenic, Total Recoverable	µg/L	21.5[4]	NA	10	340	150	--	--	--	10	Yes
Bis (2-ethylhexyl) Phthalate	µg/L	<0.1[5]	NA	1.8	--	--	1.8	5.9	--	4	No
Cadmium, Total Recoverable	µg/L	0.036	NA	3.2[6]/0.70[7]	5.8[6]/0.74[7]	3.2[6]/0.70[7]	--	--	--	5	No
Chloride	mg/L	70.1	NA	106[8]	--	--	--	--	--	250	No
Chlorine, Total Residual	mg/L	7.5	NA	0.011	0.019[1]	0.011[2]	--	--	--	--	Yes
Chlorodibromomethane	µg/L	0.97	NA	0.41	--	--	0.41	34	--	80	Yes
Chloroform	µg/L	41[4]	NA	80	--	--	--	--	--	80	No
Chromium, Total	µg/L	0.16	NA	50	--	--	--	--	--	50	No
Copper, Total Recoverable	µg/L	21.9	NA	13[6]/2.4[7]	19[6]/3.1[7]	13[6]/2.4[7]	1,300	--	--	1,000	Yes
Cyanide, Total (as CN)	µg/L	0.01	NA	5.2	22	5.2	700	220,000	--	150	No
Dichlorobromomethane	µg/L	14	NA	0.56	--	--	0.56	46	--	80	Yes
Di-n-octyl Phthalate	µg/L	<0.1[5]	NA	--	--	--	--	--	--	--	No
Electrical Conductivity @ 25°C	µmhos/cm	1,090	500	700[8]	--	--	--	--	--	900	No[9]
Iron, Total Recoverable	µg/L	47[4]	NA	300	--	--	--	--	--	300	No
Lead, Total Recoverable	µg/L	25.2	NA	3.6[6]/0.41[7]	92[6]/11[7]	3.6[6]/0.41[7]	--	--	--	15	Yes
Manganese, Total Recoverable	µg/L	29[4]	NA	50	--	--	--	--	--	50	No
Mercury, Total Recoverable	µg/L	0.00323	NA	0.050	--	--	0.050	0.051	--	2	Yes[10]
Methyl Tertiary Butyl Ether	µg/L	<0.5	NA	5	--	--	--	--	--	5	No
Nickel, Total Recoverable	µg/L	2.7	NA	70[6]/13[7]	627[6]/120[7]	70[6]/13[7]	610	4,600	--	100	No

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Nitrate Plus Nitrite, Total	mg/L	49	0.9	10	--	--	--	--	--	10	Yes
Nitrite Nitrogen, Total (as N)	mg/L	3.12	NA	1.0	--	--	--	--	--	1.0	Yes
Persistent Chlorinated Hydrocarbon Pesticides[11]	µg/L	<0.0019	NA	ND	--	--	--	--	ND	--	No
Phosphorus, Total (as P)	µg/L	8,580	NA	--	--	--	--	--	--	--	No
Phthalate Acid Esters[12]	µg/L	<0.1[5]	NA	3[13]	--	--	--	--	--	--	No
Polychlorinated Biphenyls[14]	µg/L	<0.04	NA	0.00017	--	0.014	0.00017	0.00017	--	0.5	No
Selenium, Total Recoverable	µg/L	1.2	NA	5.0	20	5.0	--	--	--	20	No
Silver, Total Recoverable	µg/L	0.02	NA	2.9[6]/0.25[7]	2.9[6]/0.25[7]	--	--	--	--	100	No
Sulfate	mg/L	36.1	NA	250	--	--	--	--	--	250	No
TCDD-Equivalents	µg/L	9.41×10^{-10}	NA	1.3×10^{-8}	--	--	1.3×10^{-8}	1.4×10^{-8}	--	0.00001	No
Total Dissolved Solids	mg/L	486	NA	450[8]	--	--	--	--	--	500	No[9]
Tributyltin	µg/L	0.0024	NA	0.072	0.46[1]	0.072[2]	--	--	--	--	No
Zinc, Total Recoverable	µg/L	48	NA	160[6]/31[7]	160[6]/31[7]	160[6]/31[7]	--	--	--	5,000	No

