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North Coast Region
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Matt Rodriquez
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Governor

ORDER NO. R1-2012-0012
NPDES NO. CA0023043
WDID NO. 1B83100OSON

WASTE DISCHARGE REQUIREMENTS AND MASTER RECLAMATION PERMIT

FOR THE

FORESTVILLE WATER DISTRICT
WASTEWATER TREATMENT, RECLAMATION AND DISPOSAL FACILITY
SONOMA COUNTY

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

Table 1. Discharger Information

Discharger	Forestville Water District
Name of Facility	Forestville Water District Wastewater Treatment, Reclamation and Disposal Facility
Facility Address	6194 Forestville Street
	Forestville, CA 95436
	Sonoma County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a minor discharge.	

The discharge by the Forestville Water District to 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	Disinfected tertiary treated municipal wastewater	--	--	3.25 million gallon treated effluent storage pond
002	Disinfected tertiary treated municipal wastewater	38° 27’ 58” N	122° 53’ 18”	Jones Creek, tributary to Green Valley Creek, tributary to the Russian River

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Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
003	Disinfected tertiary treated municipal wastewater	--	--	Authorized reclamation sites
004	Disinfected tertiary treated municipal wastewater	--	--	Graton Community Services District storage ponds

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	January 19, 2012
This Order shall become effective on:	March 1, 2012
This Order shall expire on:	February 28, 2017
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:	June 1, 2016

IT IS HEREBY ORDERED, that this Order supersedes Order No. R1-2004-0027 and Monitoring and Reporting Program (MRP) No. R1-2004-0027 upon the effective date specified in Table 3. This action in no way prevents the Regional Water Quality Control Board from taking any enforcement action for past violations of the previous permit. If any part of this Order is subject to a temporary stay of enforcement, unless otherwise specified, the Discharger shall comply with the analogous portions of Order No. R1-2004-0027 and MRP No. R1-2004-0027, which shall remain in effect for all purposes during the pendency of the stay.

I, Catherine Kuhlman, 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, North Coast Region, on January 19, 2012.

_____
Catherine Kuhlman, Executive Officer

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I. FACILITY INFORMATION

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

Table 4. Facility Information

Discharger	Forestville Water District
Name of Facility	Forestville Water District Wastewater Treatment, Reclamation, and Disposal Facility
Facility Address	6194 Forestville Street
	Forestville, CA 95436
	Sonoma County
Facility Contact, Title, and Phone	Ron Walker, Chief Plant Operator, (707) 887-1551
Mailing Address	P.O. Box 261 (6530 Mirabel Road), Forestville, CA 95436
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	0.130 mgd (average daily dry weather design flow[1]) 0.58 mgd (peak weekly wet weather design flow)[2] 0.78 mgd (peak daily wet weather design flow)[3]

II. FINDINGS

The California Regional Water Quality Control Board, North Coast Region (hereinafter Regional Water Board), finds:

A. Background. The Forestville Water District (hereinafter Discharger) is currently discharging pursuant to Order No. R1-2004-0027 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0023043. The Discharger submitted a Report of Waste Discharge, dated March 9, 2009, and applied for a NPDES permit renewal to discharge up to 0.130 million gallons per day (mgd) of treated wastewater from the Forestville Water District Wastewater Treatment, Reclamation, and Disposal Facility, hereinafter Facility. A site visit was conducted on May 4, 2009 to observe operations and collect additional data to develop permit limitations and conditions. The application was deemed complete on May 4, 2009.

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.

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[1] Average daily dry weather design flow is defined as the average of daily inflows calculated during the lowest consecutive 30-day period each calendar year.

[2] Peak weekly wet weather design flow is defined as the maximum weekly average flow that may be treated, based on the capacity of the microfilters.

[3] Peak daily wet weather design flow is defined as the maximum volume of effluent that may be treated, based on the capacity of the microfilters.

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B. Facility Description. The Discharger owns and operates a wastewater collection, treatment, and disposal facility and provides sewerage service to a population of approximately 930, including residential, commercial, and institutional customers. Portions of the Discharger's collection system consist of 3.3 miles of vitrified clay and asbestos-cement collection system pipelines. Wastewater flows by gravity from the Forestville service area to the Facility. In January 2001, the Mirabel Heights Zone of Benefit (Mirabel Heights) newly constructed collection system was connected to the Facility. Mirabel Heights is served by a gravity flow collection system with 2.7 miles of plastic sewer pipe, which feeds into a force main with 1.5 miles of ductile iron pipe. Two lift stations carry wastewater from the Mirabel Heights gravity flow collection system to the Facility.

The treatment facility has design treatment capacities of 0.130 mgd (average daily dry weather flow) and 0.58 mgd (peak weekly wet weather flow) and 0.78 mgd (peak daily wet weather flow). The Discharger upgraded and expanded the Facility to provide advanced wastewater treatment prior to adoption of Order No. R1-2004-0027. The current treatment system consists of a headworks, an aeration pond, a settling pond, microfiltration, chlorine disinfection, and dechlorination. The Discharger has an approximately 3.25 million gallon effluent storage pond that is used for the storage of tertiary treated water prior to discharge to Jones Creek or the recycled water system.

During the irrigation season from May 15 through September 30, treated wastewater is reclaimed for irrigation. The irrigation system includes a 14.7 million gallon off-site storage pond located at the Sterling/Iron Horse Vineyards, approximately 296 acres of agricultural land (vineyards, pasture, orchards) with an irrigable capacity of 54 acre-feet and 18 acres of urban land (schools and park) with an irrigable capacity of 39 acre-feet. The Discharger may also transfer disinfected tertiary wastewater to the Graton CSD Wastewater Treatment Facility when the Discharger is in need of additional storage capacity. All wastewater transferred to Graton CSD for discharge must be in compliance with Graton's permit. From October 1 through May 14, treated wastewater is discharged to Jones Creek, a water of the United States, within the Guerneville hydrologic subarea of the Lower Russian River hydrologic area.

Biosolids generated during the treatment process accumulate in the aeration and settling ponds. Biosolids will be removed and disposed at a legal point of disposal when necessary. The Discharger does not anticipate needing to remove biosolids within the term of this permit.

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

C. Legal Authorities. This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as a NPDES permit for point source

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discharges from this Facility to surface waters.

This Order also serves as Waste Discharge Requirements (WDRs) for discharges to land and a Master Reclamation Permit pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260 and 13520, respectively).

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 are also incorporated into this Order.

E. California Environmental Quality Act (CEQA). This Order serves as both an NPDES permit for discharges to waters of the U.S. and as WDRs for discharges to waters of the state (the land discharges). The Regional Water Board's responsibilities under CEQA differ for NPDES-related discharges and WDR-related discharges.

Pursuant to Water Code section 13389, an action to adopt an NPDES permit is exempt from the provisions of CEQA contained in Public Resources Code sections 21100-21177. Accordingly, this exemption from CEQA applies to the Regional Water Board's actions to adopt those portions of the Order that regulate NPDES-discharges.

Similarly, the Regional Water Board's action in approving those parts of the Order that regulate WDR-related discharges is exempt from CEQA as an existing facility with no expansion of use beyond that existing at the time of the lead agency's determination pursuant to Title 14, CCR, Section 15301.

This Order also includes a process for Regional Water Board approval of new recycled water use sites that would receive discharges to land. This approval process will include compliance with CEQA as necessary. The approval process requires demonstration that a CEQA analysis has been conducted for any proposed recycled water use project. The approval process also requires the Discharger to submit technical information necessary to demonstrate that any proposed recycled water use areas will be irrigated using the most stringent of the hydraulic and nutrient agronomic rate and include best management practices that are protective of surface and ground water quality, as described in Attachment G to this Order.

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[4] (40 CFR) requires 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

[4] All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.

based on Secondary Treatment Standards at Part 133 and Best Professional Judgment (BPJ) in accordance with Part 125, section 125.3. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet (Attachment F).

G. Water Quality-Based Effluent Limitations. Section 301(b) of the CWA and section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

Section 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (WQBELs) must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

H. Water Quality Control Plans. The Regional Water Board adopted a *Water Quality Control Plan for the North Coast Region* (hereinafter the Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which establishes State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to the Guerneville Hydrologic Subarea of the Russian River Hydrologic Unit, which includes Jones Creek which is a tributary to Green Valley Creek, thence the Russian River, are described in Table 5, below.

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Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Guerneville Hydrologic Subarea of the Russian River Hydrologic Unit, which includes Jones Creek, tributary to Green Valley Creek, thence the Russian River	Existing: • Municipal and Domestic Supply (MUN) • Agricultural Supply (AGR) • Industrial Service Supply (IND) • Ground Water Recharge (GWR) • Freshwater Replenishment (FRSH) • Navigation (NAV) • Water Contact Recreation (REC-1) • Non-Contact Water Recreation (REC-2) • Commercial and Sport Fishing (COMM) • Warm Freshwater Habitat (WARM) • Cold Freshwater Habitat (COLD) • Wildlife Habitat (WILD) • Preservation of Rare, Threatened, or Endangered Species (RARE) • Migration of Aquatic Organisms (MIGR) • Spawning, Reproduction, and/or Early Development (SPWN) • Estuarine Habitat (EST) Potential: • Industrial Process Supply (PRO) • Hydropower Generation (POW) • Shellfish Harvesting (SHELL) • Aquaculture (AQUA)
001, 002, and 003	Groundwater	Existing • Municipal and Domestic Supply (MUN) • Industrial Service Supply (IND) • Industrial Process Supply (PRO) • Agricultural Supply (AGR) • Freshwater Replenishment (FRSH)

Note: Estuarine Habitat is not present in Jones Creek or Green Valley Creek

In addition to the beneficial uses set out in the Basin Plan, there are several implementation plans that include actions intended to meet water quality objectives and protect beneficial uses of the North Coastal Basin. For the Russian River and its tributaries, no point source waste discharges are allowed from May 15 through September 30 and during all other periods when the waste discharge flow is greater than one percent of the receiving stream's flow. For municipal waste discharged from October 1 through May 14, the discharge must be of advanced treated wastewater, and must meet a median coliform level of 2.2 Most Probable Number (MPN) per 100 milliliters (mL).

Requirements of this Order implement the Basin Plan.

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I. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About 40 criteria in the NTR are applicable to discharges in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority pollutants.

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

K. **Compliance Schedules and Interim Requirements.** The provision in section 2.1 of the SIP that allowed for the use of compliance schedules and interim limitations in an NPDES permit for CTR constituents ended on May 18, 2010. Based on a discharger's request and demonstration that it is infeasible to comply with an effluent limitation derived from a CTR criterion, compliance schedules may be allowed in a cease and desist order or time schedule order adopted by the Regional Water Board.

   The State Water Board adopted Resolution No. 2008-0025 on April 15, 2008, titled Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits, which includes compliance schedule policies for pollutants that are not addressed by the SIP. This Policy became effective on August 27, 2008.

   This Order includes a compliance schedule and interim effluent limitations for chlorine residual. A detailed discussion of the basis for the compliance schedule and interim effluent limitations is included in the Fact Sheet.

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

M. **Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The

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technology-based effluent limitations consist of restrictions on 5-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), and total coliform bacteria. Restrictions on these pollutants are discussed in section IV.B.2 of the Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum applicable federal technology-based requirements. In addition, this Order contains effluent limitations for BOD_5 and TSS that are more stringent than the minimum, federal technology-based requirements and are necessary to meet water quality standards established in the Basin Plan.

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 section 131.38. The scientific procedures for calculating the individual WQBELs for priority pollutants are based on the CTR and the SIP, which was approved by USEPA on May 18, 2000. Most beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to section 131.21(c)(1). The remaining water quality objectives and beneficial uses implemented by this Order (specifically the addition of the beneficial uses Water Quality Enhancement (WQE), Flood Peak Attenuation/Flood Water Storage (FLD), Wetland Habitat (WET), Native American Culture (CUL), and Subsistence Fishing (FISH), and the General Objective regarding antidegradation in the Basin Plan) were approved by USEPA on March 4, 2005, and are applicable water quality standards pursuant to section 131.21(c)(2). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

The Regional Water Board has considered the factors in Water Code section 13263, including the provisions of Water Code section 13241, in establishing these requirements.

N. Antidegradation Policy. Section 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 provision of section 131.12 and State Water Board Resolution No. 68-16.

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O. Anti-Backsliding Requirements. Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 CFR section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. Effluent limitations for lead, zinc and settleable solids have been removed from this Order, and thus are less stringent than those in the previous Order.

Monitoring data for lead and zinc collected over the term of Order No. R1-2004-0027 indicates that concentrations of lead and zinc in the effluent do not indicate a reasonable potential to cause or contribute to an exceedance of applicable water quality objectives. The lack of reasonable potential for lead and zinc constitutes new information, which permits the removal of lead and zinc effluent limitations.

Prior to adoption of Order No. R1-2004-0027, the Discharger upgraded its wastewater treatment facility to include advanced wastewater treatment utilizing microfiltration. This technology removes all settleable solids to negligible levels and this has been demonstrated with settleable solids monitoring over the previous permit term. The Facility modifications and lack of reasonable potential for settleable solids constitutes new information, which permits the removal of settleable solids effluent limitations.

New effluent limitations for total residual chlorine have been established in this Order. The new limitations are numerical and expressed as a monthly maximum limitation of 0.01 mg/L and a maximum daily limitation of 0.02 mg/L. In the previous Order, the effluent limitation was expressed as “nondetect” with a detection limit of 0.1 mg/L. The new limitations, although no longer expressed as “nondetect”, are in effect more stringent limitations because the discharge is required to achieve an effluent concentration of total residual chlorine that is numerically lower than was required to be demonstrated by the previous Order.

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

R. Standard and Special Provisions. Standard Provisions, which apply to all NPDES permits in accordance with section 122.41, and additional conditions applicable to

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specified categories of permits in accordance with section 122.42, are provided in Attachment D. The Discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42. The Regional Water Board has also included in this Order special provisions applicable to the Discharger. A rationale for the special provisions contained in this Order is provided in the attached Fact Sheet.

S. Provisions and Requirements Implementing State Law. The provisions/requirements in subsections III.E, III.F, IV.B, IV.C, and V.B of this Order; sections VI, VII, VIII.B, X.D.2, X.D.3.g, and X.E of the MRP; and Attachment G to 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 Waste Discharge Requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of the notification are provided in the Fact Sheet of this Order.

U. Consideration of Public Comment. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet of this Order.

III. DISCHARGE PROHIBITIONS

A. The discharge of any waste not disclosed by the Discharger or not within the reasonable contemplation of the Regional Water Board is prohibited.

B. Creation of pollution, contamination, or nuisance, as defined by section 13050 of the California Water Code is prohibited.

C. The discharge of sludge or digester supernatant is prohibited, except as authorized under VI.C.5.c of this Order (Sludge Disposal and Handling Requirements).

D. The discharge or reclamation use of untreated or partially treated waste (receiving a lower level of treatment than described in section II.A of the Fact Sheet) from anywhere within the collection, treatment, or disposal systems is prohibited, except as provided for in Attachment D, Standard Provision G (Bypass).

E. Any sanitary sewer overflow (SSO) that results in a discharge of untreated or partially treated wastewater to (a) waters of the State, (b) groundwater, or (c) land that creates pollution, contamination, or nuisance, as defined in Water Code section 13050 (m) is prohibited.

F. The discharge of waste to land that is not owned by or under agreement to use by the Discharger is prohibited, except for use for fire suppression as provided in title 22, sections 60307(a) and 60307(b) of the California Code of Regulations.

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G. The discharge of waste at any point not described in Finding II.B or authorized by a permit issued by the State Water Board or another Regional Water Board is prohibited.

H. The mean daily dry weather flow of waste in excess of 0.130 mgd measured over a period of 30 consecutive days is prohibited.

I. The peak daily wet-weather influent flow through the treatment system in excess of 0.58 mgd is prohibited.

J. The discharge of wastewater effluent from the Facility to the Russian River or its tributaries is prohibited during the period from May 15 through September 30 of each year.

K. During the period from October 1 through May 14, discharges of treated wastewater to Jones Creek, tributary to Green Valley Creek which is tributary to the Russian River, shall not exceed one percent of the flow of Green Valley Creek, as measured at the Iron Horse Bridge. For purposes of this Order, compliance with this discharge prohibition shall be determined as follows:

1. The discharge of advanced treated wastewater shall be adjusted at least once daily to avoid exceeding, to the extent practicable, one percent of the most recent daily flow measurement of Green Valley Creek at Iron Horse Bridge. Daily flow shall be based on flow meter comparisons reasonably read between the hours of 12:01 am to 12:00 midnight; and
2. In no case shall the total volume of advanced treated wastewater discharged in a calendar month exceed one percent of the total volume of Green Valley Creek at Iron Horse Bridge in the same calendar month. At the beginning of the discharge season, the monthly flow volume comparisons shall be based on the date when the discharge commenced to the end of the calendar month. At the end of the discharge season, the monthly flow volume shall be based on the first day of the calendar month to the date when the discharge ceased for the season.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations

1. Final Effluent Limitations – Discharge Point 001 (Discharge to Storage Pond)

a. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Locations INT-001 (BOD_5) and EFF-001 (TSS) as described in the attached MRP:

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Table 6. Effluent Limitations – Discharge Point 001 (Discharge to Storage Pond)

Parameter	Units	Effluent Limitations				
		Average Monthly[5]	Average Weekly[5]	Maximum Daily[5]	Instantaneous Minimum[5]	Instantaneous Maximum[5]
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5)	mg/L	10	15	--	--	--
	lbs/day[6,7] (dry-weather)	11	16	--	--	--
	lbs/day[6,8] (wet-weather)	48	73	--	--	--
Total Suspended Solids (TSS)	mg/L	10	15	--	--	--
	lbs/day[6,7] (dry-weather)	11	16	--	--	--
	lbs/day[6,8] (wet-weather)	48	73	--	--	--

b. **Percent Removal.** The average monthly percent removal of BOD_5 and TSS shall not be less than 85 percent. Percent removal shall be determined from the monthly average value of influent wastewater concentration in comparison to the monthly average value of effluent concentration for the same constituent over the same time period as measured at Monitoring Locations INT-001 (BOD_5) and EFF-001 (TSS). [40 CFR 133.101(j)]

c. **Disinfection.** Disinfected effluent discharged at Discharge Point 001 shall not contain coliform bacteria in excess of the following concentrations:

   i. The median concentration shall not exceed an MPN of 2.2 per 100 mL, using the bacteriological results of the last 7 days for which analyses have been completed[9];

   ii. The number of coliform bacteria shall not exceed an MPN of 23 per 100 mL in more than one sample in any 30-day period; and

   iii. No single sample shall exceed an MPN of 240 total coliform bacteria per 100 mL.

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5 See Definitions in Attachment A and Compliance Determination discussion in section VII of this Order.

6 Mass-based effluent limitations apply during periods of discharge to surface waters (Jones Creek). See section VII.H of this Order regarding compliance with mass-based effluent limitations.

7 Mass-based effluent limitations are based on the dry weather design flow of the Facility of 0.130 mgd and apply whenever influent flows to the WWTF are less than or equal to 0.130 mgd.

8 During wet weather periods, when the influent flow rate exceeds the dry weather design flow, mass emission limitations shall be calculated using the concentration-based effluent limitations and the actual daily average influent flow rate (not to exceed a peak weekly design flow of 0.58 mgd).

9 See section VII.H of this Order regarding compliance with bacteriological limitations.

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2. **Final Effluent Limitations – Discharge Point 002 (Discharge to Jones Creek)**

   a. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 002, with compliance measured at Monitoring Location EFF-002 as described in the attached MRP:

Table 7. Effluent Limitations – Discharge Point 002 (Discharge to Jones Creek)

Parameter	Units	Effluent Limitations				
		Average Monthly[5]	Average Weekly[5]	Maximum Daily[5]	Instantaneous Minimum[5]	Instantaneous Maximum[5]
pH	standard units	--	--	--	6.5	8.5
Copper, Total Recoverable	µg/L	[10]	--	[10]	--	--
Cyanide, Total (as CN)	µg/L	4.2	--	8.7	--	--
Dichlorobromomethane	µg/L	0.56	--	1.45	--	--
Total Trihalomethanes[11]	µg/L	80	--	--	--	--
Chlorine, Total Residual[12]	mg/L	0.01	--	0.02	--	--
Nitrate Nitrogen, Total (as N)	mg/L	10	--	--	--	--

   b. **Acute Toxicity.** There shall be no acute toxicity in treated wastewater discharged to Jones Creek. The Discharger will be considered compliant with this limitation when the survival of aquatic organisms in a 96-hour bioassay of undiluted effluent complies with the following:

      i. Minimum for any one bioassay: 70 percent survival; and

      ii. Median for any three or more consecutive bioassays: at least 90 percent survival.

   Compliance with this effluent limitation shall be determined in accordance with section V.A of the Monitoring and Reporting Program (Attachment E).

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[10] Final effluent limitations for copper are hardness-dependent. See Attachment E-1 for the full table of hardness-dependent copper effluent limitations, which are to be determined based on the hardness of the effluent at the time the discharge is sampled.

[11] Total trihalomethanes (TTHM) means the sum of the concentrations of the trihalomethane compounds dichlorobromomethane, chloroform, bromoform and dibromochloromethane (CCR, Title 22, section 64401.92).

[12] Final effluent limitations for total chlorine residual become effective on March 1 2017.

3. **Interim Effluent Limitations – Discharge Point 002 (Discharge to Jones Creek)**

   a. Beginning on the effective date of this Order and ending February 28, 2017, the Discharger shall maintain compliance with an interim effluent limitation for chlorine residual of 0.1 mg/L at Discharge Point 002, with compliance measured at Monitoring Location EFF-002, as described in the MRP. Final effluent limitations specified in section IV.A.2.a (Table 7) become effective no later February 28, 2017 in accordance with the compliance schedule in section V.C.7.a of this Order.

B. Land Discharge Specifications – Not Applicable

This section is not applicable to the Discharger as treated wastewater is not discharged to or applied to land for the purpose of disposal. The Discharger reclaims treated wastewater, thus the Discharger has Reclamation Specifications rather than Land Discharge Specifications.

C. Reclamation Specifications – Discharge Point 003 (All Authorized Reclamation Sites[13]) and Discharge Point 004 (Transfers to Graton CSD)

1. **Reclamation Requirements.**

   a. The Discharger shall comply with applicable state and local requirements regarding the production and use of reclaimed wastewater, including requirements of Water Code sections 13500 – 13577 (Water Reclamation) and California Department of Public Health (CDPH) regulations at title 22, sections 60301 – 60357 of the California Code of Regulations (Water Recycling Criteria).

   b. The Discharger shall comply with the requirements contained in Reclamation Requirements and Provisions – Attachment G of this Order.

2. **Reclamation Specifications.**

   a. All effluent discharges to the recycled water system and transfers to Graton CSD are from the on-site recycled water storage pond, therefore, effluent limitations identified in sections IV.A.1.a and IV.A.1.c, above must be met at Discharge Point 001 for discharges to the recycled water system and transfers to Graton CSD.

   b. During periods of discharge to the recycled water system and transfers to Graton CSD, the Discharger shall maintain compliance with the following effluent limitations at Discharge Point 003/004 as measured at Monitoring Location REC-001(discharge from storage pond to reclamation system) as described in the MRP.

[13] Authorized reclamation sites means sites which have been evaluated for CEQA compliance and addressed in the Discharger's Title 22 Recycled Water Engineering Report and approved by the State Department of Public Health and Regional Water Board.

Table 8. Reclamation Specifications – Discharge Point 003 (Discharge to Reclamation Distribution System) and Discharge Point 004 (Transfers to Graton CSD)

Parameter	Units	Discharge Specifications			
		Average Monthly[5]	Average Weekly[5]	Instantaneous Minimum[5]	Instantaneous Maximum[5]
pH	standard units	--	--	6.0	9.0

D. Other Requirements

1. Filtration Process Requirements

a. **Turbidity.** The effluent from the filtration system shall at all times be filtered such that the filtered effluent does not exceed any of the following specifications at Monitoring Location INT-001, prior to discharge to the disinfection unit:

i. 0.2 NTU more than 5 percent of the time during any 24-hour period; and

ii. 0.5 NTU at any time.

b. Filtered effluent in excess of the turbidity specifications shall not enter the reclamation distribution system. Filtered effluent in excess of turbidity specifications shall be automatically diverted to an upstream treatment process unit or to emergency storage as soon as the Discharger is aware of the exceedance. Alternatively, the Discharger may cease transfers through the microfilters until the problem is corrected. The Discharger shall provide notification of non-compliance with the filtration process requirements as required in section VI.A.2.b of this Order.

2. **Disinfection Process Requirements for Chlorine Disinfection System.** Treated effluent shall be disinfected in a manner that ensures effective pathogen reduction. The disinfection specifications shall be met at the end of the disinfection process (Discharge Point 001, Monitoring Location EFF-001):

a. When discharging to the recycled water system, the chlorine disinfection process shall provide a CT value[14] of not less than 450 milligram-minutes per liter at all times.

[14] The CT value is the product of total chlorine residual and modal contact time measured at the same period. The modal contact time is the amount of time that elapsed between the time that a tracer, such as salt or dye,

b. When discharging to Jones Creek when the filter effluent flow is greater than or equal to 0.58 mgd, the chlorine disinfection process shall provide a minimum continuous chlorine residual concentration of 5.3 milligrams per liter at all times. The Discharger shall initiate daily coliform monitoring when the average influent flow to the WWTF from the previous day is greater than or equal to 0.58 mgd.

c. When discharging to Jones Creek when the filter effluent flow is less than 0.58 mgd, the chlorine disinfection process shall at all times provide a CT value of not less than 450 milligram-minutes per liter.

d. Effluent not meeting the CT criteria shall be diverted to an upstream treatment process unit or to emergency storage as soon as the Discharger is aware of the exceedance. The Discharger shall provide notification of non-compliance with disinfection process requirements as required by section VI.A.2.b of this Order.

3. **Storage Ponds.** Ponds used for the storage of recycled water shall be constructed in a manner that protects groundwater. Prior to construction of any new wastewater storage ponds or use of any existing pond for storage of recycled water, the discharger shall submit to the Regional Water Board Executive Officer for review and approval, a technical report that includes design proposals and a technical evaluation that demonstrates that the pond design complies with the Water Code and title 27 of the California Code of Regulations and is protective of ground water quality. Pond design and operation plan must include features and BMPs to protect groundwater and prevent exceedances of groundwater quality objectives.

IV. RECEIVING WATER LIMITATIONS

A. Surface Water Limitation

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. Compliance with receiving water limitations shall be measured at monitoring locations described in the MRP (Attachment E). Discharges from the Facility shall not cause the following:

1. The discharge shall not cause the dissolved oxygen concentration of the receiving water to be depressed below 7.0 mg/L. Additionally, the discharge shall not cause the dissolved oxygen content of the receiving water to fall below 10.0 mg/L more than 50 percent of the time, or below 7.5 mg/L more than 10 percent of the time in a calendar year. In the event that the receiving waters are determined to have a dissolved oxygen concentration of less than 7.0 mg/L, the discharge shall not depress the dissolved oxygen concentration below the existing level.

2. The discharge shall not cause the pH of receiving waters to be depressed below 6.5 nor raised above 8.5. Within this range, the discharge shall not cause the pH of the

is injected into the influent at the entrance of the chlorination chamber and the time that the highest concentration of the tracer is observed in the effluent from the chamber.

receiving waters to be changed at any time more than 0.5 units from that which occurs naturally.

3. The discharge shall not cause the turbidity of receiving waters to be increased more than 20 percent above naturally occurring background levels.
4. The discharge shall not cause receiving waters to contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.
5. The discharge shall not cause receiving waters to contain floating materials, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.
6. The discharge shall not cause receiving waters to contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, that cause nuisance, or that adversely affect beneficial uses.
7. The discharge shall not cause coloration of receiving waters that causes nuisance or adversely affects beneficial uses.
8. The discharge shall not cause bottom deposits in receiving waters to the extent that such deposits cause nuisance or adversely affect beneficial uses.
9. The discharge shall not cause or contribute concentrations of biostimulatory substances to receiving waters that promote objectionable aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.
10. The discharge shall not cause receiving waters to contain toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in humans, plants, animals, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods, as specified by the Regional Water Board.
11. The discharge shall not cause a measurable temperature change in the receiving water at any time.
12. The discharge shall not cause an individual pesticide or combination of pesticides to be present in concentrations that adversely affect beneficial uses. The discharge shall not cause bioaccumulation of pesticide, fungicide, wood treatment chemical, or other toxic pollutant concentrations in bottom sediments or aquatic life to levels which are harmful to human health.
13. The discharge shall not cause receiving waters to contain concentrations of pesticides in excess of the limiting concentrations set forth in Table 3-2 of the Basin Plan or in excess of more stringent Maximum Contaminant Levels (MCLs) established for these pollutants in title 22, Division 4, Chapter 15, Articles 4 and 5.5 of the California Code of Regulations.

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14. The discharge shall not cause receiving waters to contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise affect beneficial uses.
15. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Regional Water Board or the State Water Board, as required by the federal Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to section 303 of the Clean Water Act, or amendments thereto, the Regional Water Board will revise and modify this Order in accordance with such more stringent standards.
16. The discharge shall not cause concentrations of chemical constituents to occur in excess of limits specified in Table 3-2 of the Basin Plan or in excess of more stringent MCLs established for these pollutants in title 22, Division 4, Chapter 15, Articles 4 and 5.5 of the California Code of Regulations.

B. Groundwater Limitations

Receiving water limitations for groundwater are based on water quality objectives in the Basin Plan and are a required part of this Order. Discharges from the Facility shall not cause exceedance of applicable water quality objectives or create adverse impacts to beneficial uses of groundwater. Discharges from the Facility shall not cause the following:

1. The collection, storage, and use of wastewater or recycled water shall not cause or contribute to a statistically significant degradation of groundwater quality unless a technical evaluation is performed that demonstrates that any degradation that could reasonably be expected to occur, after implementation of all regulatory requirements (e.g., Title 27) and reasonable best management practices, will not violate groundwater quality objectives or cause impacts to beneficial uses of groundwater.
2. The collection, storage, and use of wastewater or recycled water shall not cause groundwater to contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

V. PROVISIONS

A. Standard Provisions

1. **Federal Standard Provisions.** The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.
2. **Regional Water Board Standard Provisions.** The Discharger shall comply with the following Regional Water Board standard provisions:
    a. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this facility, may

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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.

b. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, interim or final effluent limitation, land discharge specification, reclamation specification, receiving water limitation, or provision of this Order that may result in a significant threat to human health or the environment, such as inundation of treatment components, breach of pond containment, sanitary sewer overflow, irrigation runoff, etc., that results in a discharge to a drainage channel or a surface water, the Discharger shall notify Regional Water Board staff within 24 hours and report orally and in writing to the Regional Water Board staff all unauthorized spills of waste. Spill notification and reporting shall be conducted in accordance with section X.E of the Monitoring and Reporting Program.

c. 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. (Water Code § 1211)

B. Monitoring and Reporting Program (MRP) Requirements

The Discharger shall comply with the MRP included as Attachment E to this Order, and future revisions thereto.

C. Special Provisions

1. **Reopener Provisions**

a. **Standard Revisions.** If applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA, or amendments thereto, the Regional Water Board may reopen this Order and make modifications in accordance with such revised standards.

b. **Reasonable Potential.** This Order may be reopened for modification to include an effluent limitation, if monitoring establishes that the discharge causes, or has the reasonable potential to cause or contribute to, an excursion above a water quality criterion or objective applicable to the receiving water.

c. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if 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 effluent limitation based on that objective.

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d. **303(d)-Listed Pollutants.** If an applicable TMDL program is adopted, this Order may be reopened and effluent limitations for the pollutant(s) that are the subject of the TMDL will be modified or imposed to conform this Order to the TMDL requirements. If the Regional Water Board determines that a voluntary offset program is feasible for and desired by the Discharger, then this Order may be reopened to reevaluate the effluent limitations for the pollutant(s) that are subject of the TMDL and, if appropriate, to incorporate provisions recognizing the Discharger's participation in an offset program.

e. **Water Effects Ratios (WERs) 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. If the Discharger performs studies to determine site-specific WERs and /or site-specific dissolved-to-total metal translators and submits a report that demonstrates that WER or translator studies were performed in accordance with USEPA or other approved guidance, this Order may be reopened to modify the effluent limitations for the applicable constituents.

f. **Nutrients.** This Order contains monitoring requirements for ammonia, nitrate, and phosphorus. If new water quality objectives for nutrients are established, or if monitoring data indicate the need for effluent limitations for any of these parameters, this Order may be reopened and modified to include new or modified effluent limitations, as necessary.

g. **Salt and Nutrient Management Plans.** The Recycled Water Policy adopted by the State Water Board on February 3, 2009 and effective May 14, 2009 recognizes the fact that some groundwater basins in the state contain salts and nutrients that exceed or threaten to exceed water quality objectives in the applicable Basin Plans, and that not all Basin Plans include adequate implementation procedures for achieving or ensuring compliance with the water quality objectives for salt or nutrients. The Recycled Water Policy finds that the appropriate way to address salt and nutrient issues is through the development of regional or subregional salt and nutrient management plans rather than through imposing requirements solely on individual recycled water projects. The Regional Water Board is developing a plan to address salt and nutrient management. This Order may be reopened to incorporate provisions consistent with any salt and nutrient management plan(s) adopted by the Regional Water Board.

2. **Special Studies, Technical Reports and Additional Monitoring Requirements**

a. **Toxicity Reduction Requirements**

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i. **Whole Effluent Toxicity.** In addition to a limitation for whole effluent acute toxicity, the MRP of this Order requires routine monitoring for whole effluent chronic toxicity to determine compliance with the Basin Plan's narrative water quality objective for toxicity. As established by the MRP, if either of the effluent limitations for acute toxicity is exceeded (a single sample with less than 70% survival or a three sample median of less than 90% survival) or if the chronic toxicity monitoring trigger of 1.0 TUc (where TUc = 100/NOEC)[15] is exceeded, the Discharger shall conduct accelerated monitoring as specified in section V. of the MRP.

Results of accelerated toxicity monitoring will indicate a need to conduct a TRE, if toxicity persists; or it will indicate that a return to routine toxicity monitoring is justified because persistent toxicity has not been identified by accelerated monitoring. TREs shall be conducted in accordance with the TRE workplan prepared by the Discharger pursuant to Section VI.C.2.a.ii of this Order, below.

ii. **Toxicity Reduction Evaluations (TRE) Workplan.** The Discharger submitted a TRE workplan to the Regional Water Board on March 9, 2009. This plan shall be reviewed at least once every 5 years and updated as necessary in order to remain current and applicable to the discharge and discharge facilities. The Discharger shall notify the Regional Water Board of this review and submit any revision of the TRE workplan with each Report of Waste Discharge.

The TRE workplan shall describe the steps the Discharger intends to follow if toxicity is detected, and should include at least the following items:

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

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

c. If a toxicity identification evaluation (TIE) is necessary, an indication of the person who would conduct the TIEs (i.e., an in-house expert or an outside contractor).

iii. **Toxicity Reduction Evaluations (TRE) Implementation.** The TRE shall be conducted in accordance with the following:

a. The TRE shall be initiated within 30 days of the date of completion of the accelerated monitoring testing, required by Sections V.A.7 and V.B.9 of

[15] This Order does not allow any credit for dilution for the chronic condition. Therefore, a TRE is triggered when the effluent exhibits a pattern of toxicity at 100% effluent.

the MRP, observed to exceed either the acute or chronic toxicity parameter.

b. The TRE shall be conducted in accordance with the Discharger's TRE workplan.

c. The TRE shall be in accordance with current technical guidance and reference material including, at a minimum, the USEPA manual EPA/833B 99/002.

d. The TRE may end at any stage if, through monitoring results, it is determined that there is no longer consistent toxicity. The Discharger shall notify the Regional Water Board of this determination.

e. The Discharger may initiate a TIE as part of the TRE process to identify the cause(s) of toxicity. TIEs shall be conducted in accordance with current technical guidance and reference material, including, at a minimum, the Discharger shall use the USEPA acute and chronic manuals, EPA/600/6-91/005F (Phase I), EPA/600/R-92/080 (Phase II), and EPA-600/R-92/081 (Phase III).

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

g. Many recommended TRE elements accompany required efforts of source control, pollution prevention, and storm water control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements of recommendations of such programs may be acceptable to comply with requirements of the TRE.

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

b. Technical Report(s) Regarding Existing Recycled Water Use Sites. The Discharger provides recycled water to several existing recycled water use sites. Technical information is needed to assess these recycled water use sites to determine if they meet recycled water requirements identified in the statewide Recycled Water Policy adopted by the State Water Board in 2009 and in Attachment G of this Order. Within 120 days of the effective date of this Order, the Discharger shall prepare and submit, for approval by the Regional Water Board Executive Officer, a workplan describing the Discharger's plan and time

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schedule for (1) assessing existing recycled water use sites and submittal of programmatic and/or site-specific technical reports in accordance with Water Reclamation Technical Report Requirements in section D of Attachment G to this Order; and (2) complying with Reclamation Requirement VII.B. (Recycled Water Production and Use) in the MRP. The Workplan shall lead to the submittal of technical information that is sufficient to (1) determine whether or not recycled water is being applied at nutrient and hydraulic agronomic rates, (2) describe best management practices (BMPs) being implemented at each recycled water use site, (3) evaluate if BMPs are adequate to prevent and minimize the potential for surface runoff and impacts to groundwater, and (4) identify any additional BMPs that are needed to meet the requirements of this Order. If more than two years are needed to complete the assessment of all sites, the workplan shall include a plan to prioritize the assessment of recycled water use sites over time until all recycled water use site assessments are completed. The workplan shall also include a task to submit a corrective action plan to address any recycled water use that is found to exceed agronomic rates or to be resulting in runoff of recycled water to surface waters.

c. Storage Pond Technical Report. The Discharger shall prepare and submit for approval by the Regional Water Board Executive Officer a Storage Pond Technical Report within four years of the effective date of this Order. The Technical Report shall utilize existing information to provide a description of each recycled water storage pond used by the Discharger in order for Regional Water Board staff to assess whether the storage ponds are adequately designed to minimize the potential for recycled water to cause adverse impacts to areal groundwater and beneficial uses thereof. The Technical Report shall include, but not be limited to construction date (or estimate if actual date is not known), construction details (thickness of any clay liner, impermeability, construction details, etc), and operation and maintenance procedures that are used (e.g., berm and liner inspections, etc).

