CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

CENTRAL VALLEY REGION

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ORDER R5-2014-0005
NPDES NO. CA0085235

WASTE DISCHARGE REQUIREMENTS AND MASTER RECYCLING PERMIT FOR THE CITY OF CLOVIS CLOVIS SEWAGE TREATMENT AND WATER REUSE FACILITY FRESNO COUNTY

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

Table 1. Discharger Information

Discharger	City of Clovis
Name of Facility	Clovis Sewage Treatment and Water Reuse Facility
Facility Address	9700 East Ashlan Avenue
	Clovis, CA 93619
	Fresno County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a major discharge.	

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

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Disinfected Tertiary-Treated Municipal Wastewater	36º 45' 39" N	119º 37' 40.4" W	Fancher Creek
002	Disinfected Tertiary-Treated Municipal Wastewater	36º 53' 24" N	119º 39' 56.3" W	Diversion Channel from Big Dry Creek Reservoir to Little Dry Creek
REC-001	Disinfected Tertiary-Treated Municipal Wastewater	--	--	Groundwater underlying recycled water use sites

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	**6 February 2014**
This Order shall become effective on:	**28 March 2014**
This Order shall expire on:	**1 March 2019**
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:	**3 September 2018**

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **6 February 2014.**

Original signed by:

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PAMELA C. CREEDON, 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	City of Clovis
Name of Facility	Clovis Sewage Treatment and Water Reuse Facility
Facility Address	9700 East Ashlan Avenue Clovis, CA 93619 Fresno County
Facility Contact, Title, and Phone	Ms. Lisa Koehn, Assistant Public Utilities Director, 559-324-2607
Mailing Address	City of Clovis, 155 N. Sunnyside Avenue, Clovis, CA 93611
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	Phase I – 2.8 million gallons per day (MGD) / Phase II – 5.6 MGD (Average Annual) Phase I – 3.1 MGD / Phase II – 6.2 MGD (Average Monthly)

II. FINDINGS

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

A. Background. The City of Clovis (hereinafter Discharger or City) was authorized to discharge pursuant to Order R5-2008-0036 and National Pollutant Discharge Elimination System (NPDES) Permit CA0085235. The Discharger submitted a Report of Waste Discharge, dated 2 November 2012, and applied for a NPDES permit renewal to discharge up to 8.4 million gallons per day (mgd) of treated wastewater from the Clovis Sewage Treatment and Water Reuse Facility (Facility) with an initial discharge of 2.8 mgd for Phase I, an additional discharge of 2.8 mgd for Phase II, and additional discharge of 2.8 mgd for Phase III. This permit grants discharge for Phase I and for Phase II after requirements in Special Provision VI.C.6.a. have been met.

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

B. Facility Description. The Discharger owns the Facility and contracts with CH2M Hill to operate the Facility. The treatment system consists of headworks with screens, a cyclone to remove grit and settle materials, anaerobic and aerobic treatment tanks, membrane filtration units, and disinfection by ultraviolet light. Disinfected tertiary-treated wastewater is stored in a 3.08 million gallon bolted-steel tank. A second 3.08 million gallon bolted-steel tank will be added with the completion of Phase II.

The solids are passed through the Cannibal™ Solids Reduction Process. The patented Cannibal™ process reduces the solids in the secondary treatment system by holding Return Activated Sludge (RAS) in the interchange tanks for approximately 10 days under specific environmental conditions that work to break down the solids. The City

added a centrifuge in 2012 to enhance the biosolids dewatering process. According to the Report of Waste Discharge, the City began disposing biosolids from the Facility to the Clovis Municipal Solid Waste Landfill on 11 December 2012. The City initially proposed the change in biosolids disposal in a letter received on 12 September 2012.

Disinfected tertiary-treated wastewater is discharged from the Facility to any of the following sites (see table on cover page): (1) Discharge Point 001 to Fancher Creek, a Valley Water Floor and a water of the United States within the Fresno Hydrologic Area (551.30); (2) Discharge Point 002 to the Diversion Channel, which flows to Little Dry Creek, a water of the United States and a tributary to the San Joaquin River within the Berenda Creek Hydrologic Area (545.30); or (3) Discharge Point REC-001 to the City's recycled water distribution system. 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 Clean Water Act (CWA) and implementing regulations adopted by USEPA and chapter 5.5, division 7 of the California Water Code (Water Code; commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260). This Order also serves as a Master Recycling Permit pursuant to article 4, chapter 7, division 7 of the Water Code (commencing with section 13550).

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

E. California Environmental Quality Act (CEQA). Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100-21177.

F. Technology-based Effluent Limitations. Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations (40 CFR 122.44), require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 CFR Part 133 and Effluent Limitations Guidelines and Best Professional Judgment (BPJ) in accordance with 40 CFR 125.3. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet.

G. Water Quality-based Effluent Limitations (WQBELs). Section 301(b) of the CWA and 40 CFR 122.44(d) require that permits include limitations more stringent than

applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements, expressed as technology equivalence requirements, which are necessary to achieve water quality standards. The Central Valley Water Board has considered the factors listed in Water Code section 13241 in establishing these requirements. The rationale for these requirements, which consist of tertiary treatment or equivalent requirements, is discussed in the Fact Sheet.

40 CFR 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).

H. Water Quality Control Plans. The Central Valley Water Board adopted the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition (Revised October 2011)* (hereinafter San Joaquin Basin Plan) and *Water Quality Control Plan for the Tulare Lake Basin, Second Edition (Revised January 2004)* (hereinafter Tulare Lake Basin Plan) (collectively hereinafter Basin Plans) that designate beneficial uses, establish water quality objectives, and contain implementation programs and policies to achieve those objectives for all waters addressed through the plans.

Table II-1 of the Tulare Lake Basin Plan identifies beneficial uses of certain specific surface water bodies. Table II-1 does not specifically identify beneficial uses for Fancher Creek, but does identify beneficial uses for Valley Floor Waters. Fancher Creek is a Valley Floor Water and thus has designated beneficial uses listed in Table 5 below.

Designated beneficial uses are not specifically listed in the Basin Plans for the Diversion Channel. The Diversion Channel is a constructed conveyance that is periodically used to divert water from Big Dry Creek Reservoir to Little Dry Creek. The designated beneficial uses of Big Dry Creek, as a Valley Floor Water, are listed in the Tulare Lake Basin Plan for the Diversion Channel and summarized in Table 5 below. As the source of the water being diverted, it is reasonable to apply beneficial uses for the Diversion Channel consistent with the waters of Big Dry Creek.

The San Joaquin Basin Plan at page II-2.00 states that the "…*beneficial uses of any specifically identified water body generally apply to its tributary streams*." Table II-1 of the San Joaquin Basin Plan identifies the beneficial uses of certain specific water bodies. The San Joaquin Basin Plan does not specifically identify beneficial uses for Little Dry Creek, but does identify present and potential uses in Table II-1 for San

Joaquin River, to which Little Dry Creek is an ephemeral tributary. In addition, the San Joaquin Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Consequently, discharges to Discharge Point 002 must be protective of these beneficial uses applicable to Little Dry Creek, which are listed in Table 5 below.

The Table II-2 of the Tulare Lake Basin Plan also identifies beneficial uses for groundwater underlying Discharge Points 001, 002, and REC-001. Groundwater underlying Discharge Point 001 and sections of Discharge Point REC-001 are in Detailed Analysis Unit (DAU) #233 of the Kings Basin. Groundwater underlying Discharge Point 002 and sections of Discharge Point REC-001 is in DAU #234 of the Kings Basin. The beneficial uses of groundwater for these DAUs are also listed in Table 5 below.

Thus, as described in detail in the Fact Sheet, beneficial uses applicable to Fancher Creek, the Diversion Channel, Little Dry Creek, and underlying groundwater are as follows:

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Fancher Creek (Valley Floor Water)	Existing uses from Table II-1 of the Tulare Lake Basin Plan: Agricultural supply, including irrigation and stock watering (AGR); Industrial service supply (IND); Industrial process supply (PRO); Water contact recreation, including canoeing and rafting (REC-1); Non-contact water recreation (REC-2); Warm freshwater habitat (WARM); Wildlife habitat (WILD); Rare, Threatened, or Endangered Species (RARE); and Groundwater recharge (GWR)
002	Diversion Channel from Big Dry Creek Reservoir to Little Dry Creek (Valley Floor Water)	Existing uses from Table II-1 of the Tulare Lake Basin Plan: Agricultural supply, including irrigation and stock watering (AGR); Industrial service supply (IND); Industrial process supply (PRO); Water contact recreation, including canoeing and rafting (REC-1); Non-contact water recreation (REC-2); Warm freshwater habitat (WARM); Wildlife habitat (WILD); Rare, threatened, or endangered species (RARE); and Groundwater recharge (GWR)

Discharge Point	Receiving Water Name	Beneficial Use(s)
	Little Dry Creek	Existing uses from Table II-1 of the San Joaquin Basin Plan: Municipal and domestic supply (MUN); Agricultural supply, including irrigation and stock watering (AGR); Industrial process supply (PRO); Water contact recreation, including canoeing and rafting (REC-1); Non-contact water recreation (REC-2); Warm freshwater habitat (WARM); Cold freshwater habitat (COLD); Migration of aquatic organisms, warm and cold (MIGR); Spawning, reproduction, and/or early development, warm (SPWN); and Wildlife habitat (WILD) Potential uses from Table II-1 of the San Joaquin Basin Plan: Spawning, reproduction, and/or early development, cold (SPWN)
001 and REC-001	Groundwater	Existing Uses from Table II-2 of the Tulare Lake Basin Plan for DAU #233: Municipal and domestic supply (MUN); Agricultural supply (AGR); Industrial service supply (IND); Industrial process supply (PRO); Water contact recreation (REC-1); and Non-contact water recreation (REC-2)
002 and REC-001	Groundwater	Existing Uses from Table II-2 of the Tulare Lake Basin Plan for DAU #234: Municipal and domestic supply (MUN); Agricultural supply (AGR); and Industrial service supply (IND)

The Basin Plans include a list of Water Quality Limited Segments (WQLSs), which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate effluent limitations for point sources* (40 CFR 130, et seq.)." The Basin Plans also indicate that additional treatment beyond minimum federal requirements will be imposed on dischargers to WQLSs and that dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment. Both the Diversion Channel and Fancher Creek are not listed as WQLSs in the 303(d) list of impaired water bodies. Little Dry Creek is also not listed as a WQLS, but the San Joaquin River (from Friant Dam to Mendota Pool) is listed as a WQLS for invasive species in the 303(d) list of impaired water bodies.

Requirements of this Order specifically implement the Basin Plans.

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

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

K. Compliance Schedules and Interim Requirements. In general, an NPDES permit must include final effluent limitations that are consistent with CWA section 301 and with 40 CFR 122.44(d). There are exceptions to this general rule. The State Water Board's *Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits* (Compliance Schedule Policy) allows compliance schedules for new, revised, or newly interpreted water quality objectives or criteria, or in accordance with a TMDL. All compliance schedules must be as short as possible, and may not exceed ten years from the effective date of the adoption, revision, or new interpretation of the applicable water quality objective or criterion, unless a TMDL allows a longer schedule. A Regional Water Board, however, is not required to include a compliance schedule, but may issue a Time Schedule Order pursuant to Water Code section 13300 or a Cease and Desist Order pursuant to Water Code section 13301 where it finds that the discharger is violating or threatening to violate the permit. The Central Valley Water Board will consider the merits of each case in determining whether it is appropriate to include a compliance schedule in a permit, and, consistent with the Compliance Schedule Policy, should consider feasibility of achieving compliance, and must impose a schedule that is as short as possible to achieve compliance with the effluent limit based on the objective or criteria.

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

Where a compliance schedule for a final effluent limitation exceeds one year, the Order must include interim numeric limitations for that constituent or parameter, interim milestones and compliance reporting within 14 days after each interim milestone. The permit may also include interim requirements to control the pollutant, such as pollutant minimization and source control measures. This Order does not include compliance schedules and interim effluent limitations.

L. Alaska Rule. On 30 March 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards become effective for CWA purposes. (40 CFR 131.21 and 65 FR 24641 (27 April 2000).) Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after 30 May 2000, must be approved by USEPA before being used for CWA

purposes. The final rule also provides that standards already in effect and submitted to USEPA by 30 May 2000 may be used for CWA purposes, whether or not approved by USEPA.

M. Stringency of Requirements for Individual Pollutants. This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on flow, ammonia (as N), and total nitrogen (as N). The WQBELs consist of restrictions on ammonia (as N), pH, 5-day biochemical oxygen demand (BOD_5), total suspended solids, total coliform organisms, electrical conductivity, and acute toxicity. This Order includes a new effluent limitation for ammonia to protect beneficial uses. In addition, this Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

WQBELs have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR 131.38. The scientific procedures for calculating the individual WQBELs for priority pollutants are based on the CTR-SIP, which was approved by USEPA on 18 May 2000. All beneficial uses and water quality objectives contained in the Basin Plans were approved under state law and submitted to and approved by USEPA prior to 30 May 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to 30 May 2000, but not approved by USEPA before that date, are nonetheless "*applicable water quality standards for purposes of the [Clean Water] Act*" pursuant to 40 CFR 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the CWA and the applicable water quality standards for purposes of the CWA.

N. Antidegradation Policy. 40 CFR 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Central Valley 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 40 CFR 131.12 and Resolution No. 68-16.

O. Anti-Backsliding Requirements. Sections 303(d)(4) and 402(o)(2) of the CWA and federal regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions. Some effluent limitations in this Order are less stringent than those in Order R5-2008-0036. As discussed in detail in the Fact Sheet, this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

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

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

The technical and monitoring reports in this Order are required in accordance with Water Code section 13267, which states the following in subsection (b)(1), "*In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.*"

The Discharger owns the Facility subject to this Order. The monitoring reports required by this Order are necessary to determine compliance with this Order. The need for the monitoring reports is discussed in the Fact Sheet.

R. Standard and Special Provisions. Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR 122.42. The Central Valley Water Board has also included in this Order special provisions applicable to the Discharger. Some special provisions require submittal of technical reports. All technical reports are required in accordance with Water Code section 13267. The rationale for the special provisions and need for technical reports required in this Order is provided in the Fact Sheet.

S. Provisions and Requirements Implementing State Law. The provisions/requirements in sections IV.C, V.B, VI.A.2.o, and portions of section VI.C of

this Order are included to implement State law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

1. The provisions in subsection IV.C. are Recycling Specifications and the provisions in subsection VI.C.8 are the Master Recycling permit provisions of this Order. The Master Recycling Permit provisions of this Order are adopted pursuant to Section 13523.1, Chapter 7, Article 2 of the Water Code, which authorizes issuance of a Master Recycling Permit to suppliers or distributors, or both, of recycled water in lieu of issuing individual water recycling requirements to each Recycled Water user (hereafter User(s)).