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential

General Note: All inorganic concentrations are given as a total recoverable.
MEC = Maximum Effluent Concentration
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 = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)
Org. Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)
Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective
MCL = Drinking Water Standards Maximum Contaminant Level
NA = Not Available

Footnotes:
(1) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 1-hour Average.
(2) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 4-day Average.
(3) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 30-day Average.
(4) Represents the maximum observed monthly average concentration for comparison with the MCL.
(5) Represents monitoring data collected since the Discharger implemented “clean” sampling procedures in January 2007. See Section IV.C.3.c of the Fact Sheet (Attachment F).
(6) Criterion to be compared to the maximum effluent concentration.
(7) Criterion to be compared to the maximum upstream receiving water concentration.
(8) Water Quality for Agriculture.
(9) Based on the relatively low reported salinity, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity. See Section IV.C.3.d.xiv of the Fact Sheet (Attachment F).
(10) The Sacramento River from Knights Landing to the Delta, downstream of the discharge, is listed on the 2006 303(d) list as impaired for mercury. Therefore, this Order establishes a final, monthly average mass loading limitation for mercury.
(11) Persistent chlorinated hydrocarbon pesticides include aldrin, dieldrin, chlordane, endrin, endrin aldehyde, heptachlor, heptachlor epoxide, hexachlorocyclohexane (alpha-BHC, beta-BHC, delta-BHC, and gamma-BHC or lindane), endosulfan (alpha and beta), endosulfan sulfate, toxaphene, 4,4’DDD, 4,4’DDE, and 4,4’DDT.
(12) Phthalate acid esters include bis (2-ethylhexyl) phthalate, butylbenzyl phthalate, di-n-butyl phthalate, di-n-octyl phthalate, diethyl phthalate, and dimethyl phthalate.
(13) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, Toxicity Information, Chronic Lowest Observed Effect Level.
(14) Polychlorinated biphenyls include Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260.

ATTACHMENT H – CALCULATION OF WATER QUALITY-BASED EFFLUENT LIMITATIONS

Parameter	Units	Most Stringent Criteria			Human Health Calculations[1]			Aquatic Life Calculations[1]											Final Limitations	
		HH	CMC	CCC	ECA_{HH} = $AMEL_{HH}$	AMEL/MDEL $Multiplier_{HH}$	$MDEL_{HH}$	ECA_{acute}	ECA $Multipler_{acute}$	LTA_{Acute}	$ECA_{chronic}$	ECA $Multipler_{chronic}$	$LTA_{chronic}$	Lowest LTA	AMEL $Multipler_{95}$	$AMEL_{AL}$	MDEL $Multipler_{99}$	$MDEL_{AL}$	AMEL	MDEL
Aluminum, Total Recoverable	µg/L	200	750	87	200	2.2	441	750	0.27	202	87	0.47	40	40	1.7	68	3.7	151	68	151
Ammonia Nitrogen, Total (as N)	mg/L	--	3.83	2.30	--	--	--	3.83	0.17	0.65	2.30	0.61	1.4	0.65	2.2	1.4	6.0	3.9	1.4	3.9
Chlorodibromomethane	µg/L	0.41	--	--	0.41	2.01	0.82	--	--	--	--	--	--	--	--	--	--	--	0.41	0.82
Copper, Total Recoverable	µg/L	1,000	19[2]/3.1[3]	13[2]/2.4[3]	1,000	2.52	2,520	19[4]	0.20	3.9	13[4]	0.37	4.6	3.9	2.0	7.6	5.0	19	7.6	19
Dichlorobromomethane	µg/L	0.56	--	--	0.56	2.72	1.5	--	--	--	--	--	--	--	--	--	--	--	0.56	1.5
Lead, Total Recoverable	µg/L	15	92[2]/11[3]	3.6[2]/0.41[3]	15	2.92	44	92[4]	0.15	13	3.6[4]	0.27	0.96	0.96	2.4	2.3	6.8	6.5	2.3	6.5

1 As described in section IV.C.2.e of the Fact Sheet (Attachment F), calculation of effluent limitations for the protection of human health and aquatic life are determined without the allowance of dilution credits.
2 Criterion to be compared to the maximum effluent concentration.
3 Criterion to be compared to the maximum upstream receiving water concentration.
4 ECA determined as described in section IV.C.2.c.ii of the Fact Sheet (Attachment F).