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

a. **Pollutant Minimization Program (PMP)**

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

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i. A sample result is reported as DNQ and the effluent limitation is less than the RL; or

ii. A sample result is reported as ND and the effluent limitation is less than the MDL, using definitions described in Attachment A and reporting protocols described in MRP section X.B.4.

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

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

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

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

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

v. An annual status report that shall be submitted as part of the Annual WWTF Report due March 1st to the Regional Water Board and shall include:

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

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

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

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

4. **Construction, Operation and Maintenance Specifications**

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

b. The Discharger shall maintain an updated Operation and Maintenance (O&M) Manual for the Facility. The Discharger shall update the O&M Manual, as necessary, to conform to changes in operation and maintenance of the Facility. The O&M Manual shall be readily available to operating personnel onsite and for

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review by state or federal inspectors. The O&M Manual shall include the following.

i. Description of the Facility's table of organization showing the number of employees, duties and qualifications and plant attendance schedules (daily, weekends and holidays, part-time, etc). The description should include documentation that the personnel are knowledgeable and qualified to operate the treatment facility so as to achieve the required level of treatment at all times.

ii. Detailed description of safe and effective operation and maintenance of treatment processes, process control instrumentation and equipment.

iii. Description of laboratory and quality assurance procedures.

iv. Process and equipment inspection and maintenance schedules.

v. Description of safeguards to assure that, should there be reduction, loss, or failure of electric power, the Discharger will be able to comply with requirements of this Order.

vi. Description of preventive (fail-safe) and contingency (response and cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. These plans shall identify the possible sources (such as loading and storage areas, power outage, waste treatment unit failure, process equipment failure, tank and piping failure) of accidental discharges, untreated or partially treated waste bypass, and polluted drainage.

5. **Special Provisions for Municipal Facilities (POTWs Only)**

a. **Wastewater Collection Systems**

i. **Statewide General WDRs for Sanitary Sewer Systems**

On May 2, 2006, the State Water Board adopted State Water Board Order No. 2006-003-DWQ, Statewide General WDRs for Sanitary Sewer Systems. Order No. 2006-0003-DWQ requires all public agencies that currently own or operate sanitary sewer systems to apply for coverage under the General WDRs. The deadline for existing dischargers to apply for coverage under State Water Board Order No. 2006-003-DWQ was November 6, 2006. On February 20, 2008, the State Water Board adopted Order No. WQ 2008-0002-EXEC Adopting Amended Monitoring and Reporting Requirements for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. The Discharger shall maintain coverage under, and shall be subject to the requirements of Order Nos. 2006-0003-DWQ and WQ-2008-0002-EXEC and any future revisions thereto for operation of its wastewater collection system.

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In addition to 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)].

ii. **Spills and Sanitary Sewer Overflows**

(a) The Discharger shall take all feasible steps to stop spills and sanitary sewer overflows (SSOs) as soon as possible. All reasonable steps should be taken to collect spilled material and protect the public from contact with wastes or waste-contaminated soil or surfaces.

(b) The Discharger shall report orally and in writing to the Regional Water Board staff all SSOs and unauthorized spills of waste. Spill notification and reporting shall be conducted in accordance with section X.E of the Monitoring and Reporting Program.

b. **Source Control Provisions**

The Discharger shall perform source control functions and provide a summary of source control activities conducted in the Annual WWTF Report (due March 1st to the Regional Water Board). Source control functions and requirements shall include the following:

i. Implement the necessary legal authorities to monitor and enforce source control standards, restrict discharges of toxic materials to the collection system and inspect facilities connected to the system.

ii. If waste haulers are allowed to discharge to the Facility, establish a waste hauler permit system, to be reviewed by the Executive Officer, to regulate waste haulers discharging to the collection system or Facility.

iii. National Pretreatment Standards: Prohibited Discharges

General prohibitions. Pollutants introduced into WWTFs by a non-domestic source shall not pass through [40 CFR 403.3(n)] the WWTF or interfere [40 CFR 403.3(i)] with the operation or performance of the WWTF. These general prohibitions and the specific prohibitions in paragraph (b) of this provision apply to all non-domestic sources introducing pollutants into a WWTF whether or not the source is subject to other National Pretreatment Standards or any national, state, or local pretreatment requirements.

Specific prohibitions. In addition, the following pollutants shall not be introduced into a WWTF:

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Pollutants that create a fire or explosion hazard in the WWTF;

Pollutants that will cause corrosive structural damage to the WWTF, but in no case discharges with pH lower than 5.0, unless the WWTF is specifically designed to accommodate such discharges;

Solid or viscous pollutants in amounts that will cause obstruction to the flow in the WWTF resulting in interference;

Any pollutant, including oxygen demanding pollutants (BOD, etc) released in a discharge at a flow rate and/or pollutant concentration that will cause interference with the WWTF;

Heat in amounts which will inhibit biological activity in the WWTF resulting in interference, but in no case heat in such quantities that the temperature at the WWTF exceeds 40°C (104°F) unless the Regional Water Board, upon request of the WWTF, approves alternate temperature units;

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

Pollutants that result in the presence of toxic gases, vapors, or fumes within the WWTF in a quantity that may cause acute worker health and safety problems; or

Any trucked or hauled pollutant, except at discharge points designated by the WWTF.

iv. Conduct an industrial waste survey to identify all dischargers that might discharge pollutants that could pass through or interfere with the operation or performance of the Facility.

v. Perform public outreach to educate industrial, commercial, and residential users about the importance of preventing discharges of industrial and toxic wastes to the wastewater treatment plant.

vi. Perform ongoing inspections and monitoring, as necessary, to ensure adequate source control.

c. **Sludge Disposal and Handling Requirements**

i. Sludge, as used in this Order, means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screenings generated during preliminary treatment. Biosolids refers to sludge that has been treated, tested, and demonstrated to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities.

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ii. All collected sludges and other solid waste removed from liquid wastes shall be removed from screens, sumps, ponds, and tanks as needed to ensure optimal plant operation and disposed of in accordance with applicable federal and State regulations.

iii. The use and disposal of biosolids shall comply with all of the land application and disposal requirements in 40 CFR 503, which are enforceable by the USEPA, not the Regional Water Board. If during the life of this Order, the State accepts primacy for implementation of 40 CFR 503, the Regional Water Board may also initiate enforcement where appropriate.

iv. Sludge or biosolids that are disposed of in a municipal solid waste landfill or used as daily landfill cover shall meet the applicable requirements of 40 CFR 258. In the annual self-monitoring report, the Discharger shall report the amount of sludge placed in a landfill and the landfill(s) which received the sludge or biosolids.

v. The beneficial use of biosolids by application to land as soil amendment is not covered or authorized by this Order. Biosolids that are applied to land as soil amendment by the Discharger within the North Coast Region shall comply with State Water Board Water Quality Order No. 2004-12-DWQ (General Waste Discharge Requirements for the Discharge of Biosolids to Land as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities) or other permits issued by the Regional Water Board.

vi. The Discharger shall take all reasonable steps to prevent and minimize any sludge use or disposal in violation of this Order that may adversely affect human health or the environment.

vii. Solids and sludge treatment, storage, and disposal or reuse shall not create a nuisance, such as objectionable odors or flies, and shall not result in groundwater contamination.

viii. Solids and sludge treatment and storage sites shall have facilities adequate to divert surface water runoff from adjacent areas, to protect the boundaries of the site from erosion, and to prevent drainage from the treatment and storage site. Adequate protection is defined as protection from at least a 100-year storm.

ix. The discharge of sewage sludge and solids shall not cause waste material to be in a position where it is, or can be, conveyed from the treatment and storage sites and deposited in the waters of the State.

d. **Discharge of Biosolids**

For the discharge of biosolids from the WWTF, the Discharger shall comply with the following requirements:

i. Statewide General WDRs for Discharge of Biosolids to Land

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If applicable, the Discharger shall obtain authorization to discharge under and meet the requirements of the State Water Board Water Quality Order No. 2004-0012-DWQ General Waste Discharge Requirements for the Discharge of Biosolids to Land or Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities. For existing discharges of biosolids to land, the Discharger shall submit a Notice of Intent to Comply within 180 days of the effective date of this Order. For future discharges of biosolids to land, the Discharger shall submit a Notice of Intent to Comply in accordance with the enrollment requirements of Order No. 2004-0012-DWQ; or

ii. Alternatively, the Discharger may dispose of biosolids at another appropriately permitted facility.

iii. New sludge treatment and storage facilities must comply with the Water Code and California Code of Regulations Title 27 requirements for the protection of water quality.

e. **Operator Certification**

Supervisors and operators of municipal WWTFs shall possess a certificate of appropriate grade in accordance with Title 23, CCR, section 3680. The State Water Board may accept experience in lieu of qualification training. In lieu of a properly certified WWTF operator, the State Water Board may approve use of a water treatment facility operator of appropriate grade certified by CDPH where water reclamation is involved.

f. **Adequate Capacity**

If the WWTF or effluent disposal areas will reach capacity within 4 years, the Discharger shall notify the Regional Water Board. A copy of such notification shall be sent to appropriate local elected officials, local permitting agencies, and the press. Factors to be evaluated in assessing reserve capacity shall include, at a minimum, (1) comparison of the wet weather design flow with the highest daily flow, and (2) comparison of the average dry weather design flow with the lowest 30-day flow. The Discharger shall demonstrate that adequate steps are being taken to address the capacity problem. The Discharger shall submit a technical report to the Regional Water Board showing how flow volumes will be prevented from exceeding capacity, or how capacity will be increased, within 120 days after providing notification to the Regional Water Board, or within 120 days after receipt of Regional Water Board notification, that the WWTF will reach capacity within four years. The time for filing the required technical report may be extended by the Regional Water Board. An extension of 30 days may be granted by the Executive Officer, and longer extensions may be granted by the Regional Water Board itself. [CCR Title 23, section 2232]

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6. **Other Special Provisions**

   a. **Storm Water Best Management Practices (BMPs).** BMPs to control storm water at the Facility shall be developed and upgraded, as necessary. In each annual report submitted to the Regional Water Board, the Discharger shall describe the effectiveness of these storm water BMPs as well as activities to maintain and upgrade these BMPs during the previous year.

7. **Compliance Schedules**

   a. **Compliance Schedule for Final Effluent Limitations for Chlorine Residual**

      The Discharger shall comply with the following compliance schedule to achieve compliance with final effluent limitations for total chlorine residual specified in IV.A.2.a (Table 7) of this Order:

Table 9. Compliance Schedule for Final Effluent Limitations for Chlorine Residual

Task Number	Task Description	Compliance Date
1	The Discharger shall submit for Executive Officer approval, a workplan identifying a plan for complying with final chlorine residual effluent limitations.	March 1, 2013
2	The Discharger shall submit annual reports identifying progress toward compliance with final chlorine residual effluent limitations.	Beginning March 1, 2014
3	The Discharger shall comply with final effluent limitations for chlorine residual.	No later than February 28, 2017

VI. COMPLIANCE DETERMINATION

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

A. General

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

B. Multiple Sample Data

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

1. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
2. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

C. Average Monthly Effluent Limitation (AMEL)

If the average (or when applicable, the median determined by subsection B above for multiple sample data) of daily discharges over a calendar month exceeds the AMEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the Discharger will be considered out of compliance for that calendar month. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

D. Average Weekly Effluent Limitation (AWEL)

If the average (or when applicable, the median determined by subsection B above for multiple sample data) of daily discharges over a calendar week exceeds the AWEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that week for that parameter, resulting in 7 days of non-compliance. If only a single sample is taken during the calendar week and the analytical result for that sample exceeds the AWEL, the Discharger will be considered out of compliance for that calendar week. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar week during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar week.

E. Maximum Daily Effluent Limitation (MDEL)

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If a daily discharge (or when applicable, the median determined by subsection B, above, for multiple sample data of a daily discharge) exceeds the MDEL for a given parameter, the Discharger will be considered out of compliance for that parameter for that 1 day only within the reporting period. For any 1 day during which no sample is taken, no compliance determination can be made for that day.

F. Instantaneous Minimum Effluent Limitation

If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, the Discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are lower than the instantaneous minimum effluent limitation would result in two instances of non-compliance with the instantaneous minimum effluent limitation).

G. Instantaneous Maximum Effluent Limitation

If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, the Discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of non-compliance with the instantaneous maximum effluent limitation).

H. Mass-Based Effluent Limitations

Compliance with mass- and concentration-based effluent limitations for the same parameter shall be determined separately. Mass-based calculations shall use transfer flow rate and effluent concentration measured at EFF-001 (discharge to effluent storage pond).

1. Weekly Average. Compliance with the weekly mass-based average limitation shall be determined using the following formula:

   lbs/day = 8.34 * Ce * Q, where

   Ce = average of effluent concentrations collected during the calendar week (mg/L)

   Q = average flow rate averaged over the same calendar week (mgd)

2. Monthly Average. Compliance with the monthly mass-based average limitation shall be determined using the following formula:

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lbs/day = 8.34 * Ce * Q, where

Ce = average of effluent concentrations collected during the calendar month (mg/L)

Q = average flow rate averaged over the same calendar month (mgd)

I. Bacteriological Limitations (Total Coliform)

1. Median. The median is the central tendency concentration of the pollutant. The data set shall be ranked from low to high, ranking the ND concentrations lowest, DNQ determinations next, followed by quantified values. The order of the individual ND and DNQ determinations is not important. The median value is determined based on the number of data points in the set. 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, the median is the average of the two middle values, unless one or both points are ND or DNQ, in which case the median value shall be the lower of the two middle data points. DNQ is lower than a detected value, and ND is lower than DNQ.

2. Compliance with the 7-day median will be determined as a rolling median during periods when sampling occurs more frequently than weekly. During periods when sampling is weekly, this requirement shall apply to each weekly sample.

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

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

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

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

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

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

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

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

Effective Concentration (EC) is a point estimate of the toxicant concentration that would cause an adverse effect on a quantal, "all or nothing," response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Karber. EC25 is the concentration of toxicant (in percent effluent) that causes a response in 25 percent of the test organisms.

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

Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of 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 is the estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

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

Inhibition Concentration (IC). The IC25 is typically calculated as a percentage of effluent. It is the level at which the organisms exhibit 25 percent reduction in biological measurement such as reproduction or growth. It is calculated statistically and used in chronic toxicity testing.

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

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

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

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

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

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

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

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

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

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

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

Pollutant Minimization Program (PMP) means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling,

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alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

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

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

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

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

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

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

where:

x is the observed value;

μ is the arithmetic mean of the observed values; and

n is the number of samples.

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

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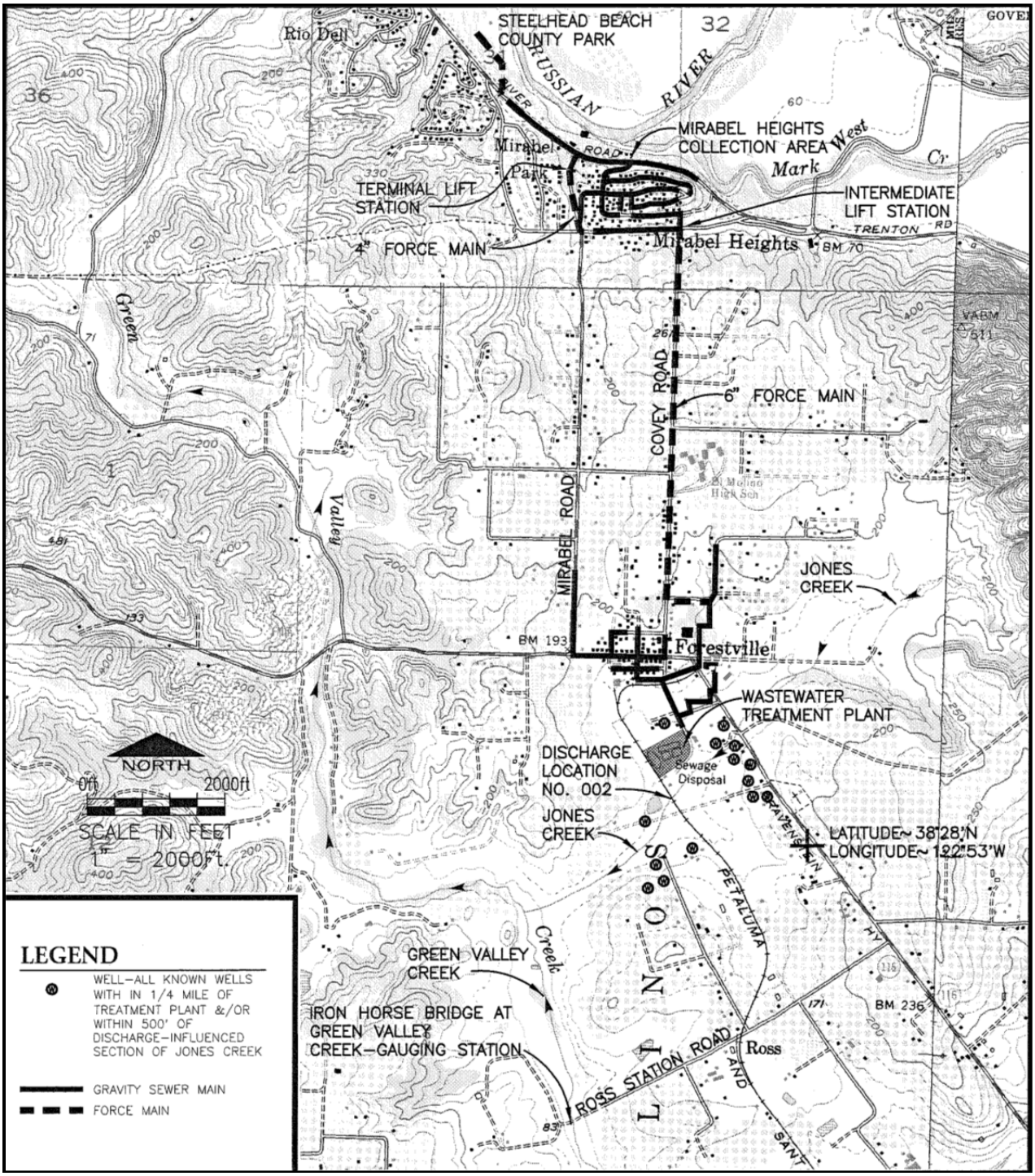
ATTACHMENT B – MAP OF FORESTVILLE WATER DISTRICT



ATTACHMENT C – FACILITY FLOW SCHEMATIC

DESIGN CRITERIA

FLOWS

AVERAGE DRY WEATHER FLOW (ADWF)	0.130 MGD
PEAK WEEKLY FLOW (MDF)	0.580 MGD
PEAK DAILY WET WEATHER FLOW (PWWF)	0.780 MGD

WASTEWATER CONSTITUENTS

BOD5	335 MG\L
TSS	335 MG\L

HEADWORKS

HYDROSCREEN CAPACITY (MAX.)	2.0 MGD
NUMBER SCREENS	1
MOTOR HORSEPOWER	5 HP
FLUME CAPACITY (MAX.)	1.25 MGD
FLUME SIZE	3 INCH
NO. OF FLUMES	1

AERATED PONDS

DESIGN CAPACITY (ADWF)	0.130 MGD
NO. OF CELLS	3
TOTAL VOLUME	2.93 MG
EQUALIZATION VOLUME	0.52 MG
OPERATING VOLUME	2.41 MG
AERATOR HORSEPOWER (TOTAL)	23 HP
CELL 1	2 @ 7 1/2 HP
CELL 2	5 HP
CELL 3	3 HP

SETTLING PONDS

DESIGN CAPACITY (ADWF)	0.130 MGD
NO. OF PONDS	1
NO. OF CELLS	3
TOTAL POND VOLUME	0.75 MG
EQUALIZING VOLUME	0.23 MG
OPERATING VOLUME	0.52 MG
CELL 1	0.25 MG
CELL 2	0.25 MG
CELL 3	0.20 MG

PREFILTER PUMP STATION

DESIGN CAPACITY (MDF+FBR)	0.67 MGD
NO. OF PUMPS	3
PUMP CAPACITY (EACH)	60 TO 480 GPM
TOTAL DYNAMIC HEAD	105 FT TO 130 FT
MOTOR HORSEPOWER (EACH)	30 HP

MICROFILTRATION FACILITIES

DESIGN CAPACITY	0.58 MGD
MAXIMUM CLEAN IN PLACE FREQUENCY	14 days
FILTER BACKWASH RATE (FBR) (10% TO 15%)	0.09 MGD

CHLORINATION FACILITIES

DESIGN CAPACITY	0.58 MGD
NO. OF CHLORINATORS	2
APPLICATION RATE	50 lb\day
CYLINDER SIZE	150 lb
CT	450 MG-MIN/L

DECHLORINATION FACILITIES

DESIGN CAPACITY	0.58 MGD
NO. OF SULFINATORS	2
APPLICATION RATE	20 lb\day
CYLINDER SIZE	150 lb

EFFLUENT STORAGE PONDS

ON-SITE STORAGE CAPACITY	2.3 MG
OFF-SITE STORAGE CAPACITY	16 MG

EFFLUENT PUMP STATION

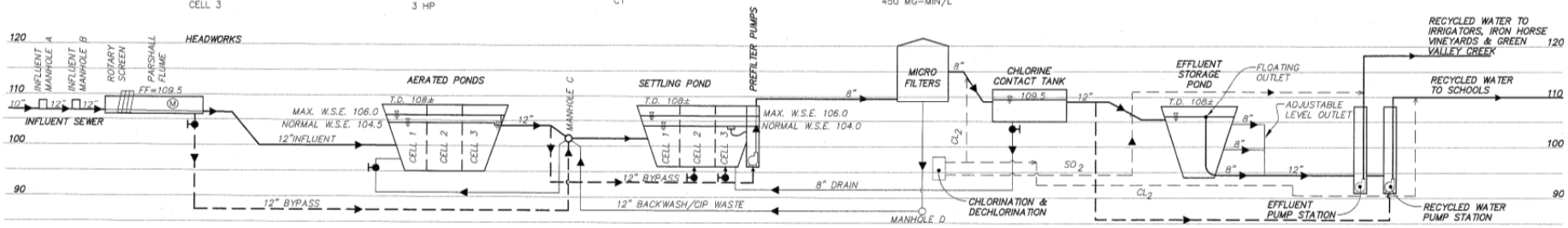
DESIGN CAPACITY	800 GPM
NO. OF PUMPS	2
PUMP CAPACITY (EACH)	500 GPM
TOTAL DYNAMIC HEAD	200 FT
MOTOR HORSEPOWER (EACH)	50 HP

RECYCLED WATER PUMP STATION

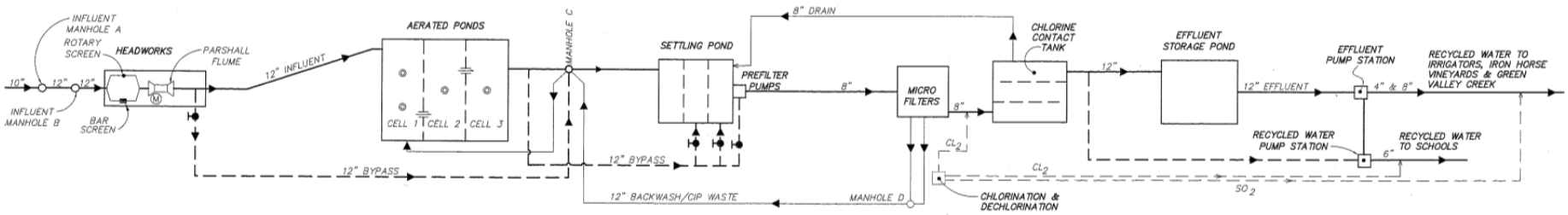
DESIGN CAPACITY	250 GPM
NO. OF PUMPS	2
PUMP CAPACITY	250 GPM
TOTAL DYNAMIC HEAD	350 FT
MOTOR HORSE POWER	40 HP

IRRIGATION SYSTEM

TOTAL NO. OF IRRIGATION SITES	8
IRRIGATION AREA & USAGE	26 AC/66 AC-FT
APPLICATION RATE	12 IN/AC/YR



SCHEMATIC FLOW PROFILE



SCHEMATIC FLOW PLAN

ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

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

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

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

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E. Property Rights

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

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

F. Inspection and Entry

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

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

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

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

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

G. Bypass

1. Definitions

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

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

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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.6 below. (40 CFR § 122.41(m)(4)(i)(C).)

4. Burden of Proof. In any enforcement proceeding, the Discharger seeking to establish the bypass defense has the burden of proof.

5. 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).)

6. 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).)

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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

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termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 CFR § 122.41(f).)

B. Duty to Reapply

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

C. Transfers

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

III. STANDARD PROVISIONS – MONITORING

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

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

IV. STANDARD PROVISIONS – RECORDS

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

B. Records of monitoring information shall include:

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

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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 Requirement s

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).).

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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).)

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2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 CFR § 122.41(l)(4)(i).)

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 CFR § 122.41(l)(4)(ii).)

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

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

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

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

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

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

   c. Violation of a maximum daily discharge limitation for any of the pollutants listed in this Order to be reported within 24 hours [40 CFR § 122.41(l)(6)(ii)(C)]

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

F. Planned Changes

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

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

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

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

G. Anticipated Noncompliance

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

H. Other Noncompliance

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

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any

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report to the Regional Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 CFR § 122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

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

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

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

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

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

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

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM NO. R1-2012-0012

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Attachment E – Monitoring and Reporting Program (MRP)
The Code of Federal Regulations (CFR) at 40 CFR 122.48 requires that all National Pollutant Discharge Elimination System (NPDES) permits specify monitoring and reporting requirements. California Water Code 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 (MRP) establishes monitoring and reporting requirements, which implement the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

A. Wastewater Monitoring Provision. Composite samples may be taken by a proportional sampling device approved by the Executive Officer or by grab samples composited in proportion to flow. In compositing grab samples, the sampling interval shall not exceed one hour.

B. If the Discharger monitors any pollutant more frequently than required by this Order, using test procedures approved by 40 CFR Part 136 or as specified in this Order, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the monthly and annual discharger monitoring reports.

C. Laboratories analyzing monitoring samples shall be certified by the California Department of Public Health (CDPH) in accordance with the provisions of Water Code section 13176, and must include quality assurance / quality control data with their analytical reports.

D. Compliance and reasonable potential monitoring analyses shall be conducted using commercially available and reasonably achievable detection limits that are lower than the applicable effluent limitation. If no ML value is below the effluent limitations, the lowest ML shall be selected as the RL. Table E-1 lists the test methods the Discharger may use for compliance and reasonable potential monitoring to analyze priority pollutants with effluent limitations.

Table E-1. Test Methods and Minimum Levels for Priority Pollutants

CTR#	Constituent Types of Analytical Methods Minimum Levels (µg/L)	Types of Analytical Methods Minimum Levels (µg/L)				
		Gas Chromatography (GC)	Gas Chromatography/ Mass Spectroscopy (GCMS)	Colorimetric	Inductively Coupled Plasma/ Mass Spectroscopy (ICPMS)	Stabilized Platform Graphite Furnace Atomic Absorption
6	Copper	---	---	---	0.5	2
14	Cyanide	---	---	5	---	---
20	Bromoform	0.5	2	---	---	---
23	Dibromochloromethane	0.5	2	---	---	---
26	Chloroform	0.5	2	---	---	---
27	Dichlorobromomethane	0.5	2	---	---	---

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II. MONITORING LOCATIONS

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

Table E-2. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	Untreated influent wastewater collected at the plant headworks at a representative point preceding primary treatment.
--	INT-001	Treated wastewater immediately following the advanced wastewater (AWT) process and prior to the chlorine contact chamber.
001	EFF-001	Treated wastewater after disinfection but prior to discharge to the effluent storage pond.
002	EFF-002[1]	Treated wastewater discharged from the effluent storage pond to Jones Creek.
003	REC-001[1]	Treated wastewater following all treatment and storage in the 3.25 million gallon storage pond, and before it enters the reclamation distribution system.
004	REC-001	Treated wastewater following all treatment and storage in the 3.25 million gallon storage pond, and before it enters the reclamation distribution system pipeline for delivery to the Graton Community Services District (CSD) storage ponds.
--	RSW-001	Upstream receiving water monitoring location in Jones Creek, upstream of the pedestrian bridge at a location that is not influenced by the discharge.
--	RSW-002	Downstream receiving water monitoring location in Jones Creek immediately downstream of the pedestrian bridge in the area influenced by the discharge.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

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

[1] EFF-002 and REC-001 are the same location, the sampling point following the effluent storage pond. Different Discharge Point Names have been assigned due to differences in monitoring requirements at Discharge Point 002 (discharge to surface waters) and Discharge Point 003/004 (discharge to reclamation system).

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Table E-3. Influent Monitoring – Monitoring Location INF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	24-hr composite	Monthly	Standard Methods[2]
Total Suspended Solids	mg/L	24-hr composite	Monthly	Standard Methods
Influent Flow[3]	mgd	Meter	Continuous	--

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INT-001

Table E-4. Effluent Monitoring for Discharge to Storage – Monitoring Location INT-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Biochemical Oxygen Demand (5-day @20°C)	mg/L	Grab	Weekly	Standard Methods[2]
	lbs/day	Calculate	Weekly	--
	lbs/day	Calculate	Weekly	--
Turbidity[4]	NTU	Meter	Continuous	Standard Methods

B. Monitoring Location EFF-001

The Discharger shall monitor treated wastewater to be discharged to the 3.2 million gallon storage pond at Monitoring Location EFF-001 as follows:

Table E-5. Effluent Monitoring for Discharge to Storage– Monitoring Location EFF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Effluent Flow[5]	mgd	Meter	Continuous	--
Total Suspended Solids	mg/L	Grab	Weekly	Standard Methods[2]
	lbs/day	Calculate	Weekly	--
Total Coliform Bacteria	MPN/100 mL	Grab	Daily[6]	Standard Methods
Chlorine, Total	mg/L	Meter	Continuous[7,8]	Standard Methods

---

[2] In accordance with the current edition of Standard Methods for Examination of Water and Wastewater (American Public Health Administration) or current test procedures specified in 40 CFR Part 136.

[3] Each month, the Discharger shall report average daily and average monthly flows.

[4] Turbidity monitoring requirements are described in detail in section IX.A of this MRP.

[5] Each month, the Discharger shall report average daily and average monthly flows.

[6] Total coliform sampling shall be daily when discharging to the recycled water system. Total coliform sampling may be decreased to weekly when discharging to surface waters.

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Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Residual				
Disinfection CT[9]	mg-min/L	Calculate	Daily	--

C. Monitoring Location EFF-002

The Discharger shall monitor treated wastewater to be discharged to Jones Creek at Monitoring Location EFF-002 as follows:

Table E-6. Effluent Monitoring for Discharges to Jones Creek – Monitoring Location EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Effluent Flow[5]	mgd	Meter	Continuous	--
Dilution Rate	% of stream flow	Calculate	Daily	--
pH	standard units	Grab	Daily	Standard Methods[2]
Chlorine, Total Residual[10]	mg/L	Grab	Daily	Standard Methods
Dissolved Oxygen	mg/L	Grab	Weekly	Standard Methods
Temperature	°F or °C	Grab	Weekly	Standard Methods
Hardness, Total (as $CaCO_3$)[11]	mg/L	Grab	Monthly	Standard Methods
Copper, Total Recoverable	µg/L	Grab	Monthly	EPA Method 200[12]
Cyanide, Total (as CN)	µg/L	Grab	Monthly	EPA Method 335[12]
Chloroform	µg/L	Grab	Monthly	EPA Method 624[12]
Dichlorobromomethane	µg/L	Grab	Monthly	EPA Method 624[12]
Dibromochloromethane	µg/L	Grab	Monthly	EPA Method 624[12]

---

7 Chlorine residual monitoring at Monitoring Location EFF-001 shall demonstrate that a chlorine residual is present after chlorination. This monitoring shall occur continuously when transferring from the chlorine contact tank to the storage pond.

8 Report minimum daily chlorine residual

9 Disinfection CT monitoring requirements are described in detail in section IX.B of this MRP.

10 Chlorine residual monitoring at Monitoring Location EFF-002 shall demonstrate that there is no detectable chlorine during periods of discharge to Jones Creek. Samples collected to demonstrate complete dechlorination shall be collected at a point following disinfection and prior to discharge to Jones Creek. All chlorine residual measurements shall be reported as total chlorine residual.

11 Monitoring for effluent and receiving water hardness shall be conducted concurrently with effluent sampling for copper.

12 Analytical methods shall achieve the lowest minimum level (ML) specified in Appendix 4 of the SIP; and in accordance with Section 2.4.1 of the SIP, the Discharger shall report the Reporting Level (RL) and the Method Detection Limit (MDL) with each sample result.

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Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Bromoform	µg/L	Grab	Monthly	EPA Method 624[12]
Acute Toxicity[13]	% Survival	Grab	Monthly	See Section V.A below
Chronic Toxicity[13]	TUc	Grab	Annually	See Section V.B below
CTR Pollutants[14]	µg/L	Grab	1X/Permit Term	Standard Methods[12]
Title 22 Pollutants[15]	µg/L	Grab	1X/Permit Term	Standard Methods
Nitrate Nitrogen, Total (as N)	mg/L	Grab	Monthly	Standard Methods
Ammonia Nitrogen, Total (as N)[16]	mg/L	Grab	Monthly	Standard Methods
Ammonia Nitrogen, Unionized (as N)	mg/L	--	Monthly	Calculation
Phosphorus, Total (as P)	mg/L	Grab	Monthly	Standard Methods

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Acute Toxicity Testing

The Discharger shall conduct acute whole effluent toxicity testing (WET) to determine compliance with the effluent limitation for acute toxicity established by section IV.A.1 of the Order.

1. **Test Frequency.** The Discharger shall conduct acute WET testing in accordance with the schedule established by this MRP while discharging at Discharge Point 002, as summarized in Table E-6, above.

2. **Sample Type.** For 96-hour static renewal or 96-hour static non-renewal testing, the effluent samples shall be grab samples collected at Monitoring Location EFF-002.

3. **Test Species.** Test species for acute WET testing shall be the rainbow trout, *Oncorhynchus mykiss*. At least one time every 5 years, the Discharger shall

[13] Whole effluent acute and chronic toxicity shall be monitored in accordance with the requirements of section V of this Monitoring and Reporting Program.

[14] CTR pollutants are those pollutants identified in the California Toxics Rule at 40 CFR 131.38.

[15] The Title 22 pollutants are those pollutants for which the Department of Public Health has established Maximum Contaminant Levels (MCLs) at Title 22, Division 4, Chapter 15, sections 64431 (Inorganic Chemicals) and 64444 (Organic Chemicals) of the California Code of Regulations. Duplicate analyses are not required for pollutants that are identified both as CTR and Title 22 pollutants. Monitoring required in future permit terms may be reduced to only those pollutants detected in the Title 22 sampling conducted during this permit term.

[16] Monitoring for ammonia shall be concurrent with acute whole effluent toxicity monitoring (Section V.A. of this MRP). Effluent and receiving water temperature and pH shall be recorded at the time of the ammonia sample.

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conduct one suite of acute WET testing using an invertebrate, the water flea, *Ceriodaphnia dubia*, and a vertebrate, *Oncorhynchus mykiss*. After this screening period, monitoring shall be conducted annually using the most sensitive species. The next two species acute WET test shall be conducted by **March, 2014**.

4. **Test Methods.** The presence of acute toxicity shall be estimated as specified in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (USEPA Report No. EPA-821-R-02-012, 5th edition or subsequent editions), or other methods approved by the Executive Officer.

   Test procedures related to pH control, sample filtration, aeration, temperature control and sample dechlorination shall be performed in accordance with the USEPA method and fully explained and justified in each acute toxicity report submitted to the Regional Water Board. The control of pH in acute toxicity tests is allowed, provided the test pH is maintained at the effluent pH measured at the time of sample collection, and the control of pH is done in a manner that has the least influence on the test water chemistry and on the toxicity of other pH sensitive materials such as some heavy metals, sulfide and cyanide.

5. **Test Dilutions.** The acute toxicity test shall be conducted using 100 percent effluent collected at Monitoring Location EFF-002.

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

7. **Accelerated Monitoring.** If the result of any acute toxicity test fails to meet the single test minimum limitation (70 percent survival), and the testing meets all test acceptability criteria, the Discharger shall take two more samples, one within 14 days and one within 21 days following receipt of the initial sample result. If any one of the additional samples do not comply with the three sample median minimum limitation (90 percent survival), the Discharger shall initiate a Toxicity Reduction Evaluation (TRE) in accordance with section VI.C.2.a.ii of the Order. If the two additional samples are in compliance with the acute toxicity requirement and testing meets all test acceptability criteria, then a TRE will not be required. If the discharge stops before additional samples can be collected, the Discharger shall contact the Executive Officer within 21 days with a plan to demonstrate compliance with the effluent limitation.