   Water Code section 13523.1(b) requires a Master Recycling Permit to include waste discharge requirements that require the supplier to:

   i. Comply with the uniform statewide recycling criteria established pursuant to Water Code section 13521.

   ii. Establish and enforce rules and regulations for Users, governing the design and construction of recycled water use facilities and use of recycled water, in accordance with uniform statewide recycling criteria.

   iii. Submit a quarterly report summarizing recycled water use.

   iv. Conduct periodic inspections of the recycled water use sites to monitor compliance by the Users.

2. This Order and its Master Recycling Permit provisions implement Water Code section 13523.1(b).

3. In accordance with the Memorandum of Agreement (MOA) between the California Depart of Public Health (DPH) and the State Water Board on use of recycled water, this Order incorporates any conditions of approval submitted as part of the DPH recommendations into water recycling proposed for adoption by the Central Valley Water Board.

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

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

THEREFORE, IT IS HEREBY ORDERED, that Order R5-2008-0036 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the

provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

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

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

C. Neither the discharge nor its treatment shall create a condition of pollution or nuisance as defined in section 13050 of the Water Code.

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

E. Discharge of waste classified as 'hazardous' as defined in Title 23, California Code of Regulations (CCR), Section 2521(a), et seq., is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Points 001 and 002

1. Final Effluent Limitations – Discharge Points 001 and 002

The Discharger shall maintain compliance with the following effluent limitations at Discharge Points 001 and 002, with compliance measured at Monitoring Location EFF-A, as described in the Monitoring and Reporting Program:

a. The effluent limitations specified in Table 6:

Table 6. Effluent Limitations – Discharge Points 001 and 002

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	10	15	20	--	--
	lbs/day [1]	234	350	467	--	--
	lbs/day [2]	467	701	935	--	--
pH	standard units	--	--	--	6.5	8.2 [3]/8.1 [4]
Total Suspended Solids	mg/L	10	15	20	--	--
	lbs/day [1]	234	350	467	--	--
	lbs/day [2]	467	701	935	--	--
Non-Conventional Pollutants						
Ammonia Nitrogen, Total (as N)	mg/L	1.0	--	5.4 [3]/4.6 [4]	--	--
	lbs/day [1]	23		126 [3]/107 [4]		
	lbs/day [2]	47		252 [3]/215 [4]		
Nitrogen, Total (as N)	mg/L	10	--	--	--	--

[1] Based on a design flow of 2.8 mgd for Phase I
[2] Based on a design flow of 5.6 mgd for Phase II
[3] Applicable to Discharge Point 001 only
[4] Applicable to Discharge Point 002 only

b. Percent Removal. The average monthly percent removal of BOD_5 and TSS shall not be less than 90 percent.

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

i. 2.2 most probable number (MPN) per 100 mL as a 7-day median.
ii. 23 MPN/100 mL more than once in any calendar month.
iii. 240 MPN/100 mL at any time.

d. Electrical Conductivity. The 12-month rolling average electrical conductivity (@ 25°C) of the discharge shall not exceed the 12-month rolling average electrical conductivity (@ 25°C) of the source water plus 500 µmhos/cm, or a maximum of 1,000 µmhos/cm, whichever is more stringent. When source water is from more than one source, the electrical conductivity shall be a flow-weighted average of all sources.

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

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

f. Flow. The Phase I flow limits are effective until compliance with Special Provision VI.C.6.a. Phase II flow limits are effective upon compliance with Special Provision VI.C.6.a.

i. Phase I. The effluent discharged to the steel storage tanks shall not exceed:

(a) An average monthly daily flow of 3.1 mgd; and
(b) An average annual daily flow of 2.8 mgd.

ii. Phase II. The effluent discharged to the steel storage tanks shall not exceed:

(a) An average monthly daily flow of 6.2 mgd; and
(b) An average annual daily flow of 5.6 mgd.

2. Interim Effluent Limitations – Not Applicable

B. Land Discharge Specifications – Not Applicable

C. Recycling Specifications – Discharge Point REC-001

1. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations of this Order.

2. Use of recycled water shall comply with the terms and conditions of the most current Title 22 regulations.

3. All recycling equipment, pumps, piping, valves, and outlets shall be appropriately marked to differentiate them from potable facilities. All recycling distribution system piping shall be purple or adequately wrapped with purple tape.

4. Recycled water controllers, valves, and similar appurtenances shall be affixed with recycled water warning signs, and shall be equipped with removable handles, locking mechanisms, or some other means to prevent public access or tampering. The contents of the signs shall conform to Title 22, CCR, Section 60310. Quick couplers and sprinkler heads, if used, shall be of a type, or secured in a manner, that permits operation only be authorized personnel. Hose bibs that the public could use shall be eliminated.

5. All use 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, AGUA DE DESPERDICIO RECLAMADA – NO TOME**". Each sign shall display an international symbol similar to that shown in Attachment J.

6. Recycled water shall not be allowed to escape from the authorized use areas by airborne spray or by surface flow except in minor amounts such as that associated with good irrigation practices.

7. Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities.

8. Drinking water fountains shall be protected against contact with recycled water spray, mist, or runoff.

9. Workers shall be educated regarding proper hygienic procedures to ensure personal and public safety.

10. Potable water mains shall be separated by a clear horizontal distance of at least four feet from, and clear vertical distance of at least one foot above, any parallel pipeline conveying disinfected tertiary recycled water, and shall be separated by a clear vertical distance of at least one foot above any crossing pipeline conveying disinfected tertiary recycled water, except as may be otherwise allowed or approved under DPH regulatory requirements or DPH design guidance documents. All separation distances shall be measured form the nearest outside edge of each pipe. Vertical separation distances shall apply wherever the horizontal separation distance is eleven feet or less.

11. Potable water supply piping and recycled water piping shall not have any cross-connections. Supplementing recycled water with potable water shall not be allowed except through an air-gap separation or, if approved by the DPH, a reduced pressure principle backflow device.

12. Application of recycled water to recycled water 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 the plant, soil, climate, and irrigation management system (i.e., general accepted agronomic rates). All tail water shall be returned to the use areas or treatment facilities.

13. No spray irrigation with recycled water shall occur when wind velocities exceed 30 mph.

14. Areas irrigated with recycled water shall be managed to prevent breeding of mosquitoes. More specifically:

    a. All applied irrigation water must infiltrate completely within 24 hours.

    b. Ditches not serving as wildlife habitat should be maintained free of emergent, marginal, and floating vegetation.

    c. Low-pressure and un-pressurized pipelines and ditches, which are accessible to mosquitoes, shall not be used to store recycled water.

15. Discharges to the spray irrigation fields shall be managed to minimize erosion.

16. No irrigation with recycled water shall take place within 50 feet of any domestic water supply well.

17. No impoundment of recycled water shall occur within 100 feet of any domestic water supply well.

18. The Discharger shall maintain compliance with the following recycled water specifications at Discharge Point REC-001, with compliance measured at Monitoring Location EFF-A as described in the Monitoring and Reporting Program (Attachment E):

a. The recycled water specifications in Table 7:

Table 7. Recycled Water Specifications

Parameter	Units	Recycled Water Specifications				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	10	15	20	--	--
Total Suspended Solids	mg/L	10	15	20	--	--
pH	standard units	--	--	--	6.5	8.5
Non-Conventional Pollutants						
Nitrogen, Total (as N)	mg/L	10	--	--	--	--

b. Percent Removal: The average monthly percent removal of BOD_5 @ 20°C and total suspended solids shall not be less than 90 percent.

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

i. 2.2 most probable number (MPN) per 100 mL as a 7-day median;
ii. 23 MPN/100 mL more than once in any calendar month; and
iii. 240 MPN/100 mL at any time.

d. Electrical Conductivity. The 12-month rolling average electrical conductivity (@ 25°C) of the discharge shall not exceed the 12-month rolling average electrical conductivity (@ 25°C) of the source water plus 500 µmhos/cm, or a maximum of 1,000 µmhos/cm, whichever is more stringent. When source water is from more than one source, the electrical conductivity shall be a flow-weighted average of all sources.

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

1. Receiving water limitations for Fancher Creek and the Diversion Channel are based on water quality objectives contained in the Tulare Lake Basin Plan and are a required part of this Order. The discharge shall not cause the following in Fancher Creek and/or the Diversion Channel:

a. Un-ionized Ammonia. Un-ionized ammonia to be present in amounts that adversely affect beneficial uses nor to be present in excess of 0.025 mg/L (as N).

b. Bacteria. The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mL, nor more than 10 percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.

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

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

e. Color. Discoloration that causes nuisance or adversely affects beneficial uses.

f. Dissolved Oxygen:

i. The monthly median of the mean daily dissolved oxygen concentration to fall below 85 percent of saturation in the main water mass at centroid of flow;

ii. The 95 percentile dissolved oxygen concentration to fall below 75 percent of saturation **;** nor

iii. The dissolved oxygen concentration to be reduced below 5.0 mg/L at any time.

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

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

i. pH. The pH to be depressed below 6.5 nor raised above 8.3.

j. Pesticides:

i. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses;

ii. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses;

k. Radioactivity: Radionuclides to be present in concentrations that are deleterious to human, plant, animal, or aquatic life nor that result in the accumulation of

radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.

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

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

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

o. **Taste and Odors.** Taste- or odor-producing substances to be present in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or domestic or municipal water supplies.

p. **Temperature.** The natural temperature to be increased by more than 5°F. Compliance to be determined based on the difference in temperature at RSW-001U and RSW-001D for Fancher Creek and RSW-003U and RSW-003D for the Diversion Channel.

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

r. **Turbidity.** Turbidity to increase more than:

i. 1 Nephelometric Turbidity Units (NTUs) where natural turbidity is between 0 and 5 NTUs;

ii. 20 percent where natural turbidity is between 5 and 50 NTUs;

iii. 10 NTUs where natural turbidity is between 50 and 100 NTUs; nor

iv. 10 percent where natural turbidity is greater than 100 NTUs.

2. Receiving water limitations for Little Dry Creek are based on water quality objectives contained in the San Joaquin Basin Plan and are a required part of this Order. The discharge shall not cause the following in Little Dry Creek:

a. **Bacteria.** The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mL, nor more than 10 percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.

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

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

d. Color. Discoloration that causes nuisance or adversely affects beneficial uses.

e. Dissolved Oxygen:

i. The monthly median of the mean daily dissolved oxygen concentration to fall below 85 percent of saturation in the main water mass;

ii. The 95 percentile dissolved oxygen concentration to fall below 75 percent of saturation; nor

iii. The dissolved oxygen concentration to be reduced below 7.0 mg/L at any time.

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

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

h. pH. The pH to be depressed below 6.5 nor raised above 8.5.

i. Pesticides:

i. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses;

ii. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses;

iii. Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by USEPA or the Executive Officer;

iv. Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Board Resolution No. 68-16 and 40 CFR 131.12.);

v. Pesticide concentrations to exceed the lowest levels technically and economically achievable;

vi. Pesticides to be present in concentration in excess of the maximum contaminant levels (MCLs) set forth in CCR, Title 22, division 4, chapter 15; nor

vii. Thiobencarb to be present in excess of 1.0 µg/L.

j. Radioactivity:

i. Radionuclides to be present in concentrations that are harmful to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.

ii. Radionuclides to be present in excess of the maximum contaminant levels (MCLs) specified in Table 64442 of section 64442 and Table 64443 of section 64443 of Title 22 of the California Code of Regulations.

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

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

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

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

o. Temperature. The natural temperature to be increased by more than 5°F. Compliance to be determined based on the difference in temperature at RSW-002U and RSW-002D.

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

q. Turbidity. Turbidity to:

i. Exceed 2 Nephelometric Turbidity Units (NTUs) where natural turbidity is less than 1 NTU;

ii. Increase more than 1 NTU where natural turbidity is between 1 and 5 NTUs;

iii. Increase more than 20 percent where natural turbidity is between 5 and 50 NTUs;

iv. Increase more than 10 NTU where natural turbidity is between 50 and 100 NTUs; nor

v. Increase more than 10 percent where natural turbidity is greater than 100 NTUs.

B. Groundwater Limitations

Release of waste constituents from any storage, treatment, or disposal component associated with the Facility shall not cause the following in underlying groundwater:

1. Total coliform organism densities equal to or greater than 2.2 MPN/100 mL;

2. Constituents in concentrations greater than the appropriate MCLs specified in Title 22; or

3. Taste or odor-producing constituents, or toxic substances, or any other constituents in concentrations that create a nuisance or adversely affect a beneficial use.

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions (federal NPDES standard conditions from 40 CFR Part 122) included in Attachment D of this Order.

2. The Discharger shall comply with the following provisions:

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

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

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

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

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

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

The causes for modification include:

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

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

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

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

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

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

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

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

ii. Controls any pollutant limited in the Order.

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

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

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

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

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

i. Safeguard to electric power failure:

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

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

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

j. The Discharger, upon written request of the Central Valley Water Board, shall file with the Board a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. This report may be combined with that required under the Central Valley Water Board Standard Provision contained in section VI.A.2.i of this Order.

The technical report shall:

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

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

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

The Central Valley Water Board, after review of the technical report, may establish conditions which it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions shall be incorporated as part of this Order, upon notice to the Discharger.

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

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

m. The Central Valley Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13268, 13350, 13385, 13386, and 13387.

n. For publicly owned treatment works, prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a permanent 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 section 1211).

o. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, maximum daily effluent limitation, instantaneous maximum or minimum effluent limitation, acute toxicity effluent limitation, or receiving water limitation contained in this Order, the Discharger shall notify the Central Valley Water Board by telephone (559) 455-5116 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within 5 days, unless the Central Valley Water Board waives confirmation. The written notification shall include the information required by the Standard Provision contained in Attachment D section V.E.1. [40 CFR 122.41(l)(6)(i)].

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

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

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

B. Monitoring and Reporting Program Requirements

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

C. Special Provisions

1. Reopener Provisions

a. Conditions that necessitate a major modification of a permit are described in 40 CFR 122.62, including, but not limited to:

i. If new or amended applicable water quality standards are promulgated or approved pursuant to section 303 of the CWA, or amendments thereto, this permit may be reopened and modified in accordance with the new or amended standards.