ATTACHMENT I – EFFLUENT AND RECEIVING WATER CHARACTERIZATION 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.

II. Monitoring Requirements.

A. Annual Monitoring. Annual 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 I-1. The results of such monitoring shall be submitted to the Regional Water Board in accordance with the schedule listed in Table E-10 of the Monitoring and Reporting Program (Attachment E). Each individual monitoring event shall provide representative sample results for the effluent and upstream receiving water.

B. Concurrent Sampling. Effluent and receiving water sampling shall be performed at approximately the same time, on the same date.

C. 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 I-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
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

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]		
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
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

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]		
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
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

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]		
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
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

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]		
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
	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

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]		
	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, USEPA

III. Additional Study Requirements

A. Laboratory Requirements. Chemical, bacteriological, and bioassay analyses of any material required by this Order shall be conducted by a laboratory certified for such analyses by the Department of Public Health (DPH; formerly the Department of Health Services). Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Regional Water Board.

The Discharger shall institute a Quality Assurance-Quality Control Program for any onsite field measurements such as pH, turbidity, temperature and residual chlorine. A manual containing the steps followed in this program must be kept onsite and shall be available for inspection by Regional Water Board staff. The Discharger must demonstrate sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform these field measurements. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Regional Water Board.

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 I-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 I-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 14 May 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 J – INTERIM 1-HOUR AVERAGE EFFLUENT LIMITATIONS FOR AMMONIA

pH[1]	Ammonia Nitrogen, Total (as N) 1-Hour Average Effluent Limitation (mg/L)
6.5	15.1
6.6	15.1
6.7	15.1
6.8	15.1
6.9	15.1
7.0	15.1
7.1	15.1
7.2	15.1
7.3	15.1
7.4	15.1
7.5	13.3
7.6	11.4
7.7	9.64
7.8	8.11
7.9	6.77
8.0	5.62
8.1	4.64
8.2	3.83
8.3	3.15
8.4	2.59
8.5	2.14
8.6	1.77
8.7	1.47
8.8	1.23
8.9	1.04
9.0	0.885

[1] Effluent pH at time of effluent ammonia sampling.