8. **Notification.** The Discharger shall notify the Regional Water Board in writing 14 days after the receipt of test results exceeding the acute toxicity effluent limitation. The notification will describe actions the Discharger has taken or will take to investigate and correct the cause(s) of toxicity. It may also include a status report on

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any actions required by this Order, with a schedule for actions not yet completed. If no actions have been taken, the reasons shall be given.

9. **Reporting.** Test results for acute toxicity tests shall be reported according to section 12 (Report Preparation) of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* or in an equivalent format that clearly demonstrates that the Discharger is in compliance with effluent limitations, and other permit requirements.

B. Chronic Toxicity Testing

The Discharger shall conduct chronic toxicity testing to demonstrate compliance with the Basin Plan's water quality objective for toxicity. The Discharger shall meet the following chronic toxicity testing requirements:

1. **Test Frequency.** The Discharger shall conduct annual chronic WET testing in accordance with the schedule established by this MRP while discharging at Discharge Point 002, as summarized in Table E-6, above.

2. **Sample Type.** Effluent samples from Monitoring Location EFF-002 shall be grab samples. For toxicity tests requiring renewals, grab samples collected on consecutive days are required. When tests are conducted off-site, a minimum of three samples shall be collected, in accordance with USEPA test methods.

3. **Test Species.** Test species for chronic WET testing shall be shall be a vertebrate, the fathead minnow, *Pimephales promelas* (larval survival and growth), an invertebrate, the water flea, *Ceriodaphnia dubia* (survival and reproduction test), and a plant, the green algae, *Selanastrum capricornutum* (growth test). At least one time every 5 years, the Discharger shall conduct two suites of chronic WET testing using the three species listed above. After this screening period, monitoring shall be conducted annually using the most sensitive species. The next multiple species chronic WET test shall be conducted by **March, 2014**.

4. **Test Methods.** The presence of chronic toxicity shall be estimated as specified in USEPA's *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms* (USEPA Report No. EPA-821-R-02-013, or subsequent editions).

   Test procedures related to pH control, sample filtration, aeration, temperature control and sample dechlorination shall be performed in accordance with the USEPA method and fully explained and justified in each acute toxicity report submitted to the Regional Water Board. The control of pH in chronic toxicity tests is allowed, provided the test pH is maintained at the pH of the receiving water measured at the time of sample collection, and the control of pH is done in a manner that has the

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least influence on the test water chemistry and on the toxicity of other pH sensitive materials such as some heavy metals, sulfide and cyanide.

5. **Test Dilutions.** The chronic toxicity test shall be conducted using a series of at least five dilutions and a control. The series shall consist of the following dilution series: 12.5, 25, 50, 75, and 100 percent, and a control. Control and dilution water shall be receiving water collected at an appropriate location upstream of the discharge point. Laboratory water may be substituted for receiving water, as described in the USEPA test methods manual, upon approval by the Executive Officer. If the dilution water used is different from the culture water, a second control using culture water shall be used.

6. **Reference Toxicant.** If organisms are not cultured in-house, concurrent testing with a reference toxicant shall be conducted. Where organisms are cultured in-house, monthly reference toxicant testing is sufficient. Reference toxicant tests also shall be conducted using the same test conditions as the effluent toxicity tests (e.g., same test duration, etc).

7. **Test Failure.** If either the reference toxicant test or the chronic toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger shall re-sample and re-test as soon as possible, not to exceed 14 days following notification of test failure.

8. **Notification.** The Discharger shall notify the Regional Water Board in writing within 14 days after the receipt of test results that indicate an exceedance of the monitoring trigger for chronic toxicity during regular or accelerated monitoring.

9. **Accelerated Monitoring Requirements.** If the result of any chronic toxicity test exceeds the chronic toxicity monitoring trigger of 1.0 TUc as specified in section VI.C.2.a. of the Order, and the testing meets all test acceptability criteria, the Discharger shall initiate accelerated monitoring. Accelerated monitoring shall consist of four additional effluent samples and dilution series (specified in number 5 above) – with one test for each test species showing toxicity results excceding the toxicity trigger. Accelerated monitoring test shall be conducted approximately every week over a 4 week period.

   Testing shall commence within 14 days of receipt of initial sample results which indicated an exceedance of the chronic toxicity trigger. If the discharge will cease before the additional samples can be collected, the Discharger shall contact the Executive Officer within 21 days with a plan to address elevated levels of chronic toxicity in effluent and/or receiving water. The following protocol shall be used for accelerated monitoring and TRE implementation:

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a. If the results of four consecutive accelerated monitoring tests do not exceed the chronic toxicity trigger of 1.0 TUc, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring. However, if there is adequate evidence of a pattern of effluent toxicity, the Regional Water Board's Executive Officer may require that the Discharger initiate a TRE.

b. If the source(s) of the toxicity is easily identified (i.e. temporary plant upset), the Discharger shall make necessary corrections to the facility and shall continue accelerated monitoring until four (4) consecutive accelerated tests do not exceed the monitoring "trigger." Upon confirmation that the chronic 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 an effluent limitation or monitoring trigger, the Discharger shall cease accelerated monitoring and, within thirty (30) days of the date of completion of the accelerated monitoring test, initiate the TRE Workplan developed in accordance with Section VI.C.2.a.(2) of the Order to investigate the cause(s) and identify corrective actions to reduce or eliminate the chronic toxicity. Within thirty (30) days of completing the TRE Workplan implementation, the Discharger shall submit a report to the Regional Water Board including, at a minimum:

    i. Specific actions the Discharger took to investigate and identify the cause(s) of toxicity, including a TRE WET monitoring schedule;

    ii. Specific actions the Discharger took to mitigate the impact of the discharge and prevent the recurrence of toxicity;

    iii. Recommendations for further actions to mitigate continued toxicity, if needed; and

    iv. A schedule for implementation of recommended actions.

C. Chronic Toxicity Reporting

1. **Routine Reporting.** 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 and this Monitoring and Reporting Program. Chronic toxicity test results shall be submitted with the self-monitoring report.

   The WET test report shall contain a narrative report that includes details about WET test procedures and results, including the following:

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a. receipt and handling of the effluent sample that includes a tabular summary of initial water quality characteristics;

b. the source and make-up of the lab control/diluent water used for the test;

c. any manipulations done to lab control/diluent and effluent such as filtration, nutrient addition, etc.;

d. identification of any reference toxicant testing performed;

e. tabular summary of test results for control water and each effluent dilution and statistics summary to include calculation of NOEC, TU_c and IC_{25};

f. identification of any anomalies or nuances in the test procedures or results; and

g. summary and conclusions section.

Test results shall include, at a minimum, for each test:

a. Sample date(s);

b. Test initiation date;

c. Test species;

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

e. NOEC value(s) in percent effluent;

f. IC15, IC25, IC40, and IC50 values (or EC15, EC25…etc.) in percent effluent;

g. TUc values (100/NOEC);

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

i. NOEC and LOEC values for reference toxicant test(s);

j. IC50 or EC50 value(s) for reference toxicant test(s);

k. Available water quality measurements for each test (e.g., pH, DO, temperature, conductivity, hardness, salinity, ammonia);

l. Statistical methods used to calculate endpoints;

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m. The statistical output page, which includes the calculation of percent minimum significant difference (PMSD); and

n. Results of applicable reference toxicant data with the statistical output page identifying the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD and dates tested; the reference toxicant control charts for each endpoint, to include summaries of reference toxicant tests performed by the contracting laboratory; and any information on deviations from standard test procedures or problems encountered in completing the test and how the problems were resolved.

2. **Quality Assurance Reporting.** Because the permit requires sublethal hypothesis testing endpoints from methods 1000.0, 1002.0, and 1003.0 in the test methods manual titled *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA-821-R-02-013, 2002), with-in test variability must be reviewed for acceptability and variability criteria (upper and lower PMSD bounds) must be applied, as directed under section 10.2.8 – *Test Variability* of the test methods manual. Under section 10.2.8, the calculated PMSD for both reference toxicant test and effluent toxicity test results must be compared with the upper and lower PMSD bounds variability criteria specified in Table 6 – *Variability Criteria (Upper and Lower PMSD Bounds) for Sublethal Hypothesis Testing Endpoints Submitted Under NPDES Permits*, following the review criteria in paragraphs 10.2.8.2.1 through 10.2.8.2.5 of the test methods manual. Based on this review, only accepted effluent toxicity test results shall be reported.

3. **Compliance Summary.** 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 (routine, accelerated, or TRE). The final report shall clearly demonstrate that the Discharger is in compliance with effluent limitations and other permit requirements.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

This section is not applicable to the Discharger as treated wastewater is not discharged to or applied to land for the purpose of disposal. The Discharger reclaims treated wastewater; thus, the Discharger has Reclamation Monitoring Requirements rather than Land Discharge Monitoring Requirements.

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VII. RECLAMATION MONITORING REQUIREMENTS

A. Recycled Water Monitoring

The following reclamation requirements are applicable during periods when the reclamation system is being used. Monitoring requirements identified in this section are not applicable during periods when all effluent is discharged to Jones Creek.

1. The Discharger shall monitor treated, disinfected wastewater prior to reclamation at Monitoring Location REC-001 as follows:

Table E-7. Reclamation Monitoring Requirements – Monitoring Location REC-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow[17]	mgd	Meter	Continuous	Meter
pH	Standard units	Grab	Weekly	Standard Methods
Nitrate Nitrogen[18]	mg/L	Grab	Monthly	Standard Methods
Nitrite Nitrogren[18]	mg/L	Grab	Monthly	Standard Methods
Ammonia Nitrogen[18]	mg/L	Grab	Monthly	Standard Methods
Organic Nitrogen[18]	mg/L	Grab	Monthly	Standard Methods
TDS	mg/L	Grab	Monthly[19]	Standard Methods
Chloride	mg/L	Grab	Monthly[19]	Standard Methods
Boron	mg/L	Grab	Monthly[19]	Standard Methods
Sodium	mg/L	Grab	Monthly[19]	Standard Methods
Visual Observations[20]	--	--	Daily	Visual

[17] Each month, the Discharger shall report the number of days that treated wastewater was used for reclamation at all authorized reclamation sites, as well as the average and maximum daily flow rate.

[18] Monitoring for nitrate, nitrite, ammonia and organic nitrogen is for the purpose of determining total nitrogen concentration for agronomic rate calculations.

[19] The monitoring frequency for TDS, chloride, boron, and sodium may be reduced or eliminated if monitoring data demonstrates that concentrations of these constituents are consistently lower than water quality objectives for protection of groundwater.

[20] During periods of discharge to the irrigation system, visual observations shall be conducted at least weekly for agronomic applications and daily during periods of frost protection to verify compliance with recycled water requirements in Attachment G and shall confirm proper operation of the recycled water system and associated BMPs and include a record of any malfunctions or findings of improper operation, including, but not limited to odors, evidence of surface run-off, or ponding that exceeds 24-hours. Visual observations may be performed by the irrigation users in accordance with the Discharger's user agreements. The monthly monitoring report shall include the daily volume of treated wastewater discharged to the irrigation system and any observations indicating non-compliance with the provisions of the waste discharge requirements.

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B. Recycled Water Production and Use.

Recycled water quality characteristics and precipitation data shall be used to ascertain nitrogen loading rates at each recycled water use site. The following information shall be reported for any new use site added after the permit adoption date and for existing use sites upon completion of the agronomic rate evaluation required by Provision VI.C.2.b. of the Order.

Table E-8. Recycled Water Production and Use

Parameter	Units	Sample Type	Minimum Sampling Frequency
Volume of recycled water[21]	Acre-feet	Meter	Monthly
Total area of application	Acres	Observation	Monthly
Total Nitrogen application rate[22,23]	lbs/acre-month	Calculation	Monthly
Rainfall	Inches	Gage	Daily

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Surface Water Monitoring Locations RSW-001 and RSW-002

1. The Discharger shall monitor upstream and downstream conditions in Jones Creek at Monitoring Locations RSW-001 and RSW-002, respectively, during periods of discharge to Jones Creek as follows:

Table E-9. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dissolved Oxygen	mg/L	Grab	Weekly	Standard Methods
pH[24]	standard units	Grab	Weekly	Standard Methods
Turbidity	NTU	Grab	Weekly	Standard Methods
Temperature[24]	°F or °C	Grab	Weekly	Standard Methods

[21] Estimation of the volume of recycled water shall not include other potable or non-potable "make-up" water used in conjunction with recycled water.

[22] Nitrogen application rate shall consider nitrogen content of the recycled water, based on effluent monitoring data.

[23] Nitrogen concentrations shall be calculated and reported "as N". For example, nitrate-nitrogen = 27 mg/L as NO_3 shall be converted and reported as nitrate-nitrogen = 6.1 mg/L as N using a conversion factor of' 14.067 (N)/62.0049 (NO_3)

[24] Effluent and receiving water pH, temperature, and ammonia samples shall be collected on the same day and at approximately the same time.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Hardness, Total (as $CaCO_3$) [11]	mg/L	Grab	Monthly	Standard Methods
Ammonia Nitrogen, Total (as N)[24]	mg/L	Grab	Monthly	Standard Methods
Unionized Ammonia (as N)[24]	mg/L	Calculation	Monthly	--
Nitrate Nitrogen, Total (as N)[24]	mg/L	Grab	Monthly	Standard Methods
Phosphorus, Total (as P)	mg/L	Grab	Monthly	Standard Methods
CTR Pollutants[14, 25]	µg/L	Grab	1X/Permit Term	Standard Methods
Copper, Total, Recoverable [25]	ug/L	Grab	Monthly	Standard Methods
Cyanide[25]	ug/L	Grab	Monthly	Standard Methods
Stream Flow	mgd	Gage	Daily	---

B. Groundwater

There are no groundwater monitoring requirements in this monitoring and reporting program. Groundwater monitoring may be established in the future, if necessary, to assess impacts of effluent discharge to the reclamation system.

IX. OTHER MONITORING REQUIREMENTS

A. Filtration Process Monitoring

Filtration process monitoring shall demonstrate compliance with section IV.D.1 (Filtration Process Requirements) of this Order and applies to all treated wastewater flows. The following filtration process monitoring shall be implemented:

1. **Effluent Filter Monitoring (Monitoring Location INT-001)**

   a. **Monitoring.** The turbidity of the filter effluent shall be continuously measured and recorded. Should the turbidity meter and recorder fail, grab sampling at a minimum frequency of 1.2 hours may be substituted for a period of up to 24 hours. The recorded data shall be maintained by the Discharger for at least 3 years. The daily maximum and 95th percentile turbidity results shall be reported on the monthly monitoring reports.

   b. **Compliance.** Compliance with the 95th percentile effluent turbidity limitation specified in section IV.D.1.a.i (Filtration Process Requirements) of this Order

[25] Monitoring shall occur only at Monitoring Location RSW-001.

shall be determined using the levels of recorded turbidity taken at intervals of no more than 1.2 hours over a 24-hour period. Exceedances of the maximum turbidity requirement referenced in section IV.D.1.a.ii of this Order shall not be considered a violation of these waste discharge requirements if such exceedance does not exceed a duration of one minute.

c. **Reporting.** If the filter effluent turbidity exceeds 0.2 NTU for more than 15 minutes, the incident shall be reported in the monthly self-monitoring report. If the filter effluent turbidity exceeds 0.5 NTU at any time, the incident shall be reported to the Regional Water Board and CDPH by telephone within 24 hours in accordance with Provision VI.A.2.b of this Order. A written report describing the incident and the actions undertaken in response shall be included in the monthly self-monitoring report. Mitigation of the event shall consist of diverting all inadequately treated wastewater to temporary storage or an upstream process.

B. Disinfection Process Monitoring for Chlorine Disinfection System (Monitoring Location EFF-001)

Disinfection process monitoring shall demonstrate compliance with section IV.D.2 (Disinfection Process Requirements for Chlorine Disinfection System) of this Order and applies to all treated wastewater flows. The following disinfection process monitoring requirements must be implemented:

1. **Monitoring.** The chlorine residual of the effluent from the chlorine contact chamber shall be monitored continuously at a point prior to dechlorination and recorded, and the modal contact time shall be determined at the same point.

2. **Compliance.** The chlorine disinfection CT (the product of total chlorine residual and modal contact time) shall not fall below 450 mg-min/L, with a modal contact time of at least 90 minutes.

   Each day, the Discharger shall calculate the CT values for the following conditions:

   a. Modal contact time under highest daily flow and corresponding chlorine residual.
   b. Modal contact time under lowest daily flow and corresponding chlorine residual.
   c. Lowest chlorine residual and corresponding modal contact time.
   d. Highest chlorine residual and corresponding modal contact time.

   The lowest calculated CT value under the aforementioned conditions shall be reported as the daily CT value on the monthly self-monitoring report.

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3. **Reporting.** If the chlorine disinfection CT is less than 450 mg-min/L or if the chlorination equipment fails, the event shall be reported to the Regional Water Board and CDPH by telephone within 24 hours. The report shall describe the measures taken to bring the discharge into compliance. Upon discovery of the equipment failure or effluent limitation exceedance, inadequately treated and disinfected wastewater shall be diverted to a storage basin or an upstream process for adequate treatment.

C. Visual Monitoring of Discharge (EFF-002) and Receiving Water (RSW-002)

Visual observations of the discharge and the receiving water shall be recorded monthly and on the first day of each intermittent discharge. Visual monitoring shall include, but not be limited to, observations for floating materials, coloration, objectionable aquatic growths, oil and grease films, and odors. Visual observations shall be recorded and included in the Discharger's monthly monitoring reports.

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. **Schedules of Compliance.** The Discharger shall submit all reports and documentation required by compliance schedules that are established by this Order. Such reports and documentation shall be submitted to the Regional Water Board on or before each compliance date established by this Order. If noncompliance is reported, the Discharger shall describe the reasons for noncompliance and a specific date when compliance will be achieved. The Discharger shall notify the Regional Water Board when it returns to compliance with applicable compliance dates established by schedules of compliance.

B. Self Monitoring Reports (SMRs)

1. The Discharger shall submit electronic Self-Monitoring Reports (eSMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html). The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal. The Discharger shall maintain sufficient staffing and resources to ensure it submits eSMRs that are complete and timely. This includes provision of training and supervision of individuals (e.g., Discharger personnel or consultant) on how to prepare and submit eSMRs.

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Until State or Regional Water Board staff provide notification to the Discharger, the Discharger shall also submit hard copy SMRs.

2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP 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. All monitoring results reported shall be supported by the inclusion of the complete analytical report from the laboratory that conducted the analyses.

4. 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	Permit effective date	All	First day of second calendar month following month of sampling
Daily	Permit effective date	(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
Weekly	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of second calendar month following month of sampling
Monthly	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
Quarterly	Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date	January through March April through June July through September October through December	First day of second calendar month following end of quarter
Annually	January 1 following (or on) permit effective date	January 1 through December 31	March 1, each year

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

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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.

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

   a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The reported data shall include calculation of all effluent limitations that require averaging, taking of a median, or other computation. 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. During periods of land discharge and/or reclamation discharge, the reports shall certify "land discharge" and/or "reclamation discharge".

   b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify:

      1. Facility name and address;

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2. WDID number;

3. Applicable period of monitoring and reporting;

4. Violations of the WDRs (identified violations must include a description of the requirement that was violated and a description of the violation);

5. Corrective actions taken or planned; and

6. The proposed time schedule for corrective actions.

c. 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
North Coast Region
5550 Skylane Blvd., Suite A
Santa Rosa, CA 95403

C. Discharge Monitoring Reports (DMRs)

1. This section is not applicable to the Discharger because USEPA does not require minor dischargers to submit DMRs.

D. Other Reports

1. The Discharger shall report the results of any special studies, acute and chronic toxicity testing, TRE/TIE, PMP, and Pollution Prevention Plan required by Special Provisions – VI.C.2 and VI.C.3 of this Order.

2. **Water Reclamation System**

a. **Reclamation Operations Reporting.** The Discharger shall submit reports pertaining to the operation, performance, monitoring, and other activities related to water reclamation as follows:

i. **Quarterly Recycled Water Report.** The Discharger shall submit a quarterly recycled water summary report, as required by section 13523.1(b)(4) of the Water Code, containing the following information:

(a) Total volume of recycled water supplied to each recycled water user for each month of the reporting period;

(b) Total number of recycled water use sites;

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(c) Locations of recycled water use sites, including a map and tabular summary with acreage and name of property owner;

(d) A summary of recycled water use site inspections conducted by the Discharger or recycled water users and identification of recycled water user violations, including:

(1) Inspection dates;

(2) All observations of recycled water over-application and/or runoff;

(3) Misuses of recycled water;

(4) the number and location of any cross-connections and/or improper backflow prevention devices; and

(5) any other violations of the Master Reclamation Permit or the Discharger's rules and regulations.

(e) A summary of operational problems, plant equipment malfunctions, and any diversion of recycled water which does not meet the requirements specified in this Order.

(f) Documentation of notifications to users if any recycled water was delivered that did not meet the requirements specified in this Order.

(g) A record of equipment or process failures initiating an alarm, as well as any corrective and preventative actions; and

(h) Documentation of the Discharger's communication with recycled water users regarding nutrient concentrations in the recycled water pursuant to Water Reclamation Requirement B.9.b of Attachment G.

ii. **Annual Recycled Water Report.** The annual report shall include but not be limited to the following;

(a) A compliance summary and discussion of the compliance record for the prior calendar year, including:

(1) If violations occurred, the report shall also discuss the corrective actions taken and planned to bring the reclamation program into full compliance with this Order.

(2) Upon approval of one or more Irrigation Management Plans, the annual report shall include an evaluation verifying that the application

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of recycled water to each use area occurred at reasonable agronomic rates identified in the Irrigation Management Plans required by section C.5 of Attachment G and utilizing the data required by Table E-7 of the MRP. If the agronomic rate evaluation determines that exceedances of the agronomic rate may be occurring, the Discharger shall identify and implement corrective actions to ensure recycled water use occurs at reasonable agronomic rates.

(3) Certification that all reasonable BMPs and management practices were implemented to ensure efficient and compliant operation of the recycled water system; and

(4) Identification of any other problems that occurred in the recycled water system during the prior year and plans to rectify those problems in the coming year.

(b) A summary of scheduled and non-scheduled maintenance of the reclamation system appurtenances and irrigation areas;

(c) Enforcement and monitoring activities that occurred during the previous year, and identification of any problems and how the problems were addressed; and.

(d) If applicable, a summary of all cross-connection testing and back-flow prevention activities (inspections, maintenance) and a summary of any problems identified, or certification that no problems occurred.

iii. **Other Recycled Water Reporting**

(a) New Use Site Reporting. The Discharger shall notify the Regional Water Board Executive Officer in anticipation of reclaiming water at a new location. This notification shall be made far enough in advance of commencement of reclamation activities at the new location to provide sufficient time for submittal and approval of all technical information required by section D of Attachment G.

3. **Annual Report.** The Discharger shall submit an annual report to the Regional Water Board for each calendar year. The report shall be submitted by March 1st of the following year. The report shall, at a minimum, include the following:

a. Both tabular and, where appropriate, graphical summaries of the monitoring data and disposal records from the previous year. If the Discharger monitors any pollutant more frequently than required by this Order, using test procedures approved under title 40, section 136 or as specified in this Order, the results of

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this monitoring shall be included in the calculation and report of the data submitted SMR.

b. A comprehensive discussion of the Facility's compliance (or lack thereof) with all effluent limitations and other WDRs, and the corrective actions taken or planned, which may be needed to bring the discharge into full compliance with the Order.

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

d. The names and telephone numbers of persons to contact regarding the wastewater treatment facility for emergency and routine situations;

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

f. A statement certifying whether the current operation and management manual and spill contingency plan, reflect the wastewater treatment facility as currently constructed and operated, and the dates when these documents were last reviewed and last revised for adequacy.

g. **Sanitary Sewer System Reporting.** The Discharger shall submit, as part of its annual report to the Regional Water Board, a description of the Discharger's activities within the sanitary sewer system over the previous 12 months. The report shall contain:

   i. A description of any change in the local legal authorities enacted to implement the Sewer System Management Plan (SSMP);

   ii. A summary of the SSOs that occurred in the past year. The summary shall include the date, location of overflow point, affected receiving water (if any), estimated volume, and cause of the SSO, and the names and addresses of the responsible parties as well as the names and addresses of the property owner(s) affected by the sanitary sewer overflow.

   iii. A summary of compliance and enforcement activities during the past year. The summary shall include fines, other penalties, or corrective actions taken as a result of the SSO. The summary shall also include a description of public participation activities to involve and inform the public;

   iv. Documentation that all feasible steps to stop and mitigate impacts of sanitary sewer overflows have been taken.

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h. **Source Control Activity Reporting.** The Discharger shall submit, as part of its annual report to the Regional Water Board, a description of the Discharger's source control activities, as required by Provision VI.C.5.b. of this Order.

   i. A copy of the source control standards.

   ii. A description of the waste hauler permit system.

   iii. A summary of the compliance and enforcement activities during the past year. The summary shall include the names and addresses of any industrial or commercial users under surveillance by the Discharger, an explanation of whether they were inspected, sampled, or both, the frequency of these activities at each user, and the conclusions or results from the inspection or sampling of each user.

   iv. A summary of any industrial waste survey results.

   v. A summary of public participation activities to involve and inform the public.

i. **Biosolids Handling and Disposal Activity Reporting.** The Discharger shall submit, as part of its annual report to the Regional Water Board, a description of the Discharger's solids handling, disposal and reuse activities over the previous twelve months. At a minimum, the report shall contain:

   i. Annual sludge production, in dry tons and percent solids

   ii. A schematic diagram showing sludge handling facilities (e.g., digesters, thickeners, drying beds, etc.), if any and a solids flow diagram.

   iii. Methods of final disposal of sludge:

      (a) For any portion of sludge discharged to a sanitary landfill, the Discharger shall provide the volume of sludge transported to the land fill, the names and locations of the facilities receiving sludge, the Regional Water Board's WDRs order number for the regulated landfill, and the landfill classification.

      (b) For any portion of sludge discharged through land application, the Discharger shall provide the volume of biosolids applied, the date and locations where biosolids were applied, the Regional Water Board's WDRs order number for the regulated discharge, a demonstration that the discharge was conducted in compliance with applicable permits and regulations, and, if applicable, corrective actions taken or planned to bring the discharge into compliance with WDRs.

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(c) For any portion of sludge further treated through composting, the Discharger shall provide a summary of the composting process, the volume of sludge composted, and a demonstration and signed certification statement that the composting process and final product met all requirements for Class A biosolids.

j. **Storm Water Reporting.** The Discharger shall submit, as part of its annual report to the Regional Water Board, an evaluation of the effectiveness of the Discharger's best management practices (BMPs) to control storm water, as well as activities to maintain and upgrade these BMPs.

k. **Recycled Water Pipe Identification.** The Discharger shall document compliance with California Health and Safety Code section 116815 regarding the installation and marking of recycled water piping.

E. Spills and Overflows Notification

1. All spills, unauthorized discharges, and sanitary sewer overflows (SSOs) equal to or in excess of 1,000 gallons or any size spill or SSO that result in a discharge to a drainage channel or a surface water:

a. As soon as possible, but not later than **two (2) hours** after becoming aware of the discharge, the Discharger shall notify the State Office of Emergency Services (OES), the local health officer or directors of environmental health with jurisdiction over affected water bodies or land areas, and the Regional Water Board.[26]

Information to be provided verbally to the Regional Water Board includes:

i. Name and contact information of caller;
ii. Date, time and location of spill occurrence;
iii. Estimates of spill volume, rate of flow, and spill duration;
iv. Surface water bodies impacted, if any;
v. Cause of spill;
vi. Cleanup actions taken or repairs made; and
vii. Responding agencies.

b. As soon as possible, but not later than **twenty-four (24) hours** after becoming aware of a discharge, the Discharger shall submit to the Regional Water Board a

[26] The contact number for spill reporting for the Office of Emergency Services is (800) 852-7550. The contact number of the Regional Water Board during normal business hours is (707) 576-2220. After normal business hours, spill reporting to OES will satisfy the 2 hour notification requirement for the Regional Water Board.

certification that the State Office of Emergency Services and the local health officer or directors of environmental health with jurisdiction over affected water bodies or land areas have been notified of the discharge. For the purpose of this requirement, "certification" means an OES certification number and, for the local health department, name of local health staff, department name, phone number and date and time contacted.

c. Within **five (5) business days**, the Discharger shall submit a written report to the Regional Water Board office. The report must include all available details related to the cause of the spill and corrective action taken or planned to be taken, as well as copies of reports submitted to other agencies.

   i. Information provided in the verbal notification;
   ii. Other agencies notified by telephone;
   iii. Detailed description of cleanup actions and repairs taken; and
   iv. Description of actions that will be taken to minimize or prevent future spills.

d. In the cover letter of the monthly monitoring report, the Discharger shall include a brief written summary of the event and any additional details related to the cause or resolution of the event, including, but not limited to results of any water quality monitoring conducted.

2. All spills, unauthorized discharges, and sanitary sewer overflows (SSOs) less than 1,000 gallons that do not reach a drainage channel or a surface water:

   a. As soon as possible, but not later than **twenty-four (24) hours** after becoming aware of the discharge, the Discharger shall notify the Regional Water Board and provide the applicable information in requirement 1.a of this section.

   b. In the cover letter of the monthly monitoring report, the Discharger shall include a written description of the spill event.

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Attachment E-1. Final Copper Effluent Limitations

Hardness-Dependent Effluent Limitations for Copper
Total Recoverable Copper (in ug/l)

Hardness (mg/L as CaCO3	CCC 4-Day Average (ug/L)	CMC 1-Hour Average (ug/L)	LTA 0.31CCC	LTA 0.17CMC	Lowest LTA	AMEL (ug/l)	MDEL (ug/l)
5	0.72	0.83	0.22	0.14	0.14	0.31	0.85
10	1.30	1.60	0.40	0.27	0.27	0.59	1.63
15	1.84	2.34	0.57	0.40	0.40	0.87	2.38
20	2.36	3.07	0.73	0.52	0.52	1.14	3.12
25	2.85	3.79	0.88	0.64	0.64	1.41	3.85
30	3.33	4.50	1.03	0.77	0.77	1.67	4.58
35	3.80	5.21	1.18	0.89	0.89	1.93	5.29
40	4.26	5.90	1.32	1.00	1.00	2.19	6.00
45	4.72	6.60	1.46	1.12	1.12	2.44	6.71
50	5.16	7.29	1.60	1.24	1.24	2.70	7.41
55	5.60	7.97	1.74	1.35	1.35	2.95	8.10
60	6.03	8.65	1.87	1.47	1.47	3.21	8.79
65	6.46	9.33	2.00	1.59	1.59	3.46	9.48
67	6.63	9.60	2.05	1.63	1.63	3.56	9.76
70	6.88	10.00	2.13	1.70	1.70	3.71	10.17
75	7.30	10.68	2.26	1.81	1.81	3.96	10.85
80	7.71	11.34	2.39	1.93	1.93	4.20	11.53
85	8.12	12.01	2.52	2.04	2.04	4.45	12.21
90	8.53	12.68	2.64	2.15	2.15	4.70	12.89
95	8.93	13.34	2.77	2.27	2.27	4.94	13.56
100	9.33	14.00	2.89	2.38	2.38	5.19	14.23
105	9.73	14.66	3.02	2.49	2.49	5.43	14.90
110	10.12	15.31	3.14	2.60	2.60	5.68	15.57
115	10.51	15.97	3.26	2.71	2.71	5.92	16.23
120	10.90	16.62	3.38	2.83	2.83	6.16	16.90
125	11.29	17.27	3.50	2.94	2.94	6.40	17.56
130	11.67	17.92	3.62	3.05	3.05	6.64	18.22
135	12.06	18.57	3.74	3.16	3.16	6.88	18.88
140	12.44	19.22	3.86	3.27	3.27	7.12	19.54
145	12.82	19.87	3.97	3.38	3.38	7.36	20.20
150	13.19	20.51	4.09	3.49	3.49	7.60	20.85
155	13.57	21.16	4.21	3.60	3.60	7.84	21.51
160	13.94	21.80	4.32	3.71	3.71	8.08	22.16
165	14.31	22.44	4.44	3.81	3.81	8.32	22.81
170	14.68	23.08	4.55	3.92	3.92	8.55	23.46
175	15.05	23.72	4.67	4.03	4.03	8.79	24.11
180	15.42	24.36	4.78	4.14	4.14	9.03	24.76
185	15.78	24.99	4.89	4.25	4.25	9.26	25.41
190	16.14	25.63	5.00	4.36	4.36	9.50	26.06
195	16.51	26.26	5.12	4.46	4.46	9.73	26.70
200	16.87	26.90	5.23	4.57	4.57	9.97	27.35
205	17.23	27.53	5.34	4.68	4.68	10.20	27.99
210	17.59	28.16	5.45	4.79	4.79	10.44	28.63
215	17.94	28.80	5.56	4.90	4.90	10.67	29.27
220	18.30	29.43	5.67	5.00	5.00	10.91	29.91
225	18.65	30.06	5.78	5.11	5.11	11.14	30.55
230	19.01	30.68	5.89	5.22	5.22	11.37	31.19
235	19.36	31.31	6.00	5.32	5.32	11.60	31.83
240	19.71	31.94	6.11	5.43	5.43	11.84	32.47
245	20.06	32.57	6.22	5.54	5.54	12.07	33.11
250	20.41	33.19	6.33	5.64	5.64	12.30	33.74
255	20.76	33.82	6.44	5.75	5.75	12.53	34.38
260	21.11	34.44	6.54	5.86	5.86	12.76	35.01
265	21.45	35.07	6.65	5.96	5.96	13.00	35.65
270	21.80	35.69	6.76	6.07	6.07	13.23	36.28
275	22.14	36.31	6.86	6.17	6.17	13.46	36.91
280	22.49	36.93	6.97	6.28	6.28	13.69	37.55
285	22.83	37.55	7.08	6.38	6.38	13.92	38.18
290	23.17	38.17	7.18	6.49	6.49	14.15	38.81
295	23.51	38.79	7.29	6.59	6.59	14.38	39.44
300	23.85	39.41	7.39	6.70	6.70	14.61	40.07
310	24.53	40.65	7.60	6.91	6.91	15.06	41.32
320	25.20	41.88	7.81	7.12	7.12	15.52	42.58
330	25.88	43.12	8.02	7.33	7.33	15.98	43.83
340	26.54	44.35	8.23	7.54	7.54	16.43	45.08
350	27.21	45.57	8.44	7.75	7.75	16.89	46.33
360	27.87	46.80	8.64	7.96	7.96	17.34	47.58
370	28.53	48.02	8.85	8.16	8.16	17.80	48.82
380	29.19	49.25	9.05	8.37	8.37	18.25	50.06
400	30.50	51.68	9.45	8.79	8.79	19.15	52.54
>400	30.50	51.68	9.45	8.79	8.79	19.15	52.54

Hardness = hardness of effluent at the time the discharge is sampled

Criteria Continuous Concentration = $(e^{\{0.8545[\ln(hardness)]-1.702\}})$

CMC (Criteria Maximum Concentration = $(e^{\{0.9422[\ln(hardness)-1.700\}})$

Calculated using a coefficient of variation (CV) of 1.25

LTA = Long-term average

AMEL (Average Monthly Effluent Limitation = 2.18[min(0.31CCC,0.17CMC)]

MDEL (Maximum Daily Effluent Limitation = 5.98[min(0.31CCC, 0.17CMC)]

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

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

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for dischargers in California. Only those sections or subsections of this Order that are specifically identified as "not applicable" have been determined not to apply to 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	1B83100OSON
Discharger	Forestville Water District
Name of Facility	Forestville Water District Wastewater Treatment, Reclamation, and Disposal Facility
Facility Address	6194 Forestville Street
	Forestville, CA 95436
	Sonoma County
Facility Contact, Title and Phone	Ronald Walker, Chief Plant Operator, (707) 887-1551
Authorized Person to Sign and Submit Reports	Ronald Walker, Chief Plant Operator, (707) 887-1551
Mailing Address	P.O. Box 261 (6530 Mirabel Road), Forestville, CA 95436
Billing Address	Same as Mailing Address
Type of Facility	Publicly Owned Treatment Works (POTW)
Major or Minor Facility	Minor
Threat to Water Quality	1
Complexity	B
Pretreatment Program	No
Reclamation Requirements	Producer
Facility Permitted Flow	0.130 million gallons per day (mgd) (average daily dry weather flow)
Facility Design Flow	0.130 mgd (average daily dry weather designflow[1]) 0.58 mgd (peak weekly wet weather designflow[2]) 0.78 mgd (peak daily wet weather design flow[3])
Watershed	Russian River Hydrologic Unit, Guerneville Hydrologic Subarea

[1] Average daily dry-weather design flow is defined as the average of daily inflows calculated during the lowest consecutive 30-day period each calendar year.

[2] Peak weekly wet-weather design flow is defined as the maximum weekly average flow that may be treated, based on the capacity of the microfilters

[3] Peak daily wet-weather design flow is defined as the maximum volume of effluent that may be treated, based on the capacity of the microfilters

Receiving Water	Jones Creek, tributary to Green Valley Creek, thence to the Russian River
Receiving Water Type	Inland surface water

A. The Forestville Water District (hereinafter Discharger) is the owner and operator of the Forestville Water District Wastewater Treatment, Reclamation, and Disposal Facility (hereinafter Facility), a POTW, as shown on Attachment B.

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 Jones Creek which is tributary to Green Valley Creek, thence the Russian River, all waters of the United States, and is currently regulated by Order No. R1-2004-0027 which was adopted on October 6, 2004 and expired on October 6, 2009. The Discharger is also regulated by Monitoring and Reporting Program (MRP) No. R1-2004-0027, which was adopted on October 6, 2004. The terms and conditions of the current Order and MRP have been automatically continued and remain in effect until new Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit are adopted pursuant to this Order.