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

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

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

d. Mercury. If mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted, or if the increased mercury monitoring required by this Order indicates that mercury exhibits reasonable potential to cause or contribute to an exceedance of applicable water quality objectives, this Order shall be reopened and an effluent concentration limitation(s) imposed. If the Central Valley Water Board determines that a mercury offset program is feasible for Dischargers subject to a NPDES permit, then this Order may be reopened to reevaluate the need for a mercury offset program for the Discharger.

e. Constituent Study. If after review of the study results it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective for copper or lead, this Order may be reopened and effluent limitations added for copper and/or lead.

f. Water Effects Ratios (WER) and Metal Translators. A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable inorganic

constituents. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

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

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

ii. Numeric Toxicity Monitoring Trigger. The numeric toxicity monitoring trigger to initiate a TRE is > 1 TUC (where TUC = 100/NOEC). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring and initiate a TRE when the effluent exhibits toxicity.

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

(a) If the results of four (4) consecutive accelerated monitoring tests do not exceed the monitoring trigger, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring. However,

notwithstanding the accelerated monitoring results, if there is evidence of effluent toxicity, the Executive Officer may require that the Discharger initiate a TRE.

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

(c) If the result of any accelerated toxicity test exceeds the monitoring trigger, the Discharger shall cease accelerated monitoring and begin a TRE to investigate the cause(s) of, and identify corrective actions to reduce or eliminate effluent toxicity. Within thirty (30) days of notification by the laboratory of any test result exceeding the monitoring trigger during accelerated monitoring, the Discharger shall submit a TRE Action Plan to the Central Valley Water Board including, at minimum:

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

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

(3) A schedule for these actions.

Within sixty (60) days of notification by the laboratory of the test results, the Discharger shall submit to the Central Valley Water Board a TRE work plan for approval by the Executive Officer. The TRE work plan shall outline the procedures for identifying the source(s) of, and reducing or eliminating effluent toxicity. The TRE work plan must be developed in accordance with USEPA guidance[1].

b. Constituent Study. There are indications that the discharge may contain constituents that have a reasonable potential to cause or contribute to an exceedance of water quality objectives for copper and lead. The Discharger shall comply with the following time schedule in conducting a study of these constituents' potential effect in surface waters:

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

Task		Compliance Date
i.	Begin monthly effluent and receiving water monitoring for copper and lead per the Monitoring and Reporting Program (Attachment E).	**28 March 2014**
ii.	Submit Constituent Study results and reasonable potential analysis.	**28 September 2016**
iii.	If the new copper and/or lead effluent and receiving water data demonstrate that reasonable potential exists, submit a Treatment Feasibility Study and Work Plan to reduce the discharge of copper and/or lead or a work plan to evaluate the toxicity of copper and/or lead in the receiving water(s).	**28 March 2017**

3. Best Management Practices and Pollution Prevention – Not Applicable

4. Construction, Operation and Maintenance Specifications

a. Turbidity. Effluent turbidity shall not exceed any of the following:

i. 0.2 NTU, more than 5% of the time within a 24-hour period.
ii. 0.5 NTU, at any time.

b. Ultraviolet Light Disinfection System Operating Specifications. The Discharger shall operate the ultraviolet light disinfection system to provide a minimum ultraviolet light dose per channel of 80 millijoules per square centimeter (mJ/cm^2) at all times, unless otherwise approved by the Department of Public Health (DPH), and shall maintain an adequate dose for disinfection while discharging to Fancher Creek, the Diversion Channel, and/or recycled water use sites, unless otherwise approved by DPH.

i. The Discharger shall comply with all of DPH's acceptance conditions for the ultraviolet light disinfection system in use at the Facility.

ii. The Discharger shall provide continuous, reliable monitoring of flow, ultraviolet light transmittance, ultraviolet light intensity, ultraviolet light dose, ultraviolet light power, and turbidity.

iii. The Discharger shall operate the treatment system to ensure that turbidity prior to disinfection meets the turbidity operational specifications listed in Section VI.C.4.a. of this Order.

iv. The ultraviolet light transmittance (at 254 nanometers) in the wastewater exiting the ultraviolet light disinfection system shall not fall below 54 percent of maximum at any time, unless otherwise approved by DPH.

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

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

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

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

c. Facility Operating Requirements

i. The Facility shall be designed, constructed, operated, and maintained to prevent inundation or washout due to flows with a 100-year return frequency.

ii. Public contact with wastewater, sludge, biosolids, and other wastes shall be precluded through such means as fences and signs, or acceptable alternatives.

iii. Objectionable odors originating at the Facility shall not be perceivable beyond the limits of the waste treatment areas at an intensity that crease or threatens to crease nuisance conditions.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Pretreatment Requirements.

i. The Discharger shall continue to authorize the City of Fresno to implement its approved pretreatment program within the City of Clovis and the program shall be an enforceable condition of this Order. If the Discharger prevents or impedes City of Fresno implementation of pretreatment functions, the Central Valley Water Board, the State Water Board, and the USEPA may take enforcement actions against the Discharger as authorized by the CWA. For violations of pretreatment requirements, the Discharger shall be subject to enforcement actions, penalties, fines, and other remedies by USEPA or other appropriate parties, as provided in the CWA. USEPA may initiate enforcement action against a nondomestic user for noncompliance with applicable standards and requirements are provided in the CWA.

ii. The Discharger shall continue to authorize the City of Fresno to enforce the requirements promulgated under sections 307(b), 307(c), 307(d), and 402(b) of the CWA with timely, appropriate, and effective enforcement actions. The Discharger shall cause all nondomestic users subject to federal categorical standards to achieve compliance no later than the date specified in those

requirements or, in the case of a new nondomestic user, upon commencement of the discharge.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

b. Sludge/Biosolids Treatment or Discharge Specifications. Sludge in this document means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screening material generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the wastewater treatment plant. Biosolids refer to sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agricultural, silvicultural, horticultural, and land reclamation activities as specified under 40 CFR Part 503.

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

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

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

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

v. The Discharger shall comply with Section IX.A. Biosolids of the Monitoring and Reporting Program, Attachment E.

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

vii. Within 180 days of the permit effective date, the Discharger shall review and update its existing biosolids use or disposal plan, and submit it to the Central Valley Water Board. The updated plan shall describe at a minimum:

(a) Sources and amounts of biosolids generated annually.

(b) Location(s) of on-site storage and description of the containment area.

(c) Plans for ultimate disposal. For landfill disposal, include the Central Valley Water Board's waste discharge requirement numbers that regulate the particular landfill; the present classification of the landfill; and the name.

c. Collection System. On 2 May 2006, the State Water Board adopted State Water Resources Control Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements (WDRs) for Sanitary Sewer Systems. The Discharger shall be subject to the requirements of Order No. 2006-0003-DWQ and any future revisions thereto. 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 Discharger has applied for and has been approved for coverage under Order 2006-0003-DWQ for operation of its wastewater collection system.

d. This Order, and the Monitoring and Reporting Program which is a part of this Order, requires that certain parameters be monitored on a continuous basis. The wastewater treatment plant is not staffed on a full time basis. Permit violations or system upsets can go undetected during this period. The Discharger shall establish an electronic system for operator notification for continuous recording device alarms. For existing continuous monitoring systems, the electronic notification system shall be installed **within 6 months** of adoption of this permit. For systems installed following permit adoption, the notification system shall be installed simultaneously.

6. Other Special Provisions

a. Discharge Flow Expansion (Phase II Improvements). The Discharger is permitted to discharge up to 5.6 MGD (average annual) to Fancher Creek and/or the Diversion Channel upon compliance with the following requirements:

i. Facility Improvements. The Discharge shall have completed construction and start-up of Phase II on the Facility, as identified in section II.A of the Fact Sheet, and shall provide evidence certified by the plant design engineer that the plant is operating properly.

ii. Effluent Limitation Compliance. The Discharger shall demonstrate compliance with final effluent limitations in this Order.

iii. Implementation of the San Joaquin River Agreement. The Discharger shall demonstrate that the 2006 San Joaquin River Agreement (NRDC v. Rodgers); or some other subsequent agreement, has been implemented that increased the minimum 1Q10 and 7Q10 flows of the San Joaquin River to 100 cubic feet per second.

iv. Request for Increase. The Discharger shall submit a request for an increase in discharge flow rate, which demonstrates compliance with items i., ii., and iii. above. The increase in discharge flow rate, as allowed under the terms of this Order, shall not be effective until the Executive Officer approves the Discharger's request in writing.

b. Wastewater shall be oxidized, filtered, and adequately disinfected pursuant to the Department of Public Health (DPH; formerly the Department of Health Services) recycling criteria, CCR, Title 22, division 4, chapter 3, (Title 22), or equivalent.

c. The Discharger shall not discharge disinfected tertiary-treated wastewater to Discharge Point 002 until the necessary agreements to flow disinfected tertiary-treated wastewater through the Diversion Channel are obtained. **Prior to discharge to Discharge Point 002**, the Discharger shall submit, to the Central Valley Water Board, confirmation that the necessary agreements have been obtained.

7. Compliance Schedules – Not Applicable

8. Master Recycling Permit Provisions

a. 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 Users responsible for the application and use of recycled water on their designated use areas, and associated operations and maintenance in accordance with all applicable requirements of Title 22, CCR and this Order.

b. The Discharger shall establish and enforce rules and regulations governing the design, construction, and use of recycled water distribution and disposal system by its reuse customers.

c. The Discharger shall conduct periodic inspections of the Users' facilities and operations to monitor and ensure compliance with conditions of the User Agreement and this Order. The Discharger shall take whatever actions are necessary, including termination of delivery of recycled water to the User, to correct any User violations.

d. The Discharger, Central Valley Water Board, DPH, or an authorized representative of these parties, upon presentation of proper credentials, shall have the right to enter upon the recycled water use site during reasonable hours to verify that the user of recycled water is complying with the Master Recycling Permit Provisions in this Order and the District's rules and regulations.

e. **At least 30 days prior to conveying recycled water to a new use site**, the Discharger shall submit a User Report to the Central Valley Water Board and DPH. The User Report shall include the following:

i. The site location including a map showing the specific boundaries of the use site and the County Assessor Parcel Number(s) (if appropriate, if Parcel Number(s) are not appropriate to accurately describe the site location, the Discharger shall provide the Central Valley Water Board with enough information for the Central Valley Water Board to accurately determine the location of the proposed recycling activities);

ii. The name of the use site property owner and contact information;

iii. The name of the User and contact information;

iv. The specific use to be made of the recycled water, the use site acreage, the type of vegetation/crops to which the recycled water will be applied, and the anticipated volume of recycled water to be used;

v. Identification of the on-site supervisor who is responsible for operation of the recycled water system;

vi. Description of the recycled water management facilities and operations plan;

vii. Plans and specification that include the following:

(a) Pipe locations of the recycled, potable, and auxiliary non-potable water systems;

(b) Type and location of the outlets and plumbing fixtures that will be accessible to the public;

(c) The methods and devices to be used to prevent backflow of recycled water in the public water system; and

(d) Plan notes relating to recycled water specific installation and use requirements

viii. Certification that the new use site conforms to the Discharger's rules and regulations;

ix. A copy of the signed User Agreement; and

x. The results of the cross-connection control test performed in accordance with the American Water Work Association and DPH guidelines. The results shall include a certification that DPH was notified of the initial cross-connection control test and was provided an opportunity to be present.

f. A copy of the User Agreement and the Discharger's rules and regulations governing the distribution and use of recycled water shall be maintained at the User's facilities and be available at all times for inspection by Central Valley Water Board staff, the Discharger, and DPH staff.

g. If, in the opinion of the Executive Officer, recycling at a proposed new use site cannot be adequately regulated under the Master Recycling Permit, a Report of Waste Discharge may be requested and individual Water Recycling Requirements may be adopted.

VII. COMPLIANCE DETERMINATION

A. Average Annual Daily Flow Limitation (Section IV.A.1.f.). The average annual daily flow represents the daily average flow (in million gallons per day) as determined over a calendar year.

B. Average Monthly Daily Flow Limitation (Section IV.A.1.f.). The average monthly daily flow represents the daily average flow (in million gallons per day) as determined over a calendar month.

C. BOD_5 and TSS Effluent Limitations (Section IV.A.1.a., IV.A.1.b., IV.C.18.a., and IV.C.18.b.). Compliance with the final effluent limitations for BOD_5 and TSS required in Limitations and Discharge Requirements section IV.A.1.a. and Recycled Water Specifications section IV.C.18.a. shall be ascertained by 24-hour composite samples. Compliance with effluent limitations required in Limitations and Discharge Requirements section IV.A.1.b. and Recycled Water Specifications sections IV.C.18.b. for percent removal shall be calculated using the arithmetic mean of BOD_5 and TSS in effluent samples collected over a monthly period as a percentage of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period.

D. Total Coliform Organisms Effluent Limitations (Section IV.A.1.c. and IV.C.18.c.). For each day that an effluent sample is collected and analyzed for total coliform

organisms, the 7-day median shall be determined by calculating the median concentration of total coliform bacteria in the effluent utilizing the bacteriological results of the last 7 days. For example, if a sample is collected on a Wednesday, the result from that sampling event and all results from the previous 6 days (i.e., Tuesday, Monday, Sunday, Saturday, Friday, and Thursday) are used to calculate the 7-day median. If the 7-day median of total coliform organisms exceeds a most probable number (MPN) of 2.2 per 100 milliliters, the Discharger will be considered out of compliance.

E. Mass Effluent Limitations. The mass effluent limitations contained in the Final Effluent Limitations IV.A.1.a. are based on the permitted average annual flow and calculated as follows:.

Mass (lbs/day) = Flow (MGD) x Concentration (mg/L) x 8.34 (conversion factor)

ATTACHMENT A – DEFINITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

Estimated Chemical Concentration
The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value, but above the MDL. Same as Detected, but Not Quantified.

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

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

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 effluent limitation or recycled water specification).

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

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

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

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

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

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

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

Pollutant Minimization Program (PMP)
Pollutant Minimization means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Central Valley Water Board may consider cost effectiveness when establishing the requirements of a PMP. The PMP shall be prepared in accordance with section 2.4.5.1. of the SIP. 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 of the SIP.