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

ATTACHMENT K – INTERIM 4-DAY AVERAGE EFFLUENT LIMITATIONS FOR AMMONIA

pH[1]	Ammonia Nitrogen, Total (as N) 4-Day Average Effluent Limitation (mg/L)									
	Temperature (°C/°F)[2]									
	0 (32)	14 (57)	16 (61)	18 (64)	20 (68)	22 (72)	24 (75)	26 (79)	28 (82)	30 (86)
6.5	16.7	16.7	15.1	13.3	11.8	10.3	9.04	7.95	6.99	6.14
6.6	16.4	16.4	14.9	13.1	11.5	10.1	8.91	7.83	6.88	6.05
6.7	16.1	16.1	14.6	12.9	11.3	9.94	8.74	7.68	6.75	5.94
6.8	15.7	15.7	14.3	12.8	11.1	9.71	8.54	7.51	6.60	5.80
6.9	15.3	15.3	13.9	12.2	10.7	9.44	8.30	7.30	6.41	5.64
7.0	14.8	14.8	13.4	11.8	10.4	9.12	8.02	7.05	6.19	5.45
7.1	14.2	14.2	12.9	11.3	9.95	8.75	7.69	6.76	5.94	5.22
7.2	13.5	13.5	12.3	10.8	9.46	8.32	7.31	6.43	5.65	4.97
7.3	12.7	12.7	11.5	10.1	8.91	7.84	6.89	6.05	5.32	4.68
7.4	11.8	11.8	10.8	9.46	8.31	7.31	6.42	5.65	4.96	4.36
7.5	10.9	10.9	9.92	8.72	7.66	6.74	5.92	5.20	4.57	4.02
7.6	9.94	9.94	9.03	7.94	6.98	6.14	5.39	4.74	4.17	3.66
7.7	8.95	8.95	8.13	7.15	6.28	5.52	4.85	4.27	3.75	3.3
7.8	7.96	7.96	7.23	6.36	5.59	4.91	4.32	3.79	3.34	2.93
7.9	6.99	6.99	6.36	5.59	4.91	4.32	3.80	3.34	2.93	2.58
8.0	6.08	6.08	5.53	4.86	4.27	3.76	3.30	2.90	2.55	2.24
8.1	5.24	5.24	4.77	4.19	3.68	3.24	2.85	2.50	2.20	1.93
8.2	4.48	4.48	4.07	3.58	3.15	2.77	2.43	2.14	1.88	1.65
8.3	3.81	3.81	3.46	3.04	2.68	2.35	2.07	1.82	1.60	1.40
8.4	3.22	3.22	2.93	2.58	2.26	1.99	1.75	1.54	1.35	1.19
8.5	2.72	2.72	2.48	2.18	1.91	1.68	1.48	1.30	1.14	1.00
8.6	2.30	2.30	2.09	1.84	1.61	1.42	1.25	1.10	0.964	0.848
8.7	1.95	1.95	1.77	1.55	1.37	1.20	1.06	0.928	0.816	0.717
8.8	1.65	1.65	1.50	1.32	1.16	1.02	0.897	0.788	0.693	0.609
8.9	1.41	1.41	1.28	1.13	0.992	0.872	0.766	0.674	0.592	0.520
9.0	1.22	1.22	1.11	0.971	0.854	0.751	0.660	0.580	0.510	0.448

[1] Effluent pH at time of effluent ammonia sampling.
[2] Effluent temperature at time of effluent ammonia sampling.

$$2.5CCC = 2.5 \times \left(\frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}} \right) \times Min\left(2.85 \; or \; 1.45 \times 10^{0.028\times(25-T)}\right)$$

ATTACHMENT L – INTERIM 30-DAY AVERAGE EFFLUENT LIMITATIONS FOR AMMONIA

pH[1]	Ammonia Nitrogen, Total (as N) 30-Day Average Effluent Limitation (mg/L)									
	Temperature (°C/°F)[2]									
	0 (32)	14 (57)	16 (61)	18 (64)	20 (68)	22 (72)	24 (75)	26 (79)	28 (82)	30 (86)
6.5	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.6	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	6.44	6.44	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37
6.8	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.9	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.0	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.2	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	4.73	4.73	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74
7.5	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.7	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.8	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.9	2.80	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8.0	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897
8.1	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773
8.2	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.8550	0.752	0.661
8.3	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.7270	0.639	0.562
8.4	1.29	1.29	1.17	1.03	0.906	0.796	0.700	0.6150	0.541	0.475
8.5	1.09	1.09	0.990	0.870	0.765	0.672	0.591	0.5200	0.457	0.401
8.6	0.920	0.920	0.836	0.735	0.646	0.568	0.499	0.4390	0.386	0.339
8.7	0.778	0.778	0.707	0.622	0.547	0.480	0.422	0.3710	0.326	0.287
8.8	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.3150	0.277	0.244
8.9	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.2690	0.237	0.208
9.0	0.486	0.486	0.442	0.389	0.342	0.300	0.264	0.2320	0.204	0.179

[1] Effluent pH at time of effluent ammonia sampling.
[2] Effluent temperature at time of effluent ammonia sampling.

$$CCC = \left(\frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}} \right) \times Min\left(2.85 \; or \; 1.45 \times 10^{0.028\times(25-T)}\right)$$