C. The Discharger filed a Report of Waste Discharge and submitted an application for renewal of its WDRs and NPDES permit on March 9, 2009. A site visit was conducted on May 4, 2009, to observe operations and collect additional data to develop permit limitations and conditions. The permit application was deemed complete on May 4, 2009.

II. FACILITY DESCRIPTION

The Discharger owns a wastewater collection, treatment, reclamation and disposal facility and provides sewerage service to a population of approximately 930, including residential, commercial, and institutional customers in the Forestville and Mirabel Heights Zone of Benefit (Mirabel Heights) areas. There are no industrial users that discharge into the Facility. The Discharger's wastewater makeup is approximately 65 percent residential flow, 21 percent commercial flow, and 14 percent institutional flow. The institutional portion reflects two schools, which serve larger populations than live within the Discharger's service area.

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A. Description of Wastewater and Biosolids Treatment or Controls

1. Collection System

Portions of the Discharger's collection system, which were constructed in the early 1950's, consist of 3.3 miles of vitrified clay and asbestos-cement collection system pipelines to the Facility. In 1976 and 1977, 5,026 feet of sewer mains were sliplined with polyethylene liner to improve the system integrity. Wastewater flows by gravity from the Forestville service area to the Facility.

Mirabel Heights is served by a gravity flow collection system, which feeds into a force main connected to the Facility. The gravity portion of the collection system consists of 2.7 miles of plastic sewer pipe and the force main consists of 1.5 miles of ductile iron pipe. Two lift stations carry wastewater from the Mirabel Heights gravity flow collection system to the Facility.

2. Wastewater Treatment

The Facility was upgraded and expanded just prior to adoption of Order No. R1-2004-0027 to provide advanced wastewater treatment[4] employing microfiltration technology to bring the Facility into compliance with the Basin Plan and to maintain compliance with the CDPH water recycling requirements contained in Chapter 3, Division 4, Title 22 of the California Code of Regulations, sections 60301 through 60355. Advanced wastewater treatment allows the Discharger to pursue increased reclamation opportunities, including landscape irrigation of local schools and parks in addition to local vineyards and farmlands.

The current treatment system consists of a headworks, an aeration pond, a settling pond, microfiltration, chlorine disinfection, and dechlorination. The Facility is designed to provide tertiary treatment for up to an average daily dry weather flow of 0.130 mgd, a peak weekly wet weather flow of 0.58 mgd and a peak daily wet-weather flow of 0.78 .

The headworks includes a rotary hydroscreen system, a screenings washer, and a metering flume. Influent flows from a 12-inch pipeline to the rotary hydroscreen system. After solids removal, influent flows through a 3-inch Parshall flume for flow measurement. The cleaned and dewatered solids are disposed of at a landfill.

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[4] The terms "advanced treated effluent" and "disinfected tertiary effluent" are used interchangeably in this permit. Both terms refer to the advanced wastewater treatment process described in section II.A.2 of this Fact Sheet. The term "advanced wastewater treatment" is used in the W*ater Quality Control Plan for the North Coast Region* (Basin Plan). The term "disinfected tertiary effluent" is used in the Department of Public Health's (DPH) Recycled Water Criteria contained in Chapter 3, Division 4, Title 22 of the California Code of Regulations, sections 60301 through 60355 (hereinafter Title 22).

Wastewater from the headworks flows by gravity to the east end of the aeration pond (also known as the South Pond). The pond has a volumetric capacity of 2.93 million gallons and is divided into three baffled cells to reduce short-circuiting. The first cell has two 7.5-horsepower aerators, the second cell has one 5-horsepower aerator, and the third cell has one 3-horsepower aerator. Based on the average dry weather treatment capacity, the theoretical detention time in the pond is 24.8 days. Wastewater flows from cell to cell and exits from the westernmost cell into the settling pond.

The settling pond (also known as the North Pond) receives aerated wastewater by gravity into the south side, opposite the settling pond outlet. Flow of wastewater through the settling pond allows microorganisms to settle out prior to being pumped to the microfiltration system. The settling pond has a total volume of 0.75 million gallons.

Effluent from the settling pond is pumped by three 5-horsepower prefilter pumps to the filtration system. To maintain cleanliness in the filters, the secondary effluent is pre-chlorinated using sodium hypochlorite prior to filtration. Tertiary treatment is achieved in the microfiltration system. The microfiltration system consists of two treatment trains each with a holding tank, strainer, and three banks of 12 microza microfiltration modules (water flows from the outside-in). The microfiltration building has been designed to accommodate a third treatment train if necessary. The microfiltration system is operated in accordance with the manufacturer's operations manual and CDPH requirements. Where the manufacturer's recommendations are less stringent than CDPH requirements, CDPH requirements take precedence.

From the microfiltration system, filtered wastewater flows to the chlorine contact tank by gravity through an 8-inch pipeline. Gaseous chlorine is injected into the 8-inch influent line prior to entering the chlorine contact tank using two chlorinators each. Two cylinders are kept on-line at all times. Automatic switchover is available between the systems. Chlorinated effluent then flows into one of two baffled concrete chambers. A chlorine contact tank tracer study conducted in August 2005 demonstrated that the contact time is 105 minutes at the peak weekly treatment plant design flow of 0.58 mgd, and that a final chlorine residual of 4.3 mg/L is needed to maintain a contact time of 450 mg-min/L at peak weekly design flow. The study also demonstrated that when the filter flow exceeds 0.58 mgd, up to the peak wet weather daily design flow of 0.78 mgd, a final chlorine residual of 5.3 mg/L is needed to maintain a contact time of 450 mg-min/L. After flowing through the chlorine contact tank, before discharge to surface water, the chlorinated effluent is dechlorinated using sulfur dioxide. During the irrigation season, plant effluent is lightly dechlorinated.

In 2010 the Discharger reconfigured the chlorination system to improve chlorination efficiency and compliance with BOD effluent limitations. Prior to the reconfiguration, the chlorination system utilized tertiary recycled water from the effluent storage pond

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as solution water to carry chlorine to the point of disinfection upstream of the chlorine contact tanks. The Discharger reconfigured the piping and installed a small pump to use effluent directly from the chlorine contact tank as the solution water. This modification is expected to reduce chlorine usage and improve compliance with coliform effluent limitations because recycled water stored in the effluent storage pond accumulates organic matter (algae, bird feces) that can have a higher chlorine and oxygen demand.

3. **Effluent Storage**

After treatment, the advanced treated effluent is discharged to an on-site effluent storage pond prior to discharge to the land disposal system or the surface water discharge system. The maximum capacity of the existing on-site storage pond is 3.2 million gallons. Additional on-site storage capacity may also be available within the treatment ponds during low flow periods. The storage ponds allow the amount of discharge to be controlled to protect beneficial uses of the receiving water and provide a source of recycled water during the discharge prohibition period.

4. **Recycled Water**

During the dry weather season (May 15 to September 30), and other periods as allowed under this Order, disinfected tertiary effluent from effluent storage is reclaimed for irrigation. The existing irrigation system includes approximately 296 acres of agricultural land with an irrigable capacity of 54 acre-feet and 18 acres of urban land with an irrigable capacity of approximately 39 acre-feet. The Discharger has written agreements with individual recycled water customers. In addition, the Discharger has the capability of delivering recycled water to Graton CSD's recycled water users, if needed.

The advanced wastewater treatment recycled water system includes two effluent pump stations, two recycled water mains, an effluent transfer line to the Graton CSD WWTF, an off-site storage reservoir, spray irrigation systems and accompanying appurtenances to provide advanced treated recycled water to agricultural and urban landscapes, including school grounds and parks. The off-site storage pond is an existing 14.7 million gallon storage reservoir at the Sterling/Iron Horse Vineyards property in Forestville that provides additional effluent storage capacity of 6.5 to 13 million gallons annually. Effluent stored in this pond is used for irrigation and frost protection of vineyards on the Sterling/Iron Horse Vineyards property.

The amount of recycled water used for irrigation in any year is dependent on weather conditions and the amount of land available for irrigation. The Discharger's preferred disposal method is irrigation, rather than discharge to surface waters.

5. **Transfers Between the Facility and the Graton CSD WWTF**

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The Discharger may accept disinfected secondary effluent from the Graton CSD WWTF for the purpose of providing advanced wastewater treatment to the transferred effluent. An effluent transfer pipeline connects the two treatment plants.

Graton's disinfected secondary effluent can be transferred to the Facility for advanced wastewater treatment, disinfection, storage, and disposal when treatment, storage, and disposal capacity are available at the Facility. The Discharger is responsible for compliance with effluent limitations for advanced wastewater treatment for all effluent that is treated at the Facility for the Graton CSD WWTF. The Discharger may provide for surface water disposal of effluent from the Graton CSD WWTF provided that such disposal does not result in any violation of this Order, including, but not limited to, the one percent flow limitation, all discharge prohibitions, effluent limitations, receiving water limitations, and general provisions. The Discharger may also transfer disinfected tertiary wastewater to the Graton CSD WWTF when the Discharger is in need of additional storage capacity. Disinfected tertiary effluent delivered via the pipeline after disinfected secondary effluent has been in the pipeline would only be considered tertiary after one full pipe volume of tertiary water passes through the pipeline.

The Discharger did not transfer any of its effluent to the Graton CSD WWTF during the term of Order No. R1-2004-0027. On one occasion, the Discharger provided tertiary effluent for frost protection and irrigation for Graton CSD WWTF recycled water customers. During dry months, when the Discharger has needed more recycled water for its users, the Discharger has received secondary effluent from the Graton CSD WWTF, which was then filtered and disinfected for use by the Discharger's recycled water customers.

6. **Biosolids**

Biosolids generated during the treatment process accumulate in the aeration and settling ponds, where they undergo anaerobic digestion and compaction. Over time, the volume of settled solids increases, reducing the retention time of flow through the pond. It is recommended that the settling pond provide a minimum of 12 hours detention time at the peak week wet weather flow, at maximum allowable water depth. Accordingly, 0.46 million gallons of settling pond capacity is available for solids accumulation. This volume is equivalent to a depth of 6.5 feet. No solids have been removed since construction of the tertiary facilities in 2001. At present, there are approximately 2 feet of solids at the bottom of the pond, or approximately 0.1 million gallons of accumulated solids in 7 years. This rate of accumulation is consistent with industry values for solids reduction in aerated pond systems. As necessary, biosolids will be removed and disposed at a legal point of disposal. The Discharger does not anticipate needing to remove biosolids within the term of this permit.

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B. Discharge Points and Receiving Waters

1. The treatment, reclamation, and disposal facilities and part of the collection system are located in the Green Valley Creek drainage area in portions of Sections 5, 6, 7, and 8, T7N, R9W, MDB&M. The remainder of the collection system is located in the Mark West Creek drainage area in portions of Sections 31 and 32, T8N, R9W, MDB&M. A map of the area is shown in Attachment B to this Order.

2. The Discharger discharges advanced treated wastewater at Discharge Point 001 to a 3.25 million gallon on-site effluent storage pond prior to discharge to the land disposal system or the surface water discharge system.

3. Advanced treated wastewater is discharged from the 3.25 million gallon on-site effluent storage pond via an outfall pipe at Discharge Point 002 to Jones Creek, a water of the United States and a tributary to the Russian River via Green Valley Creek at a point latitude 38° 27’ 58” N and longitude 122° 53’ 18” W during the allowed discharge period from October 1 to May 14. The rate of discharge is governed by flow conditions in Green Valley Creek monitored at the Iron Horse Bridge and is limited to one percent of the flow of Green Valley Creek. The Discharger performed an analysis to determine dilution rates of the discharge to Jones Creek. The analysis was based upon estimated comparative flows in Jones Creek and Green Valley Creek at Iron Horse Bridge utilizing discharge records for the period of 2005 through June 2008. The analysis revealed that dilution rates of the discharge to Jones Creek range from 5% to 25% with an average and median discharge percentage of 10% to Jones Creek. This issue will be addressed in a future enforcement action, and the Discharger will be required to submit a formal request for an exception to the Basin Plan one percent flow limitation requirement if the Discharger plans to continue to discharge to Jones Creek at this rate beyond the term of this permit. A concurrent analysis of limited existing monitoring data collected in Jones Creek during periods of discharge was indeterminate with regard to impacts of the discharge on water quality and beneficial uses of the creek. This permit requires the Discharger to monitor the discharge and Jones Creek more frequently for pH, temperature, dissolved oxygen and turbidity in order to evaluate impacts.

4. During the dry weather season (May 15 to September 30), and other periods as allowed under this Order, advanced treated wastewater from effluent storage is reclaimed for irrigation on authorized use sites generally referred to as Discharge Point 003.

5. Disinfected tertiary treated effluent may be transferred from the Facility to the Graton CSD WWTF at Discharge Point 004.

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

1. Effluent limitations contained in Order No. R1-2004-0027 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order No. R1-2004-0027 are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data – Discharge Point 001 (During periods of surface water discharge)

Parameter	Units	Effluent Limitations			Monitoring Data (From October 2004 to June 2010)	
		Average Monthly[5]	Average Weekly[6]	Maximum Daily[7]	Reported Value of Highest Violation	Number of Violations
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	--	15.5/31[8]	2/5[8]
	lbs/day (dry-weather)[9,10]	11	16	--	33.7/61.1[8]	4/9[8]
	lbs/day (maximum wet weather)[9,10]	48	73	--	--	No Violations
	% Removal	85	--	--	78[11]	1

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5 The arithmetic mean of all samples collected in a calendar month.

6 The arithmetic mean of all samples collected in a calendar week, Sunday to Saturday.

7 The maximum result of all samples collected in a calendar day.

8 Number of 30-day average violations/Number of 7-day average violations.

9 The mass discharge (lbs/day) is obtained from the following calculation of any calendar day:

$$\frac{8.34}{N}\sum^{N} Q_i C_i$$

in which N is the number of samples analyzed in any calendar day. Q_i and C_i are the flow rate (mgd) and the constituent concentration (mg/L), respectively, that are associated with each of the N grab samples that may be taken in any calendar day. If a composite sample is taken, C_i is the concentration measured in the composite sample; and Q_i is the average flow rate occurring during the period over which samples are composited.

10 Mass-based effluent limitations are based on the wastewater treatment facility (WWTF) average dry-weather design flow of 0.130 mgd. During wet-weather periods when the flow rate into the WWTF exceeds the dry-weather design flow, the mass emission limitations shall be calculated using the concentration-based effluent limitations and the actual daily average flow rates (not to exceed the peak design flow of 0.58 mgd).

11 Value represents the lowest reported monthly average percent removal resulting in an effluent limitation violation.

Parameter	Units	Effluent Limitations			Monitoring Data (From October 2004 to June 2010)	
		Average Monthly[5]	Average Weekly[6]	Maximum Daily[7]	Reported Value of Highest Violation	Number of Violations
Total Suspended Solids	mg/L	10	15	--	--	No Violations
	lbs/day (dry-weather)[9,10]	11	16	--	--	No Violations
	lbs/day (maximum wet weather)[9,10]	48	73	--	--	No Violations
	% Removal	85	--	--	----	0
Settleable Solids	ml/L	--	--	[12]	--	No Violations
Total Coliform Organisms	MPN/100 mL	23[13]	2.2[14]	230	--	No Violations
pH	standard units	--	--	6.0 – 9.0	--	No Violations
Flow (Influent)	mgd	0.130[15]	--	--	--	No Violations

2. Effluent limitations contained in Order No. R1-2004-0027 for discharges from Discharge Point 002 (Monitoring Location EFF-002) and representative monitoring data from the term of Order No. R1-2004-0027 are as follows:

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[12] Effluent shall not contain any measurable settleable solids.

[13] The number of coliform bacteria shall not exceed a Most Probable Number (MPN) of 23 per 100 milliliters in more than one sample in any 30-day period. Compliance shall be determined based on a fixed calendar month, not a rolling 30-day average.

[14] The median concentration shall not exceed a MPN of 2.2 per 100 milliliters, using bacteriological results of the last 7 days for which analyses have been completed. Compliance shall be determined as a rolling 7-day median.

[15] The average daily dry weather flow (ADWF) of waste into the Permittee's WWTF in excess of 0.130 mgd, as determined from the lowest consecutive 30-day mean flow, is prohibited.

Table F-3. Historic Effluent Limitations and Monitoring Data – Discharge Point 002

Parameter	Units	Effluent Limitations			Monitoring Data (From October 2004 to June 2010)	
		Average Monthly[5]	Average Weekly[6]	Maximum Daily[7]	Reported Value of Highest Violation	Number of Violations
Total Chlorine	mg/L	--	--	ND[16]	--	No Violations
pH	standard units	--	--	6.5 – 8.5	--	No Violations
Copper, Total Recoverable	µg/L	--	--	[17]	54	4
	µg/L	[18]	--	[18]	--	3 – AMEL 1 - MDEL
Lead, Total Recoverable	µg/L	--	--	[17]	--	No Violations
	µg/L	[19]	--	[19]	--	No Violations
Zinc, Total Recoverable	µg/L	--	--	[17]	--	No Violations
	µg/L	[20]	--	[20]	--	No Violations
Chloroform + Dichlorobromomethane	µg/L	100[21]	--	--	--	No Violations

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16 The effluent shall not contain detectable levels of total chlorine using an analytical method or chlorine analyzer with a minimum detection level of 0.1 mg/L.

17 Interim effluent limitations are effective until October 6, 2009. Attachment E to Order No. R1-2004-0027 provides calculated interim acute and chronic aquatic life values (expressed as 1-hour and 4-day averages) for a range of hardness values.

18 Final effluent limitations became effective on October 6, 2009. Attachment B to Order No. R1-2004-0027 provides calculated AMEL and MDEL values for a range of hardness values.

19 Final effluent limitations became effective on October 6, 2009. Attachment C to Order No. R1-2004-0027 provides calculated AMEL and MDEL values for a range of hardness values.

20 Final effluent limitations became effective on October 6, 2009. Attachment D to Order No. R1-2004-0027 provides calculated AMEL and MDEL values for a range of hardness values.

21 Final effluent limitations became effective on October 6, 2009. The chloroform and dichlorobromomethane concentrations combined are not to exceed 100 µg/L.

Parameter	Units	Effluent Limitations			Monitoring Data (From October 2004 to June 2010)	
		Average Monthly[5]	Average Weekly[6]	Maximum Daily[7]	Reported Value of Highest Violation	Number of Violations
Dichlorobromomethane	µg/L	--	--	5.7[22]	13	1
	µg/L	0.56[23]	--	1.4[23]	--	No Violations
Acute Toxicity	% Survival	--	--	[24]	30[25]	1

3. Effluent limitations contained in Order No. R1-2004-0027 for discharges from Discharge Point 003 (Monitoring Location REC-001) and representative monitoring data from the term of Order No. R1-2004-0027 are as follows:

Table F-4. Historic Effluent Limitations and Monitoring Data – Discharge Point 001 (During periods of transfer to reclamation system)

Parameter	Units	Effluent Limitations			Monitoring Data (From October 2004 to June 2010)	
		Average Monthly[6]	Average Weekly[7]	Maximum Daily[8]	Reported Value of Highest Violation	Number of Violations
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	30	45	--	44/65	6/25
	lbs/day (dry-weather)[9,10]	33	49	--	--	No Violations
	lbs/day (maximum wet weather)[9,10]	145	218	--	--	No Violations
Total Suspended Solids	mg/L	30	45	--	--	No Violations
	lbs/day (dry-weather)[9,10]	33	49	--	--	No Violations
	lbs/day (maximum wet weather)[9,10]	145	218	--	--	No Violations

22 Interim effluent limitations became effective until October 6, 2009.

23 Final effluent limitations became effective on October 6, 2009.

24 There shall be no acute toxicity in the effluent. Effluent is considered acutely toxic when there is: 1) less than 90 percent survival based on the median from any three or more consecutive bioassays, or 2) less than 70 percent survival 100 percent of the time.

25 Value represents the lowest reported percent survival resulting in an effluent limitation violation.

Parameter	Units	Effluent Limitations			Monitoring Data (From October 2004 to June 2010)	
		Average Monthly[6]	Average Weekly[7]	Maximum Daily[8]	Reported Value of Highest Violation	Number of Violations
Total Coliform Organisms	MPN/100 mL	23[14]	2.2[15]	230	22/30[26]	11/1[27]

D. Compliance Summary

1. Violations Summary

During the term of the previous Order, the Discharger experienced violations of BOD, copper, total coliform and acute toxicity effluent limitations.

The Discharger suspected that ammonia may have been the cause of the single acute toxicity violation, but this could not be completely verified given the fact that no additional acute toxicity violations occurred. This Order requires the Discharger to monitor its effluent for ammonia to determine whether or not ammonia is present at concentrations that could cause violations of water quality objectives.

Violations of BOD effluent limitations occurred fairly regularly in 2005, 2007, and 2008 with violations occurring during periods of discharge to Jones Creek in January and March 2007 and again in January through March 2008. The Discharger believes that some of the violations resulted from dechlorination of samples in the analytical laboratory causing an increase in the BOD concentrations, however, this could not be conclusively demonstrated. In 2008, it was revealed that the chlorination system utilized tertiary recycled water from the effluent storage pond as solution water to carry chlorine to the point of disinfection upstream of the chlorine contact tanks. The Discharger modified its chlorination system to utilize water from the chlorine contact chamber as solution water. The Discharger has not experienced any BOD violations since March 2008.

The Discharger has had four violations of the interim copper effluent limitation and would have experienced more violations of the final effluent limitations if those limitations had been effective prior to October 6, 2009 (the date that final effluent limitations became effective). After final copper effluent limitations became effective on October 6, 2009, the Discharger had three violations of the average monthly effluent limitation and one violation of the maximum daily effluent limitation for copper. Although the Discharger's wastewater treatment plant removes some of the copper that enters the plant, copper removal is not sufficient to meet final copper

[26] Highest of weekly median and daily maximum

[27] Number of reported violations of weekly median and daily maximum.

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effluent limitations. The Discharger has requested additional time to comply with final copper effluent limitations, thus a cease and desist order providing additional time to implement a plan to comply with final copper effluent limitations is proposed for adoption concurrent with this Order. In addition, the Discharger has requested that compliance with copper effluent limitations be based on effluent hardness rather than upstream receiving water hardness as discussed further in section IV.C.3.g of this Fact Sheet. This Order grants that request.

The Discharger had no violations of the interim dichlorobromomethane effluent limitation, but would have had eight violations of the final average monthly effluent limitation and three violation of the maximum daily effluent limitation if those limitations had been effective prior to October 6, 2009.

Violations of the total coliform effluent limitation occurred during April 2008. The Discharger corrected the cause of the violations.

1. **Enforcement Action Summary**

Important enforcement actions taken against the Discharger, related to violations of waste discharge and NPDES requirements, are summarized below.

a. **Administrative Civil Liability (ACL) Complaint No. R1-2005-0005.** This ACL Complaint was issued by the Regional Water Board Executive Officer on January 20, 2005, to address violations of effluent limitations contained in Order No. 95-45 that occurred between January 29, 2000 and May 5, 2004. The ACL Complaint describes numerous violations, including exceedances of effluent limitations for 5-day biochemical oxygen demand (BOD_5), non-filterable residue (NFR), settleable solids, chlorine residual, total coliform organisms, pH, and copper.

b. **ACL Complaint No. R1-2005-0063.** Subsequent to issuance of ACL Complaint No. R1-2005-0005, the Discharger provided financial information to the Regional Water Board. The Regional Water Board Executive Officer determined that the Facility serves a small community with a financial hardship, and ACL Complaint No. R1-2005-0063 was adopted on June 17, 2005, which rescinded ACL Complaint No. R1-2005-0005 and allowed the Discharger to conduct a compliance project in lieu of paying the full amount of applicable mandatory minimum penalties (MMPs). The Discharger's compliance project included installation of a standby power generator to reduce the risk of future violations due to wastewater spills from the treatment plant.

c. **ACL Complaint No. R1-2008-0127.** This complaint was issued by the Regional Water Board Executive Officer on December 15, 2008 to address violations of effluent limitations contained in Order Nos. 95-45 and R1-2004-0027 that occurred between February 29, 2000 and June 30, 2008. The ACL Complaint

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describes numerous violations, including exceedances of effluent limitations for BOD_5 and copper. The Discharger completed a supplemental environmental project in response to this ACL Complaint. The SEP was the chlorine contact chamber source water project described in section II.A.2 of this Fact Sheet.

E. Planned Changes

The ROWD identified plans to modify the chlorine contact chamber feed water source. The chlorine contact chamber project was completed in 2010, prior to completion of this Order and is described in section II.A.2 of this Fact Sheet. No other planned changes have been identified at this time.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the requirements and authorities described in this section. This section provides supplemental information, where appropriate, for the plans, policies, and regulations relevant to the discharge.

A. Legal Authorities

This Order is issued pursuant to section 402 of the federal CWA and implementing regulations adopted by USEPA and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as WDRs and a Master Reclamation Permit pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with sections 13260 and 13520, respectively).

B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100 through 21177. This action also involves the re-issuance of waste discharge requirements for an existing facility that discharges treated wastewater to land and as such, is also exempt from CEQA as an existing facility for which no expansion of design flow is being permitted pursuant to Title 14, CCR, section 15301.

When approving proposals for new recycled water sites, the Regional Water Board's action is subject to CEQA. Regional Water Board compliance with CEQA shall be addressed during the approval process for reclamation expansion areas set forth in Attachment G to this Order. The approval process requires demonstration that a CEQA analysis has been conducted for the proposed recycled water use project. The approval process also requires the Discharger to submit technical information necessary to demonstrate that any proposed recycled water use areas will be irrigated using the most stringent of the hydraulic and nutrient agronomic rate and include best management practices that are protective of surface and ground water quality, as described in Attachment G to this Order.

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If the local agency (e.g., Discharger or other approved agency pursuant to CEQA regulations) has conducted an appropriate CEQA analysis, the Regional Water Board may review the CEQA document prepared by the local agency and make findings based on that document. If the local agency does not prepare a CEQA document, the Regional Water Board could act as the lead agency under CEQA and prepare the needed CEQA document, however, this could result in delays in project approval until such time that a proper CEQA analysis can be conducted by the Regional Water Board.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The Regional Water Quality Control Board (Regional Water Board) adopted a *Water Quality Control Plan for the North Coast Region* (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. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which establishes State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. The Basin Plan, at page 2-18.00, establishes beneficial uses for groundwater as municipal and domestic supply, industrial service supply, industrial process supply, agricultural supply, and freshwater supply. Thus, beneficial uses applicable to Jones Creek and groundwater are as follows:

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Table F-5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
002	Jones Creek, tributary to the Russian River via Green Valley Creek within the Guerneville Hydrologic Subarea of the Russian River Hydrologic Unit	Existing: • Municipal and Domestic Supply (MUN) • Agricultural Supply (AGR) • Industrial Service Supply (IND) • Ground Water Recharge (GWR) • Freshwater Replenishment (FRSH) • Navigation (NAV) • Water Contact Recreation (REC-1) • Non-Contact Water Recreation (REC-2) • Commercial and Sport Fishing (COMM) • Warm Freshwater Habitat (WARM) • Cold Freshwater Habitat (COLD) • Wildlife Habitat (WILD) • Preservation of Rare, Threatened, or Endangered Species (RARE) • Migration of Aquatic Organisms (MIGR) • Spawning, Reproduction, and/or Early Development (SPWN) • Estuarine Habitat (EST) Potential: • Industrial Process Supply (PRO) • Hydropower Generation (POW) • Shellfish Harvesting (SHELL) • Aquaculture (AQUA)
001, 002, and 003	Groundwater	Existing • Municipal and Domestic Supply (MUN) • Industrial Service Supply (IND) • Industrial Process Supply (PRO) • Agricultural Supply (AGR) • Freshwater Replenishment (FRSH)

Note: Estuarine Habitat is not present in Jones Creek or Green Valley Creek

Requirements of this Order implement the Basin Plan.

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

3. **State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP).

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The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

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

5. **Antidegradation Policy.** Section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16.

6. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations[28] (40 CFR) section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.

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

Section 303(d) of the federal CWA requires states to identify waterbodies that do not meet water quality standards and are not supporting their beneficial uses after implementation of technology-based effluent limitations on point sources. Each state must submit an updated list, the 303(d) List of Impaired Waterbodies, to USEPA by April

[28] All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.

of each even numbered year. In addition to identifying the waterbodies that are not supporting beneficial uses, the 303(d) list also identifies the pollutant or stressor causing impairment and establishes a schedule for developing a control plan to address the impairment. The USEPA requires the Regional Water Board to develop total maximum daily loads (TMDLs) for each 303(d) listed pollutant and water body contaminant. TMDLs establish the maximum quantity of a given pollutant that can be added to a water body from all sources without exceeding the applicable water quality standard for that pollutant and determine wasteload allocations (the portion of a TMDL allocated to existing and future point sources) for point sources and load allocations (the portion of a TMDL attributed to existing and future nonpoint sources) for nonpoint sources.

On November 12, 2010, the USEPA provided final approval of the 303(d) list of impaired water bodies prepared by the State. The list identifies the entire Russian River watershed as impaired by excess sediment and elevated water temperatures and Green Valley Creek as impaired for indicator bacteria. Pursuant to CWA section 303(d), the Regional Water Board will adopt TMDLs to address impairing pollutants in 303(d) listed waters, and then implement TMDLs, including through provisions of NPDES permits. TMDLs establish the maximum quantity of a given pollutant that can be added to a water body from all sources without exceeding the applicable water quality standard for that pollutant and determine wasteload allocations (the portion of a TMDL allocated to existing and future point sources) for point sources and load allocations (the portion of a TMDL attributed to existing and future nonpoint sources) for nonpoint sources. The Regional Water Board expects to adopt TMDLs for sediment and temperature for the Russian River by 2019.

Aspects of the sediment impairing the Russian River include settleable solids, suspended solids, and turbidity. The impact of settleable solids results when they collect on the bottom of a waterbody over time, making them a persistent or accumulative constituent. The impact of suspended solids and turbidity, by contrast, results from their concentration in the water column.

An analysis of the Discharger's effluent monitoring data since the upgrade to advanced wastewater treatment indicates levels of BOD_5, TSS, total coliform bacteria, and settleable solids in the effluent are generally less than the effluent limitations required by this Order; however, there have been occasional exceedances of the effluent limitations for BOD_5. Thus, the discharge does not typically contain sediment (e.g., settleable solids, suspended solids, and turbidity) at levels which will cause, have the reasonable potential to cause, or contribute to increases in sediment levels in the Russian River. This finding is based, in part, on the advanced level of treatment provided by the Facility, which removes settleable solids and reduces total suspended solids and turbidity to negligible levels. This finding is also supported by the summer discharge prohibition, the one percent flow limitation for the winter discharge, and previous solids and turbidity monitoring that has demonstrated that the Facility removes settleable solids and turbidity to negligible levels.

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As part of the Report of Waste Discharge, the Discharger submitted *Technical Memorandum: Direct Impacts and Dilution Rates of Discharge to Jones Creek*, as required by Provision J.2 of Order No. R1-2004-0027. As part of the study, the Discharger evaluated upstream and downstream temperature in Jones Creek to determine whether the discharge appears to have an effect on water quality in the creek. The study showed that seven of the 13 sample dates indicated no change in water temperature in Jones Creek, while five samples indicated changes from upstream to downstream in the same direction of the discharge temperature. The average change in temperature observed was 0.1°C and the greatest change was a decrease of 0.6°C. The Discharger observed that the discharge appeared to be warmer than the creek during the shoulder seasons and colder than the creek during the winter months. The Discharger concluded that the impact of the discharge on the temperature in Jones Creek was inconsistent and minor. Additional effluent and receiving water monitoring for temperature is required during the term of this Order to develop data needed to assess impacts of the effluent discharged on receiving water temperature.

The discharge is not anticipated to contribute to impairments of the receiving water by indicator bacteria. The Discharger's current disinfection system has demonstrated consistent compliance with coliform effluent limitations.

E. Other Plans, Policies and Regulations

1. On May 2, 2006, the State Water Board adopted State Water Board Order No. 2006-0003-DWQ, Statewide General WDRs for Sanitary Sewer Systems and on February 20, 2008 adopted Order No. WQ 2008-0002-EXEC Adopting Amended Monitoring and Reporting Requirements for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. Order No. 2006-0003-DWQ requires that all public agencies that currently own or operate sanitary sewer systems apply for coverage under the General WDRs. The deadline for dischargers to apply for coverage was November 2, 2006. The Discharger applied for coverage and is subject to the requirements of Order Nos. 2006-0003-DWQ and WQ 2008-0002 and any future revisions thereto for operation of its wastewater collection system.

2. The Discharger has determined that the Facility does not have industrial storm water discharges to surface waters and storm water best management practices (BMPs) are in place to divert storm water run-on from the treatment facility grounds. The State Water Board Water Quality Order No. 97-03-DWQ, NPDES General Permit No. CAS000001, Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities, does not require facilities to obtain coverage if storm water is captured and treated and/or disposed of within the facility's NPDES permitted process wastewater or if storm water is disposed of to evaporation ponds, percolation ponds, or combined sewer systems. Therefore, coverage under the General Storm Water Permit is not required for this Facility.

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3. On July 22, 2004, the State Water Board adopted State Water Board Order No. 2004-0012-DWQ, General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities. The Order requires the Discharger to obtain coverage under Order No. 2004-0012-DWQ prior to any removal of biosolids from the Facility that will be land disposed.

4. On February 3, 2009, the State Water Board adopted the Recycled Water Policy (State Water Board Resolution No. 2009-0011) for the purpose of increasing the use of recycled water from municipal wastewater sources in a manner that implements state and federal water quality laws. The Recycled Water Policy became effective on May 14, 2009. The Recycled Water Policy provides direction to the regional water boards regarding the appropriate criteria to be used in issuing permits for recycled water projects and describes permitting criteria intended to streamline, and provide consistency for, the permitting of the vast majority of recycled water projects. Pertinent provisions and requirements of the policy have been incorporated into this Order to address conditions specific to the Discharger's plan to implement water recycling.

   The Recycled Water Policy recognizes the fact that some groundwater basins in the state contain salts and nutrients that exceed or threaten to exceed water quality objectives in the applicable Basin Plans, and that not all Basin Plans include adequate implementation procedures for achieving or ensuring compliance with the water quality objectives for salt or nutrients. The Recycled Water Policy further recognizes that these conditions can be caused by natural soils/conditions, discharges of waste, irrigation using surface water, groundwater or recycled water, and water supply augmentation using surface or recycled water, and that regulation of recycled water alone will not address these conditions. It is the intent of the Recycled Water Policy that salts and nutrients from all sources be managed on a basin-wide or watershed-wide basis in a manner that ensures attainment of water quality objectives and protection of beneficial uses. The Recycled Water Policy finds that the appropriate way to address salt and nutrient issues is through the development of regional or subregional salt and nutrient management plans rather than through imposing requirements solely on individual recycled water projects.

   This Order is consistent with the requirements of the Recycled Water Policy. The Regional Water Board is developing a plan to address salt and nutrient management. This Order may be reopened to incorporate provisions consistent with any salt and nutrient management plan(s) adopted by the Regional Water Board. This Order allows for increased use of recycled water consistent with the mandate established in the Recycled Water Policy to increase the use of recycled water in California. The Recycled Water Policy currently requires monitoring for chemicals of emerging concern (CEC) annually and for priority pollutants twice annually. The Recycled Water Policy is being revised to remove monitoring requirements for CECs based on recommendations of the CEC advisory panel that was appointed to review

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this issue, thus the MRP does not include monitoring requirements for CECs. The monitoring requirement for priority pollutants is addressed through CTR priority pollutant monitoring that is required of the Discharger pursuant to the SIP. The Discharger monitors for all CTR priority pollutants one time during each permit term and monitors more than twice per year for all CTR priority pollutants that exhibit reasonable potential.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

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

A. Discharge Prohibitions

1. **Discharge Prohibition III.A.** The discharge of any waste not disclosed by the Discharger or not within the reasonable contemplation of the Regional Water Board is prohibited.

   This prohibition is based on the Basin Plan, the previous Order, and State Water Board Order WQO No. 2002-0012 regarding the petition of WDRs Order No. 01-072 for the East Bay Municipal Utility District and Bay Area Clean Water Agencies. In State Water Board Order No. WQO 2002-0012, the State Water Board found that this prohibition is acceptable in orders, but should be interpreted to apply only to constituents that are either not disclosed by the Discharger, or are not reasonably anticipated to be present in the discharge but have not been disclosed by the Discharger. It specifically does not apply to constituents in the discharge that do not have "reasonable potential" to exceed water quality objectives.

   The State Water Board has stated that the only pollutants not covered by this prohibition are those which were "*disclosed to the permitting authority and … can be reasonably contemplated*." [In re the Petition of East Bay Municipal Utilities District et al., (State Water Board, 2002) Order No. WQO 2002-0012, p. 24] In that Order, the State Water Board cited a case which held the Discharger is liable for the discharge of pollutants "*not within the reasonable contemplation of the permitting authority <u>….whether spills or otherwise</u>…*" [*Piney Run Preservation Assn. v. County Commissioners of Carroll County, Maryland* (4th Cir. 2001) 268 F. 3d 255, 268.] Thus the State Water Board authority provides that, to be permissible, the

constituent discharged (1) must have been disclosed by the Discharger and (2) can be reasonably contemplated by the Regional Water Board.

Whether or not the Discharger reasonably contemplates the discharge of a constituent is not relevant. What matters is whether the Discharger disclosed the constituent to the Regional Water Board or whether the presence of the pollutant in the discharge can otherwise be reasonably contemplated by the Regional Water Board at the time of Order adoption.