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

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

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

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

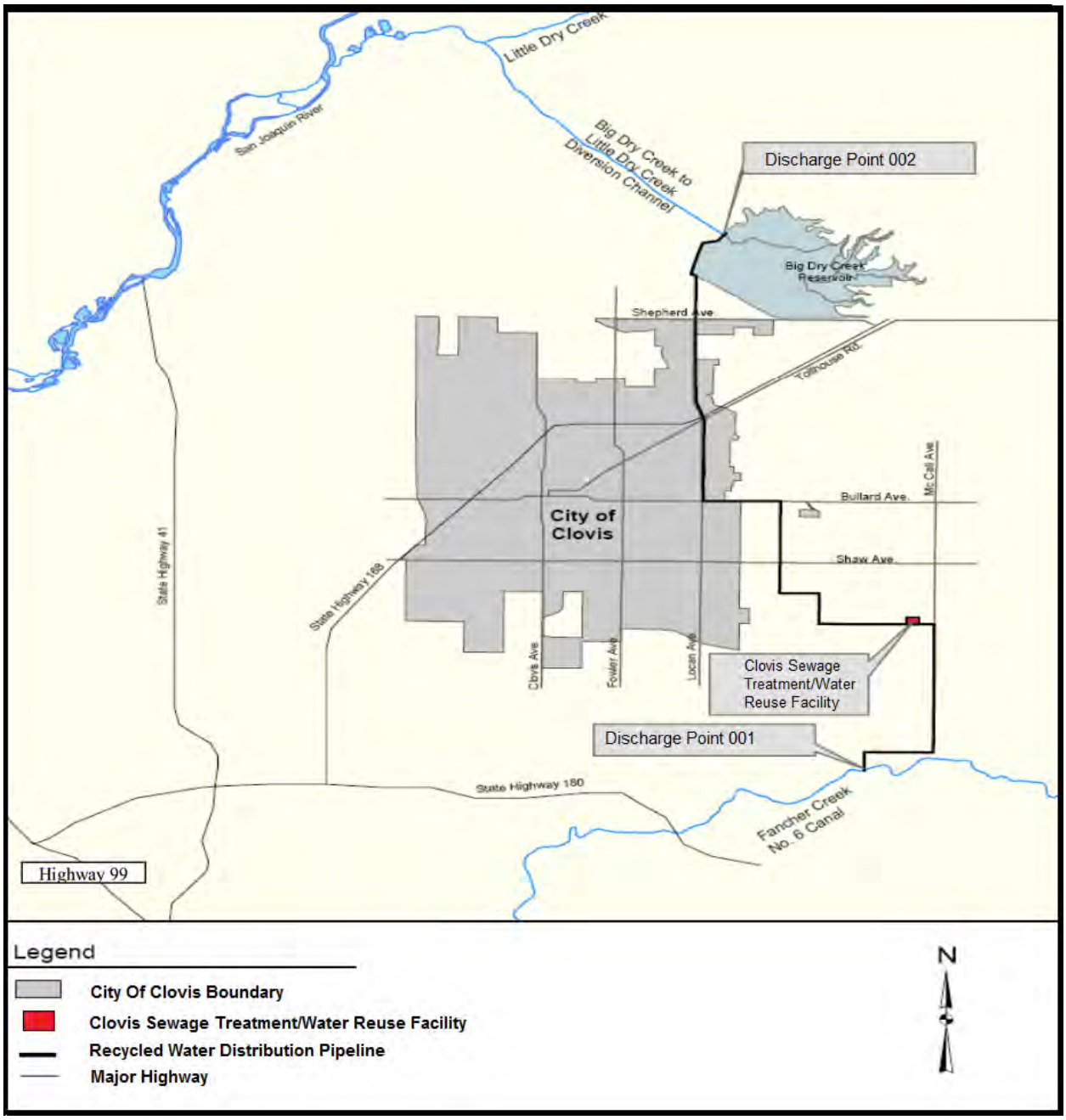
$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:

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

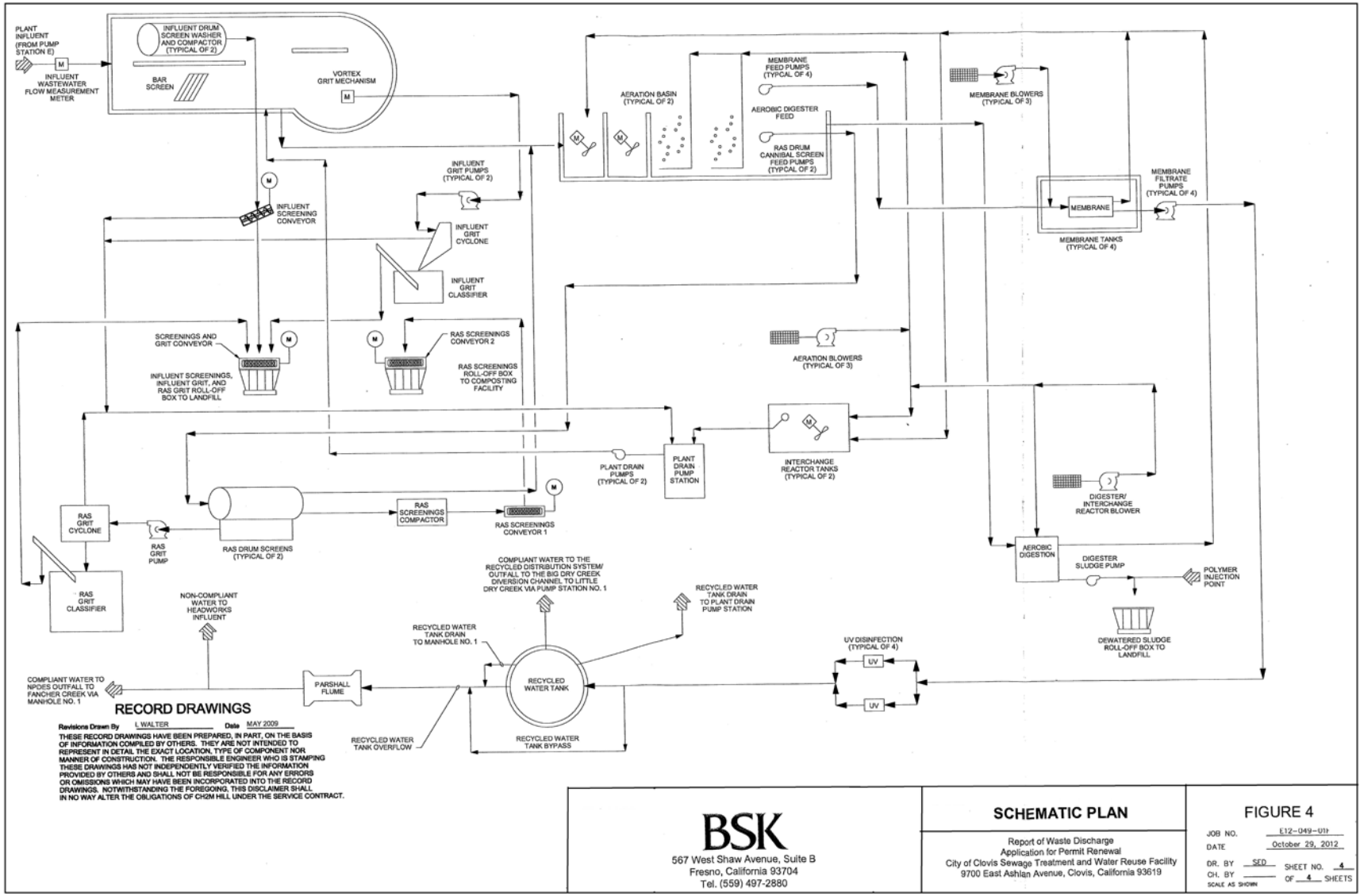
Toxicity Reduction Evaluation (TRE)
TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first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

ATTACHMENT B – MAP



Drawing Reference: Malcom Pirnie, Inc. *Not to Scale*	SITE LOCATION MAP CITY OF CLOVIS CLOVIS SEWAGE TREATMENT/WATER REUSE FACILITY FRESNO COUNTY

ATTACHMENT C – FLOW SCHEMATIC



ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

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

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

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

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

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

F. Inspection and Entry

The Discharger shall allow the Central Valley 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); Water Code section 13383):

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

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

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

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

G. Bypass

1. Definitions

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

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

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

3. Prohibition of bypass. Bypass is prohibited, and the Central Valley 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 Central Valley Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 CFR 122.41(m)(4)(i)(C))

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

5. Notice

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

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

H. Upset

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

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

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

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

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

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

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

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

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

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

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

III. STANDARD PROVISIONS – MONITORING

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

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

IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least 5 years (or longer as required by 40 CFR Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Central Valley Water Board Executive Officer at any time. (40 CFR 122.41(j)(2))

B. Records of monitoring information shall include:

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

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

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

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

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

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

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

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

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

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

1. The Discharger shall furnish to the Central Valley Water Board, State Water Board, or USEPA within a reasonable time, any information which the Central Valley 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 Central Valley Water Board, State Water Board, or USEPA copies of records required to be kept by this Order. (40 CFR 122.41(h); Wat. Code, § 13267)

B. Signatory and Certification Requirements

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

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

3. All reports required by this Order and other information requested by the Central Valley 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 Central Valley 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 Central Valley Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 CFR 122.22(c))

5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

"*I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*" (40 CFR 122.22(d))

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 CFR 122.22(l)(4))

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

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Central Valley 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 notify the California Office of Emergency Services of any noncompliance that may endanger health or the environment within two (2) hours from the time the Discharger becomes aware of the circumstances. The Discharger

shall notify the Central Valley Water Board of the noncompliance by telephone or fax within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided to the Central Valley Water Board within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 CFR 122.41(l)(6)(i))

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

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

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

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

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

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

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

G. Anticipated Noncompliance

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

H. Other Noncompliance

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

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Central Valley 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 Central Valley 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 Central Valley Water Board of the following (40 CFR 122.42(b)):

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

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

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

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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

I. GENERAL MONITORING PROVISIONS

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

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

C. Chemical, bacteriological, and bioassay analyses of any material required by this Order shall be conducted by a laboratory certified for such analyses by the California Department of Public Health (DPH). Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Central Valley Water Board. In the event a certified laboratory is not available to the Discharger for any onsite field measurements such as pH, dissolved oxygen, turbidity, temperature, and residual chlorine, such analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program for any onsite field measurements such as pH, dissolved oxygen, turbidity, temperature, and residual chlorine must be kept onsite in the treatment facility laboratory and shall be available for inspection by Central Valley Water Board staff, State Water Resources Control Board (State Water Board) staff, United States Environmental Protection Agency (USEPA) staff, and/or their authorized representatives. The Discharger must demonstrate sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform these field measurements. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Central Valley Water Board.

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

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

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

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

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

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

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

II. MONITORING LOCATIONS

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

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	A location where a representative sample of the influent into the Facility can be collected prior to any plan return flows or treatment processes
001, 002, REC-001	EFF-A	Final disinfected tertiary-treated effluent, prior to storage in steel tank
001	EFF-001	Final disinfected tertiary-treated effluent after the steel storage tank and prior to discharge to Fancher Creek where most representative of the effluent discharged
002	EFF-002	Final disinfected tertiary-treated effluent after the steel storage tank and prior to discharge to the Diversion Channel where most representative of the effluent discharged
REC-001	REC-001	Final disinfected tertiary-treated effluent after the storage tank and prior to discharge to the recycled water use sites where most representative of the effluent discharged
--	RSW-001U	Fresno No. 3 Canal, approximately 100 feet upstream of Discharge Point 001 (Fresno No.3 Canal splits to become Mill Ditch and Fancher Creek)
--	RSW-001D	Fancher Creek, approximately 100 feet downstream of Discharge Point 001

--	RSW-002U	Little Dry Creek, approximately 7,250 feet upstream of the confluence of Little Dry Creek and the Diversion Channel, where there is bridge access over Little Dry Creek
--	RSW-002D	Little Dry Creek, approximately 4,550 feet downstream of the confluence of Little Dry Creek and the Diversion Chanel, east of Friant Road at a flow measurement weir in Little Dry Creek
--	RSW-003U	With Central Valley Water Board staff concurrence, at a location representative of the water quality immediately upstream of the Discharge Point 002 outfall to the Diversion Channel and not influenced by the Facility's Discharge
--	RSW-003D	With Central Valley Water Board staff concurrence, in the Diversion Channel downstream of the Discharge Point 002 outfall at a location most likely to capture any influence of the Facility discharge
--	BIO-001	Representative of the dewatered biosolids shipped offsite for disposal and/or composting
--	SPL-001	Representative of the water supply for the area served by the Facility
--	UVS-001	Ultraviolet light disinfection system

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:

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Meter	Continuous	--
Biochemical Oxygen Demand (BOD) (5-day @ 20°C)	mg/L	24-hr Composite [1]	3/Week	[2]
Total Suspended Solids	mg/L	24-hr Composite [1]	3/week	[2]
Electrical Conductivity @ 25°C	µmhos/cm	Grab [3]	3/week	[2, 4]

[1] 24-hour flow proportional composite.

[2] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136; or by methods approved by the Central Valley Water Board or the State Water Board.

[3] Grab samples shall not be collected at the same time each day to get a complete representation of variations in the influent.

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

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-A

1. The Discharger shall monitor tertiary-treated wastewater at Monitoring Location EFF-A as follows.

Table E-3a. Effluent Monitoring Requirements – Monitoring Location EFF-A

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Meter	Continuous	--
Conventional Pollutants				
Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C)	mg/L	24-hr Composite [2]	3/week [3]	[1]
	lbs/day	Calculate		--
Total Suspended Solids	mg/L	24-hr Composite [2]	3/week [3]	[1]
	lbs/day	Calculate		--
pH	standard units	Grab	1/day [4]	[1, 6]
Priority Pollutants				
Copper, Total Recoverable	µg/L	24-hr Composite [2]	1/Month [7, 9]	[1, 5]
Lead, Total Recoverable	µg/L	24-hr Composite [2]	1/Month [7, 9]	[1, 5]
Priority Pollutants and Other Constituents of Concern	vary	See Attachment I	See Attachment I	See Attachment I
Non-Conventional Pollutants				
Aluminum, Total Recoverable OR Acid-Soluble	µg/L	24-hr Composite [2]	1/Quarter [7, 11]	[1, 12]
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Week [4]	[1]
Chlorine, Total Residual	mg/L	Meter	Continuous	[1, 14]
Dissolved Oxygen	mg/L	Meter	Continuous	[1]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	5/Week	[1]
Hardness (as $CaCO_3$)	mg/L	Grab	1/Month [7]	[1]
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/Week [8]	[1]
Nitrite Nitrogen, Total (as N)	mg/L	Grab	1/Week [8]	[1]
Total Kjeldahl Nitrogen (as N)	mg/L	Grab	1/Week [8]	[1]
Nitrogen, Total (as N)	mg/L	Calculate	1/Week	Calculated
Total Coliform Organisms	MPN/100 mL	Grab	5/Week 1/Day [13]	[1]
Total Dissolved Solids	mg/L	Grab	1/Month	[1]
Standard Minerals [10]	mg/L	Grab	1/Year	[1]
Whole Effluent Toxicity (see Section V. below)	--	--	--	--

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or by methods approved by the Central Valley Water Board or the State Water Board. For acid-soluble aluminum, the analytical method described in footnote 12 is considered an approved alternate method by the Central Valley Water Board for the purposes of this Order.