2. **Discharge Prohibition III.B.** Creation of pollution, contamination, or nuisance, as defined by Section 13050 of the California Water Code is prohibited.

   This prohibition is based on section 13050 of the Water Code, and has been retained from Order No. R1-2004-0027.

3. **Discharge Prohibition III.C.** The discharge of sludge or digester supernatant is prohibited, except as authorized under section VI.C.5.c. (Solids Disposal and Handling Requirements, section VI.C.5.c of the Order.)

   This prohibition is based on restrictions on the disposal of sewage sludge found in federal regulations [40 CFR Part 503 (Biosolids), Part 527 and Part 258] and Title 27 of the California Code of Regulations (CCR). It has been retained from the previous Order.

4. **Discharge Prohibition III.D.** The discharge or reclamation use of untreated or partially treated waste from anywhere within the collection, treatment, or disposal systems is prohibited, except as provided for in Attachment D, Standard Provisions (Bypass).

   This prohibition has been retained from the previous Order and is based on the Basin Plan to protect beneficial uses of the receiving water from unpermitted discharges, and the intent of the Water Code sections 13260 through 13264 relating to the discharge of waste to waters of the State without filing for and being issued an Order. This prohibition applies to spills not related to sanitary sewer overflows (SSOs) and other unauthorized discharges of wastewater within the collection, treatment, and disposal facilities. The discharge of untreated or partially treated wastewater from the collection, treatment, or disposal facility represents an unauthorized bypass pursuant to 40 CFR 122.41(m) or an unauthorized discharge which poses a threat to human health and/or aquatic life, and therefore is explicitly prohibited by this Order.

5. **Discharge Prohibition III.E.** Any SSO that results in a discharge of untreated or partially treated wastewater to (a) waters of the State, (b) groundwater, or (c) land that creates pollution, contamination, or nuisance, as defined in Water Code section 13050(m) is prohibited.

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This prohibition applies to spills related to SSOs and is based on State standards, including section 13050 of the Water Code and the Basin Plan. This prohibition is consistent with the State's antidegradation policy as specified in State Water Board Resolution No. 68-16 (Statement of Policy with Respect to Maintaining High Quality of Water in California) in that the prohibition imposes conditions to prevent impacts to water quality, the degradation of water quality, negative effects on receiving water beneficial uses, and lessening of water quality beyond that prescribed in State Water Board or Regional Water Board plans and policies.

This prohibition is stricter than the prohibitions stated in State Water Board Order 2006-003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. Order No. 2006-0003-DWQ prohibits SSOs that result in the discharge of untreated or partially treated wastewater to waters of the United States and SSOs that cause a nuisance, compared to Prohibition III.E of this Order, which prohibits SSO discharges that create nuisance or pollution to waters of the State, groundwater, and land for a more complete protection of human health. The rationale for this prohibition is because of the prevalence of high groundwater in the North Coast Region, and this Region's reliance on groundwater as a drinking water source.

6. **Discharge Prohibition III.F.** The discharge of waste to land that is not owned or under agreement to use by the Discharger is prohibited, except for use for fire suppression as provided in Title 22, sections 60307 (a) and (b) of the California Code of Regulations.

   This prohibition is retained from Order No. R1-2004-0027. Land used for the application of wastewater must be owned by the Discharger or be under the control of the Discharger by contract so that the Discharger maintains a means for ultimate disposal of treated wastewater.

7. **Discharge Prohibition III.G.** The discharge of waste at any point not described in Finding II.B or authorized by a permit issued by the State Water Board or another Regional Water Board is prohibited.

   This prohibition is a general prohibition that allows the Discharger to discharge waste only in accordance with WDRs. It is based on sections 301 and 402 of the federal CWA and section 13263 of the Water Code.

8. **Discharge Prohibition III.H.** The mean daily dry weather flow of waste in excess of 0.130 mgd measured over a period of 30 consecutive days is prohibited.

   This prohibition is retained from the previous permit and is based on the dry weather discharge treatment capacity of the Facility.

9. **Discharge Prohibition III.I.** The peak daily wet-weather influent flow through the treatment system in excess of 0.78 mgd is prohibited.

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This prohibition is new and is based on the current daily peak sustained wet-weather capacity of the treatment system of 0.78 mgd. Exceedance of this capacity on a daily basis may result in effluent violations and/or the need to by-pass untreated effluent blended with treated effluent, which is prohibited.

10. **Discharge Prohibition III.J.** The discharge of wastewater effluent from the Facility to the Russian River or its tributaries is prohibited during the period of May 15 through September 30 of each year.

    This prohibition is retained from the previous Order, and is required by the Basin Plan. The Basin Plan prohibits discharges to the Russian River and its tributaries during the period of May 15 through September 30 (Chapter 4, North Coastal Basin Discharge Prohibition No. 3). The original intent of this prohibition was to prevent the contribution of wastewater to the baseline flow of the Russian River during the period of the year when the Russian River and its tributaries experience the heaviest water-contact recreation use.

11. **Discharge Prohibition III.K.** During the period from October 1 through May 14, discharges of treated wastewater shall not exceed 1 percent of the flow of Green Valley Creek.

    This prohibition is required by the Basin Plan (Chapter 4, North Coastal Basin Discharge Prohibition No. 3). The Basin Plan prohibits discharges to the Russian River and its tributaries when the waste discharge flow is greater than one percent of the receiving water's flow.

    Basin Plan Prohibition No. 4 does not specify how compliance with the one-percent flow requirement should be determined. This prohibition, set forth in Provision III.K of this Order, specifies that the discharge may comply with the 1 percent requirement as a monthly average for the surface water discharge season, provided the Discharger makes a reasonable effort to adjust the discharge of treated wastewater to one percent of the most recent daily flow measurement of Green Valley Creek, as measured at the Iron Horse Bridge. This modification provides day-to-day operational flexibility for the Discharger while retaining the intent of the prohibition.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations, 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 Part

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133 and Best Professional Judgment (BPJ) in accordance with Part 125, section 125.3

Regulations promulgated in section 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 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 BOD_5, TSS, and pH, as follows:

2. **BOD_5 and TSS**

   a. The 30-day average shall not exceed 30 mg/L.

   b. The 7-day average shall not exceed 45 mg/L.

   c. The 30-day average percent removal shall not be less than 85%.

3. **pH**

   The pH shall be maintained within the limits of 6.0 to 9.0.

   The effluent limitation for pH required to meet the water quality objective for hydrogen ion concentration (pH) is contained in the Basin Plan, Table 3-1.

   In addition, section 122.45(f) requires the establishment of mass-based effluent limitations for all pollutants limited in Orders, except for 1) pH, temperature, radiation, or other pollutants which cannot be appropriately expressed by mass, and 2) when applicable standards and limitations are expressed in terms of other units of measure.

4. **Applicable Technology-Based Effluent Limitations**

   The effluent limitations in this Order for BOD_5, TSS, and pH excced the technology-based requirements for secondary treatment set forth in section 133.102. pH effluent limitations have been established that also meet the water quality-based requirements set forth in the Basin Plan.

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In addition to the minimum, federal technology-based requirements, the Basin Plan requires that discharges of municipal waste "*shall be of advanced treated wastewater in accordance with effluent limitations contained in NPDES permits for each affected discharger, and shall meet a median coliform level of 2.2 MPN/100 mL*" for discharges to the Russian River and its tributaries during October 1 through May 14. This requirement leaves discretion to the Regional Water Board to define advanced wastewater treatment by the implementation of effluent limitations in individual permits.

a. **BOD_5 and TSS.** For the purpose of applying advanced wastewater treatment requirements on the discharge to Jones Creek, effluent limitations for BOD_5 and TSS are established at 10 mg/L as a monthly average and 15 mg/L as a weekly average, which are technically achievable based on the capability of a tertiary treatment system. 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. These effluent limitations are retained from Order No. R1-2004-0027.

   Order No. R1-2004-0027 established effluent limitations for BOD_5 and TSS based on the secondary treatment standards required at 40 CFR Part 133 for effluent transfers to the Graton CSD WWTF storage ponds. Transfers of secondary treated wastewater from the Graton CSD WWTF share the same pipeline as transfers of tertiary treated wastewater from the Facility to the Graton CSD WWTF storage ponds. Therefore, tertiary treated wastewater delivered to the Graton CSD WWTF storage ponds after secondary treated wastewater has been in the pipeline would only be considered tertiary after one full pipe volume of tertiary water passes through the pipeline. The Graton CSD WWTF discharges effluent from the storage ponds to Atascadero Creek or to its recycled water system under Order No. R1-2004-0038 (NPDES No. CA0023639). This Order retains effluent limitations for BOD_5 and TSS from Order No. R1-2004-0027 for discharges to Discharge Point 001 (on-site effluent storage pond). This Order includes more stringent requirements for transfers of effluent from Forestville to Graton, requiring that any transfer from Forestville to Graton consist of disinfected tertiary effluent, in anticipation of Graton's upgrade to tertiary.

5. **Mass-Based Effluent Limitations.** Mass effluent limitations for BOD_5 and TSS are required pursuant to 40 CFR 122.45(f) for the purpose of assuring that dilution is not used as a method of achieving the concentration limitations in the permit. Mass-based effluent limitations established in the Order are technology-based; and for this permit are based on the Facility's design dry-weather capacity of 0.130 mgd. During wet-weather periods when the flow rate into the Facility exceeds 0.130 mgd, the mass effluent limitations may be calculated based on the actual daily average flow rate, not to exceed the peak weekly design flow of 0.58 mgd.

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6. **Total Coliform Bacteria.** Even though effluent limits for coliform bacteria are not set out in the federal regulations for secondary treatment, they are included here in the section on technology-based effluent limits because they reflect technology standards for tertiary treatment. Coliform bacteria are a pollutant of concern in all wastewaters of domestic origin, and therefore, the Order retains the effluent limitations for total coliform bacteria from Order No. R1-2004-0027. These effluent limitations reflect standards for tertiary treated recycled water in the Basin Plan (Section 4, Implementation Plans) and as adopted by the California Department of Public Health (CDPH) in title 22 of the California Code of Regulations. Recycled water from this Facility meets the highest title 22 treatment and disinfection standards and is suitable for the broad range of recycled water uses identified in title 22, including urban land uses.

This Order establishes the following technology-based effluent limitations applicable to Discharge Points 001 and 004.

Summary of Technology-based Effluent Limitations
Discharge Points 001 and 004

Table F-6. Summary of Technology-based Effluent Limitations – Discharge Point 001 (Discharge to On-Site Storage Pond)

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	--	--	--
	lbs/day[29] (dry-weather)	11	16	--	--	--
	lbs/day[30] (wet-weather)	48	73	--	--	--
	% Removal	85	--	--	--	--
Total Suspended Solids	mg/L	10	15	--	--	--
	lbs/day[29] (dry-weather)	11	16	--	--	--
	lbs/day[30] (wet-weather)	48	73	--	--	--
	% Removal	85	--	--	--	--

[29] Mass-based limitations are based on the dry weather design flow of the Facility of 0.130 mgd.

[30] During wet weather periods, when the influent flow rate exceeds the dry weather design flow, mass emission limitations shall be calculated using the concentration-based effluent limitations and the actual daily average influent flow rate (not to exceed the peak weekly design flow rate of 0.58 mgd).

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Coliform Bacteria	MPN/100 mL	--	2.2[31]	23/240[32]	--	--

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

Section 301(b) of the CWA and section 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 technology equivalence requirements that are necessary to meet applicable water quality standards. The rationale for these requirements, which consist of advanced wastewater treatment, is discussed in section IV.B.2 of the Fact Sheet. In addition, this Order contains additional requirements to meet applicable water quality standards. The rationale for these requirements is discussed in section IV.C.3 of this Fact Sheet.

Section 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. A reasonable potential analysis (RPA) demonstrated reasonable potential for discharges from the Facility to cause or contribute to exceedances of nitrate, copper, cyanide, dichlorobromomethane, and total trihalomethanes (identified in Order No. R1-2004-0027 as chloroform plus dichlorobromomethane). No monitoring data is available to determine whether or not there is reasonable potential for ammonia. The monitoring and reporting program establishes monthly monitoring during periods of discharge to surface waters to develop a sufficient data base to determine reasonable potential.

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 section 122.44(d)(1)(vi).

[31] Expressed as a 7-day median.

[32] The number of coliform bacteria must not exceed an MPN of 23 per 100 mL in more than one sample in any 30-day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 mL.

The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the CTR and NTR.

2. **Applicable Beneficial Uses and Water Quality Criteria and Objectives**

   a. **Beneficial Uses.** Beneficial use designations for receiving waters for discharges from the Facility are presented in Finding II.H of the Order and section III.C.1 of this Fact Sheet.

   b. **Basin Plan Water Quality Objectives.** In addition to the specific water quality objectives indicated above, the Basin Plan contains narrative objectives for color, tastes and odors, floating material, suspended material, settleable material, oil and grease, biostimulatory substances, sediment, turbidity, pH, dissolved oxygen, bacteria, temperature, toxicity, pesticides, chemical constituents, and radioactivity that apply to inland surface waters, enclosed bays, and estuaries, and includes the Russian River and its tributaries. For waters designated for use as domestic or municipal supply (MUN), the Basin Plan establishes as applicable water quality criteria the Maximum Contaminant Levels (MCLs) established by CDPH for the protection of public water supplies at title 22 of the California Code of Regulations section 64431 (Inorganic Chemicals) and section 64444 (Organic Chemicals).

   c. **SIP, CTR and NTR.** Water quality criteria and objectives applicable to this receiving water are established by the California Toxics Rule (CTR), established by the USEPA at 40 CFR 131.38; and the National Toxics Rule (NTR), established by the USEPA at 40 CFR 131.36. Criteria for most of the 126 priority pollutants are contained within the CTR and the NTR.

   d. Aquatic life freshwater and saltwater criteria are identified as criterion maximum concentrations (CMC) and criterion continuous concentrations (CCC). The CTR defines the CMC as the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time without deleterious effects and the CCC as the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (4 days) without deleterious effects. The CMC is used to calculate an acute or 1-hour average numeric effluent limitation and the CCC is used to calculate a chronic or 4-day average numeric effluent limitation. Aquatic life freshwater criteria were used for the RPA, and for the calculation of effluent limitations for copper.

      Human health criteria are further identified as “water and organisms” and “organisms only.” “Water and organism” criteria are designed to address risks to human health from multiple exposure pathways. The criteria from the “water and

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organisms" column of CTR were used for the RPA because the Basin Plan identifies that the receiving water, Jones Creek, has the beneficial use designation of municipal and domestic supply. Effluent limitations were not necessary for any constituents based on criteria for the protection of human health.

The SIP, which is described in Finding II.J of the Order and section III.C.3 of this Fact Sheet, includes procedures for determining the need for, and the calculation of, WQBELs and requires dischargers to submit data sufficient to do so.

At title 22, Division 4, Chapter 15 of the CCR, CDPH has established MCLs for certain pollutants for the protection of drinking water. Chapter 3 of the Basin Plan establishes these MCLs as water quality objectives applicable to receiving waters with the beneficial use designation of municipal and domestic supply.

Attachment F-1 includes a summary of RPA results for all priority toxic pollutants and ammonia, nitrate, and phosphorus, with water quality criteria/objectives that are applicable to Jones Creek.

3. **Determining the Need for WQBELs**

NPDES regulations at 40 CFR 122.44 (d) require effluent limitations to control all pollutants which 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.

4. **Non-Priority Pollutants**

a. **pH.** The effluent limitation for pH of 6.5 to 8.5 is retained from Order No. R1-2005-0084 and applies to discharges to Jones Creek. This limitation is based on the water quality objective for all surface waters of the North Coast Region established in Chapter 3 of the Basin Plan. Federal technology-based requirements prescribed in 40 CFR 133 are not sufficient to meet these Basin Plan water quality standards.

b. **Chlorine Residual.** The Basin Plan establishes a narrative water quality objective for toxicity, stating that *"[a]ll waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life."* The Regional Water Board considers any chlorinated discharge as having the reasonable potential to cause or contribute to exceedances of this water quality objective for toxicity, and therefore, the Order establishes effluent limitations for chlorine. USEPA has established the following criteria for chlorine-produced oxidants for protection of freshwater aquatic life. [*Quality Criteria for Water 1986* (The Gold Book, 1986, EPA 440/5/-86-001)]

Chronic Criterion	Acute Criterion
0.011 mg/L	0.019 mg/L

Order No. R1-2004-0027 required that there be no detectable level of total chlorine in the effluent to Jones Creek using an analytical method or chlorine analyzer with a minimum detection level of 0.1 mg/L. This Order revises effluent limitations for chlorine residual to be consistent with the water quality criteria, which are below current analytical detection limits. The water quality criteria recommended by USEPA have been translated to average monthly and maximum daily effluent limitations for total chlorine residual. The new chlorine residual effluent limitations established in this Order are numerically lower than the minimum detection limit for the final effluent limitation in the previous Order that required no detectable level of chlorine in effluent at the point of discharge at a detection limit of 0.1 mg/L. This Order contains a chlorine residual compliance schedule to allow the Discharger time to comply with final effluent limitations in the Order. During the interim, the Discharger may demonstrate that there is no detectable level of chlorine in the effluent using a minimum detection limit of 0.1 mg/L. Beginning March 1, 2017, the Discharger shall employ a method sensitive to and accurate at the permitted level of 0.01 mg/L.

c. **Ammonia and Nitrate.** Untreated domestic wastewater contains ammonia. Nitrification is a biological process that converts ammonia to nitrite and nitrate. Denitrification is a process that converts nitrate to nitrogen gas, which is then released to the atmosphere. Wastewater treatment facilities commonly use nitrification to remove ammonia from the waste stream and denitrification to remove nitrate from the waste stream. Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving water and inadequate or incomplete denitrification may result in the discharge of nitrate to the receiving water. The Facility achieves varying levels of nitrification and denitrification throughout the year. As stated in the Report of Waste Discharge, sample data for nitrate reveals an annual pattern of nitrification and dentrification, with low concentrations during the winter, moderate concentrations during the summer, and higher concentrations during transition periods. Treatment plants such as the Facility often experience minimal nitrification in the winter, full nitrification and denitrification during the warm season, and full nitrification but limited denitrification during transition periods. As discussed in the following two paragraphs, effluent limitations for nitrate are included in the Order to assure that the Discharger protects the beneficial uses of the receiving waters and to prevent aquatic toxicity.

i. **Nitrate.** Nitrate is known to cause adverse health effects in humans. For waters designated as domestic or municipal supply, the Basin Plan (Chapter 3) adopts the MCLs, established by CDPH for the protection of public water supplies at Title 22 of the California Code of Regulations, sections 64431 (Inorganic Chemicals) and 64444 (Organic Chemicals), as applicable water

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quality criteria. The MCL for nitrate (10 mg/L as N) is therefore applicable as a water quality criterion for Jones Creek. The Discharger sampled its discharge to Jones Creek 34 times between October 2004 and September 2009. Monitoring results showed a concentration range between 0.52 mg/L as N and 37 mg/L as N and an average nitrate concentration of 6.6 mg/L as N. The maximum concentration of 37 mg/L as N occurred in July 2009. Because nitrate levels in effluent have been measured at concentrations greater than 10 mg/L as N, the Regional Water Board concludes that discharges from the Facility have a reasonable potential to cause or contribute to exceedances of applicable water quality criteria for the receiving water. The Order therefore establishes effluent limitations for nitrate for the protection of human health.

ii. **Ammonia.** Ammonia is known to cause toxicity to aquatic organisms in surface waters. The Basin Plan establishes a narrative water quality objective for toxicity, stating that *"[a]ll waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" Discharges of toxic concentrations of ammonia would violate the Basin Plan narrative toxicity objective. Due to concerns regarding ammonia toxicity, the Regional Water Board relies on USEPA's recommended water quality criteria for ammonia in fresh water from the 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014 (1999) to interpret the Basin Plan's narrative objective for toxicity. USEPA has recommended acute and chronic water quality criteria for the protection of aquatic life, which are dependent on receiving water pH and the presence/absence of salmonids (acute criteria), and pH, temperature, and the presence/absence of early life stages of fish (chronic criteria). EPA 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.

Effluent monitoring data for ammonia is not available. Therefore, the monitoring and reporting program of this Order requires the Discharger to collect effluent monitoring data to determine if the discharge from this Facility poses reasonable potential to cause or contribute to exceedances of applicable water quality objectives for ammonia in the receiving water (Jones Creek).

d. **Phosphorus.** The Basin Plan contains a narrative water quality objective for biostimulatory substances that states *"[w]aters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses*." The Regional

Water Board is increasingly concerned about the biostimulatory properties of discharges to surface waters in the North Coast Region. Nutrients, such as phosphorus and nitrogen containing compounds, in treated wastewater stimulate biological growth, thereby depleting dissolved oxygen and advancing eutrophication of receiving waters. At present, for interpretation of the Basin Plan's narrative water quality objective for biostimulatory substances, USEPA has established recommended water quality criteria for nutrients in Nutrient Criteria Documents for Lakes and Rivers and Nutrient Criteria Documents for Rivers and Streams. USEPA has defined 14 "ecoregions" and further categorized surface waters as lakes and reservoirs or rivers and streams for purposes of defining applicable numeric water quality criteria for nutrients. The State and Regional Water Boards continue to examine other methods of interpreting the Basin Plan's narrative water quality objective for biostimulatory substances. When the Boards determine that USEPA's recommended criteria are appropriate for implementing the Basin Plan objectives, or when a more appropriate and meaningful method is established, the need for limiting nutrients in relation to biostimulatory properties, including phosphorus and nitrogen-containing compounds, in all discharges in the Region will be reassessed. In the meantime, the RPA for nutrients in relation to biostimulatory properties, performed for development of this Order, is inconclusive. The Order establishes monitoring requirements for phosphorus and nitrogen containing compounds in discharges from the Facility to allow a determination of "reasonable potential" at such time as the State and Regional Water Boards select an appropriate method for interpretation of the Basin Plan's narrative objective.

e. **Priority Pollutants**

The SIP establishes procedures to implement water quality criteria from the NTR and CTR and for priority, toxic pollutant objectives established in the Basin Plan. The implementation procedures of the SIP include methods to determine reasonable potential (for pollutants to cause or contribute to excursions above State water quality standards) and to establish numeric effluent limitations, if necessary, for those pollutants showing reasonable potential.

Section 1.3 of the SIP requires the Regional Water Board to use all available, valid, relevant, and representative receiving water and effluent data and information to conduct an RPA. For this RPA, the Regional Water Board has used effluent and receiving water monitoring data generated from a single sample collected on February 6, 2008 for most of the CTR pollutants. For asbestos and 2,3,7,8-TCDD, effluent data generated from individual samples collected on May 27, 2008 and October 7, 2008, respectively, were used. Additional data collected during the term of the previous permit from October 2004 through September 2010 for copper, lead, zinc, cyanide, chloroform, and dichlorobromomethane was also used in conducting the RPA.

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Hardness

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 hardness-dependent metal criteria include cadmium, copper, chromium III, lead, nickel, silver, and zinc.

Effluent limitations for the discharge must be set to protect the beneficial uses of the receiving water for all discharge conditions. Effluent limitations must be set using a reasonable worst-case condition in order to protect beneficial uses for all discharge conditions. The SIP does not address how to determine 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. 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 (See 40 CFR 131.38(c)(4)(i)). The CTR does not define whether the term "ambient", as applied in the regulations, necessarily requires the consideration of the upstream as opposed to downstream hardness conditions.

State Water Board Order No. WQ-2008-0008 (City of Davis) further interpreted the SIP by stating "…*the regional water boards have considerable discretion in the selection of hardness. Regardless of which method is used for determining hardness, the selection must be protective of water quality criteria, given the flow conditions under which a particular hardness exists….Regardless of the hardness used, the resulting limits must always be protective of water quality under all flow conditions.*"

The point in the receiving water affected by the discharge is downstream of the discharge. As the effluent mixes with the receiving water, the hardness of the receiving water can change. Therefore, where reliable, representative data are available, it is appropriate to use the ambient hardness downstream of the discharge that is a mixture of the effluent and receiving water for the determination of the CTR hardness-dependent metals criteria.

A 2006 Study (*Emerick, R.W.; Booroum, Y.; & Pedri, J.E., 2006. California and National Toxics Rule Implementation and Development of Protective Hardness Based Metal Effluent Limitations,* WEFTEC, Chicago, Ill.) demonstrates that using the lowest recorded receiving water hardness for establishing water quality criteria is not always protective of the receiving water under various mixing conditions (e.g., when the effluent hardness is less than the receiving water hardness).

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The 2006 study evaluated the relationships between hardness and the CTR metals criterion that is calculated using the CTR metals equation. The equation describing the total recoverable regulatory criterion, as established in the CTR, is as follows:

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

Where:

WER = water effect ratio
H = Hardness
b = metal- and criterion-specific constant
m = metal- and criterion-specific constant

In accordance with the CTR, the default value for the WER is 1. A discharger-specific WER study must be conducted in order to use a WER 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 relationship between hardness and the resulting criterion in Equation 1 can exhibit either a downward –facing (i.e., concave downward) or an upward-facing (i.e., concave upward) curve depending on the values of the criterion-specific constants. The curve shapes for acute and chronic criteria for the metals are as follows:

Concave Downward Metals: acute and chronic chromium (III), copper, nickel, and zinc; and chronic cadmium.

For those contaminants where the regulatory criteria exhibit a concave downward relationship as a function of hardness, any mixture of receiving water that is compliant with water quality objectives for that metal and effluent that is compliant with water quality objectives for that metal will always result in a mixture that is compliant with water quality objectives and use of the lowest recorded effluent hardness for establishment of water quality objectives is fully protective of all beneficial uses regardless of whether the effluent or receiving water hardness is higher. Use of the lowest recorded effluent hardness is also protective under all possible mixing conditions between the effluent and the receiving water (i.e., from high dilution to no dilution).

Because this Order requires compliance with effluent limitations at the end of the discharge pipe, effluent hardness is an appropriate and protective hardness to use in adjusting the water quality criteria for the concave downward metals. The reasonable worst-case ambient hardness can be estimated by using the lowest

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effluent hardness. Copper is the only concave-downward metal that exhibits reasonable potential. The water quality criteria for copper was calculated for this Order using Equation 1 and a reported minimum effluent hardness of 82.6 mg/L as $CaCO_3$, based on 19 effluent hardness measurements obtained by the Discharger between February 2005 and April 2010. The maximum effluent hardness measurement during that time period was 145 mg/L and the average of the 19 measurements was 111 mg/L.

Concave Upward Metals: cadmium (acute), lead, and silver (acute).

For Concave Upward Metals, 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. The 2006 Study provides a mathematical approach to calculate the final effluent limitations for Concave Upward Metals that are based on the lowest of receiving water and effluent hardness. To be consistent with this methodology, the lowest observed hardness, which was receiving water hardness, was used for determining whether reasonable potential exists for the Concave Upward hardness-based metals. For this RPA, a hardness concentration of 60 mg/L (as $CaCO_3$) was used, reflecting the lowest receiving water hardness measured by the Discharger during the period of October 2004 through April 2010. During that time period, upstream and downstream receiving water hardness were sampled during periods of discharge to Jones Creek (October through May) a total of 22 times. Upstream receiving water hardness ranged from 60 mg/L to 140 mg/L, with an average concentration of 96.5 mg/L (as $CaCO_3$). Downstream receiving water hardness ranged from 62 mg/L to 150 mg/L, with an average concentration of 99.5 mg/L (as $CaCO_2$).

To conduct the RPA, Regional Water Board staff identified the maximum effluent concentration (MEC) and maximum background (B) concentration for each priority, toxic pollutant from effluent and receiving water data provided by the Discharger, and compared this information to the most stringent applicable water quality criterion (C) for each pollutant with applicable water quality criteria from the NTR, CTR, and the Basin Plan. Section 1.3 of the SIP establishes three triggers for a finding of reasonable potential.

Trigger 1. If the MEC is greater than C, there is reasonable potential, and an effluent limitation is required.

Trigger 2. If B is greater than C, and the pollutant is detected in effluent (MEC > ND), there is reasonable potential, and an effluent limitation is required.

Trigger 3. After a review of other available and relevant information, a permit writer may decide that a WQBEL is required. Such additional information may include, but is not limited to: the facility type, the discharge type, solids loading

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analyses, lack of dilution, history of compliance problems, potential toxic impact of the discharge, fish tissue residue data, water quality and beneficial uses of the receiving water, CWA 303 (d) listing for the pollutant, and the presence of endangered or threatened species or their critical habitat.

Reasonable Potential Determination

The RPA demonstrated reasonable potential for discharges from the Facility to cause or contribute to exceedances of applicable water quality criteria for copper, cyanide, dichlorobromomethane, total trihalomethanes (identified in Order No. R1-2004-0027 as chloroform plus dichlorbromomethane), and nitrate. Reasonable potential could not be determined for all pollutants, as there are not applicable water quality criteria for all pollutants. The RPA determined that there is either no reasonable potential or there was insufficient information to conclude affirmative reasonable potential for the remainder of the 126 priority pollutants.

The following table summarizes the RPA for each priority pollutant that was reported in detectable concentrations in the effluent or the receiving water (detected values are indicated in bold type). The MECs, most stringent water quality objectives/water quality criteria (WQO/WQCs), and background concentrations (B) used in the RPA are presented, along with the RPA results (Yes or No and which trigger) for each toxic pollutant analyzed. No other pollutants with applicable, numeric water quality criteria from the NTR, CTR, and the Basin Plan were measured above detectable concentrations during the monitoring events conducted by the Discharger. Attachment F-1 to this Order summarizes the RPA for all 126 priority pollutants.

Table F-7. Summary of Reasonable Potential Analysis Results

CTR #	Priority Pollutants	C or Most Stringent WQO/WQC (µg/L)	MEC or Minimum DL (µg/L)[33]	B or Minimum DL (µg/L)[33]	RPA Results[34]
1	Antimony	6	**0.3**	--	No
2	Arsenic	50	**1.2**	--	No
5a	Chromium III	177	**1**	--	No
6	Copper[35]	7.9	**54**	--	Yes (Trigger 1)

[33] The Maximum Effluent Concentration (MEC) or maximum background concentration (B) is the actual detected concentration unless it is preceded by "<", in which case the value shown is the minimum detection level as the analytical result was reported as not detected (ND).

[34] RPA Results:
= Yes, if MEC > WQO/WQC, or B > WQO/WQC and MEC is detected;
= No, if MEC and B are < WQO/WQC or all effluent data are undetected;
= Undetermined (Ud).

CTR #	Priority Pollutants	C or Most Stringent WQO/WQC (µg/L)	MEC or Minimum DL (µg/L)[33]	B or Minimum DL (µg/L)[33]	RPA Results[34]
7	Lead[36]	1.7	**1.5**	--	No
8	Mercury	0.050	**0.0024**	--	No
9	Nickel[36]	44	**4**	--	No
10	Selenium	5	**0.93**	--	No
13	Zinc[36]	102	**44**	**24**	No
14	Cyanide	5.2	**10**	**5**	Yes (Trigger 1)
26	Chloroform	---	**160**	--	Ud (No Criteria)
27	Dichlorobromomethane	0.56	**13**	--	Yes (Trigger 1)
81	Di-n-butyl Phthalate	2,700	**3**	--	No
---	Total Trihalomethanes[37]	80	**173**	**---**	Yes (Trigger 1)
--	Nitrate (as N)	10,000	**18,000**	**1,800**	Yes (Trigger 1)

During the term of the previous permit, the Discharger sampled its effluent for the priority pollutants copper, lead, zinc, cyanide, dichlorobromomethane, and chloroform during months when it was discharging as well as during months when it was not discharging. The reasonable potential analysis for these constituents is based on samples collected between the months of November and April during the period of October 2004 through April 2010 regardless of whether the Discharger was discharging that month and also includes sample data collected in October and November 2004 due to the fact that the Discharger did discharge during those months in 2004. The decision to use data during these specific months was made due to the fact that discharges could reasonably be expected to occur during these six months based on the Discharger's discharge history. Beginning in 2005, the Discharger consistently avoided discharges during the allowable discharge months of May and October due to its commitment to avoid these months when flow in Jones Creek and Green Valley Creek are typically low. However, this Order allows discharges to occur during the months of May and October.

Additional details regarding each of these six constituents is included in the following paragraphs.

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35 Water Quality Criteria for copper is based on the lowest detected effluent hardness concentration of 90 mg/L and has been converted to total recoverable copper fraction using conversion factors in the CTR and a default water effect ratio of 1.

36 Water Quality Criteria for the hardness-based metals lead, nickel, and zinc are based on the lowest detected receiving water hardness concentration of 60 mg/L and have been converted to total recoverable metal fraction using the conversion factors in the CTR.

37 Total Trihalomethanes means the sum of the trihalomethane compounds dichlorobromomethane, chloroform, dichlorobromomethane, and bromoform (CCR, Title 22, section 64401.92).

Copper. Effluent monitoring data submitted by the Discharger showed concentrations of total recoverable copper ranging from <0.7 ug/L to 54 ug/L in 35 samples. A determination of reasonable potential has been made based on the maximum effluent concentration of 54 ug/L exceeding the most stringent water quality objective of 7.9 ug/L. Eight effluent samples collected during the term of the previous Order would have exceeded final effluent limitations for copper.

Lead. Effluent monitoring data submitted by the Discharger showed concentrations of total recoverable lead ranging from <0.2 ug/L to 1.5 ug/L in 35 samples. A determination of no reasonable potential has been made based on the maximum effluent concentration of 1.5 ug/L being less than the most stringent water quality objective of 1.7 ug/L In addition, a comparison of each sample result to the hardness-derived AMEL and MDEL further confirmed the finding of no reasonable potential for lead.Zinc. Effluent monitoring data submitted by the Discharger showed concentrations of total recoverable zinc ranging from <0.9 to 44 ug/L in 24 samples collected between October 2004 and March 2007. A determination of no reasonable potential has been made based on the maximum effluent concentration of 44 ug/L being less than the most stringent water quality objective of 102 ug/L. Due to the fact that effluent results were consistently well below the applicable water quality objectives for zinc, the monitoring requirement for zinc was terminated during the term of the previous Order, in accordance with provisions contained in the monitoring and reporting program that allowed this discontinuation of monitoring.

Cyanide. Effluent monitoring data submitted by the Discharger showed concentrations of cyanide ranging from <2 ug/L to 10 ug/L in 35 samples. Eight samples exceeded the most stringent water quality objective of 5.2 ug/L. All eight exceedances occurred during allowable discharge months when the discharger was not discharging. A determination of reasonable potential is made due to the fact that discharges could have occurred during the months when the exceedances of the water quality objective occurred.

Dichlorobromomethane (DCBM). DCBM is a component of a group of chemicals, commonly known as trihalomethanes (THMs), which are formed during the disinfection process for drinking water and wastewater treatment through the reaction of chlorine and organic and inorganic material. Other THMs include chloroform, bromoform, and chorodibromomethane. THMs are human carcinogens. The CTR criterion for DCBM to protect human health for drinking water sources (consumption of water and aquatic organisms) is 0.56 ug/L.

Effluent monitoring data submitted by the Discharger showed concentrations of DCBM ranging from <0.08 ug/L to 13 ug/L in 31 samples. Seven samples exceeded the most stringent water quality objective of 0.56 ug/L. Three of the exceedances occurred during periods of discharge, while four of the

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exceedances occurred during allowable discharge months when there was no discharge.

Order No. R1-2004-0027 established an average monthly effluent limitation for chloroform plus dichlorobromomethane of 100 µg/L based on the California Department of Public Health's (CDPH) maximum contaminant level (MCL) for protection of human health in drinking water and the Discharger's use of chlorine for disinfection and the potential for the creation of chlorine disinfection byproducts such as chloroform. CDPH has since revised the MCL for chloroform plus dichlorobromomethane to 80 ug/L, thus this new water quality objective is established in this Order based on the fact that effluent monitoring showed excursions above 80 ug/L and the Discharger's continued use of chlorine for disinfection. Effluent monitoring data submitted by the Discharger showed concentrations of chloroform plus DCBM ranging from 2.3 ug/L to 173 ug/L. A determination of reasonable potential is made based on one sample collected during the term of the previous Order exceeding the water quality objective of 80 ug/L.

5. **WQBEL Calculations**

Final WQBELs for copper, cyanide, dichlorobromomethane, chloroform plus dichlorobromomethane, and nitrate have been determined using the methods described in Section 1.4 of the SIP.

Step 1: To calculate the effluent limits, an effluent concentration allowance (ECA) is calculated for each pollutant found to have reasonable potential using the following equation, which takes into account dilution and background concentrations:

ECA = C + D (C – B), where

C = the applicable water quality criterion (adjusted for receiving water hardness and expressed as the total recoverable metal, if necessary)

D = the dilution credit (here D = 0, as the discharge does not qualify for a dilution credit)

B = the background concentration

Because no credit for dilution is being allowed, D=0, and the ECA is equal to the applicable criterion (ECA = C).

Step 2: For each ECA based on an aquatic life criterion/objective (i.e., copper and cyanide), the long term average discharge condition (LTA) is determined by multiplying the ECA by a factor (multiplier), which adjusts the ECA to account for effluent variability. The multiplier depends on the coefficient of variation (CV) of the data set and whether it is an acute or chronic criterion/objective. Table 1 of the SIP

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provides pre-calculated values for the multipliers based on the values of the CV. When the data set contains less than 10 sample results, or when 80 percent or more of the data set is reported as non-detect (ND), the CV is set equal to 0.6. Derivation of the multipliers is presented in section 1.4 of the SIP.

From Table 1 of the SIP, the acute and chronic ECA multipliers for calculating LTAs at the 99th percentile occurrence probability for copper, and cyanide are shown in the table below. The LTAs are determined as follows.

Table F-8. Determination of Long Term Averages

Pollutant	ECA		ECA Multiplier		LTA (µg/L)	
	Acute	Chronic	Acute	Chronic	Acute	Chronic
Copper	11.7	7.9	0.17	0.31	1.95	2.45
Cyanide	22	5.2	0.30	0.51	6.7	2.64

Step 3: WQBELs, including an average monthly effluent limitation (AMEL) and a maximum daily effluent limitation (MDEL) are calculated using the most limiting (lowest) LTA. The LTA is multiplied by a factor that accounts for averaging periods and exceedance frequencies of the effluent limitations, and for the AMEL, the effluent monitoring frequency. Here the CV for copper and cyanide is set equal to 1.25 and 0.64, respectively, and the sampling frequency is set equal to 4 (n = 4). The 99th percentile occurrence probability was used to determine the MDEL multiplier and a 95th percentile occurrence probability was used to determine the AMEL multiplier. From Table 2 of the SIP, the MDEL multipliers and the AMEL multipliers were determined as shown in the table below. Final WQBELs for copper, and cyanide are determined as follows.

Table F-9. Determination of Final WQBELs Based on Aquatic Life Criteria

Pollutant	LTA (µg/L)	MDEL Multiplier	AMEL Multiplier	MDEL (µg/L)	AMEL (µg/L)
Copper	1.95	5.98	2.18	11.7	4.3
Cyanide	2.64	3.28	1.59	8.7	4.2

The final effluent limits presented above for copper are based on an effluent hardness of 82.6 mg/L. Because effluent hardness can vary, actual effluent limitations will be determined based on measured effluent hardness at the time that compliance monitoring is performed. Effluent limitations at varying hardness concentrations are presented in Attachment E-1 of this Order. All copper effluent limitations in Attachment E-1 were calculated using a default water effects ratio of 1.0 and default dissolved-to-total metal translators to convert water quality objectives from dissolved to total recoverable.

Step 4: When the most stringent water quality criterion/objective is a human health criterion/objective (as for dichlorobromomethane and nitrate), the AMEL is set equal to the ECA. From Table 2 of the SIP for dichlorobromomethane, when CV = 1.07

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and n = 4, the MDEL multiplier at the 99th percentile occurrence probability equals 5.20, and the AMEL multiplier at the 95th percentile occurrence probability equals 2.01. The MDEL for protection of human health is calculated by multiplying the ECA by the ratio of the MDEL multiplier to the AMEL multiplier. Final WQBELs for dichlorobromomethane are determined as follows.

Table F-10. Determination Final WQBELs Based on Human Health Criteria

Pollutant	Units	ECA	MDEL/AMEL	MDEL	AMEL
Dichlorobromomethane	µg/L	0.56	2.59	1.45	0.56

The SIP methodology was not applied to establish final effluent limitations for total trihalomethanes or nitrate due to the fact that it is most appropriate to establish a maximum daily effluent limitation based on the drinking water MCLs of 80 ug/L and 10 mg/L, respectively.

A summary of WQBELs established by the Order is given in the table below. The effluent limitation for pH is based on the Basin Plan water quality objective for pH.

Summary of Water Quality-based Effluent Limitations
Discharge Point 002

Table F-11. Summary of Water Quality-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Copper, Total Recoverable	µg/L	[38]	--	[38]	--	--
Cyanide, Total (as CN)	µg/L	4.2	--	8.7	--	--
Dichlorobromomethane	µg/L	0.56	--	1.45	--	--
Total Trihalomethanes	µg/L	80	--	--	--	--
Nitrate Nitrogen, Total (as N)	mg/L	10	--	--	--	--
pH	standard units	--	--	--	6.5	8.5

6. **Whole Effluent Toxicity (WET)**

Effluent limitations for whole effluent, acute and chronic toxicity, protect the receiving water from the aggregate effect of a mixture of pollutants that may be present in effluent. There are two types of WET tests – acute and chronic. An acute toxicity

[38] Effluent limitations for copper are hardness-dependent. See Attachment E-1 for the full table of hardness-dependent copper effluent limitations, which are to be determined based on the hardness of the receiving water at the time the discharge is sampled.

test is conducted over a short time period and measures mortality. A chronic test is conducted over a longer period of time and may measure mortality, reproduction, and/or growth.

WET requirements are derived from the CWA and the Basin Plan. The Basin Plan establishes a narrative water quality objective for toxicity that states "*All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, or aquatic life*." Detrimental responses may include, but are not limited to, decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alterations in population, community ecology, or receiving water biota. For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct WET testing for acute and chronic toxicity, as specified in the MRP (Attachment E, section V).

a. **Acute Aquatic Toxicity**

Consistent with Order No. R1-2004-0027, this Order includes an effluent limitation for acute toxicity in accordance with the Basin Plan, which requires that the average survival of test organisms in undiluted effluent for any three consecutive 96-hour bioassay tests be at least 90 percent, with no single test having less than 70 percent survival.

The Order also implements federal guidelines (Regions 9 and 10 Guidelines for Implementing Whole Effluent Toxicity Testing Programs) by requiring dischargers to conduct acute toxicity tests on a fish species and on an invertebrate to determine the most sensitive species. According to the USEPA manual, *Methods for Estimating the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/600/4-90/-27F), the acceptable vertebrate species for the acute toxicity test are the fathead minnow, *Pimephales promelas* and the rainbow trout, *Oncorhynchus mykiss*. The acceptable invertebrate species for the acute toxicity test are the water flea, *Ceriodaphnia dubia*, *Daphnia magna*, and *D. pulex*. The Discharger tests its effluent for acute toxicity using the rainbow trout, *Oncorhynchus mykiss*. During the term of the previous Order, the Discharger consistently maintained compliance with the acute toxicity limitation, with a minimum percent survival of 90 percent, except for one test in February 2005 which showed a percent survival of 20 percent.

b. **Chronic Aquatic Toxicity**

The SIP requires the use of short-term chronic toxicity tests to determine compliance with the narrative toxicity objectives for aquatic life in the Basin Plan. The SIP requires that the Discharger demonstrate the presence or absence of chronic toxicity using tests on the fathead minnow, *Pimephales promelas*, the

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water flea, *Ceriodaphnia dubia*, and the freshwater alga, *Selenastrum capricornutum*.

The Discharger's chronic toxicity testing results are summarized in the table below.

Table F-12. Whole Effluent Chronic Toxicity Monitoring Results

Date	*Selenastrum capricornutum*				*Ceriodaphnia dubia*				*Pimaphales promelas*			
	Growth				Survival		Reproduction		Survival		Growth	
	IC25	TUc	NOEC	TUc	NOEC	TUc	NOEC	TUc	NOEC	TUc	NOEC	TUc
4/13/2005	>100	<1	100	1	100	1	100	1	100	1	100	1
1/10/2006	46.3	2.2	25	4	100	1	100	1	100	1	100	1
2/7/2006	57.8	1.7	50	2	---	---	---	---	---	--	---	---
4/25/2006	>100	<1	100	1	---	---	---	---	---	--	---	---
5/10/2006	50.9	2.0	25	4	---	---	---	---	---	--	---	---
6/13/2006	95.6	1.0	25	4	---	---	---	---	---	--	---	---
1/9/2007	70.2	1.4	50	2	---	---	---	---	---	--	---	---
2008	>100	<1	100	1	---	---	---	---	---	--	---	---
2/2009	68.8	1.5	50	2	---	---	---	---	---	---	---	---
3/2009	83.5	1.2	75	1.3	---	---	---	---	---	---	---	
2/16/2010	>100	<1	100	1	100	1	---	---	---	---	---	---

Chronic toxicity effluent limitations have not been included in the Order for consistency with the SIP, which implements narrative toxicity objectives in Basin Plans and specifies use of a numeric trigger for accelerated monitoring and implementation of a Toxicity Reduction Evaluation (TRE) in the event that persistent toxicity is detected. 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 that contained numeric chronic toxicity effluent limitations. To address the petition, the State Water Board adopted WQO 2003-0012 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 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

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at this time. The SIP revision may require a permit modification to incorporate new statewide toxicity criteria established by the upcoming SIP revision.

However, the State Water Board found in WQO-2003-012 that, while it is not appropriate to include final numeric effluent limitations for chronic toxicity in NPDES permits for POTWs, permits must contain a narrative effluent limitation, numeric benchmarks for triggering accelerated monitoring, rigorous Toxicity Reduction Evaluation (TRE)/Toxicity Identification Evaluation (TIE) conditions, and a reopener to establish numeric effluent limitations for either chronic toxicity or the chemical(s) causing toxicity. This Order includes a reopener that allows the Regional Water Board to reopen the permit and include a numeric chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE.

To ensure compliance with the narrative effluent limitation and 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, Special Provision IV.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.

Section V.B.9 of the MRP defines the chronic toxicity monitoring trigger as 1 TUc and section V.C.1.g of the MRP requires TUc to be calculated as 100/NOEC for purposes of determining if the Discharger's effluent exceeds the chronic toxicity monitoring trigger. Although the federal requirements may provide for flexibility in determining how to calculate TUc for compliance purposes (e.g., 100/NOEC, 100/IC25, 100/EC25), USEPA Region 9 recommends that effluent limitations and triggers be based on the no observed effect concentration (NOEC) when the permit language and chronic toxicity testing methods incorporate important safeguards that improve the reliability of the NOEC. These safeguards include the use of a dilution series (testing of a series of effluent concentrations) to verify and quantify a dose-response relationship and a requirement to evaluate specific performance criteria in order to determine the sensitivity of each chronic toxicity test. The goal is to demonstrate that each test is sensitive enough to determine whether or not the effluent is toxic or not.

The use of 100/IC25 or 100/EC25 as methods for calculating chronic toxicity are point estimates that automatically allow for a 25 percent effect before calling an

effluent toxic. The Basin Plan has a narrative objective for toxicity that requires that "*all waters be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life*." Allowance of a possible 25 percent effect would not meet the Basin Plan's narrative toxicity requirement. In addition, California has historically used the NOEC to regulate chronic toxicity for ocean discharges, thus it is fitting that the same method be used to regulate chronic toxicity in inland surface water discharges.

The Discharger provided information in the Report of Waste Discharge demonstrating that the discharge to Jones Creek always has at least 4:1 dilution and requested that the chronic toxicity monitoring trigger be set at 4 TUc. Although the SIP allows the Regional Water Board to consider mixing zones and dilution credits on a discharge-by-discharge basis, the Discharger has not submitted the information required for consideration of dilution credits at this time. Section 1.4.2 of the SIP defines the dilution credit, D, as a numerical value that may be used in the calculation of effluent limitations and is associated with the mixing zone that accounts for the receiving water entrained into the discharge. The SIP identifies specific information that is required to evaluate the appropriateness of a mixing zone and dilution credits, including information to determine whether the discharge is completely or incompletely mixed, the amount of receiving water available to dilute the effluent using the appropriate flows in Table 3 of the SIP (for completely mixed discharges), an independent mixing zone study (for incompletely mixed discharges), and demonstration that all mixing zone conditions identified in section 1.4.2.2 of the SIP are satisfied.

Because no dilution has been granted for the chronic condition, chronic toxicity testing results exceeding 1.0 chronic toxicity unit (TUc) demonstrate that the discharge is in violation of the narrative toxicity water quality objective. If accelerated sampling of the discharge demonstrates a pattern of toxicity exceeding the chronic toxicity trigger, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE), in accordance with an approved TRE work plan to determine whether the discharge is contributing chronic toxicity to the receiving water. The Discharger submitted a *Toxicity Reduction Evaluation Study Plan for Forestville Wastewater Treatment Facility* on March 9, 2009. Special Provision VI.C.2.a.ii requires the Discharger to maintain the TRE Work Plan to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The provision also includes a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as requirements for TRE initiation if a pattern of toxicity is demonstrated.

Chronic WET limitations will be established if monitoring results demonstrate that discharges from the Facility are causing or contributing to chronic toxicity in the receiving water.

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c. **Ammonia-related Toxicity**

The chronic toxicity test shall be conducted without modifications to eliminate ammonia toxicity. Ammonia toxicity in water is due mostly to its unionized fraction which is primarily a function of the temperature and the pH of the water being tested. As the pH and temperature increase so does the toxicity of a given concentration of ammonia. In static WET tests, the pH in the test concentrations often increases (drifts) due to the loss of carbon dioxide (CO_2) from the test concentrations as the test chambers are incubated over the test period. This upward drift results in pH values in the test concentrations that often exceed those pH values that could reasonably be expected to be found in the effluent or in the mixing zone under ambient conditions. Unionized ammonia toxicity caused by pH drift is considered to be an artifact of test conditions and is not a true measure of the ammonia toxicity likely to occur as the discharge enters the receiving waters. In order to reduce the occurrence of artifactual unionized ammonia toxicity, it may be necessary to control the pH in toxicity tests, provided the control of pH is done in a manner that has the least influence on the test water chemistry and on the toxicity of other pH sensitive materials such as some heavy metals, sulfide and cyanide. This Order authorizes the use of pH control procedures where the procedures are consistent with USEPA methods and do not significantly alter the test water chemistry so as to mask other sources of toxicity.

D. Final Effluent Limitations

1. Satisfaction of Anti-Backsliding Requirements

All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order, except for the effluent limitations for lead, zinc and settleable solids.

The previous permit contained floating effluent limitations for lead which were based on the CTR criteria for the protection of aquatic life. Using a receiving water hardness concentration of 60 ug/L, the acute and chronic criteria for lead are 42.6 ug/L and 1.7 ug/L, respectively. The MEC for lead was 1.5 ug/L, based on 35 samples collected between October 2004 and April 2010. As explained previously in section IV.C.3.c of this Fact Sheet, the RPA considered data collected whenever the Discharger was discharging and during allowable discharge months even when the Discharger was not discharging. The MEC of 1.5 ug/L occurred in April 2005, a month when the Discharger was not discharging to surface waters. The MEC that occurred during a month when there was a discharge was 0.86 ug/L. The lack of reasonable potential for lead constitutes new information, which permits the removal of effluent limitations consistent with CWA section 402(o)(2)(B). As a result of the

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RPA, effluent limitations for lead are not included in the proposed Order and anti-backsliding requirements are satisfied.

The previous permit contained floating effluent limitations for zinc which were based on the CTR criteria for the protection of aquatic life. Using a hardness of 64 µg/L, the acute and chronic criteria for zinc are both 82 µg/L. The MEC for zinc was 44 µg/L, based on 24 samples collected between October 2004 and April 2010. The lack of reasonable potential for zinc constitutes new information, which permits the removal of effluent limitations consistent with CWA section 402(o)(2)(B). As a result of the RPA, effluent limitations for zinc are not included in the proposed Order and anti-backsliding requirements are satisfied.

The previous permit contained an effluent limitation for settleable solids requiring that effluent discharged to Jones Creek shall not contain any measurable settleable solids. The Order also contained monitoring requirements for settleable solids for the Discharger to demonstrate compliance with the settleable solids effluent limitation. Prior to adoption of Order No. R1-2004-0027, the Discharger upgraded its wastewater treatment facility to include advanced wastewater treatment utilizing microfiltration. This technology removes all settleable solids to negligible levels and this has been demonstrated with settleable solids monitoring over the previous permit term. The Facility modifications and lack of reasonable potential for settleable solids constitutes new information, which permits the removal of effluent limitations consistent with CWA section 402(o)(2)(B). As a result of the RPA, effluent limitations for settleable solids are not included in the proposed Order and anti-backsliding requirements are satisfied.

2. **Satisfaction of Antidegradation Policy**

This Order is consistent with applicable federal and State antidegradation policies, as it does not authorize the discharge of increased concentrations of pollutants or increased volumes of treated wastewater beyond that which was permitted to discharge in accordance with the previous Order.

Removal of the effluent limitations for settleable solids is also consistent with antidegradation policies. The advanced wastewater treatment process ensures that no settleable solids are discharged in the effluent to Jones Creek.

The discharge of recycled water to land at or below hydraulic agronomic rates and where proper irrigation system design and BMPs are implemented is not expected to result in degradation to surface water because the potential for irrigation runoff will be prevented or minimized.

The discharge of recycled water may result in minor degradation of groundwater, primarily due to salts and nitrogen, but is not expected to result in the exceedance of applicable water quality objectives. Degradation of groundwater by constituents in

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recycled water may be permitted where it has been demonstrated that any change will be consistent with the maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water, and will not result in water quality less than that prescribed in the Basin Plan. In addition, it must be demonstrated that the discharges to high quality waters meet waste discharge requirements that result in the best practicable treatment or control of the discharge necessary to avoid pollution or nuisance and assure that the highest water quality consistent with the maximum benefit to the people of the state is maintained.

Degradation of groundwater from constituents in recycled water after effective source control, treatment, and control may be determined consistent with maximum benefit to the people of the State, provided that the terms of the Basin Plan and Recycled Water Policy are met. Whether the degradation of groundwater consistent with the Basin Plan and Recycled Water Policy requirements is consistent with the maximum benefit to the people of the State is based on consideration of the four factors that are discussed in the following paragraphs (a. through d.):

a. Past, present, and probable beneficial uses of the receiving water (as specified in the Basin Plan) have been considered. This Order establishes terms and conditions of discharge to ensure that the discharge does not unreasonably affect present and anticipated beneficial uses of groundwater and surface water. These terms and conditions include:

    i. Recycled water will be treated to achieve disinfected, tertiary level recycled water;

    ii. Recycled water will be applied at agronomic rates reflecting the hydraulic and nutrient requirements of the use area;

    iii. The Discharger is responsible for ensuring that recycled water meets the quality standards and associated waste discharge requirements of this Order;

    iv. The Discharger must identify and require implementation of BMPs to prevent and minimize the potential for surface runoff of irrigation water;

    v. The Discharger must comply with comply with groundwater limitations in section V.B of this Order; and

    vi. Discharges to surface waters, other than those authorized in this Order, are prohibited.

b. Economic and social costs, tangible and intangible, of the recycled water usage compared to the benefits have been considered as follows:

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i. The use of recycled water for irrigation could potentially result in degradation of groundwater or risks to public health if the recycled water is mismanaged. These environmental/social risks are offset by the high quality of treatment provided and the Discharger's commitment to implementing BMPs to ensure protection of groundwater and public health.

ii. The use of recycled water reduces the potential diversion of water from Jones Creek or Green Valley Creek, thus reducing the potential for dewatering these creeks.

iii. The use of recycled water reduces the diversion of groundwater for irrigation uses, thus reducing the potential for dewatering groundwater and protecting this resource for needed domestic supply, and

iv. The use of recycled water provides a sustainable and drought-resistant source of irrigation water for agricultural and urban uses and conserves potable water.

c. Environmental aspects of the recycled water usage have been considered as follows:

i. The potential for groundwater degradation (not exceeding water quality objectives) or runoff to surface waters is offset by the high quality of treatment provided and the Discharger's commitment to irrigation at hydraulic and nutrient agronomic rates and implementation of BMPs to ensure protection of groundwater and to minimize the potential for surface runoff.

d. Implementation of feasible alternative treatment or control methods have been considered as follows:.

Degradation of groundwater will not result in water quality less than that prescribed in the Basin Plan because this Order requires the Discharger to implement, and ensure that recycled water users implement, the following treatment and control measures necessary to avoid pollution or nuisance and maintain the highest water quality consistent with the maximum benefit to the people of the State:

i. Implement treatment and use standards necessary to produce disinfected tertiary recycled water, and implement applicable title 22 requirements;

ii. Apply recycled water at nutrient and hydraulic agronomic rates (whichever is the limiting rate);

iii. Identify and implement best management practices to minimize the potential for irrigation runoff and for percolation of recycled water to groundwater;

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iv. Develop, maintain, and implement an Operation and Maintenance/Irrigation Management Plan; and

v. Employ trained personnel.

The preceding analysis demonstrates that there is sufficient reason to allow for the potential of limited groundwater degradation, provided the terms of the Basin Plan, the Recycled Water Policy, and this Order are met.

Recycled water requirements in Attachment G require the Discharger to implement management measures and BMPs that ensure that all irrigation occurs in a manner that is protective of groundwater and surface water quality. A key component of the water reclamation requirements in Attachment G is the requirement for the Discharger to submit programmatic and site-specific technical reports prior to commencement of reclamation activities at any new recycled water use sites and to provide this required technical information for existing recycled water use sites during the term of this Order. The programmatic technical report must contain sufficient information to demonstrate that recycled water will be applied at hydraulic and nutrient agronomic rates and that BMPs will be implemented to ensure that recycled water is not over-applied and does not discharge to surface waters or cause degradation of groundwater.

3. **Stringency of Requirements for Individual Pollutants**

This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The terms of this Order meet the minimum federal technology-based effluent limitations for secondary treatment, and in addition include additional requirements, expressed as technology equivalence requirements, for BOD_5, TSS, pH, and total coliform bacteria that are necessary to achieve tertiary treatment of wastewater, consistent with the Basin Plan's requirements that discharges of municipal wastewater into the Russian River and its tributaries be of advanced treated water. Restrictions on these pollutants are discussed in section IV.B in this Fact Sheet.

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 section 131.38. The scientific procedures for calculating the individual WQBELs for priority pollutants are based on the SIP, which was approved by USEPA on May 18, 2000. Most beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality

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standards for purposes of the CWA" pursuant to section 131.21(c)(1). The remaining water quality objectives and beneficial uses implemented by this Order (specifically the addition of the beneficial uses Water Quality Enhancement (WQE), Flood Peak Attenuation/Flood Water Storage (FLD), Wetland Habitat (WET), Native American Culture (CUL), and Subsistence Fishing (FISH)) and the General Objective regarding antidegradation) were approved by USEPA on, March 4, 2005, and are applicable water quality standards pursuant to section 131.21(c)(2). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

In addition, the Regional Water Board has considered the factors in Water Code section 13263, including the provisions of Water Code section 13241, in establishing these requirements. Factors set forth in section 13241 must be evaluated for requirements that go beyond what is required by the Clean Water Act.

Water Code section 13263 requires that waste discharge requirements "*implement any relevant water quality control plans that have been adopted and take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance and the provisions of section 13241*." These requirements, however, only apply to those portions of the permit that exceed the requirements of the federal CWA, and not to those requirements that are necessary to meet the technology-based effluent limitations or the WQBELs necessary to protect water quality objectives for surface waters set out in the Basin Plan. (*City of Burbank v. State Water Resources Control Board*, 35 Cal. 4th 613, 627.) In this Order, those requirements that exceed the requirements of the federal CWA are those that solely apply to the land discharge. Nonetheless, the Regional Water Board has attempted to include permit terms that allow for compliance with all applicable federal and state requirements in the most cost effective manner possible.

The Regional Water Board considered the factors set forth in section 13263 and 13241 throughout various portions of the permit, including Attachment F, which contains background information and rationale for the requirements set forth in the permit. The permit, in section II.H, and section III.C of Attachment F, identifies the beneficial uses identified in the Basin Plan. Section IV of Attachment F sets forth the rationale for the effluent limits, particularly the beneficial uses to be protected and water quality objectives required for that purpose. All effluent limitations established for surface water discharges are required by the CWA, Basin Plan or CTR-SIP. This section of the Fact Sheet sets out a discussion of the factors set forth in 13263 and 13241 considered for the effluent limits on the reclamation discharge. The Regional Water Board also considered upgrades to the Facility performed by the Discharger, along with other waste discharges in the watershed, and concluded that coordinated control of other discharges would not eliminate the need for the requirements on this discharge, particularly given the continued growth in the region and the past, present and probable future uses of the receiving waters and the environmental

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characteristics, including water quality, of the Guerneville hydrologic subarea of the Russian River. (See Attachment F, Section III.D, III.E, IV, and V.) The Regional Water Board also considered the need to develop and use recycled water, and the potential for increased reclamation opportunities. The Regional Water Board also considered the need to prevent nuisance, and incorporated discharge prohibitions to protect against nuisance caused by the discharge or use for reclamation of untreated or partially treated waste from anywhere within the collection, treatment or disposal system or from sanitary sewer overflows. Monitoring and reporting requirements are established to assess compliance with effluent limitations and receiving water limitations. Monitoring frequencies are established based on threat to water quality and are consistent with monitoring frequencies required of other dischargers in the North Coast Region.

The Discharger submitted an economic analysis with its ROWD that described the financial impacts of increased monitoring and technical report requirements. The Discharger stated that the residents in Forestville currently pay monthly sewer charges of $100.82 per month per equivalent single-family dwelling (ESD) which will increase to $105.92 per month beginning July 1, 2011 and that only one other community in Sonoma County pays higher rates than Forestville. As of July 1, 2011 Forestville Water District sewer rates will be 2.1 percent of median household income (MHI) OF $62,000 per year ($5166.67 per month) based on the 2010 census report. The financial analysis provided with the ROWD indicates that additional monitoring, data entry and reporting requirements would add costs that would require Forestville to increase monthly rates further. The analysis stated that a document prepared by the State Water Board Small Community Wastewater Strategy staff indicates that a rate of 1.5 to 2 percent of MHI is generally an affordable baseline for evaluating sewer rate affordability. The financial analysis further states that Forestville is prepared to increase its rates in a moderate and incremental process, however, given that rates are already at the level considered affordable by the State Water Board, Forestville Water District requested that the Regional Water Board consider cost and true value in writing additional requirements into the renewed permit.

Regional Water Board staff considered Forestville's economic analysis in establishing new permit requirements and carefully considered the cost and need for additional monitoring requirements. Although new permit requirements for reclamation and surface water discharges have been added to the proposed permit that were not in the prior permit, Regional Water Board staff carefully considered the priority and timing of new requirements. New requirements related to surface water discharges are discussed in the following paragraphs while new requirements related to reclamation are discussed in section IV.G Reclamation Specifications.

As noted in the Discharger's consultant's comment letter dated April 1, 2011, the permit does not include addition of many of the monitoring requirements that the Discharger was concerned about. Monitoring frequencies for many constituents

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were retained at the same level as the previous permit. Some monitoring requirements that were included in Monitoring and Reporting Program No. R1-2004-0027 were eliminated, such as effluent monitoring for settleable solids, zinc, and lead, and receiving water monitoring for biochemical oxygen demand and zinc. Monitoring requirements were only increased where necessary. For example, effluent discharge and receiving water monitoring requirements were increased for dissolved oxygen, temperature, pH, and turbidity due to the need to better assess impacts of the discharge on the small receiving water stream. Three of these parameters can be monitored at the treatment plant, thus saving costs of more expensive laboratory analyses. In addition, effluent and receiving water nutrient monitoring was also added to assess whether the nutrient levels in the discharge have the potential to impact receiving water beneficial uses. The Discharger may request modification of the receiving water monitoring requirements after sufficient data is collected to assess whether or not there is evidence that the discharge is impacting the receiving water.

Summary of Final Effluent Limitations
Discharge Points 001, 002, and 003

Table F-13. Summary of Final Effluent Limitations – Discharge Point 001

Parameter	Units	Effluent Limitations					Basis[39]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	--	--	--	AWT
	lbs/day[29] (dry-weather)	11	16	--	--	--	
	lbs/day[30] (wet-weather)	48	73	--	--	--	
	% Removal	85	--	--	--	--	CFR
Total Suspended Solids	mg/L	10	15	--	--	--	AWT
	lbs/day[29] (dry-weather)	11	16	--	--	--	
	lbs/day[30] (wet-weather)	48	73	--	--	--	
	% Removal	85	--	--	--	--	CFR
Total Coliform Bacteria	MPN/100 mL	--	2.2[31]	23/240[32]	--	--	AWT

[39] AWT – Based on the technical capability of an advanced wastewater treatment facility.

CFR – Based on secondary treatment regulations contained in 40 CFR Part 133.

NAWQC – Based on the National Ambient Water Quality Criteria for protection of freshwater aquatic life.

Table F-14. Summary of Final Effluent Limitations – Discharge Point 002

Parameter	Units	Effluent Limitations					Basis[40]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
pH	standard units	--	--	--	6.5	8.5	BP
Copper, Total Recoverable	µg/L	[38]	--	[38]	--	--	CTR
Cyanide, Total (as CN)	µg/L	4.2	--	8.7	--	--	CTR
Dichlorobromomethane	µg/L	0.56	--	1.45	--	--	CTR
Total Trihalomethanes	µg/L	80	--	--	--	--	PO
Chlorine, Total Residual	mg/L	0.01	--	0.02	--	--	AL
Nitrate Nitrogen, Total (as N)	mg/L	10	--		--	--	MCL
Acute Toxicity	% Survival	--	--	[41]	--	--	BP

Table F-15. Summary of Final Effluent Limitations – Discharge Points 003 and 004

Parameter	Units	Effluent Limitations					Basis[42]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
pH	standard units	--	---	---	6.0	9.0	AWT

[40] BP – Based on water quality objectives contained in the Basin Plan.

CTR – Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.

PO – Based on effluent limitations contained in previous Order No. R1-2004-0027.

AL – Based on the *Quality Criteria for Water 1986* (The Gold Book, 1986, EPA 440/5/-86-001) for protection of freshwater aquatic life.

MCL –Based on the Maximum Contaminant Level

[41] There shall be no acute toxicity in treated wastewater discharged to Jones Creek. The Discharger will be considered compliant with this limitation when the survival of aquatic organisms in a 96-hour bioassay of undiluted effluent complies with the following:

1) Minimum for any one bioassay: 70 percent survival; and
2) Median for any three or more consecutive bioassays: at least 90 percent survival.

Compliance with these effluent limitations shall be determined in accordance with section V.A of the Monitoring and Reporting Program (Attachment E).

[42] CFR – Based on secondary treatment regulations contained in 40 CFR Part 133.

AWT – Based on the technical capability of an advanced wastewater treatment facility.

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The permit also includes other requirements for discharges from the facility for filtration and chlorine disinfection that reflect the title 22 requirements for disinfected tertiary wastewater.

E. Interim Effluent Limitations

An interim effluent limitation for chlorine residual of 0.1 mg/L established in Section IV.A.3 of the Order is effective through February 28, 2017.

F. Land Discharge Specifications

This section is not applicable to the Discharger as treated wastewater is not discharged to or applied to land for the purpose of disposal. The Discharger reclaims treated wastewater, thus the Discharger has Reclamation Specifications rather than Land Discharge Specifications.

G. Reclamation Specifications

The Discharger has a reclamation system to irrigate urban and agricultural areas from May 15 through September 30 and other times during the year when weather allows (e.g., dry fall, winter and spring periods).

1. Scope and Authority

Section 13263 of the Water Code requires the Regional Water Board to prescribe requirements for proposed discharges, existing discharges, or material change in an existing discharge based upon the conditions of the disposal area or receiving waters upon or into which the discharge is made or proposed. The prescribed requirements shall implement any relevant water quality control plans that have been adopted, and shall take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of Water Code section 13241. In prescribing requirements, the Regional Water Board is not obligated to authorize the full waste assimilation capacities of the receiving water.

Here, the Regional Water Board considered all of these factors when developing the waste discharge requirements for the reclamation discharge. Limitations for BOD_5, TSS, and pH were scientifically derived to implement water quality objectives that protect beneficial uses. Both beneficial uses and the water quality objectives have been approved pursuant to State law, and then submitted to and approved by USEPA. In addition, discharge prohibitions were included to prohibit the reclamation use of untreated or partially treated waste, in order to prevent nuisance. In addition, the Regional Water Board considered the factors set forth in Water Code section 13241, including the consideration of past, present, and probable future beneficial uses of the receiving water, which the Regional Water Board anticipates to be the same as set forth in the Basin Plan. The Regional Water Board considered the

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environmental characteristics, including water quality of the Russian River-Guerneville Hydrologic Subarea of the Russian River Hydrologic Unit, the coordinated control of all factors which affect water quality in the area, and the need to develop and use recycled water, which this Order supports. The Discharger submitted an economic analysis with its ROWD describing the financial implications of increased monitoring and technical report requirements related to reclamation as discussed in detail in Fact Sheet section IV.D.3, paragraph 5.

As stated in section IV.D.3, Regional Water Board staff considered Forestville's economic analysis in establishing new permit requirements and carefully considered the cost and need for additional monitoring requirements. New requirements were added only as necessary.

New technical report requirements, including VI.C.2.b (Technical Report(s) Regarding Existing Recycled Water Use Sites) and IV.C.2.c (Storage Pond Technical Report) are needed to assess compliance with new requirements that recycled water be applied at agronomic rates. The Order gives the Discharger most of the permit term to complete the technical report for existing recycled water use sites and the Storage Pond Technical Report only requires the gathering of existing information, postponing potential requirements for exploratory groundwater monitoring or corrective action to a future permit term. Effluent monitoring requirements were added for nutrients and salts due to the need to assess nitrogen and salt application rates for recycled water. The monitoring and reporting program allows for a potential reduction of some of these monitoring requirements if monitoring demonstrates no reasonable potential.

2. **Applicable Beneficial Uses and Water Quality Criteria and Objectives**

   a. **Beneficial Uses.** Beneficial use designations for groundwater established in the Basin Plan include MUN, IND, PRO, AGR, and FRSH.

   b. **Basin Plan Water Quality Objectives.** The Basin Plan contains narrative objectives for tastes and odors, bacteria, radioactivity, and chemical constituents (including those chemicals that adversely affect agricultural water supply) that apply to groundwater.

3. **Determining the Need for WQBELs and Technology-Based Limits for Reclamation**

   The following reclamation specifications apply to effluent discharges to all authorized reclamation sites at Discharge Point 003.

   a. **BOD_5 and TSS.** This Order establishes discharge specifications for BOD_5 and TSS based on technology-based effluent limitations that consist of a monthly average of 10 mg/L and a weekly average of 15 mg/L. These levels are technically achievable based on the capability of the tertiary treatment system.

These limits are included in the Order to ensure that discharges to the reclamation system receive proper treatment.

b. **Coliform Bacteria.** This Order establishes reclamation specifications for coliform bacteria that reflect standards for tertiary treated recycled water adopted by the CDPH in title 22 of the California Code of Regulations and are included to ensure that recycled water quality is protective of human health. Recycled water from this Facility meets the highest title 22 treatment and disinfection standards and is suitable for the broad range of recycled water uses identified in title 22, including urban land uses.

c. **pH.** The Order establishes a reclamation discharge specification for pH of 6.0 to 9.0 based on technology-based effluent limitations required by USEPA pursuant to 40 CFR Part 133. These pH limits are included in the Order to ensure that pH levels are appropriate for protection of groundwater when discharging to reclamation sites.

d. **Chemical Constituents.** The Basin Plan requires that waters designated for use as MUN shall not contain concentrations of chemical constituents in excess of the limits specified in CCR, title 22, Chapter 15, Division 4, Article 4, Section 64435 (Tables 2 and 3), and Section 64444.5 (Table 5), and listed in Table 3-2 of the Basin Plan. Monitoring and Reporting Program No. R1-2004-0027 did not require such monitoring. The monitoring and reporting program requires the Discharger to monitor for constituents listed in the CCR, title 22, division 4, chapter 15, sections 64431 (inorganic chemicals) and 64444 (organic chemicals) one time during the term of this Order in order to determine whether any of these constituents are present in the treated disinfected recycled water.

4. **WQBEL Calculations**

This section does not apply to the reclamation aspect of this Facility. All of the reclamation specifications are based on the technical capabilities of the advanced wastewater treatment system and levels required by the Basin Plan and title 22, thus no calculations were needed to determine the WQBELs.

Table F-16. Summary of Final Reclamation Specifications

Parameter	Units	Discharge Specifications			
		Average Monthly	Average Weekly	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	--	--
Total Suspended Solids	mg/L	10	15	--	--
pH	standard units	--	--	6.0	9.0
Total Coliform Bacteria	MPN/100 mL	23/240[32]	2.2[31]	--	--

5. **Water Reclamation Requirements and Provisions – Attachment G**

Attachment G of this Order contains Water Reclamation Findings, Requirements and Provisions to ensure that recycled water is used in a manner that is protective of groundwater and surface water quality. Comprehensive plans are still needed to clearly identify the technical details regarding hydraulic and nutrient agronomic rates and to specify the BMPs that will be implemented to ensure that recycled water will not be over-applied or used in a manner that causes discharges to surface waters or degradation of groundwater. Attachment G includes requirements for the Discharger to submit these technical details prior to commencement of reclamation activities at proposed use sites. For existing reuse sites, Provision VI.C.2.b of this Order requires the Discharger to submit a workplan identifying a time schedule for submittal of this information. Attachment G also includes public notice requirements for programmatic technical reports submitted by the Discharger. The water reclamation requirements of this Order (including Attachment G) are consistent with the requirements of title 22 of the CCR and the State Water Board Recycled Water Policy adopted by State Water Board Resolution No. 2009-0011 on February 3, 2009 and approved on May 14, 2009 and State Water Board Order No. 2009-0006-WQ, General Waste Discharge Requirements for Landscape Irrigation Uses of Municipal Recycled Water, adopted by the State Water Board on July 7, 2009.

A key to reducing the potential for spills is for the Discharger to establish appropriate BMPs to protect against the possibility of recycled water spills. Thus Water Reclamation Technical Report Requirements in section D of Attachment G require the Discharger to recognize the possibility of runoff from recycled water use areas and describe measures, including BMPs that the Discharger will implement to minimize the possibility of runoff.

The water reclamation requirements of this Order (including Attachment G and section X of the MRP) include requirements for dual-plumbed systems, including requirements for cross-connection prevention. The Regional Water Board recognizes that at the time of adoption of this Order, the Discharger has not identified any dual-plumbed recycled water uses, however, the language that relates to dual-plumbed systems is included in this Order to provide for the possibility of the Discharger adding such uses, in the event that the Discharger identifies any potential dual-plumbed uses during the term of this Order and completes necessary CEQA documentation, title 22 engineering report, and other Order requirements.