[2] 24-hour flow proportional composite.

[3] Samples shall be collected on non-consecutive days.

[4] pH and temperature shall be recorded at the time of ammonia sample collection.

[5] Reporting levels shall be equal to the reporting levels specified in Attachment I of this Order. If more than

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method

one analytical test method is listed for a given parameter in Attachment I, the Discharger must select from the listed methods and corresponding reporting level.

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

7 Hardness samples shall be collected concurrently with metal samples.

8 Monitoring for nitrite (as N), nitrate (as N), and total kjeldahl nitrogen (as N) shall be conducted concurrently.

9 If the results of 24 months of monitoring indicate that the discharge does not cause or have reasonable potential to cause or contribute to an excursion above applicable water quality criteria, the Discharger may submit a written request to the Executive Officer to eliminate this requirement.

10 Standard minerals shall include the following: boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus, total alkalinity (including alkalinity series), and hardness, and include verification that the analysis is complete (i.e., cation/anion balance).

11 If the results of 8 quarters of monitoring indicate that the discharge does not cause or have reasonable potential to cause or contribute to an excursion above applicable water quality criteria, the Discharger may submit a written request to the Executive Officer to eliminate this requirement.

12 Monitoring for aluminum shall be conducted using either total or acid-soluble (inductively coupled plasma/atomic emission spectrometry or inductively coupled plasma/mass spectrometry) analysis methods, as supported by USEPA's Ambient Water Quality Criteria for Aluminum document (EPA 440/5-86-008), or other standard methods that exclude aluminum silicate particles as approved by the Executive Officer.

13 Samples shall be collected daily when discharging to Discharge Point REC-001.

14 Total chlorine residual shall be monitored with a method sensitive to and accurate to a level of 0.01 mg/L.

B. Monitoring Locations EFF-001 and EFF-002

1. The Discharger shall monitor tertiary-treated wastewater at Monitoring Location EFF-001 as follows when discharging effluent to Discharge Point 001:

Table E-3b. Effluent Monitoring Requirements – Monitoring Location EFF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	mgd	Meter	Continuous
Temperature [1]	°F or °C	Meter	Continuous [2]

1 Monitoring shall occur at the outfall to Fancher Creek.

2 Temperature shall be analyzed using the analytical methods described in 40 CFR Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

2. The Discharger shall monitor tertiary-treated wastewater at Monitoring Location EFF-002 as follows when discharging effluent to Discharge Point 002:

Table E-3c. Effluent Monitoring Requirements – Monitoring Location EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	mgd	Meter	Continuous
Temperature [1]	°F or °C	Meter	Continuous [2]

[1] Monitoring shall occur at the outfall to the Diversion Channel.
[2] Temperature shall be analyzed using the analytical methods described in 40 CFR Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

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

1. *Monitoring Frequency* – The Discharger shall perform **quarterly (1/quarter)** acute toxicity testing, concurrent with effluent ammonia sampling, when discharges to Discharge Points 001 and/or 002 are occurring.

2. *Sample Types* – The samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-A.

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

4. *Test Type and Duration* – The test type shall be static renew or flow-through, and the test duration shall be 96 hours.

5. Dilutions – The acute toxicity testing shall be performed using undiluted effluent.

6. Test Method – The acute toxicity testing samples shall be analyzed using *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms,* Fifth Edition, EPA-821-R-02-012, October 2002. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.

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

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

1. *Monitoring Frequency* – The Discharger shall perform **quarterly (1/quarter)** three species chronic toxicity testing when discharges to Discharge Points 001 and/or 002 are occurring.

2. *Sample Types* – Effluent samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-A, as identified in this Monitoring and Reporting Program.

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

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

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

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

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

7. *Dilutions* – For regular and accelerated chronic toxicity monitoring, it is not necessary to perform the test using a dilution series. The test may be performed using 100% effluent and one control. For Toxicity Reduction Evaluation (TRE) monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-4, below. Laboratory control water shall be used as the diluent.

Table E-4. Chronic Toxicity Testing Dilution Series

	Dilutions (%)					Control
A. Sample	**100**	**75**	**50**	**25**	**12.5**	
% Effluent	100	75	50	25	12.5	0
% Laboratory Water	0	25	50	75	87.5	100

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

a. The reference toxicant test or the effluent test does not meet all test acceptability criteria as specified in the Method Manual and its subsequent amendments or revisions; or

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

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

D. WET Testing Reporting Requirements. All toxicity test reports shall include the contracting laboratory's complete report provided to the Discharger and shall be in accordance with the appropriate "Report Preparation and Test Review" sections of the method manuals. At a minimum, whole effluent toxicity monitoring shall be reported as follows:

1. **Chronic WET Reporting.** Regular chronic toxicity monitoring results shall be reported to the Central Valley Water Board with the monthly self-monitoring report in which the first sample was taken, and shall contain, at minimum:

   a. The dates of sample collection and initiation of each toxicity test; and

   b. The results compared to the numeric toxicity monitoring trigger.

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

2. **Acute WET Reporting.** Acute toxicity test results shall be submitted with the monthly self-monitoring report in which the sample was taken following completion of the test and reported as percent survival.

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

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

   a. Results of the applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD, and dates tested.

b. The reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory.

c. Any information on deviations or problems encountered and how they were dealt with.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECYCLING MONITORING REQUIREMENTS

A. Monitoring Location REC-001

1. The Discharger shall monitor recycled water at Monitoring Location REC-001 as follows when discharging to Discharge Point REC-001:

Table E-5. Recycling Monitoring Requirements – Monitoring Location REC-001

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	mgd	Meter	Continuous

B. Monitoring Location EFF-A

1. The Discharger shall monitor recycled water at Monitoring Location EFF-A as specified in Section IV.A. of this Monitoring and Reporting Program.

C. Recycled Water Users Summary Report

1. The Discharger shall submit a **quarterly (1/quarter)** recycled water users summary report to the Executive Officer containing the following information:

a. Total volume of recycled water supplied to all recycled water users during the quarter;

b. Total number of recycled water use sites; and

c. Map showing the locations of the recycled water use sites.

A copy of each summary report shall also be sent to DPH.

2. The Discharger shall submit an **annual (1/year)** recycled water users compliance report containing the following information for each recycled water use site:

a. Name of the recycled water use site;

b. Owner of the recycled water use site;

c. Address of the recycled water use site (if available);

d. Name of the on-site recycled water use site supervisor;

e. Phone number of the on-site recycled water use site supervisor;

f. Number of acres that received recycled water;

g. Type of vegetation/crops to which the recycled water was applied;

h. Total volume of recycled water delivered to the recycled water use site during the calendar year;

i. Total nitrogen loading rate (lbs/acre) on an annual basis. Loading rates shall be calculated using the applied volume of recycled water and the results of the total nitrogen monitoring required by Section VII.B.1. of this Monitoring and Reporting Program. Application rates (lbs/acre/month) of supplemental nitrogen shall also be reported;

j. A list of recycled water use site inspections conducted by the Discharger during the calendar year; and

k. Violations of the Discharger's rules and regulations for recycled water users. The Discharger shall include a description of the noncompliance and its cause, including the period of noncompliance, and if the noncompliance has not been corrected; the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER

A. Monitoring Location RSW-001U, RSW-001D, RSW-002U, and RSW-002D

1. The Discharger shall monitor Fancher Creek consistent with Table E-6a at RSW-001U and RSW-001D (unless specified otherwise) when discharges to Discharge Point 001 are occurring and there is a measurable flow at RSW-001U. The Discharger shall monitor Little Dry Creek consistent with Table E-6a at RSW-002U and RSW-002D (unless specified otherwise) when discharges to Discharge Point 002 are occurring and there is measurable flow at RSW-002U.

Table E-6a. Receiving Water Monitoring Requirements - RSW-001(U&D) and RSW-002(U&D)

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Estimate	5/Week	
Conventional Pollutants				
pH	standard units	Grab	1/Week [2]	[1, 5]
Priority Pollutants				
Copper, Total Recoverable [9]	µg/L	Grab	1/Month [3]	[1, 4]
Lead, Total Recoverable [9]	µg/L	Grab	1/Month [3]	[1, 4]
Priority Pollutants and Other Constituents of Concern	vary	See Attachment I	See Attachment I	See Attachment I

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Non-Conventional Pollutants				
Aluminum, Total Recoverable OR Acid-Soluble [10]	µg/L	Grab	1/Quarter [6, 7]	[1, 8]
Ammonia, Total (as N)	mg/L	Grab	1/Week [2]	[1]
Ammonia, Un-ionized (as N)	mg/L	Calculate	1/Week [2]	[1]
Dissolved Oxygen	mg/L	Grab	1/Week	[1, 5]
Electrical Conductivity @ 25°C [10]	µmhos/cm	Grab	1/Week	[1, 5]
Fecal Coliform Organisms	MPN/100 mL	Grab	1/Week	[1]
Hardness, Total (as $CaCO_3$) [10]	mg/L	Grab	1/Quarter [6]	[1]
Temperature	°F or °C	Grab	1/Week [2]	[1, 5]
Turbidity	NTU	Grab	1/Week	[1, 5]

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or by methods approved by the Central Valley Water Board or the State Water Board. For acid-soluble aluminum, the analytical method described in footnote 8 is considered an approved alternate method by the Central Valley Water Board for the purposes of this Order.

[2] pH and temperature shall be recorded at the time of ammonia sample collection.

[3] If the results of 24 months of monitoring indicate that the discharge does not cause or have reasonable potential to cause or contribute to an excursion above applicable water quality criteria, the Discharger may submit a written request to the Executive Officer to eliminate this requirement.

[4] Reporting levels shall be equal to the reporting levels specified in Attachment I of this Order. If more than one analytical test method is listed for a given parameter in Attachment I, the Discharger must select from the listed methods and corresponding reporting level.

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

[6] Hardness samples shall be collected concurrently with metals samples.

[7] If the results of 8 quarters of monitoring indicate that the discharge does not cause or have reasonable potential to cause or contribute to an excursion above applicable water quality criteria, the Discharger may submit a written request to the Executive Officer to eliminate this requirement.

[8] Monitoring for aluminum shall be conducted using either total or acid-soluble (inductively coupled plasma/atomic emission spectrometry or inductively coupled plasma/mass spectrometry) analysis methods, as supported by USEPA's Ambient Water Quality Criteria for Aluminum document (EPA 440/5-86-008), or other standard methods that exclude aluminum silicate particles as approved by the Executive Officer.

[9] Monitoring is only required for Fancher Creek (upstream Monitoring Location RSW-001U).

[10] Monitoring is only required for upstream Monitoring Locations RSW-001U and RSW-002U.

2. In conducting the receiving water sampling, a log shall be kept of the conditions in Fancher Creek throughout the reach bounded by Monitoring Locations RSW-001U and RSW-001D (when discharging to Discharge Point 001) and the conditions in Little Dry Creek throughout the reach bounded by RSW-002U and RSW-002D (when discharging to Discharge Point 002). Attention shall be given to the presence or absence of:

i. Floating or suspended matter
ii. Discoloration
iii. Bottom deposits
iv. Aquatic life
v. Visible films, sheens, or coatings
vi. Fungi, slimes, or objectionable growths
vii. Potential nuisance conditions

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

3. The Discharger shall submit an **annual (1/year)** report that specifies the volume (in acre-feet) of water released from the Fresno Canal into the Fancher Creek system between 1 January and 31 December. The report shall also include the volume (in acre-feet) of Facility effluent discharged via Discharge Point 001 between 1 January and 31 December. The annual report shall be combined with the Annual Operations Report required by Section X.D.3. of this Monitoring and Reporting Program.

B. Monitoring Location RSW-003U and RSW-003D

1. The Discharger shall monitor the Diversion Channel consistent with Table E-6b at RSW-003U and RSW-003D (unless specified otherwise) only when discharges to Discharge Point 002 are occurring and water is being released from Big Dry Creek Reservoir.

Table E-6b. Receiving Water Monitoring Requirements - RSW-003(U&D)

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Conventional Pollutants				
pH	standard units	Grab	2/Year [2]	[1, 3]
Priority Pollutants				
Priority Pollutants and Other Constituents of Concern	vary	See Attachment I	See Attachment I	See Attachment I
Non-Conventional Pollutants				
Ammonia, Total (as N)	mg/L	Grab	2/Year [2]	[1]
Ammonia, Un-ionized (as N)	mg/L	Calculate	2/Year [2]	[1]
Dissolved Oxygen	mg/L	Grab	2/Year	[1, 3]
Electrical Conductivity @ 25°C [4]	µmhos/cm	Grab	2/Year	[1, 3]
Fecal Coliform Organisms	MPN/100 mL	Grab	2/Year	[1]
Hardness, Total (as $CaCO_3$) [4]	mg/L	Grab	2/Year	[1]
Temperature	°F or °C	Grab	2/Year [2]	[1, 3]
Turbidity	NTU	Grab	2/Year	[1, 3]

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

[2] pH and temperature shall be recorded at the time of ammonia sample collection.

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

[4] Monitoring is only required for upstream Monitoring Location RSW-003U.

C. Groundwater Monitoring – Not Applicable

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids

1. Monitoring Location BIO-001

a. A composite sample of the biosolids shall be collected **annually (1/year)** at Monitoring Location BIO-001 in accordance with EPA's *POTW Sludge Sampling and Analysis Guidance Document*, August 1989, and tested for priority pollutants listed in 40 CFR Part 122, Appendix D, Tables II and III (excluding total phenols).

b. A composite sample of the biosolids shall be collected **monthly (1/month)** at Monitoring Location BIO-001 in accordance with USEPA's *POTW Sludge Sampling and Analysis Guidance Document*, August 1989, and tested for the metals listed in Title 22.

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

B. Municipal Water Supply

1. Monitoring Location SPL-001

The Discharger shall monitor the municipal water supply consistent with Table E-7 at SPL-001. Sampling stations shall be established where representative samples of the municipal water supply can be obtained.

Table E-7. Municipal Water Supply Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total Dissolved Solids [1]	mg/L	Grab	1/Year	[3]
Electrical Conductivity @ 25°C [1]	µmhos/cm	Grab	1/Year	[3]
Standard Minerals [2]	mg/L	Grab	1/Year	[3]

1. If the water supply is from more than one source, the total dissolved solids and electrical conductivity shall be reported as a weighted average and include copies of supporting calculations.
2. Standard minerals shall include the following: boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus total alkalinity (including alkalinity series), and hardness, and include verification that the analysis is complete (i.e., cation/anion balance).
3. Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

C. Ultraviolet Light Disinfection System

1. Monitoring Location UVS-001

The Discharger shall monitor the ultraviolet light disinfection system at UVS-001 as follows:

Table E-8. Ultraviolet Light Disinfection System Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	mgd	Meter	Continuous [1]
Turbidity	NTU	Meter [2]	Continuous [1, 3]
Number of ultraviolet light banks in operation	Number	Observation	Continuous [1]
Ultraviolet Light Transmittance	Percent (%)	Meter	Continuous [1]
Ultraviolet Light Power Setting	Percent (%)	Meter	Continuous [1]
Ultraviolet Light Dose [4]	[5]	Calculated	Continuous [1]

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

[2] The turbidity meter shall be stationed immediately after the filters, prior to the ultraviolet light disinfection process.

[3] Report daily average turbidity and maximum turbidity. If the turbidity exceeds 0.5 NTU, collect a sample for total coliform organisms at Monitoring Location EFF-A and report the duration of the turbidity exceedance.

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

[5] Ultraviolet light dosage shall be reported in units of milliwatts per square centimeter (mW/cm^2)

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

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

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

3. Compliance Time Schedules – Not Applicable

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

B. Self-Monitoring Reports (SMRs)

1. The Discharger shall continue to submit electronic SMRs (eSMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://ciwqs.waterboards.ca.gov/). The Discharger shall maintain sufficient

staffing and resources to ensure it submits eSMRs during the effective duration of this Order. This includes provision of training and supervision of individuals (e.g., Discharger personnel or consultant) on how to prepare and submit eSMRs. The CIWQS web site will provide additional directions for eSMR submittal in the event there will be service interruption.

2. 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 eSMRs.

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

Table E-9. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	First day of the calendar month following the permit effective date or on the permit effective date if that date is the first day of the month	Continuous	Submit with monthly eSMR
1/Day	First day of the calendar month following the permit effective date or on the permit effective date if that date is the first day of the month	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling	Submit with monthly eSMR
1/Week 3/Week 5/Week	First Sunday of the calendar month following the permit effective date or on the permit effective date if that date is the first Sunday of the month	Sunday through Saturday	Submit with monthly eSMR
1/Month	First day of the calendar month following the permit effective date or on the permit effective date if that date is the first day of the month	First day of calendar month through last day of calendar month	First day of the second month following month of sampling
1/Quarter	Closest of 1 January, 1 April, 1 July, or 1 October following (or on) the permit effective date	1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	Submit with the monthly eSMR in which sample was taken (e.g., if a sample is taken in May, the result must be included in the May eSMR [due 1 July])
2/Year	Closest of 1 January or 1 July following (or on) the permit effective date	1 January through 30 June 1 July through 31 December	Submit with the monthly eSMR in which sample was taken (e.g., if a sample is taken in May, the result must be included in the May SMR [due 1 July])

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
1/Year	1 January following (or on) the permit effective date	1 January through 31 December	Submit with the monthly eSMR in which sample was taken (e.g., if a sample is taken in May, the result must be included in the May SMR [due 1 July])
1/Quarter (Acute and Chronic WET Tests)	Closest of 1 January, 1 April, 1 July, or 1 October following (or on) the permit effective date	1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	Submit with the monthly eSMR in which sample was taken (e.g., if a sample is taken in May, the result must be included in the May SMR [due 1 July])

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

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

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

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

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

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

   d. Dischargers are to instruct laboratories to establish calibration standards so that the RL 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. The Discharger's laboratory(ies) may, as allowed by the rules governing alterations to Minimum Level (ML) values in section 2.4.3 of the SIP, employ a calibration standard lower than the ML value in Appendix 4 of the SIP.

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

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

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

6. **Reporting Requirements.** In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the data, the constituents, and the concentrations are readily discernible.

   a. The data shall be summarized to clearly illustrate whether the Facility is operating in compliance with interim and/or final effluent limitations or with other waste discharge requirements (e.g., recycled water specifications, receiving water limitations, special provisions, etc.).

   b. The Discharger shall attach all laboratory analysis sheets, including quality assurance/quality control information, with all its eSMRs for which sample analyses were performed.

   c. The Discharger shall attach a cover letter with each eSMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation. Violations must also be entered into the CIWQS web site under the Violations tab for the reporting period in which the violation occurred.

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

   e. eSMRs must be submitted to the Central valley Water Board, signed and certified as required by the Standard Provisions (Attachment D), through the CIWQS web site.

f. Reports must clearly show when the discharging to Discharge Points 001, 002, and REC-001. Reports must show the date that the discharge started and stopped at each location.

g. The highest daily maximum for the month and monthly and weekly averages shall be determined and recorded as needed to demonstrate compliance.

7. Calculation Requirements. The following shall be calculated and reported in the eSMRs:

a. Annual Average Limitations. For constituents with effluent limitations specified as "annual average" (flow) the Discharger shall report the annual average in the December eSMR. The annual average shall be calculated as the average of the samples/measurements gathered for the calendar year.

b. 12-Month Rolling Average Limitations. For constituents with effluent limitations specified as "12-month rolling average" (electrical conductivity) the Discharger shall report the 12 month rolling average in each monthly eSMR. The 12-month rolling average shall be calculated as the average of all samples gathered over the previous 12 months.

c. Mass Loading Limitations. For ammonia, BOD_5, and TSS the Discharger shall calculate and report the mass loading (lbs/day) in the eSMRs. The mass loading shall be calculated as follows:

Mass Loading (lbs/day) = Flow (mgd) x Concentration (mg/L) x 8.34

When calculating daily mass loading, the daily average flow and constituent concentration shall be used. For weekly average mass loading, the weekly average flow and constituent concentration shall be used. For monthly average mass loading, the monthly average flow and constituent concentration shall be used.

d. Removal Efficiency (BOD_5 and TSS). The Discharger shall calculate and report the percent removal of BOD_5 and TSS in the eSMRs. The percent removal shall be calculated as specified in Section VII.A. of the Limitations and Discharge Requirements.

e. Total Coliform Organisms Effluent Limitations. The Discharger shall calculate and report the 7-day median of total coliform organisms for the effluent. The 7-day median of total coliform organisms shall be calculated as specified in Section VII.D. of the Limitations and Discharge Requirements.

f. Dissolved Oxygen Receiving Water Limitations. The Discharger shall calculate and report the following monthly in the self-monitoring report: i) the dissolved oxygen concentration, ii) the percent of saturation in the main water mass, and iii) the 95th percentile dissolved oxygen concentration.

g. Turbidity Receiving Water Limitations. The Discharger shall calculate and report the turbidity increase in the receiving water applicable to the natural turbidity condition specified in Section V.A.1.r.i-v. and Section V.A.2.q.i-v. of the Limitations and Discharge Requirements.

h. Temperature Receiving Water Limitations. The Discharger shall calculate and report the temperature increase in Fancher Creek, Little Dry Creek, and the Diversion Channel based on the difference in temperature at RSW-001U and RSW-001D, RSW-002U and RSW-002D, and RSW-003U and RSW-003D, respectively.

C. Discharge Monitoring Reports (DMRs)

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

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

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

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

D. Other Reports

1. The Discharger shall report the results of any special studies, acute and chronic toxicity testing, and TRE/TIE required by Special Provisions VI.C.2. of this Order. The Discharger shall submit reports within the timeframes described or by the specified due dates

2. By 7 April 2014, the Discharger shall submit a report outlining reporting levels (RLs), method detection limits (MDLs), and analytical methods for approval. The Discharger shall comply with the monitoring and reporting requirements for CTR constituents as outlined in section 2.3 and 2.4 of the SIP. The maximum required

RLs for priority pollutant constituents shall be based on the Minimum Levels (MLs) contained in Appendix 4 of the SIP, determined in accordance with Section 2.4.2 and Section 2.4.3 of the SIP. In accordance with Section 2.4.2 of the SIP, when there is more than ML value for a given substance, the Central Valley Water Board shall include as RLs, in the permit, all ML values, and their associated analytical methods, in Appendix 4 that are below the calculated effluent limitation. The Discharger may select any one of those cited analytical methods for compliance determination. If no ML value is below the effluent limitation, then the Central Valley Water Board shall select as the RL, the lowest ML value, and its associated analytical method, listed in Appendix 4 for inclusion in the permit. Table I-1 (Attachment I) provides required RLs in accordance with the SIP.

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

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

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

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

   d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the Facility as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.

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

4. **Annual Pretreatment Reporting Requirements.** The Discharger shall submit annually a report to the Central Valley Water Board, with copies to USEPA Region 9 and the State Water Board, describing the Discharger's pretreatment activities over the previous 12 months (1 January through 31 December). An annual pretreatment report prepared by the City of Fresno that includes the information required below satisfies this reporting requirement. In the event that the Discharger is not in compliance with any conditions or requirements of this Order, including noncompliance with pretreatment audit/compliance inspection requirements, then the Discharger shall also include the reasons for noncompliance and state how and when the Discharger shall comply with such conditions and requirements.

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

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

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

b. A discussion of Upset, Interference, or Pass-Through incidents, if any, at the treatment plant, which the Discharger knows or suspects were caused by nondomestic users of the POTW. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of, the nondomestic user(s) responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent Pass-Through, Interference, or noncompliance with sludge disposal requirements.

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

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

i. complied with baseline monitoring report requirements (where applicable);

ii. consistently achieved compliance;

iii. inconsistently achieved compliance;

iv. significantly violated applicable pretreatment requirements as defined by 40 CFR 403.8(f)(2)(vii);

v. complied with schedule to achieve compliance (include the date final compliance is required);

vi. did not achieve compliance and not on a compliance schedule; and

vii. compliance status unknown.

A report describing the compliance status of each SIU characterized by the descriptions in items iii through vii above shall be submitted for each calendar quarter by the **first day of the second month following the end of the quarter**. The report shall identify the specific compliance status of each such SIU and shall also identify the compliance status of the POTW with regards to audit/pretreatment compliance inspection requirements. If none of the aforementioned conditions exist, at a minimum, a letter indicating that all industries are in compliance and no violations or changes to the pretreatment program have occurred during the quarter must be submitted. The information required in the fourth quarter report shall be included as part of the annual report due every **28 February**. This quarterly reporting requirement shall commence upon issuance of this Order.

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

i. The names and addresses of the SIUs subjected to surveillance and an explanation of whether they were inspected, sampled, or both and the frequency of these activities at each user; and

ii. The conclusions or results from the inspection or sampling of each industrial user.

f. The Discharger shall characterize the compliance status each SIUs by providing a list or table which includes the following information:

i. Name of SIU;

ii. Category, if subject to federal categorical standards;

iii. The type of wastewater treatment control processes in place;

iv. The number of samples taken by the POTW during the year;

v. The number of samples taken by the SIU during the year;

vi. For an SIU subject to discharge requirements for total toxic organic, whether all required certifications were provided.

vii. A list of the standards violated during the year. Identify whether the violations were for categorical standards or local limits.

viii. Whether the facility is in significant noncompliance (SNC) as defined at 40 CFR 403.8(f)(2)(viii) at any time during the year; and

ix. A summary of enforcement or other actions taken during the year to return the SIU to compliance. Describe the type of action (e.g., warning letters or notices of violation, administrative orders, civil actions, and criminal actions), final compliance date, and the amount of fines and penalties collected, if any. Describe any proposed actions for bringing the SIU into compliance;

x. Restriction of flow to the POTW.

xi. Disconnection from discharge to the POTW.

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

h. A brief description of any significant changes in operating the pretreatment program which differ from the previous year including, but not limited to, changes concerning the program's administrative structure, local limits, monitoring program or monitoring frequencies, legal authority, enforcement policy, funding levels, or staffing levels;

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

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

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

State Water Resources Control Board
Division of Water Quality
1001 I Street or P.O. Box 100
Sacramento, CA 95812

and the

Regional Pretreatment Coordinator
CWA Compliance Office (WTR-7)
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

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

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

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

Table F-1. Facility Information

WDID	5C10NP00012
Discharger	City of Clovis
Name of Facility	Clovis Sewage Treatment and Water Reuse Facility
Facility Address	9700 East Ashlan Avenue Clovis, CA 93619 Fresno County
Facility Contact, Title and Phone	Lisa Koehn, Assistant Public Utilities Director, 559-324-2607
Authorized Person to Sign and Submit Reports	Lisa Koehn, Assistant Public Utilities Director
Mailing Address	City of Clovis 155 N. Sunnyside Avenue Clovis, CA 93611
Billing Address	Same as Mailing Address
Type of Facility	POTW
Major or Minor Facility	Major
Threat to Water Quality	2
Complexity	B
Pretreatment Program	Yes
Recycling Requirements	Producer and User
Facility Permitted Flow	**Phase I** 2.8 million gallons per day (MGD) (Average Annual) 3.1 MGD (Average Monthly) **Phase II** 5.6 MGD (Average Annual) 6.2 MGD (Average Monthly)
Facility Design Flow	Same as Facility Permitted Flow
Watershed	Fresno Hydrologic Area (551.30) and Berenda Creek Hydrologic Area (545.30)
Receiving Water	1) Fancher Creek, 2) Diversion Channel from Big Dry Creek Reservoir to Little Dry Creek, and 3) Groundwater in Detailed Analysis Unit #233 and #234 of the Kings Basin
Receiving Water Type	Inland surface waters/groundwater

A. City of Clovis (hereinafter Discharger or City) is the owner of the Clovis Sewage Treatment and Water Reuse Facility (hereinafter Facility), a domestic wastewater tertiary treatment facility and a publically owned treatment works (POTW). The Discharger continues to contract CH2M Hill to operate the Facility.

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 disinfected tertiary-treated effluent to (1) Fancher Creek at Discharge Point 001; (2) to the Discharge Channel from Big Dry Creek Reservoir to Little Dry Creek (hereinafter Diversion Channel) at Discharge Point 002; and/or (3) to reuse sites at Discharge Point REC-001 and was regulated by Order R5-2008-0036. The Diversion Channel, Little Dry Creek, and Fancher Creek are waters of the United States. Order R5-2008-0036 was adopted on 14 March 2008 and expired on 1 May 2013. The terms and conditions of Order R5-2008-0036 were administratively continued on 30 April 2013 and remained in effect until new Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit were adopted pursuant to this Order

C. The Discharger filed a report of waste discharge (ROWD) and submitted an application for renewal of its WDRs and NPDES permit on 2 November 2012.

II. FACILITY DESCRIPTION

The Discharger provides sewerage service for the community of City of Clovis, which serves a population of approximately 30,000 people currently and approximately 73,700 people in the future. The design annual average flow capacity of the Facility is 2.8 million gallons per day (mgd) for Phase I and 5.6 mgd for Phase II.