H. Other Requirements

The Order contains additional specifications that apply to the Facility regardless of the disposal method (surface water discharge, land disposal, or reclamation), including:

1. **Turbidity.** This provision specifies that the turbidity of the filtered wastewater not exceed 0.2 NTU more than 5 percent of the time within a 24-hour period and 0.5

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NTU at any time, and is based on the definition of filtered wastewater found in Title 22 section 60301.320 of the California Code of Regulations. The Title 22 definition is used as a reasonable performance standard to ensure adequate removal of turbidity upstream of disinfection facilities. Properly designed and operated effluent filters will meet this standard. The point of compliance for the turbidity requirements is a point following the microfilters and before discharge to the chlorine disinfection system.

2. **Disinfection Process Requirements for Chlorine Disinfection System.** Chlorine disinfection process requirements, which include CT value and chlorine residual requirements, are retained from the previous permit. These requirements are necessary to determine compliance with requirements for recycled wastewater systems, established at California Code of Regulations Title 22, Division 4, Chapter 3 and to ensure that the disinfection process achieves effective pathogen reduction.

3. **Storage Ponds.** Storage pond requirements are included in section IV.D.3 of the Order to ensure that future storage ponds are constructed in a manner that protects groundwater and complies with requirements of title 27 of the CCR.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

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 biostimulatory substances, bacteria, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity.

B. Groundwater

1. The beneficial uses of the underlying ground water are municipal and domestic supply, industrial service supply, industrial process supply, agricultural supply, and freshwater replenishment to surface waters.

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

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3. Discharges from the Facility shall not cause exceedance of applicable water quality objectives or create adverse impacts to beneficial uses of groundwater.

4. The Basin Plan requires that waters designated for use as MUN shall not contain concentrations of chemical constituents in excess of the limits specified in California Code of Regulations, Title 22, Chapter 15, Division 4, Article 4, Section 64435 (Tables 2 and 3), and Section 64444.5 (Table 5), and listed in Table 3-2 of the Basin Plan. Monitoring and Reporting Program No. R1-2004-0027 did not require groundwater monitoring at reclamation sites where tertiary treated effluent was delivered. Discharges to Jones Creek, the treated effluent storage pond, and authorized reclamation sites are not expected to cause exceedances of applicable water quality objectives in the groundwater and specific groundwater limitations and monitoring for these parameters are not required by this Order.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

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

A. Influent Monitoring

Influent monitoring requirements for flow, BOD5, and TSS are retained from the previous permit, Order No. R1-2004-0027 and are necessary to determine compliance with the Order's 85 percent removal requirement for these parameters. The sample type for BOD5 and TSS has been changed from 8-hour to 24-hour composite to provide a complete representation of the daily flow into the facility**.**

Order No. R1-2004-0027 required monthly influent monitoring for settleable solids. Because the Discharger has upgraded the Facility to provide advanced wastewater treatment using microfiltration, which removes all settleable solids to negligible levels, and based on monitoring demonstrating that settleable solids have not been detected in the effluent, this Order discontinues effluent limitations and influent monitoring requirements for settleable solids.

B. Effluent Monitoring

Effluent monitoring requirements are necessary to determine compliance with prohibitions and/or effluent limitations established by the Order. Monitoring at Monitoring Locations EFF-001 and EFF-002 is necessary to demonstrate compliance

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with technology-based effluent limitations, demonstrate compliance with WQBELs, and demonstrate whether or not the discharge poses reasonable potential for a pollutant to exceed any numeric or narrative water quality objectives.

Most effluent monitoring requirements for Discharge Point 001 at Monitoring Location EFF-001 (effluent discharge to on-site storage pond) are retained from the previous permit. Changes in the Effluent Monitoring requirements prior to discharge to the storage pond are as follows:

1. A new Monitoring Location, INT-001 has been established at a point following the microfilters and prior to the chlorine contact chamber. Monitoring requirements for BOD_5 and turbidity have been established at this new monitoring location. Title 22 requirements for turbidity apply at the end of the filtration process. The Discharger requested that BOD_5 monitoring requirements be established at this location due to laboratory interferences that occasionally occur in the BOD_5 analytical test due to the need to use thiosulfate to remove chlorine from the sample. This location is consistent with the objective of measuring the effectiveness of the treatment process in removing carbonaceous materials which are associated with oxygen demand.

2. Effluent monitoring requirements for settleable solids that were required in the previous permit have been removed due to the fact that the microfiltration process removes all settleable solids to negligible levels and settleable solids monitoring during the term of the previous Order demonstrated this.

3. The Discharger requested in the cover letter of their Report of Waste Discharge that effluent monitoring for pH at Monitoring Location EFF-001 be discontinued and that technology-based effluent limitations (secondary treatment requirements) be assessed at the point of discharge from the effluent storage pond. The compliance point for effluent limitations for pH has been moved from Discharge Point 001 to Discharge Point 003 for discharges to land. pH monitoring requirements following storage for discharges to Jones Creek (Discharge Point 002) have been retained from the previous Order. During periods of discharge to surface waters, water quality-based effluent limitations for pH are in effect and are more stringent than the technology-based effluent limitations.

   Effluent monitoring requirements for Discharge Point 002 at Monitoring Location EFF-002 (discharges from the on-site storage pond to Jones Creek) are similar to monitoring requirements in the previous Order. Changes in the effluent monitoring requirements for Discharge Point 002 at Monitoring Location EFF-002 are as follows:

   a. Requirements to monitor nitrate, total ammonia, and total phosphorous in the effluent monthly have been established, because nitrogen and phosphorus

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containing compounds are a common component of domestic wastewaters that can have a directly toxic (e.g., unionized ammonia) or a detrimental biostimulatory effect on receiving waters. The Regional Water Board is including such monitoring requirements in the discharge permits of POTWs in the North Coast Region to evaluate the need for effluent limitations for these pollutants.

b. The monitoring frequency for dissolved oxygen and temperature has been increased from monthly to weekly in order to collect additional data to assess the potential for impacts to Jones Creek.

c. Monitoring data collected over the existing permit term for lead, zinc 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. R1-2004-0027.

d. Monitoring requirements for bromoform and dichlorobromomethane have been added so that compliance with the effluent limitation for total trihalomethanes can be evaluated. Total trihalomethanes means the sum of the concentrations of dichlorobromomethane, chloroform, dibromochloromethane and bromoform.

e. Monitoring for the Title 22 pollutants once during the permit term has been established to provide characterization of treated wastewater that is discharged from the treatment facility and to assess the need for additional effluent limitations. The Title 22 pollutants are those toxic pollutants for which CDPH has established MCLs at Title 22, Division 4, Chapter 15 of the California Code of Regulations. For receiving waters designated as municipal and domestic supply in the North Coast Region, the Basin Plan has established the Title 22 MCLs as applicable water quality criteria.

f. A new requirement for effluent hardness monitoring has been added to the MRP due to the fact that the Order allows the Discharger to calculate effluent limitations for copper based on effluent hardness in accordance with the findings of the 2006 Study described in section VI.C.3.b of this Fact Sheet.

   Monitoring of effluent and receiving water hardness must coincide with compliance monitoring for the hardness-dependent metal (copper).

g. In accordance with Section 1.3 of the SIP, periodic monitoring is required for CTR priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. Consistent with Order No. R1-2004-0027, annual CTR monitoring is required during the term of this permit.

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C. Whole Effluent Toxicity Testing Requirements

Whole effluent toxicity (WET) limitations and monitoring requirements are retained from the previous Order and are included in the Order to protect the receiving water quality from the aggregate effect of a mixture of pollutants in the effluent. Acute toxicity testing measures mortality in 100 percent effluent over a short test period and chronic toxicity testing is conducted over a longer time period and may measure mortality, reproduction, and/or growth. This Order includes effluent limitations and monitoring requirements for acute toxicity; as well as monitoring requirements for chronic toxicity to assess compliance with the Basin Plan's narrative water quality objective for toxicity.

D. Land Discharge Monitoring Requirements

This section is not applicable to the Discharger as treated wastewater is not discharged to or applied to land for the purpose of disposal. The Discharger reclaims treated wastewater, thus the Discharger has Reclamation Monitoring Requirements rather than Land Discharge Monitoring Requirements.

E. Reclamation Monitoring Requirements

This Order requires that the Discharger comply with applicable state and local requirements regarding the production and use of reclaimed wastewater. Thus, reclamation specifications for total coliform bacteria have been established at Monitoring Location EFF-001 based on standards for tertiary treated recycled water adopted by CDPH at Title 22 of the California Code of Regulations. Likewise, reclamation specifications for BOD_5, TSS, and pH have been established at Monitoring Location 001 based on the technical capability of the advanced wastewater treatment system to ensure that discharges to authorized reclamation sites receive proper treatment.

The Discharger is also required to monitor continuously for flow and report the average and maximum daily flow rate; report the number of days that treated wastewater is used for reclamation at all authorized sites; and report the average and maximum daily flow rate to authorized reclamation sites and report the monthly volume and nitrogen application rate for each use site. These requirements apply immediately for any new reclamation site and upon completion of agronomic rate studies for existing reclamation sites.

The Order includes several new reclamation monitoring requirements including:

1. Weekly monitoring for pH as discussed in section B above.

2. Monthly monitoring for nitrate, nitrite, ammonia, organic nitrogen. It is necessary to determine the total nitrogen concentration of the effluent in order to ensure application of recycled water at nutrient agronomic rates.

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3. Monthly monitoring for total dissolved solids, chloride, boron, and sodium to determine whether any of these constituents are present in the effluent at concentrations that may exceed water quality objectives for these constituents. TDS is a direct measure of salinity, which can affect underlying groundwater quality as it relates to drinking water and agricultural supply beneficial uses. Secondary MCLs for taste and odor in drinking water have been established by CDPH for TDS (500 mg/L), chloride (250 mg/L) and sodium (60 mg/L). An agricultural water quality limit of 0.7 mg/L has been established for boron. The MRP allows for reduction of monitoring frequency or elimination of the monitoring requirement if monitoring data collected over time demonstrates that any constituent is present in concentrations that could not cause an exceedance of water quality objectives.

4. Visual monitoring of recycled water use sites. During inspections, the Discharger is required to make observations of the recycled water use sites to ensure that recycled water requirements are being met. The purpose of the visual monitoring is to identify any indicators, such as surface runoff, ponding, broken sprinkler heads, sprinklers operating when the ground is saturated, that could result in a violation of permit conditions and to implement any needed corrective measures.

F. Receiving Water Monitoring

1. Surface Water

Receiving water monitoring requirements for dissolved oxygen, pH, turbidity, hardness, nitrate, temperature, cyanide and flow are retained from Order No. R1-2004-0027.

The following changes have been made to the receiving water monitoring requirements :

a. Monitoring requirements for dissolved oxygen, pH, temperature and turbidity have been increased from monthly to weekly in order to collect additional data to assess the potential for impacts to Jones Creek.

b. The receiving water monitoring requirement for BOD_5 has been removed from the MRP due to the fact that receiving water monitoring conducted during the term of the previous permit consistently showed a reduction in BOD_5 between the upstream and downstream receiving water monitoring locations and most of the time the receiving water BOD_5 concentration was less than 5 mg/L.

c. The receiving water monitoring requirement for zinc has been removed from the monitoring and reporting program due to the fact that effluent and receiving water monitoring conducted during the term of the previous permit demonstrated no reasonable potential for zinc.

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d. Monitoring requirements for total ammonia and total phosphorus are required to characterize the assimilative capacity of the receiving water for these nutrients, to determine the impact of the discharge on the receiving water with respect to these parameters, and to generate background data for these constituents for future reasonable potential analyses.

e. Water quality criteria for CTR priority pollutants are applicable to Jones Creek, and therefore characterization of background conditions is necessary to assess impacts of the discharge. In addition, reasonable potential analyses, conducted in accordance with procedures established by the SIP, require characterization of background levels of the toxic pollutants.

2. **Groundwater**

Order No. R1-2004-0027 did not require groundwater monitoring after completion of the advanced wastewater treatment upgrade project and commencement of use of tertiary treated effluent for reclamation. Consistent with Order No. R1-2004-0027, this Order does not require groundwater monitoring. Groundwater monitoring may be established in the future, if necessary, to assess impacts of reclamation.

G. Other Monitoring Requirements

Monitoring requirements for the disinfection process and for the filtration process are established in this Order to determine compliance with requirements for recycled wastewater systems, established at California Code of Regulations Title 22, Division 4, Chapter 3.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

1. **Federal Standard Provisions**

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

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

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

2. **Regional Water Board Standard Provisions**

In addition to the Federal Standard Provisions (Attachment D), the Discharger shall comply with the Regional Water Board Standard Provisions provided in Standard Provisions VI.A.2.

a. Order Provision VI.A.2.a identifies the State's enforcement authority under the Water Code, which is more stringent than the enforcement authority specified in the federal regulations [e.g., 40 CFR sections 122.41(j)(5) and (k)(2)].

b. Order Provision VI.A.2.b requires the Discharger to notify Regional Water Board staff, orally and in writing, in the event that the Discharger does not comply or will be unable to comply with any Order requirement. This provision requires the Discharger to make direct contact with a Regional Water Board staff person.

c. Order Provision VI.A.2.c requires the Discharger to file a petition with, and receive approval from, the State Water Board Division of Water Rights 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. This requirement is mandated by Water Code section 1211.

B. Special Provisions

1. **Reopener Provisions**

a. **Standard Revisions (Special Provision VI.C.1.a).** Conditions that necessitate a major modification of a permit are described in 40 CFR 122.62, which include the following:

i. When standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision. Therefore, if revisions of applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA or amendments thereto, the Regional Water Board will revise and modify this Order in accordance with such revised 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. **Reasonable Potential (Special Provision VI.C.1.b).** This provision allows the Regional Water Board to modify, or revoke and reissue, this Order if present or future investigations demonstrate that the Discharger governed by this Permit is causing or contributing to excursions above any applicable priority pollutant

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criterion or objective, or adversely impacting water quality and/or the beneficial uses of receiving waters.

c. **Whole Effluent Toxicity (Special Provision VI.C.1.c).** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a 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. **303(d)-Listed Pollutants (Special Provision VI.C.1.d).** This provision allows the Regional Water Board to reopen this Order to modify existing effluent limitations or add effluent limitations for pollutants that are the subject of any future TMDL action.

e. **Water Effects Ratios (WERs) and Metal Translators (Special Provision VI.C.1.e).** This provision allows the Regional Water Board to reopen this Order if future studies undertaken by the Discharger provide new information and justification for applying a water effects ratio or metal translator to a water quality objective for one or more priority pollutants.

f. **Nutrients (Special Provision VI.C.1.f).** This Order establishes effluent limitations for total nitrate and monitoring requirements for the effluent and receiving water for nutrients (i.e., ammonia, nitrate, and phosphorus). This provision allows the Regional Water Board to reopen this Order if future monitoring data indicates the need for effluent limitations or more stringent effluent limitations for any of these parameters.

g. **Salt and Nutrient Management Plans (Special Provision VI.C.1.g)**. This provision allows the Regional Water Board to reopen this Order if it adopts a regional or subregional salt and nutrient management plan that is applicable to the Discharger.

2. **Special Studies and Additional Monitoring Requirements**

a. **Toxicity Reduction Evaluations (Special Provision VI.C.2.a).** The SIP requires the use of short-term chronic toxicity tests to determine compliance with the narrative toxicity objectives for aquatic life in the Basin Plan. Attachment E of this Order requires chronic toxicity monitoring for demonstration of compliance with the narrative toxicity objective.

In addition to WET monitoring, this provision requires the Discharger to maintain an up-to-date TRE Work Plan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE,

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in the event effluent toxicity is encountered in the future. The TRE is initiated by evidence of a pattern of toxicity demonstrated through the additional effluent monitoring obtained as a result of an accelerated monitoring program.

b. Technical Report(s) Regarding Existing Recycled Water Use Sites. (Special Provision VI.C.2.b) Technical information is needed to assess existing recycled water use sites to determine whether or not recycled water is being applied at nutrient and hydraulic agronomic rates. The Discharger must provide a workplan and time schedule for providing this assessment and to achieve compliance with technical report requirements in Attachment G. The workplan must also contain a task to submit a corrective action plan to address any recycled water use that is found to exceed agronomic rates or to be resulting in runoff of recycled water to surface waters. Examples of how compliance could be achieved include adjusting application rates at the use site to ensure that agronomic rates are met and implementing appropriate BMPs to minimize the potential for runoff; recognize the site as a land disposal site with appropriate groundwater monitoring and possible permit modification to include any needed land discharge specifications; or in the case of frost protection uses, establish an authorized discharge point upon demonstration that all appropriate measures (e.g., sheet flow through vegetated buffers, no use of fertilizers or other agricultural chemicals, etc) are implemented to protect water quality.

c. **Storage Pond Technical Report. (Special Provision VI.C.2.c)** requires the Discharger to submit existing technical information to assist in determining whether the storage ponds are adequately designed to minimize the potential for recycled water to cause adverse impacts to areal groundwater and beneficial uses thereof. The Discharger will eventually need to demonstrate that storage of treated wastewater is protective of groundwater quality. In addition, groundwater monitoring may be required in the future if it is determined that recycled water is being applied at greater than hydraulic or nutrient agronomic rates.

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

a. **Pollutant Minimization Plan.** Provision VI.C.3.a is included in this Order as required by section 2.4.5 of the SIP. The Regional Water Board includes standard provisions in all NPDES permits requiring development of a Pollutant Minimization Program when there is evidence that a toxic pollutant is present in the effluent at a concentration greater than an applicable effluent limitation.

4. **Construction, Operation, and Maintenance Specifications**

a. Section 122.41(e) of 40 CFR requires proper operation and maintenance of permitted wastewater systems and related facilities to achieve compliance with permit conditions. An up-to-date operation and maintenance manual, as required

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by Provision VI.C.4.b of the Order, is an integral part of a well-operated and maintained facility.

5. **Special Provisions for Municipal Facilities (POTWs Only)**

a. **Wastewater Collection Systems (Special Provision VI.C.5.a)**

i. **Statewide General WDRs for Sanitary Sewer Systems.** The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ (General Order) on May 2, 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 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 VI.A.2.b and VI.C.5 of the Order. The Discharger must comply with both the General Order and this Order. The Discharger and public agencies that are discharging wastewater into the facility were required to obtain enrollment for regulation under the General Order by December 1, 2006. The Discharger has enrolled under the General Order as required.

All NPDES permits for POTWs currently include federally required standard conditions to mitigate discharges (40 CFR 122.41(d)), to report non-compliance (40 CFR 122.41(1)(6) and (7)), and to properly operate and maintain facilities (40 CFR 122.41(e)). This provision is consistent with these federal requirements.

ii. **Sanitary Sewer Overflows.** This Order includes provisions (Provision VI.C.5.(a)(2), and Attachment D subsection I.C., I.D, V.E, and V.H.) to ensure adequate and timely notifications are made to the Regional Water Board and appropriate local, state, and federal authorities in case of sewage spills. In addition, as an Enrollee under General Order No. 2006-0003-DWQ, the Discharger is required to report SSOs to an online SSO database administered through the California Integrated Water Quality System (CIWQS) and via telefax when the online SSO database is not available. Detailed notification and reporting requirements for SSOs and sewage spills are specified in Attachment E subsection E (Monitoring and Reporting Program). The goal of these provisions is to ensure appropriate and timely

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response by the Discharger to SSOs to protect public health and water quality.

6. **Source Control Program (Special Provision VI.C.5.b).** Because the average dry weather design flow of the facility is less than 5.0 mgd, the Order does not require the Discharger to develop a pretreatment program that conforms to federal regulations. However, the proposed Order includes requirements for the Discharger to implement a source identification and reduction program. The Discharger's source identification and reduction program will need to address only those pollutants that continue to be detected at levels that trigger reasonable potential.

   In addition, the Regional Water Board recognizes that some form of source control is prudent to ensure the efficient operation of the Facility, the safety of Facility staff, and to ensure that pollutants do not pass through the treatment facility to impair the beneficial uses of the receiving water.

7. **Sludge Disposal and Handling Requirements (Special Provision VI.C.5.d).** The disposal or reuse of wastewater treatment screenings, sludges, or other solids removed from the liquid waste stream is regulated by 40 CFR Parts 257, 258, 501, and 503, and the State Water Board promulgated provisions of title 27, California Code of Regulations. The Discharger has indicated that all screenings, sludges, and solids removed from the liquid waste stream are currently disposed of off-site at a municipal solid waste landfill in accordance with all applicable regulations. See Fact Sheet section II.A for more detail.

8. **Statewide General WDRs for Discharge of Biosolids to Land (Special Provision VI.C.5.d).** This provision requires the Discharger to comply with the State's regulations relating to the discharge of biosolids to the land. The discharge of biosolids through land application is not regulated under this Order. Instead, the Discharger is required to obtain coverage under the State Water Board Order No. 2004-0012-DWQ, General Waste Discharge Requirements for the Discharge of Biosolids to Land as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities (General Order). Coverage under the General Order, as opposed to coverage under this NPDES permit or individual WDRs, implements a consistent statewide approach to regulating this waste discharge.

9. **Operator Certification (Special Provision VI.C.5.e).** This provision requires the Facility to be operated by supervisors and operators who are certified as required by title 23, California Code of Regulations, section 3680.

10. **Adequate Capacity (Special Provision VI.C.5.f).** The goal of this provision is to ensure appropriate and timely planning by the Discharger to ensure adequate capacity for the protection of public health and water quality.

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11. **Other Special Provisions**

    a. **Storm Water Best Management Practices (BMPs)(Special Provision VI.C.6.a).** The Discharger has determined that the Facility does not have industrial storm water discharges to surface waters and storm water BMPs are in place to divert storm water run-on from the treatment facility grounds. The Statewide General Storm Water Permit (State Water Board Order No. 97-03-DWQ) does not require facilities to obtain coverage if storm water is captured and treated and/or disposed of with the Facility's NPDES permitted process wastewater or if storm water is disposed of to evaporation ponds, percolation ponds, or combined sewer systems. Therefore, coverage under the General Storm Water Permit is not required. However, this Order requires the Discharger to develop and implement BMPs in order to ensure that discharges of storm water from the Facility to surface waters do not occur. The Discharger shall annually inspect and maintain storm water BMPs, and report these activities to the Regional Water Board.

12. **Compliance Schedules (Special Provision VI.C.7)**

    This Order contains a compliance schedule for the Discharger to achieve compliance with new, more stringent effluent limitations for chlorine residual. The time schedule in the Order requires full compliance with final effluent limitations for chlorine residual by June 1, 2016.

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, North Coast Region (Regional Water Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit and a Master Reclamation Permit for the Forestville Water District Wastewater Treatment, Reclamation, and Disposal 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 following posting on the Regional Water Board's Internet site at: http://www.waterboards.ca.gov/northcoast/public_notices/public_hearings/npdes_permits_and_wdrs.shtml and through publication in the Press Democrat on **February 4, 2011.**

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 **March 7, 2011**. The public comment period was extended to April 1, 2011 by way of revised public notices issued and posted on March 11, 2011.

C. Public Hearing

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

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Date:	**January 19, 2012**
Time:	**8:30 a.m**. or as announced in the Regional Water Board's agenda
Location:	**Regional Water Board Hearing Room** **5550 Skylane Boulevard, Suite A** **Santa Rosa, CA 95403**

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

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

D. Waste Discharge Requirements Petitions

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

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

E. Information and Copying

The Report of Waste Discharge (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling (707) 576-2220.

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 Cathleen Goodwin at cgoodwin@waterboards.ca.gov or (707) 576-2687.

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ATTACHMENT F-1

Forestville Water District
RPA
May 2009

Beginning			Step 2	Step 3				Step 5				Final Result	
CTR No.	Constituent name	C[1] (ug/L)	Effluent Data Available (Y/N)?	Are all data points non-detects[2] (Y/N)?	If all data points ND Enter the MDL[3]	Enter the pollutant effluent detected max conc (ug/L)	Pollutant Concentration[4]	B Available (Y/N)?	Are all B data points non-detects (Y/N)?	If all data points ND Enter the MDL	Enter the pollutant B detected max conc (ug/L)	RPA Result	Reason
1	Antimony	6	Y	N		0.3	0.3	N				No	Ud;MEC<C & B is ND
2	Arsenic	50	Y	N		1.2	1.2	N				No	Ud;MEC<C & B is ND
3	Beryllium	4	Y	Y	0.07		0.07	N				No	Ud;MEC<C & B is ND
4	Cadmium	2.1	Y	Y	0.04		0.04	N				No	Ud;MEC<C & B is ND
5a	Chromium (III)	177	Y	N		0.4	0.4	N				No	Ud;MEC<C & B is ND
5b	Chromium (VI)	11	Y	N		1	1	N				No	Ud;MEC<C & B is ND
6	Copper	7.9	Y	N		54	54	N				Yes	MEC>C
7	Lead	1.7	Y	N		1.5	1.5	N				No	B>C, but detected in effluent
8	Mercury	0.050	Y	N		0.0024	0.0024	N				No	Ud;MEC<C & B is ND
9	Nickel	44	Y	N		4	4	N				No	Ud;MEC<C & B is ND
10	Selenium	5.0	Y	N		0.93	0.93	N				No	Ud;MEC<C & B is ND
11	Silver	1.7	Y	Y	0.03		0.03	N				No	Ud;MEC<C & B is ND
12	Thallium	1.7	Y	Y	0.04		0.04	N				No	Ud;MEC<C & B is ND
13	Zinc	102	Y	N		44	44	Y	N		24	No	MEC<C & B<C
14	Cyanide	5.2	Y	N		10	10	Y	N		5	Yes	MEC>C
15	Asbestos	7.0	Y	Y	0.4		0.4	N				No	Ud;MEC<C & B is ND
16	2,3,7,8 TCDD	1.3E-08	Y	Y	1.1E-08			N				No	MDL>C & No B
17	Acrolein	320	Y	Y	1.3		1.3	N				No	Ud;MEC<C & B is ND
18	Acrylonitrile	0.06	Y	Y	0.66			N				No	MDL>C & No B
19	Benzene	1.0	Y	Y	0.25		0.25	N				No	Ud;MEC<C & B is ND
20	Bromoform	4.3	Y	Y	0.32		0.32	N				No	Ud;MEC<C & B is ND
21	Carbon Tetrachloride	0.25	Y	Y	0.22		0.22	N				No	Ud;MEC<C & B is ND
22	Chlorobenzene	70	Y	Y	0.29		0.29	N				No	Ud;MEC<C & B is ND
23	Chlorodibromomethane	0.40	Y	Y	0.31		0.31	N				No	Ud;MEC<C & B is ND
24	Chloroethane	No Criteria	Y	Y	0.37		No Criteria	N				Uo	No Criteria
25	2-Chloroethylvinyl ether	No Criteria	Y	Y	0.56		No Criteria	N				Uo	No Criteria
26	Chloroform	No Criteria	Y	N		19	No Criteria	N				Uo	No Criteria
27	Dichlorobromomethane	0.56	Y	N		13	13	N				Yes	MEC>C
28	1,1-Dichloroethane	5.0	Y	Y	0.26		0.26	N				No	Ud;MEC<C & B is ND
29	1,2-Dichloroethane	0.38	Y	Y	0.27		0.27	N				No	Ud;MEC<C & B is ND
30	1,1-Dichloroethylene	0.057	Y	Y	0.23			N				No	MDL>C & No B
31	1,2-Dichloropropane	0.52	Y	Y	0.28		0.28	N				No	Ud;MEC<C & B is ND
32	1,3-Dichloropropylene	0.50	Y	Y	0.34		0.34	N				No	Ud;MEC<C & B is ND
33	Ethylbenzene	300	Y	Y	0.26		0.26	N				No	Ud;MEC<C & B is ND
34	Methyl Bromide	48	Y	Y	0.27		0.27	N				No	Ud;MEC<C & B is ND
35	Methyl Chloride	No Criteria	Y	Y	0.27		No Criteria	N				Uo	No Criteria
36	Methylene Chloride	4.7	Y	Y	0.18		0.18	N				No	Ud;MEC<C & B is ND
37	1,1,2,2-Tetrachloroethane	0.17	Y	Y	0.3			N				No	MDL>C & No B
38	Tetrachloroethylene	0.80	Y	Y	0.21		0.21	N				No	Ud;MEC<C & B is ND
39	Toluene	150	Y	Y	0.24		0.24	N				No	Ud;MEC<C & B is ND
40	1,2-Trans-Dichloroethylene	10	Y	Y	0.23		0.23	N				No	Ud;MEC<C & B is ND
41	1,1,1-Trichloroethane	200	Y	Y	0.23		0.23	N				No	Ud;MEC<C & B is ND
42	1,1,2-Trichloroethane	0.60	Y	Y	0.3		0.3	N				No	Ud;MEC<C & B is ND
43	Trichloroethylene	2.7	Y	Y	0.28		0.28	N				No	Ud;MEC<C & B is ND
44	Vinyl Chloride	0.50	Y	Y	0.36		0.36	N				No	Ud;MEC<C & B is ND
45	2-Chlorophenol	120	Y	Y	0.8		0.8	N				No	Ud;MEC<C & B is ND
46	2,4-Dichlorophenol	93	Y	Y	0.7		0.7	N				No	Ud;MEC<C & B is ND
47	2,4-Dimethylphenol	540	Y	Y	0.8		0.8	N				No	Ud;MEC<C & B is ND

Forestville Water District WWTP_RPA_(12-15-10).xls
RPA
1/12/2011

Forestville Water District
RPA
May 2009

Beginning			Step 2	Step 3				Step 5				Final Result	
CTR No.	Constituent name	C[1] (ug/L)	Effluent Data Available (Y/N)?	Are all data points non-detects[2] (Y/N)?	If all data points ND Enter the MDL[3]	Enter the pollutant effluent detected max conc (ug/L)	Pollutant Concentration[4]	B Available (Y/N)?	Are all B data points non-detects (Y/N)?	If all data points ND Enter the MDL	Enter the pollutant B detected max conc (ug/L)	RPA Result	Reason
48	2-Methyl- 4,6-Dinitrophenol	13	Y	Y	0.6		0.6	N				No	Ud;MEC<C & B is ND
49	2,4-Dinitrophenol	70	Y	Y	0.6		0.6	N				No	Ud;MEC<C & B is ND
50	2-Nitrophenol	No Criteria	Y	Y	0.6		No Criteria	N				Uo	No Criteria
51	4-Nitrophenol	No Criteria	Y	Y	0.7		No Criteria	N				Uo	No Criteria
52	3-Methyl 4-Chlorophenol	No Criteria	Y	Y	0.6		No Criteria	N				Uo	No Criteria
53	Pentachlorophenol	0.01	Y	Y	0.6			N				No	MDL>C & No B
54	Phenol	21,000	Y	Y	0.6		0.6	N				No	Ud;MEC<C & B is ND
55	2,4,6-Trichlorophenol	2.1	Y	Y	0.6		0.6	N				No	Ud;MEC<C & B is ND
56	Acenaphthene	1,200	Y	Y	0.03		0.03	N				No	Ud;MEC<C & B is ND
57	Acenaphthylene	No Criteria	Y	Y	0.02		No Criteria	N				Uo	No Criteria
58	Anthracene	9,600	Y	Y	0.02		0.02	N				No	Ud;MEC<C & B is ND
59	Benzidine	0.00012	Y	Y	5			N				No	MDL>C & No B
60	Benzo(a)Anthracene	0.0044	Y	Y	0.02			N				No	MDL>C & No B
61	Benzo(a)Pyrene	0.0044	Y	Y	0.02			N				No	MDL>C & No B
62	Benzo(b)Fluoranthene	0.0044	Y	Y	0.02			N				No	MDL>C & No B
63	Benzo(ghi)Perylene	No Criteria	Y	Y	0.02		No Criteria	N				Uo	No Criteria
64	Benzo(k)Fluoranthene	0.0044	Y	Y	0.03			N				No	MDL>C & No B
65	Bis(2-Chloroethoxy)Methane	No Criteria	Y	Y	0.7		No Criteria	N				Uo	No Criteria
66	Bis(2-Chloroethyl)Ether	0.031	Y	Y	0.9			N				No	MDL>C & No B
67	Bis(2-Chloroisopropyl)Ether	1,400	Y	Y	0.6		0.6	N				No	Ud;MEC<C & B is ND
68	Bis(2-Ethylhexyl)Phthalate	1.8	Y	Y	0.6		0.6	N				No	Ud;MEC<C & B is ND
69	4-Bromophenyl Phenyl Ether	No Criteria	Y	Y	1		No Criteria	N				Uo	No Criteria
70	Butylbenzyl Phthalate	3,000	Y	Y	0.7		0.7	N				No	Ud;MEC<C & B is ND
71	2-Chloronaphthalene	1,700	Y	Y	1		1	N				No	Ud;MEC<C & B is ND
72	4-Chlorophenyl Phenyl Ether	No Criteria	Y	Y	1		No Criteria	N				Uo	No Criteria
73	Chrysene	0.0044	Y	Y	0.02			N				No	MDL>C & No B
74	Dibenzo(a,h)Anthracene	0.0044	Y	Y	0.02			N				No	MDL>C & No B
75	1,2-Dichlorobenzene	600	Y	Y	0.27		0.27	N				No	Ud;MEC<C & B is ND
76	1,3-Dichlorobenzene	400	Y	Y	0.27		0.27	N				No	Ud;MEC<C & B is ND
77	1,4-Dichlorobenzene	5.0	Y	Y	0.31		0.31	N				No	Ud;MEC<C & B is ND
78	3,3 Dichlorobenzidine	0.040	Y	Y	1			N				No	MDL>C & No B
79	Diethyl Phthalate	23,000	Y	Y	0.6		0.6	N				No	Ud;MEC<C & B is ND
80	Dimethyl Phthalate	313,000	Y	Y	0.7		0.7	N				No	Ud;MEC<C & B is ND
81	Di-n-Butyl Phthalate	2,700	Y	N		3	3	N				No	Ud;MEC<C & B is ND
82	2,4-Dinitrotoluene	0.110	Y	Y	0.6			N				No	MDL>C & No B
83	2,6-Dinitrotoluene	No Criteria	Y	Y	0.6		No Criteria	N				Uo	No Criteria
84	Di-n-Octyl Phthalate	No Criteria	Y	Y	0.7		No Criteria	N				Uo	No Criteria
85	1,2-Diphenylhydrazine	0.040	Y	Y	0.6			N				No	MDL>C & No B
86	Fluoranthene	300	Y	Y	0.02		0.02	N				No	Ud;MEC<C & B is ND
87	Fluorene	1,300	Y	Y	0.02		0.02	N				No	Ud;MEC<C & B is ND
88	Hexachlorobenzene	0.00075	Y	Y	1			N				No	MDL>C & No B
89	Hexachlorobutadiene	0.44	Y	Y	1			N				No	MDL>C & No B
90	Hexachlorocyclopentadiene	50	Y	Y	0.8		0.8	N				No	Ud;MEC<C & B is ND
91	Hexachloroethane	1.9	Y	Y	1		1	N				No	Ud;MEC<C & B is ND
92	Indeno(1,2,3-cd)Pyrene	0.0044	Y	Y	0.02			N				No	MDL>C & No B
93	Isophorone	8.4	Y	Y	0.6		0.6	N				No	Ud;MEC<C & B is ND
94	Naphthalene	No Criteria	Y	Y	0.02		No Criteria	N				Uo	No Criteria
95	Nitrobenzene	17	Y	Y	0.7		0.7	N				No	Ud;MEC<C & B is ND
96	N-Nitrosodimethylamine	0.00069	Y	Y	0.8			N				No	MDL>C & No B

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Forestville Water District
RPA
May 2009

Beginning			Step 2	Step 3				Step 5				Final Result	
CTR No.	Constituent name	C [1] (ug/L)	Effluent Data Available (Y/N)?	Are all data points non-detects [2] (Y/N)?	If all data points ND Enter the MDL [3]	Enter the pollutant effluent detected max conc (ug/L)	Pollutant Concentration [4]	B Available (Y/N)?	Are all B data points non-detects (Y/N)?	If all data points ND Enter the MDL	Enter the pollutant B detected max conc (ug/L)	RPA Result	Reason
97	N-Nitrosodi-n-Propylamine	0.0050	Y	Y	0.6			N				No	MDL>C & No B
98	N-Nitrosodiphenylamine	5.0	Y	Y	0.6		0.6	N				No	Ud;MEC<C & B is ND
99	Phenanthrene	No Criteria	Y	Y	0.02		No Criteria	N				Uo	No Criteria
100	Pyrene	960	Y	Y	0.02		0.02	N				No	Ud;MEC<C & B is ND
101	1,2,4-Trichlorobenzene	5.0	Y	Y	2		2	N				No	Ud;MEC<C & B is ND
102	Aldrin	0.00013	Y	Y	0.003			N				No	MDL>C & No B
103	alpha-BHC	0.0039	Y	Y	0.002		0.002	N				No	Ud;MEC<C & B is ND
104	beta-BHC	0.014	Y	Y	0.002		0.002	N				No	Ud;MEC<C & B is ND
105	gamma-BHC	0.019	Y	Y	0.002		0.002	N				No	Ud;MEC<C & B is ND
106	delta-BHC	No Criteria	Y	Y	0.002		No Criteria	N				Uo	No Criteria
107	Chlordane	0.00057	Y	Y	0.04			N				No	MDL>C & No B
108	4,4'-DDT	0.00059	Y	Y	0.003			N				No	MDL>C & No B
109	4,4'-DDE	0.00059	Y	Y	0.003			N				No	MDL>C & No B
110	4,4'-DDD	0.00083	Y	Y	0.003			N				No	MDL>C & No B
111	Dieldrin	0.00014	Y	Y	0.003			N				No	MDL>C & No B
112	alpha-Endosulfan	0.056	Y	Y	0.003		0.003	N				No	Ud;MEC<C & B is ND
113	beta-Endosulfan	0.056	Y	Y	0.003		0.003	N				No	Ud;MEC<C & B is ND
114	Endosulfan Sulfate	110	Y	Y	0.003		0.003	N				No	Ud;MEC<C & B is ND
115	Endrin	0.036	Y	Y	0.003		0.003	N				No	Ud;MEC<C & B is ND
116	Endrin Aldehyde	0.76	Y	Y	0.002		0.002	N				No	Ud;MEC<C & B is ND
117	Heptachlor	0.00021	Y	Y	0.003			N				No	MDL>C & No B
118	Heptachlor Epoxide	0.00010	Y	Y	0.003			N				No	MDL>C & No B
119-125	PCBs sum	0.00017	Y	Y	0.04			N				No	MDL>C & No B
126	Toxaphene	0.00020	Y	Y	0.5			N				No	MDL>C & No B
	Total Ammonia	No Criteria	N				No Criteria	N				Uo	No Criteria
	Nitrate (as N)	10,000	Y	N		18000	18000	Y	N		1800	Yes	MEC>C
	Phosphate (as P)	No Criteria	N				No Criteria	N				Uo	No Criteria
	Total Trihalomethanes	80				173	80	N				Yes	MEC>C

Footnotes
1 C = the lowest (i.e., most stringent) water quality criterion
2 ND = non-detect
3 MDL = method detection limit
4 Maximum contaminant concentration (MEC) is the maximum detected concentration. If all data points are non-detect and the MDL is less than C, the the MEC equals the MDL
5 Ud = undetermined

Forestville Water District
WQBEL Calculations
January 2011

PRIORITY POLLUTANTS	Copper	Dichlorobromomethane
Units	ug/L	ug/L
Basis and Criteria type	CTR Freshwater Aquatic Life	CTR Human Health
Lowest WQO	7.9	0.56
CTR Conversion Factor for Freshwater (acute)		
CTR Conversion Factor for Freshwater (Chronic)		
Dilution Factor (D) (if applicable)	0	0
No. of samples per month	4	4
Aquatic life criteria analysis required? (Y/N)	Y	N
HH criteria analysis required? (Y/N)	Y	Y
Applicable Acute WQO	11.7	
Applicable Chronic WQO	7.9	
HH criteria	1300	0.56
Background (Maximum Conc for Aquatic Life calc)	0	----
Background (Average Conc for Human Health calc)	0	0.00
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	N	N
ECA acute	11.7	
ECA chronic	7.9	
ECA HH	1300	0.56
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	Y
Avg of effluent data points	9.47	1.27
Std Dev of effluent data points	11.87	2.39
CV calculated	1.25	N/A
CV (Selected) - Final	1.25	1.07
ECA acute mult99	0.17	
ECA chronic mult99	0.31	
LTA acute	1.95	
LTA chronic	2.45	
minimum of LTAs	1.95	
AMEL mult95	2.18	2.01
MDEL mult99	5.98	5.20
AMEL (aq life)	4.27	
MDEL(aq life)	11.69	
MDEL/AMEL Multiplier	2.74	2.59
AMEL (human hlth)	1300.00	0.56
MDEL (human hlth)	3559.07	1.45
minimum of AMEL for Aq. life vs HH	4.27	0.56
minimum of MDEL for Aq. Life vs HH	11.69	1.45
Current limit in permit (daily)	9.3	1.41
Final limit - AMEL	4.3	0.56
Final limit - MDEL	11.7	1.45
Max Eff Conc (MEC)	54	13.0

WQBEL Page 1

ATTACHMENT G – WATER RECLAMATION REQUIREMENTS AND PROVISIONS

The Discharger's reclamation system includes urban and agricultural use sites. The Water Reclamation Findings, Requirements, and Provisions in sections A, B and C apply to both urban and agricultural use sites, unless specifically identified as applying to just urban [Urban] or just agriculture [Ag]. The Water Reclamation Technical Report(s) identified in section D must be submitted prior to delivery of recycled water to any future recycled water use site. Provision VI.C.2.b of the Order requires the Discharger to submit a workplan identifying a plan and time schedule to submit the technical information required by section D to the Regional Water Board for existing recycled water use sites.