A. Description of Wastewater and Biosolids Treatment or Controls

Operations at the Facility commenced in July 2009. The Facility treats domestic wastewater generated by three main service areas within the City of Clovis – the Northwest, Northeast, and Southwest service areas. Raw wastewater from the Fowler wastewater trunk line is diverted at Pump Station B and pumped to Pump Station E. Additional wastewater is gravity fed to Pump Station E which pumps the combined flow to the Facility.

The treatment system at the Facility consists of primary, secondary, and tertiary units. Primary treatment consists of 2mm drum screens with a bypass channel/bar with screens and a vortex grit removal mechanism. Wastewater then flows into two main bioreactor trains used for secondary treatment. Each bioreactor trains consist of two anoxic zones followed by one aerobic zone with two aeration grids. Flow from the aerobic zone is pumped to the membrane filtration units which provide tertiary treatment. The tertiary-treated effluent is then disinfected by ultraviolet light. Currently, disinfected tertiary-treated recycled water is stored in one 3.08 million gallon bolted-steel tank. A second 3.08 million gallon bolted-steel tank will be added with the completion of Phase II. The tertiary-treated effluent is either used as recycled water for

landscape irrigation or discharged to one of two surface water locations (Fancher Creek or the Diversion Channel).

Solids pass through the patented Cannibal™ Solids Reduction Process. The patented Cannibal™ Solids Reduction Process reduces the solids in the secondary activated sludge treatment by holding return activated sludge (RAS) in the interchange tanks for approximately 10 days under specific environmental conditions that work to break down the solids. After the interchange tanks, the reduced solids are purged into the digester which holds the solids for 10 to 15 days. After detainment in the digester the solids are sent to dewatering equipment. During the previous permit term a centrifuge was installed to provide additional biosolids dewatering. The dewatered biosolids are hauled offsite to a Class B Solids Disposal Facility, composting facility, or the Clovis Municipal Solid Waste Landfill.

B. Discharge Points and Receiving Waters

1. The Facility is located in Section 18, T13S, R22E, MDB&M, as shown in Attachment B, a part of this Order.

2. Treated municipal wastewater is discharged at Discharge Point 001 to Fancher Creek, a water of the United States at a point latitude 36° 45' 39" N and longitude 119° 37' 40.4" W. Treated municipal wastewater is also discharged at Discharge Point 002 to the Diversion Channel at a point latitude 36° 53' 24" N and longitude 119° 39' 56.3" W. The Diversion Channel flows to Little Dry Creek, which is a tributary of the San Joaquin River, a water of the United States.

3. Fancher Creek, at Discharge Point 001, is a modified natural creek (i.e., canal) used and managed by Fresno Irrigation District (FID) to deliver irrigation water to approximately 32,600 acres of irrigated agriculture. Water is diverted from the Kings River to Fancher Creek via the Fresno No. 3 Canal. The Fresno No. 3 Canal splits into Mill Ditch and Fancher Creek immediately upstream of Discharge Point 001. Discharge Point 001 is located southwest of McKinley and Highland Avenues. The irrigation season typically starts in March and ends in September/October. From 1996 to 2012, FID delivered an average of 123,943 acre-feet per year (AF/year) (range: 85,431 - 232,201 AF/year) from the Fresno No. 3 Canal into Fancher Creek. During the non-irrigation season, flow in Fancher Creek is limited to storm water and excess Kings River water that is routed through the Fancher Creek system for groundwater recharge. At times, flow in Fancher Creek is immeasurably small or nonexistent. Therefore, discharges from the Facility to Discharge Point 001 are, at times, expected to provide the majority of the flow in Fancher Creek during the winter months.

4. The Diversion Channel is a man-made unlined channel constructed to convey flow from Big Dry Creek Reservoir to Little Dry Creek and is operated and maintained by the Fresno Metropolitan Flood Control District. The approximately 4.5 mile Diversion Channel predominantly traverses rural residential areas and areas of non-irrigated native vegetation. Discharge Point 002 is immediately below the Big Dry Creek Reservoir outlet structure. Records show that flows are not necessarily diverted through the Diversion Channel every year, and when they do occur, they are during

the winter and spring months. Discharges to Discharge Point 002 will often provide the majority of the flow in the Diversion Channel, with little or no dilution from natural flow. The Diversion Channel remains dry the majority of the time. The Discharger proposes to discharge to the Diversion Channel only when it is unable to discharge to Fancher Creek (e.g., when Fancher Creek is closed for maintenance).

5. The Diversion Channel flows into Little Dry Creek, which is an ephemeral watercourse that eventually flows into the San Joaquin River. The 2 – 2.5 mile stretch of Little Dry Creek between its confluence with the Diversion Channel and its confluence with the San Joaquin River lies within a rural, undeveloped area that is surrounded by native vegetation. Little Dry Creek is not managed to provide irrigation supply, as the flow duration and magnitude are not predictable. Much of the land surrounding Little Dry Creek is used for cattle grazing with cattle having access to the riparian areas.

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

Effluent limitations contained in Order R5-2008-0036 for discharges from Discharge Points 001 and 002 and monitoring data from the term of Order R5-2008-0036 are summarized in the following table. No discharges occurred at Discharge Point 002 from July 2009 to May 2013.

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Monitoring Data (From July 2009 To May 2013)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Flow (Phase I) [1]	mgd	2.8 [3]/3.1 [4]	--	--	2.3 [3]/2.6 [4]	--	--
Flow (Phase II) [2]	mgd	5.6 [3]/6.2 [4]	--	--	NA	--	--
Biochemical Oxygen Demand (BOD) (5-Day @ 20°C)	mg/L	10	15	20	2.0	5.37	20
	lbs/day	234 [6]	350 [6]	467 [6]	36	84	378
	lbs/day	450 [7]	675 [7]	900 [7]	NA	NA	NA
	% removal	90	--	--	98.5 [5]	--	--
Total Suspended Solids	mg/L	10	15	20	4	4.5	16
	lbs/day	234 [6]	350 [6]	467 [6]	83	85	212
	lbs/day	450 [7]	675 [7]	900 [7]	NA	NA	NA
	% removal	90	--	--	97.9 [5]	--	--
Settleable Solids	mL/L	0.1	--	0.2	0.07	--	0.3
Ammonia, Total (as N)	mg/L	1.0	--	--	0.79	--	--
Nitrogen, Total (as N)	mg/L	10	--	--	9	--	--
pH	standard units	--	--	6.5 – 8.3 (range)	--	--	6.4 - 8.1 (range)
Chlorine, Total Residual	mg/L	--	0.01 [8]	0.02 [9]	--	ND	ND
Turbidity	NTU	--	--	0.2 [10]/0.5 [11]	--	--	0.46

Parameter	Units	Effluent Limitation			Monitoring Data (From July 2009 To May 2013)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Total Coliform	MPN/100 mL	23 [12]	2.2 [13]	240 [11]	--	--	14
Electrical Conductivity @ 25°C	µmhos/cm	1,000 [14]	--	--	596 [3]	--	--

NA = Not Available
ND = Not Detect
1 Phase I effluent flow limitation.
2 Phase II effluent flow limitation.
3 Annual Average
4 Monthly Average
5 Lowest monthly average.
6 Effluent limitation based on a design flow of 2.8 mgd for Phase I.
7 Effluent limitation based on a design flow of 5.6 mgd for Phase II.
8 Applied as a 4-day average effluent limitation.
9 Applied as a 1-hour average effluent limitation.
10 Not to be exceeded more than 5 percent of the time within a 24-hour period.
11 Not to be exceeded at any time.
12 Not to be exceeded more than once in any 30-day period.
13 Applied as a 7 day median effluent limitation.
14 Not to exceed the flow-weighted average annual electrical conductivity of the source water plus 500 µmhos/cm, or a maximum of 1,000 µmhos/cm, whichever is more stringent.

D. Compliance Summary

Based on the data contained in self-monitoring reports from July 2009 to May 2013, the Facility exceeded effluent limitations for pH and settleable solids each one time.

E. Planned Changes

The Discharger intends to build the Facility in three phases. The Facility is currently in Phase I. This permit addresses discharge limitations associated with Phases I and II, at the Discharger's request. Effluent limitations for Phase II of the Facility are only applicable after requirements specified in Special Provisions VI.C.6.a. are met.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

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

B. California Environmental Quality Act (CEQA)

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

C. State and Federal Regulations, Policies, and Plans

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

   a. *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition (Revised October 2011)* (hereinafter San Joaquin Basin Plan) and *Water Quality Control Plan for the Tulare Lake Basin, Second Edition (Revised January 2004)* (hereinafter Tulare Lake Basin Plan) (collectively hereinafter Basin Plans)

2. **Water Reuse Policy and Master Recycling permits.** The Tulare Lake Basin Plan states that "*Discharger will be required to reclaim and reuse wastewater whenever reclamation is feasible."* (Tulare Lake Basin Plan at IV-8) It also states "*Discharges to surface water and evaporation of reclaimable wastewater will not be acceptable permanent disposal methods where opportunity exists to replace an existing use or proposed use of freshwater with reclaimed water; a timetable for reclamation or reuse may be set by the Regional Water Board."* (Tulare Lake Basin Plan at IV-12)

   On February 2009, The State Water Resources Control Board adopted Resolution 2009-0011, "*Policy for Water Quality Control for Recycled Water*" (Recycled Water Policy). Section 4 of the Recycled Water Policy, *Mandate for the Use of Recycled Wate*r, paragraph a(2) states, "*Agencies producing recycled water that is available for reuse and not being put to beneficial use shall make that recycled water available to water purveyors for reuse on reasonable terms and conditions. Such terms and conditions may include payment by the water purveyor of a fair and reasonable share of the cost of the recycled water supply and facilities.*" On 23 April 2009, the Central Valley Water Board adopted a similar resolution, Resolution No. R5-200-0028, "*Resolution in Support of Regionalization, Reclamation, Recycling and Conservation for Wastewater Treatment Plants*" (Regionalization Resolution).

   Recycling of effluent by the discharger is consistent with the intent of State Water Board's Recycled Water Policy and the Central Valley Water Board's Regionalization Resolution.

   The Discharger shall treat wastewater to disinfected tertiary treatment standards and will reclaim and reuse wastewater to the maximum extent feasible as opportunities for use of recycled water become available. With this Order, the Central Valley Water Board is adopting a Master Recycling Permit that will allow the Discharger to produce, distribute, and use recycled water through the City as recycled water opportunities become available.

   Pursuant to Water Code section 13523.1, the Central Valley Water Board, after consulting with, and receiving the recommendations of, DPH and any party who has

requested in writing to be consulted, and with the consent of the Discharger, may issue a master recycling permit to the Discharger as the recycled water supplier in lieu of issuing individual waste discharge requirements or water recycling requirements to every recycled water user. As required by Water Code section 13523.1, a master recycling permit must include, and this Order does include, the following:

- Waste Discharge requirements adopted pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260);
- Requirements that the Discharger comply with the uniform statewide criteria established by DPH pursuant to section 13521 and other applicable permit conditions for the use of recycled water;
- Requirements for the Discharger to establish and enforce rules and regulations for recycled water users in accordance with statewide recycling criteria;
- Requirements for the submittal of quarterly recycled water use summary reports;
- Requirements for the recycled water agency to conduct periodic inspections of the recycled water use sites; and
- Other requirements determined to be appropriate by the Central Valley Water Board.

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

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

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

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

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

8. Emergency Planning and Community Right to Know Act

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

The most recent toxic chemical data report does not indicate any reportable off-site releases or discharges to the collection system for this Facility. Therefore, a reasonable potential analysis based on information from EPCRA cannot be conducted. Based on information from EPCRA, there is no reasonable potential to cause or contribute to an excursion above any numeric water quality objectives included within the Basin Plans or in any State Water Board plan, so no effluent limitations are included in this permit pursuant to Water Code section 13263.6(a).

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

9. Storm Water Requirements

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

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

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

1. Under section 303(d) of the 1972 CWA, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 11 October 2012, USEPA gave final approval to California's 2008-2010 section 303(d) List of Water Quality Limited Segments. The San Joaquin Basin Plan references this list of Water Quality Limited Segments (WQLSs), which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources*

(40 CFR Part 130, et seq.)." The San Joaquin Basin Plan also states, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment*." The Diversion Channel, Little Dry Creek, and Fancher Creek are not listed as WQLs in the 303(d) list of impaired water bodies. However, the listing for the San Joaquin River (from Friant Dam to Mendota Pool), to which Bullard Canal is hydraulically connected, includes invasive species.

2. **Total Maximum Daily Loads (TMDLs).** USEPA requires the Central Valley Water Board to develop TMDLs for each 303(d) listed pollutant and water body combination. A TMDL that will address invasive species is scheduled to be completed in 2019.

3. The 303(d) listings and TMDLs have been considered in the development of the Order. A pollutant-by-pollutant evaluation of each pollutant of concern is described in section IV.C.3. of this Fact Sheet.

E. Other Plans, Policies and Regulations

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

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

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

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

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

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

The CWA mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law [33 U.S.C., §1311(b)(1)(C); 40 CFR 122.44(d)(1)]. NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to federal regulations, 40 CFR 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that "*are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion*

above any State water quality standard, including State narrative criteria for water quality." Federal regulations, 40 CFR 122.44(d)(1)(vi), further provide that "[w]*here a State has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits*."

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 CFR 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 CFR 122.44(d) requires that permits include WQBELs to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established. The San Joaquin Basin Plan at page IV-16.00 and the Tulare Lake Basin Plan at page IV-21, contains an implementation policy, "*Policy for Application of Water Quality Objectives*" and "*Application of Water Quality Objectives*", respectively, that specifies that the Central Valley Water Board "*will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives*." This Policy complies with 40 CFR 122.44(d)(1). With respect to narrative objectives, the Central Valley Water Board must establish effluent limitations using one or more of three specified sources, including: (1) USEPA's published water quality criteria, (2) a proposed state criterion (i.e., water quality objective) or an explicit state policy interpreting its narrative water quality criteria (i.e., the Central Valley Water Board's "*Policy for Application of Water Quality Objectives*")(40 CFR 122.44(d)(1)(vi)(A), (B) or (C)), or (3) an indicator parameter.

The Basin Plans include numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, discoloration, radionuclides, and tastes and odors. The narrative toxicity objective states: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*." (San Joaquin Basin Plan at page III-8.01 and Tulare Lake Basin Plan at page III-6) The Basin Plans state that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The narrative chemical constituents objective states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At minimum, "…*water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs)"* in Title 22 of CCR. The Basin Plans further state that, to protect all beneficial uses, the Central Valley Water Board may apply limits more stringent than MCLs. The narrative tastes and odors objective requires that water not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.