A. Water Reclamation Findings

1. In 1977, the State Water Board adopted Resolution No. 77-1, titled "Policy with Respect to Water Reclamation in California" (Resolution No. 77-1). Resolution No. 77-1, in part, encourages the use of recycled water in the state.

2. On February 3, 2009, the State Water Board adopted Resolution No. 2009-0011, titled "Adoption of a Policy for the Water Quality Control of Recycled Water" (Recycled Water Policy) (Resolution No. 2009-0011). The goal of Resolution No. 2009-0011 is to increase the use of recycled water from municipal wastewater sources that meets the definition in Water Code section 13050(n). In accordance with the Recycled Water Policy, activities involving recycled water use that could impact high quality waters are required to implement best practicable treatment or control of the discharge necessary to ensure that pollution or nuisance will not occur, and the highest water quality consistent with the maximum benefit to the people of the state will be maintained.

3. **Streamlined Permitting**

   a. **Eligibility**

      The irrigation elements of the Discharger's proposed reclamation project may meet the criteria for streamlined permitting (Paragraph 7(c) of the Recycled Water Policy) for the following reasons:

      i. The reclamation project complies with title 22 regulations identified in Finding 4, below.

      ii. With the exception of frost protection uses, the proposed irrigation uses will not exceed agronomic rates and will not occur when soils are saturated. An operations and management plan will be developed describing how appropriate irrigation amounts and rates will be applied and may include, but not be limited to, proper design and maintenance of irrigation systems, accurate monitoring of

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the amount of water delivered, developing water budgets for use areas, providing supervisor training, and installing smart controllers. An operations and management plan may be developed to cover multiple sites.

iii. A salt and nutrient management plan has not been prepared for the groundwater basin underlying the recycled water use areas. Order section 6.C.1.g states that the Order may be reopened to incorporate provisions consistent with any salt and nutrient management plan(s) adopted by the Regional Water Board.

iv. The Discharger will communicate to users the nutrient levels in the recycled water so that users can appropriately evaluate fertilizer needs.

b. **Streamlined Permitting Requirements**

According to Paragraph 7(b)(4) of the Recycled Water Policy, irrigation projects that qualify for streamlined permitting are not required to conduct project-specific receiving water and groundwater monitoring unless otherwise required by an applicable salt and nutrient management plan. This Order requires the Discharger to comply with any future salt and nutrient management plan adopted by the Regional Water Board. Until a salt and nutrient management plan is adopted, groundwater monitoring could be required as needed for development of the salt and nutrient management plan or if necessary to assess impacts of effluent disposal to the reclamation system.

4. The California Department of Public Health (CDPH) (formerly California Department of Health Services or DHS) has established statewide reclamation criteria in Chapter 3, Division 4, title 22, CCR, sections 60301 through 60355 (hereinafter title 22) for the use of recycled water for irrigation, impoundments, cooling water, and other purposes. The CDPH has also established Guidelines for Use of Reclaimed Water. This Order (Order No. R1-2012-0012, including Attachment G) implements the title 22 recycled water criteria.

5. In 1996, the State Water Board and CDPH set forth principles, procedures, and agreements to which the agencies committed themselves, relative to the use of recycled water in California, in a document titled Memorandum of Agreement between the Department of Health Services and the State Water Resources Control Board on the Use of Reclaimed Water (MOA). This Order is consistent with the MOA.

6. This Order implements Water Code section 13523.1 which authorizes issuance of a Master Reclamation Permit to suppliers or distributors, or both, of recycled water in lieu of issuing individual water reclamation requirements to each recycled water user.

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7. The Discharger is required to develop and keep updated, an Engineering Report for the use of recycled water as pursuant to sections 60313(d), 60314, and 60323 of title 22 as required by Water Reclamation Provision D.2 of this Attachment.

8. This Order requires the Discharger to minimize the potential for surface runoff of recycled water, but recognizes that even with diligent implementation of BMPs, incidental runoff events may occur on occasion. Incidental runoff is defined as unintended small amounts (volume) of runoff from recycled water use areas where agronomic rates and appropriate best management practices are being implemented. Examples of incidental runoff include unintended, minimal over-spray from sprinklers that escapes the recycled water use area or accidental breakage of a sprinkler head on a properly maintained irrigation system. Water leaving a recycled water use area is not considered incidental if it is part of the facility design, if it is due to excessive application, if it is due to intentional overflow or application, or if it is due to negligence. Incidental runoff events are typically infrequent, low volume, accidental, not due to a pattern of neglect or lack of oversight, and are promptly addressed. The Regional Water Board recognizes that such minor violations are unavoidable and present a low risk to water quality. All runoff incidents, including incidental runoff, shall be summarized in the Discharger's quarterly recycled water monitoring report. Enforcement action shall be considered for runoff that is not incidental, inadequate response by the Discharger to incidental runoff incidents, repeated runoff incidents that were within the Discharger's control, where incidental runoff directly causes violations of water quality objectives, incidents that create a condition of pollution or nuisance, and discharges that reach surface water in violation of Discharge Prohibitions in section III of the Order and/or Water Reclamation Requirements in Attachment G, section B.4 or B.6.

9. This Order authorizes the Discharger to reuse treated municipal wastewater that complies with effluent limitations contained in section IV of the Order for uses that have been addressed in an approved title 22 Engineering Report and for which recycled water user agreements have been negotiated.

10. Effluent Limitations included in Order No. R1-2012-0012 will assure compliance with requirements contained in title 22 and the CDPH (DHS)/State Water Board MOA.

11. The Discharger must demonstrate that the storage and use of recycled water complies with applicable state regulations and the Basin Plan.

12. The Regional Water Board consulted with CDPH, the Sonoma County Health Department, and the Marin Sonoma Mosquito and Vector Control District and considered any recommendations regarding public health aspects for this use of recycled water.

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B. Water Reclamation Requirements

1. The use of recycled water shall not result in unreasonable waste of water. Recycled water shall not be applied at greater than hydraulic agronomic rates.

2. The use of recycled water shall not create a condition of pollution or nuisance as defined in Water Code section 13050(m).

3. All recycled water provided pursuant to this Order shall be treated and managed in conformance with all applicable provisions of the Recycled Water Policy.

4. Best management practices that are protective of groundwater and surface water quality and human health shall be developed and implemented to achieve an efficient irrigation system. At a minimum, the Discharger shall implement the required BMPs identified in Water Reclamation Requirement B.11 and implement other BMPs as appropriate.

5. The Discharger shall be responsible for ensuring that recycled water meets the quality standards of section IV.C of the Order and that all users of recycled water comply with the terms and conditions of this Order and with any rules, ordinances, or regulations adopted by the Discharger.

6. The Discharger shall discontinue delivery of recycled water during any period in which there is reason to believe that the requirements for use as specified in this Order or the requirements of CDPH or USEPA are not being met. The delivery of recycled water shall not resume until all conditions have been corrected.

7. The Discharger shall notify recycled water users if recycled water that does not meet the recycled water quality requirements of this Order is released into the reclamation system.

8. The Discharger shall require each recycled water user to report all violations of recycled water regulations identified in this Order, including runoff incidents. All reported violations of recycled water regulations shall be included in the Discharger's quarterly recycled water monitoring report, including incidental runoff events that the Discharger is aware of.

9. Application of recycled water to use areas shall not exceed the nitrogen or hydraulic loading reasonably necessary to satisfy the nitrogen or water uptake needs of the use area considering plant, soil, climate, and nutrient demand (i.e., generally accepted agronomic rates).

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a. Hydraulic loading to any individual recycled water use site shall be at reasonable agronomic rates designed to minimize percolation of wastewater constituents below the evaporative and root zone.

b. The seasonal nutritive loading of use areas, including the nutritive value of organic and chemical fertilizers and of the recycled water, shall not exceed the nutritive demand of the landscape or vegetation receiving the recycled water. The Discharger must communicate to recycled water users the nutrient levels in the recycled water at least monthly during the irrigation season so that the recycled water users can appropriately evaluate fertilizer needs prior to application of fertilizers. If the Discharger demonstrates that the recycled water nutrient concentrations are low and consistent from month to month, then the Discharger may reduce the frequency of notifications upon approval by the Regional Water Board Executive Officer.

10. Recycled water shall not be applied on water-saturated or frozen ground or during periods of precipitation such that runoff is induced.

11. Recycled water shall not be allowed to escape the recycled use area(s) in the form of surface runoff. [CCR title 22, section 60310(e)] However, incidental runoff of recycled water, such as unintended, minimal over-spray from sprinklers that escapes the recycled water use area, or accidental breakage of a sprinkler head on a properly maintained irrigation system, is not a violation of this Order. Practices and strategies to prevent the occurrence of runoff shall include, where appropriate, but not be limited to:

a. All new recycled water use sites shall include a 100-foot setback to all surface waters or provide written documentation of appropriate best management practices that will be implemented in order to prevent or minimize the potential for runoff discharging to surface water;

b. Urban recycled water use sites shall maintain appropriate setbacks to the street gutter and other inlets to the storm drain system based on site conditions or implement alternative means to prevent the discharge of runoff to surface waters. [Urban]

c. Implementation of an Operations and Maintenance Plan that provides for detection of leaks (for example, from sprinkler heads), and correction within 72 hours of learning of the runoff, or prior to the release of 1,000 gallons, whichever comes first.

d. Proper design and aim of sprinkler heads;

e. Proper design and operation of the irrigation system;

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f. Refraining from application during precipitation events;

g. Application of recycled water at an agronomic rate that does not exceed the water or nutrient demand of the crop or vegetation being irrigated;

h. Use of repeat start times and multiple water days to increase irrigation efficiency and reduce runoff potential;

i. Maintenance of recycled water infrastructure (pipelines, pumps, etc) to prevent and minimize breakage and leaks; and

j. Adequate protection of all recycled water reservoirs and ponds against overflow, structural damage, or a reduction in efficiency resulting from a 25-year, 24-hour storm or flood event or greater, and notification of the Regional Water Board Executive Officer, if a discharge occurs.

12. Use areas that are spray irrigated and allow public access shall be irrigated during periods of minimal use. Consideration shall be given to allow maximum drying time prior to subsequent public use. [Urban]

13. Direct or windblown spray, mist, or runoff from irrigation areas shall not enter dwellings, designated outdoor eating areas, or food handling facilities, roadways, or any other area where the public would be accidentally exposed to recycled water. [CCR title 22, section 60310(e)(3)]

14. Drinking water fountains shall be protected against contact with recycled water spray, mist, or runoff. [CCR title 22, section 60310(e)(3)] [Urban]

15. All recycled water equipment, pumps, piping, valves, and outlets shall be appropriately marked to differentiate them from potable facilities.

16. The Discharger shall implement the requirements of the California Health and Safety Code (CHSC), section 116815 regarding the installation of purple pipe. CHSC section 116815 requires that "all pipes installed above or below the ground, on or after June 1, 1993, that are designed to carry recycled water, shall be colored purple or distinctively wrapped with purple tape." Section 116815 also contains exemptions that apply to municipal facilities that have established a labeling or marking system for recycled water used on their premises and for water delivered for agricultural use. The Discharger shall document compliance with this requirement on an annual basis in its annual monitoring report. The Discharger shall continue to implement the requirements of CHSC section 116815 during the term of this Order. [Urban]

17. The portions of the recycled water piping system that are in areas subject to access by the general public shall not include any hose bibbs. Only quick couplers that differ

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from those used on the potable water system shall be used on the portions of the recycled water piping system in areas subject to public access. [CCR title 22, section 60310(l)] [Urban]

18. Cross-connections shall not occur between any recycled water system and any separate system conveying potable water. [22 CCR, section 60310(h)] Supplementing recycled water with potable water shall not be allowed except through air gap separation [CCR title 22, section 30615].

19. Disinfected tertiary recycled water shall not be irrigated within 50 feet of any domestic water supply well or domestic water supply surface intake, unless the technical requirements specified in CCR title 22, section 60310(a) have been met and approved by CDPH.

20. The use of recycled water shall not cause degradation of any water supply.

21. Areas irrigated with recycled water shall be managed to prevent ponding and conditions conducive to the proliferation of mosquitoes and other disease vectors, and to avoid creation of a public nuisance or health hazard. Irrigation water shall infiltrate completely within a 24-hour period.

22. All areas where recycled water is used that are accessible to the public shall be posted with signs that are visible to the public, in a size no less than 4 inches high by 8 inches wide that include the following wording: 'RECYCLED WATER – DO NOT DRINK'. [CCR title 22, section 60310(g)] Each sign shall display an international symbol similar to that shown in CCR title 22, Figure 60310-A. These warning signs shall be posted at least every 500 feet with a minimum of a sign at each corner and access road. CDPH may accept alternative signage and wording, or an educational program, provided that applicant demonstrates to CDPH that the alternative approach will assure an equivalent degree of public notification.

23. DHS (now CDPH) Guidance Memo No. 2003-02: Guidance Criteria for the Separation of Water Mains and Non-Potable Pipelines provides guidance for the separation of new potable water mains and recycled water pipelines which shall be implemented as follows: [Urban]

    a. There shall be at least a four-foot horizontal separation between all pipelines transporting recycled water and those transporting disinfected tertiary recycled water and new potable water mains.

    b. There shall be at least a one-foot vertical separation at crossings between all pipelines transporting recycled water and potable water mains, with the potable water main above the recycled water pipeline, unless approved by the CDPH.

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c. All portions of the recycled water pipeline that cross under a potable water main shall be enclosed in a continuous sleeve.

d. Recycled water pipelines shall not be installed in the same trench as new water mains.

e. Where site conditions make it impossible to comply with the above conditions, any variation shall be approved by CDPH and comply with alternative construction criteria for separation between sanitary sewers and potable water mains as described in the CDPH document titled "Criteria for Separation of Water Mains and Sanitary Sewers", treating the recycled water line as if a sanitary sewer.

24. A minimum freeboard, consistent with pond design, but not less than two feet, shall be maintained under normal operating conditions in any reservoir or pond containing recycled water. When extraordinary operating conditions necessitate a freeboard of less than two feet, the Discharger will document the variance in the monthly self-monitoring report. The report will include an explanation of the circumstances under which the variance is required, the estimated minimum freeboard during the extraordinary period, and any permit violations occurring as a result of the variance.

25. The use of recycled water for dust suppression shall only occur during periods of dry weather, shall be limited to periods of short duration, and shall be limited to areas under the control of the Discharger.

26. The Discharger shall comply with any salt and nutrient management plan that is adopted by the Regional Water Board in the future.

C. Water Reclamation Provisions

1. The Discharger shall manage recycled water, and shall develop, establish and enforce administrative procedures, engineering standards, rules, ordinances and/or regulations governing the design and construction of recycled water systems and use facilities and the use of recycled water in accordance with the criteria established in CCR title 22 and this Order. The Discharger shall develop user agreements requiring user compliance with CCR title 22 and this Order. Water reclamation engineering standards, rules, ordinances and/or regulations shall be approved by the Regional Water Board Executive Officer and CDPH.

   Upon approval of the Discharger's procedures, engineering standards, rules, ordinances, and/or regulations, the Discharger may authorize specific additional water reclamation projects, on a case-by-case basis, in accordance with the approved program and agreements and in accordance with the technical report requirements of this attachment (Attachment G).

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2. The Discharger shall submit revised and/or additional engineering report(s) to the Regional Water Board and CDPH, prior to initiating any recycled water use (e.g., new industrial use, recreational surface impoundments, water cooling, new dual-plumbed system, etc.) not addressed in any previously submitted CCR title 22 engineering report(s). The Discharger shall also submit any approval letters prepared by CDPH to the Regional Water Board Executive Officer. Engineering report(s) shall be prepared by a properly qualified engineer registered in California and experienced in the field of wastewater treatment, and shall contain (1) a description of the design of the reclamation system; (2) a contingency plan which will assure that no untreated or inadequately treated wastewater will be delivered to the use areas; and (3) a cross-connection control program (title 17 of the CCR) where a dual-plumbed system is used. Engineering reports shall clearly indicate the means for compliance with CCR title 22 regulations and this Order.

3. The Discharger shall conduct periodic inspections of the recycled water use areas, facilities, and operations to monitor and assure compliance with the conditions of this Order. The Discharger shall take whatever actions are necessary, including termination of delivery of recycled water, to correct any user violations. Where dual-plumbed systems are utilized, the Discharger shall, upon prior notification to the user, conduct regular inspections to assure cross-connections are not made with potable water systems and CDPH approved backflow prevention devices are installed and operable.

4. The Discharger shall be responsible for ensuring that recycled water meets the quality standards of this Order and for the operation and maintenance of transport facilities and associated appurtenances. The Discharger shall hold the recycled water users responsible for the application and use of recycled water on their designated areas and associated operations and maintenance in accordance with all applicable CCR title 22 requirements and this Order. All persons involved in the operation and/or maintenance of the recycled water system shall attend training regarding the safe and efficient operation of recycled water use facilities.

5. The Discharger shall notify the Regional Water Board Executive Officer in anticipation of reclaiming water at a new location, prior to commencement of reclamation activities at the new location and submit all information required in section D of this Attachment. Recycled water shall not be applied at any new site until approved by the Regional Water Board Executive Officer.

6. If, in the opinion of the Regional Water Board Executive Officer, recycled water use at proposed new locations cannot be adequately regulated under the Master Reclamation Permit, a Report of Waste Discharge may be requested and individual Water Reclamation Requirements may be adopted.

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7. Prior to the initial operation of any dual-plumbed recycled water system, and annually thereafter, the Discharger shall ensure that the dual-plumbed system within each facility and use area is inspected for possible cross connections with the potable water system. The recycled water system shall also be tested for possible cross connections at least once every four years. The testing shall be conducted in accordance with the method described in the Engineering Report. The inspections and the testing shall be performed by a cross connection control specialist certified by the California-Nevada section of the American Water Works Association or an organization with equivalent certification requirements. A written report documenting the result of the inspection or testing for the prior year shall be submitted to CDPH and the Regional Water Board by March 1 of each year. [CCR title 22, section 60316] [Urban]

8. If the Discharger delivers recycled water to any dual-plumbed recycled water system(s), the Discharger shall notify CDPH and the Regional Water Board of any incidents of backflow from the dual-plumbed recycled water system into the potable water system within 24 hours of the discovery of the incident. [Urban]

9. If the Discharger delivers recycled water to any dual-plumbed recycled water system(s), any backflow prevention device installed to protect the public water system serving the dual-plumbed recycled water system shall be inspected and maintained in accordance with section 7605 of title 17, CCR. [Urban]

D. Water Reclamation Technical Report Requirements

1. General Technical Report Requirements

a. Programmatic and Site-Specific Technical Reports and Public Notice Requirements

i. The Discharger shall submit for Regional Water Board Executive Officer review and approval, a programmatic technical report(s) that provide operation and management details of how agronomic rates will be achieved and best management practices to protect surface and groundwater quality will be required. Details regarding programmatic technical report requirements are further described below in sections D.2 and D.3.

The water reclamation technical reports must be submitted prior to delivery of recycled water to any future recycled water use site. Provision VI.C.2.b of the Order requires the Discharger to submit a workplan to the Regional Water Board Executive Officer, identifying a plan and time schedule to submit technical information for existing recycled water use sites.

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These technical reports shall be prepared by a California registered or certified professional(s) with demonstrated expertise in irrigation management, hydrogeology and pollution investigation and prevention (e.g., engineer, geologist, hydrogeologist, hydrologist, etc.)[1]

The Discharger may opt to combine the required programmatic and site-specific information (see Water Reclamation Technical Report Requirement D.1.a.iii, below) into a single report, in which case the entire document is subject to the public notice requirements identified in Water Reclamation Technical Report Requirement C.1.a.i, below.

ii. After preliminary review for completeness and adequacy for water quality protection, each programmatic technical report shall be subject to a minimum 30-day public comment period. Because proposed recycled water use sites must be addressed in a certified CEQA document, which includes a process for public comment, the Regional Water Board will limit public comments on the proposed management practices and hydraulic and nutrient agronomic rates proposed by the Discharger that are related to protection of surface water and groundwater quality and beneficial uses thereof. The Regional Water Board Executive Officer will place a public notice on the Regional Water Board's website. At the end of the 30-day public notice period, the Executive Officer shall provide written notification to the Discharger within 30 days either providing authorization of the recycled water use or identifying any substantial water quality concerns for which the Discharger must provide additional information.

iii. The Discharger shall submit site-specific information and technical reports that provide specific details for each use site prior to reclaiming water at the new location, pursuant to sections C.5 and D.2 of Attachment G. The site-specific reports shall demonstrate that the operation and management of each site is consistent with the approved programmatic technical report. The Executive Officer shall provide written notification to the Discharger within 30 days of receipt of each site-specific report. If the Executive Officer does not notify the Discharger within 30 days of receipt of the site-specific report, the Discharger may proceed with the use.

b. **Training Program Programmatic Technical Report**

The Discharger shall submit a programmatic technical report that identifies a training program that includes periodic education for individuals that will manage

[1] All technical reports must contain a statement of the qualifications of the responsible registered professional(s) and 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 for the work.

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any portion of the recycled water system[2]. This programmatic technical report is not subject to the public notice requirements identified in Water Reclamation Requirement D.1.a.ii, above. At a minimum, the Training Program Technical Report shall include the following elements:

i. A training program that covers the following elements:

(a) The safe and efficient operation and maintenance of recycled water use facilities, including proper installation, operation and maintenance of irrigation systems;

(b) Prevention of runoff from recycled water use sites;

(c) Matching irrigation rates to the water requirements of the landscape, and not applying recycled water when the soil is saturated;

(d) Means of ensuring that recycled water and other supplemental nutrients (including fertilizers) are used appropriately. This should include a plan to train recycled water users how to take reasonable steps to prevent the over-application of nutrients, including training in how to calculate the need for supplemental nutrient application based on knowledge of the nutrient content of the District's recycled water;

(e) Review of applicable reclamation requirements and general responsibilities to ensure compliance with this Master Reclamation Permit;

(f) Review of BMPs identified as necessary to prevent potential hazards to public health and to protect the environment and how to properly implement those BMPs; and

(g) Prevention of cross-connections with potable water systems.

ii. Identification of a means to verify that recycled water use supervisors have attended training regarding the safe and efficient operations, maintenance and management of recycled water use facilities.

c. **Other Technical Report Requirements**

i. Where unique, site-specific conditions exist, such as where recycled water is proposed to be used for irrigation over high transmissivity soils and over a

[2] Training shall be provided for all persons involved in the operation and/or maintenance of the recycled water system including, but not limited to the Discharger's employees and irrigation managers and other employees that work for the owner of the recycled water use site(s).

shallow (5 feet or less) high quality groundwater aquifer, additional requirements may be required, including a special study to determine the appropriateness of recycled water use and development of appropriate best management practices and operations plans to ensure that recycled water is applied in a manner that is protective of groundwater. The special study may include groundwater monitoring, and development of a detailed water balance and/or a salt and nutrient management plan.

d. **Approved Recycled Water Use Sites**

i. Recycled water shall only be used on areas that have been evaluated in compliance with the California Environmental Quality Act (CEQA). Future CEQA documents must evaluate the potential environmental impacts of recycled water use on a proposed use site and identify mitigation measures for the protection of water quality to be implemented. Mitigation measures and BMPs must be clearly identified in programmatic and/or site-specific technical reports described in Water Reclamation Technical Report Requirements D.2 and D.3, below.

ii. Attachment G-1 to this Order provides a list of existing recycled water use sites.

iii. Attachment G-1 will be updated by the Regional Water Board Executive Officer to include new use sites if and when the Discharger submits the required CEQA and technical information for proposed new use sites and receives approval from the Regional Water Board Executive Officer.

2. **Programmatic and Site-Specific Technical Report Requirements**

The Discharger shall submit a programmatic and site-specific technical report or technical reports that clearly demonstrate that recycled water will be applied at hydraulic and nutrient agronomic rates and that recycled water use will not result in a discharge to surface waters or cause adverse impacts to groundwater. If regional technical report templates are developed in the future for specific uses, such regional technical report templates may be utilized provided that the templates are reasonably applicable to the Discharger's recycled water use sites. The technical report(s) shall contain the following information:

a. Basic site information including site location, acreage involved, County Assessor Parcel number(s), name of property owner and/or user, estimated volume of recycled water to be used.

b. An Operations and Management Plan (O&M Plan). The O&M Plan may apply to multiple sites with similar characteristics such as crop, hydrogeology, and terrain, if it contains a sufficient level of detail to characterize each site and

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identify the practices that will be implemented to ensure that the use of recycled water occurs at appropriate hydraulic and nutrient agronomic rates and that management practices are incorporated to ensure irrigation efficiency and to minimize the potential for surface water runoff or percolation of nutrients, salts, or other constituents to groundwater. The O&M Plan shall contain the following elements:

i. An Operations Plan. A detailed operations plan for the use areas including methods and procedures for implementation of regulations regarding recycled water use and maintenance of equipment and emergency backup systems to maintain compliance with the conditions of this Order and CDPH requirements (i.e., identification of BMPs implemented to achieve and maintain compliance).

ii. An Irrigation Management Plan. The Irrigation Management Plan shall include measures to ensure that the use of recycled water occurs at an appropriate hydraulic and nutrient agronomic rate and employs practices to ensure irrigation efficiency. The Irrigation Management Plan shall be applicable for the recycled water use site(s) served and shall account for the following:

(a) Soil characteristics (e.g., soil type, nutrient content, transmissivity, etc.);

(b) Depth to groundwater;

(c) Recycled water characteristics (e.g., nutrients, including nitrogen and phosphorus content, specific ion toxicity, including chloride, boron, sodium, bicarbonate and other parameters)

(d) General requirements of major plant species being irrigated (e.g., seasonal water demand, climate, nutrient requirements);

(e) Climatic conditions (e.g., precipitation, evapotranspiration rate, wind);

(f) Other supplemental nutrient additions (e.g., chemical fertilizers) generally used within the use area; and

iii. The Irrigation Management Plan shall include:

(a) Calculation of the amount of recycled water that can be agronomically applied to the use site (considering the factors identified above) and clear demonstration that the application of recycled water at the proposed volume, rate, and timing will not allow the discharge of recycled water to groundwater or surface water, nor cause degradation of groundwater that exceeds water quality objectives or impacts beneficial uses;

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(b) A set of reasonably practicable measures to ensure compliance with the agronomic rate requirement, which may include the development of water budgets for the recycled water use site(s), tiered rate structures, the use of smart controllers, or other appropriate measures. The plan may include a menu of BMPs that may be selected from for individual use sites. The description of the recycled water management facilities and best management practices shall demonstrate that recycled water will not be overapplied nor result in a discharge to surface waters or cause adverse impacts to ground water quality. Additional BMPs are identified in section B.11 of this attachment (Attachment G).

(c) The Irrigation Management Plan shall also recognize the possibility of runoff from recycled water use areas and describe measures, including BMPs the Discharger will implement to minimize this possibility of runoff.

(d) A plan for appropriate use of fertilizers that takes into account the nutrient levels in the recycled water. The Discharger shall monitor and communicate to the recycled water users the nutrient levels in the recycled water and how to calculate the amount of supplemental nutrients that may be applied.

(e) Identification of the position(s) responsible for management of each recycled water use site (e.g., Recycled Water Use Supervisor) and a description of Recycled Water Use Supervisor responsibilities and training. See Water Reclamation Technical Report Requirement C.1.b, above.

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ATTACHMENT G-1: APPROVED RECYCLED WATER USE SITES

The recycled water use sites identified in the table below and on the attached map are conditionally approved recycled water use sites. The Discharger must submit technical reports to demonstrate that recycled water is applied in a manner that is protective of water quality in compliance with Provision V.C.2.b and Attachment G for approval by the Regional Water Board Executive Officer. The environmental impacts at these recycled water use sites were addressed in the following certified environmental documents (certification date in parentheses): September 1993 Forestville and Graton Wastewater Treatment Facilities Improvement Project Environmental Impact Report (December 14, 1993) and October 1999 Technical Memorandum, Wastewater Reclamation and Disposal Facilities Upgrade Project for Forestville County Sanitation District (March 2000).

Map ID	Owner	APN	Type of Use/Irrigation Types	Total Site Acreage/ Irrigated Acreage	Volume of Recycled Water (Acre-feet)
1	Earl Stephens	084-040-004	Vineyard/Drip	11/10	8
4	Nancy Carroll	084-050-022	Pasture &Vineyard/Spray	4.2/3.5	0.2
9	Michael & Jean Sherrel	084-040-004	Pasture/Spray	4/2	3
8	Crinella Properties	084-031-060 084-031-061 084-031-062 084-031-063	Vineyard/Drip	69/40	9.4
10	Barry and Audrey Sterling (Sterling Vineyards)	084-040-009 084-180-001 084-190-001	Vineyard/Drip	220/220	25
15	West Sonoma County High School District – El Molino High School	083-030-041 083-030-061 083-060-030 083-060-041	Landscape/Spray	39/11.6	23
14	Forestville Union School District	083-073-009 083-073-012 083-073-014 083-073-016 084-010-005 084-020-027	Landscape/Spray	15/3.2	7.4
16	Forestville Park Development – Forestville Youth Park	083-120-083 083-120-095	Landscape/Spray	8.4/3.2	8.5
3	Don Marshall (Marshall Property)	084-180-029	Plants/Drip & Spray	2/1.5	2
17	Steve Thomas	084-040-003 084-050-023	Pasture/Spray	27/10	2
12	River Road Vineyards	084-160-003	Vineyard/Drip	12/9	4
Total				411.6/314	92.5

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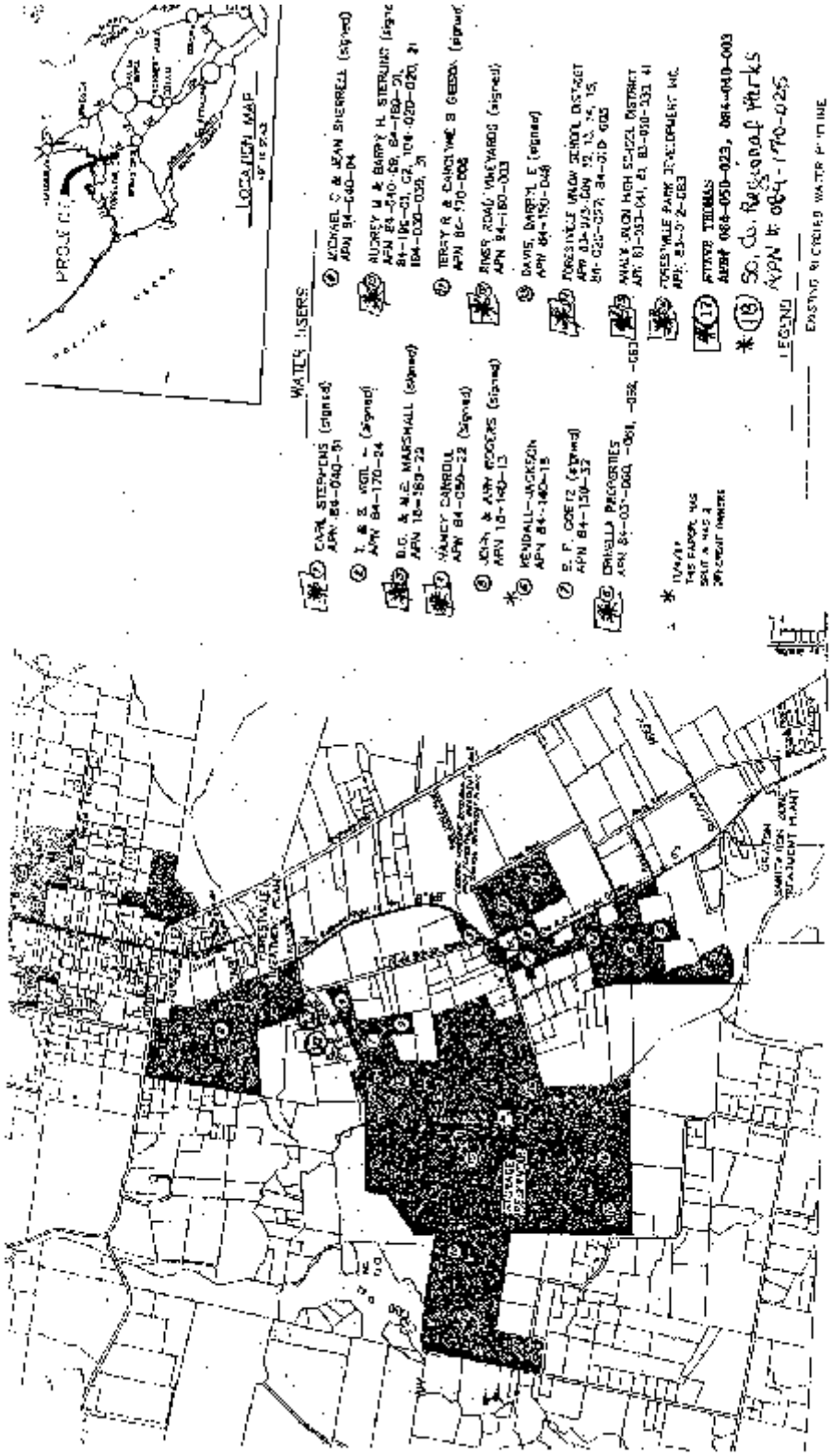
LOCATION MAP
WATER USERS
LEGEND