A. Discharge Prohibitions

1. **Prohibition III.A (No discharge or application of waste other than that described in this Order**). This prohibition is based on Water Code section 13260 that requires filing of a ROWD before discharges can occur. The Discharger submitted a ROWD for the discharges described in this Order; therefore, discharges not described in this Order are prohibited.

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

3. **Prohibition III.C (No controllable condition shall create a nuisance).** This prohibition is based on Water Code section 13050 that requires water quality objectives established for the prevention of nuisance within a specific area. The Basin Plans prohibit conditions that create a nuisance. Prohibition III.C also reflects general situations that, if created, justify cleanup or abatement enforcement activities and assessment of administrative civil liabilities.

4. **Prohibition III.D (No inclusion of pollutant free wastewater shall cause improper operation of the Facility's systems).** This prohibition is based on CFR Part 122.41 et seq. that requires the proper design and operation of treatment facilities.

5. **Prohibition III.E (No discharge of "hazardous wastes").** This prohibition concerns two categories of waste that are subject to full containment as prescribed by Title 23 and Title 27 of the CCR and, if discharged, have high potential for creating a condition that would violate Prohibition III.C as well.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at 40 CFR 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 CFR Part 133 and Best Professional Judgment (BPJ) in accordance with 40 CFR 125.3

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

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

Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in 40 CFR Part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of 5-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), and pH.

2. Applicable Technology-Based Effluent Limitations

a. BOD_5 and TSS. Federal regulations, 40 CFR Part 133, establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD_5 and TSS. Tertiary treatment is necessary to protect the beneficial uses of the receiving stream and the final effluent limitations for BOD_5 and TSS are based on the technical capability of the tertiary process. BOD_5 is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The secondary and tertiary treatment standards for BOD_5 and TSS are indicators of the effectiveness of the treatment processes. The principal design parameter for wastewater treatment plants is the daily BOD_5 and TSS loading rates and the corresponding removal rate of the system. In applying 40 CFR Part 133 for weekly and monthly average BOD_5 and TSS limitations, the application of tertiary treatment processes results in the ability to achieve lower levels for BOD_5 and TSS than the secondary standards currently prescribed; the 30-day average BOD_5 and TSS limitations have been maintained at 10 mg/L, which is technically based on the capability of a tertiary system. In addition to the average weekly and average monthly effluent limitations, a daily maximum effluent limitation for BOD_5 and TSS is included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities. In addition, 40 CFR 133.102, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal shall not be less than 85 percent. This Order requires water quality-based effluent limitations (WQBELs) that are more stringent than the secondary technology-based treatment described in 40 CFR Part 133.

b. Flow. The Facility was designed to provide a tertiary level of treatment for up to a design flow of 2.8 mgd as an annual average and 3.1 mgd as a maximum monthly average for Phase I. For Phase II, the Facility design flow will be 5.6 mgd as an annual average and 6.2 mgd as a maximum monthly average. . Therefore, this Order contains a maximum monthly and annual average discharge flow limit of 3.1 mgd and 2.8 mgd, respectively, for Phase I and a

maximum monthly and annual average discharge flow limit of 6.2 mgd and 5.6 mgd, respectively, for Phase II.

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

d. Ammonia and Total Nitrogen. Previous Order R5-2008-0036 established an average monthly ammonia and total nitrogen technology-based effluent limits of 1.0 mg/L and 10 mg/L, respectively, based on the consult's performance criteria in the *City of Clovis ST/WRF Engineering Report for the Production, Distribution, and Use of Recycled Water* (27 July 2007). Untreated domestic wastewater contains nitrogenous compounds, typically in the form of organic nitrogen and ammonia. The Discharger utilizes nitrification and partial denitrification, which when operated properly should adequately remove ammonia and total nitrogen below the ammonia and total nitrogen TBELs established in previous Order R5-2008-0036. Ammonia and total nitrogen effluent monitoring data from July 2009 to October 2012 show that the Facility can readily and feasibly meet the ammonia and total nitrogen TBELs. Therefore, the average monthly total ammonia and total nitrogen TBELs of 1.0 mg/L and 10 mg/L, respectively, are retained in this Order.

Summary of Technology-based Effluent Limitations
Discharge Point 001 and 002

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

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Annual Average	Instantaneous Minimum	Instantaneous Maximum
Flow	mgd	3.1 [1]	--	2.8 [1]	--	--
	mgd	6.2 [2]	--	5.6 [2]	--	--
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C) [5]	mg/L	30	45	--	--	--
	lbs/day[3]	700	1,051	--	--	--
	lbs/day[4]	1,402	2,102	--	--	--
	% removal	85	--	--	--	--
Total Suspended Solids [5]	mg/L	30	45	--	--	--
	lbs/day[3]	700	1,051	--	--	--
	lbs/day[4]	1,402	2,102	--	--	--
	% removal	85	--	--	--	--
pH [5]	standard units	--	--	--	6.0	9.0
Non-Conventional Pollutants						
Ammonia Nitrogen, Total (as N)	mg/L	1.0	--	--	--	--
	lbs/day[3]	23	--	--	--	--
	lbs/day[4]	47	--	--	--	--
Nitrogen, Total (as N)	mg/L	10	--	--	--	--

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Annual Average	Instantaneous Minimum	Instantaneous Maximum

[1] Phase I effluent flow limitation
[2] Phase II effluent flow limitation
[3] Based on a design flow of 2.8 mgd for Phase I
[4] Based on a design flow of 5.6 mgd for Phase II
[5] Note that more stringent WQBELs for BOD_5, pH, and TSS are applicable and are established as final effluent limitations in this Order (see section IV.C.3.d. of this Fact Sheet).

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

Section 301(b) of the CWA and 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements, expressed as a technology equivalence requirement, more stringent than secondary treatment requirements that are necessary to meet applicable water quality standards. The rationale for these requirements, which consist of tertiary treatment, is discussed in section IV.C.2.d. of this Fact Sheet.

40 CFR 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).

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

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The Basin Plans designate beneficial uses, establish water quality objectives, and contain implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plans implement State Water Board Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply.

The Tulare Lake Basin Plan on page II-1 states: *"Protection and enhancement of beneficial uses of water against quality degradation is a basic requirement of water quality planning under the Porter-Cologne Water Quality Control Act. In setting water quality objectives, the Regional Water Board must consider past, present, and probable future beneficial uses of water."* With respect to disposal of wastewaters, the Tulare Lake Basin Plan also states "...*use of waters for disposal of wastewaters is not included as a beneficial use…and are subject to regulation as activities that may harm protected uses."* The San Joaquin Basin Plan includes the same requirement.

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

a. Receiving Water and Beneficial Uses. The Facility discharges tertiary-treated wastewater into Fancher Creek at Discharge Point 001. The Tulare Lake Basin Plan designates beneficial uses for a certain group of waterways classified as Valley Floor Waters. Fancher Creek is a Valley Floor Water and thus has designated beneficial uses as summarized in Table F-4 of this Order.

The Facility also discharges tertiary-treated wastewater into the Diversion Channel at Discharge Point 002. Neither Basin Plan specifically lists beneficial uses for the Diversion Channel. However, the Tulare Lake Basin Plan lists beneficial uses for Big Dry Creek, as a Valley Floor Water. As the source of the water being diverted, it is reasonable to apply beneficial uses for the Diversion Channel consistent with the waters of Big Dry Creek. The beneficial uses listed in the Tulare Lake Basin Plan for Big Dry Creek (a Valley Floor Water) are summarized in Table F-4 of this Order.

The Diversion Channel feeds into Little Dry Creek. The San Joaquin Basin Plan at II-2.00 states that the "…*beneficial uses of any specifically identified water body generally apply to its tributary streams*." The San Joaquin Basin Plan does not specifically identify beneficial uses for Little Dry Creek in Table II-1, but does identify present and potential uses for the San Joaquin River, to which Little Dry

Creek is tributary. Thus, beneficial uses applicable to Little Cry Creek are summarized in Table F-4 of this Order.

The Tulare Lake Basin Plan designates beneficial uses for groundwater underlying Discharges Points 001, 002, and REC-001. Groundwater underlying these points is in Detailed Analysis Unit (DAU) #233 and/or #234 of the Kings Basin. The beneficial uses of groundwater for these DAUs are summarized in Table F-4 of this Order.

Table F-4. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Fancher Creek (Valley Floor Water)	Existing uses from Table II-1 of the Tulare Lake Basin Plan: Agricultural supply, including irrigation and stock watering (AGR); Industrial service supply (IND); Industrial process supply (PRO); Water contact recreation, including canoeing and rafting (REC-1); Non-contact water recreation (REC-2); Warm freshwater habitat (WARM); Wildlife habitat (WILD); Rare, Threatened, or Endangered Species (RARE); and Groundwater recharge (GWR)
002	Diversion Channel from Big Dry Creek Reservoir to Little Dry Creek (Valley Floor Water)	Existing uses from Table II-1 of the Tulare Lake Basin Plan: Agricultural supply, including irrigation and stock watering (AGR); Industrial service supply (IND); Industrial process supply (PRO); Water contact recreation, including canoeing and rafting (REC-1); Non-contact water recreation (REC-2); Warm freshwater habitat (WARM); Wildlife habitat (WILD); Rare, Threatened, or Endangered Species (RARE); and Groundwater recharge (GWR)
	Little Dry Creek	Existing uses from Table II-1 of the San Joaquin Basin Plan: Municipal and domestic supply (MUN); Agricultural supply, including irrigation and stock watering (AGR); Industrial process supply (PRO); Water contact recreation, including canoeing and rafting (REC-1); Non-contact water recreation (REC-2); Warm freshwater habitat (WARM); Cold freshwater habitat (COLD); Migration of aquatic organisms, warm and cold (MIGR); Spawning, reproduction, and/or early development, warm (SPWN); and Wildlife habitat (WILD) Potential uses from Table II-1 of the San Joaquin Basin Plan: Spawning, reproduction, and/or early development, cold (SPWN)
001 REC-001	Groundwater	Existing Uses from Table II-2 of the Tulare Lake Basin Plan for DAU #233: Municipal and domestic supply (MUN); Agricultural supply (AGR); Industrial service supply (IND); Industrial process supply (PRO); Water contact recreation (REC-1); and Non-contact water recreation (REC-2)
002 REC-001	Groundwater	Existing Uses from Table II-2 of the Tulare Lake Basin Plan for DAU #234: Municipal and domestic supply (MUN); Agricultural supply (AGR); and Industrial service supply (IND)

b. Effluent and Ambient Background Data. The reasonable potential analysis (RPA), as described in section IV.C.3 of this Fact Sheet, was based on data from July 2009 through May 2013 which includes effluent and ambient background

data, the ROWD, and priority pollutant monitoring required in Order R5-2008-0036.

c. Assimilative Capacity/Mixing Zone. As described in section II.B. of this Fact Sheet, Fancher Creek conveys approximately 123,943 acre-feet of water per year. Although dilution may exist at times, the Discharger has not provided the information necessary for the Central Valley Water Board to make a determination on allowing a mixing zone pursuant to section 1.4.2.2. of the SIP.

Due to the lack of dilution at times and lack of adequate information regarding available assimilative capacity and mixing conditions for Fancher Creek, the Diversion Channel, and Little Dry Creek, the Central Valley Water Board has evaluated the discharge without the benefit of dilution in this Order. The impact of assuming zero dilution within the receiving waters is that discharge limitations must be end-of-pipe limits, rather than allowing for dilution provided by the receiving waters. Therefore, this Order contains end-of-pipe effluent limitations. The Discharger may elect, as an alternative means of compliance with any water quality criteria or objective that proves difficult to meet, to conduct a mixing zone study to evaluate available assimilative capacity. If requested, the Regional Water Board will review such studies and, if warranted, may reopen this Order to make appropriate changes to the effluent limitations.

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

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

This Order has established the criteria for hardness-dependent metals based on the reasonable worst-case ambient hardness as required by the SIP[1], the CTR[2] and State Water Board Order WQ 2008-0008 (City of Davis). The SIP and the CTR require the use of "receiving water" or "actual ambient" hardness,

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

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

respectively, to determine effluent limitations for these metals. (SIP, § 1.2; 40 CFR 131.38(c)(4)) The CTR does not define whether the term "ambient," as applied in the regulations, necessarily requires the consideration of upstream as opposed to downstream hardness conditions. Therefore, where reliable, representative data are available, the hardness value for calculating criteria can be the downstream receiving water hardness, after mixing with the effluent (Order WQ 2008-0008, p. 11). The Central Valley Water Board thus has considerable discretion in determining ambient hardness (*Id.*, p.10).

As discussed below, scientific literature provides a reliable method for calculating protective hardness-dependent CTR criteria, considering all discharge conditions. This methodology produces hardness-dependent CTR criteria based on the reasonable worst-case downstream ambient hardness that ensure these metals do not cause receiving water toxicity under any downstream receiving water condition. Under this methodology, the Central Valley Water Board considers all hardness conditions that could occur in the ambient downstream receiving water after the effluent has mixed with the water body[1]. This ensures that effluent limitations are fully protective of aquatic life in all areas of the receiving water affected by the discharge under all flow conditions, at the fully mixed location, and throughout the water body including at the point of discharge into the water body.

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

(a) The SIP requires WQBELs if the MEC is equal to or exceeds the applicable criterion, adjusted for hardness. For comparing the MEC to the applicable criterion, the "fully mixed" reasonable worst-case downstream ambient hardness was used to adjust the criterion. In this evaluation the portion of the receiving water affected by the discharge is analyzed. For hardness-dependent criteria, the hardness of the effluent has an impact on the determination of the applicable criterion in areas of the receiving water affected by the discharge. Therefore, for comparing the MEC to the applicable criterion, the reasonable worst-case downstream ambient

[1] All effluent discharges will change the ambient downstream metals concentration and hardness. It is not possible to change the metals concentration without also changing the hardness.

hardness was used to adjust the criterion. For this situation it is necessary to consider the hardness of the effluent in determining the applicable hardness to adjust the criterion. The procedures for determining the applicable criterion after proper adjustment using the reasonable worst-case downstream ambient hardness are outlined in subsection ii, below.

(b) The SIP requires WQBELs if the receiving water is impaired upstream (outside the influence) of the discharge, i.e., if the Maximum Ambient Background Concentration of a pollutant exceeds the applicable criterion, adjusted for hardness[1]. For comparing the Maximum Ambient Background Concentration to the applicable criterion, the reasonable worst-case upstream ambient hardness was used to adjust the criteria. This is appropriate, because this area is outside the influence of the discharge. Since the discharge does not impact the upstream hardness, the effect of the effluent hardness was not included in this evaluation.

ii. Calculating Water Quality-Based Effluent Limitations. The remaining discussion in this section relates to the development of WQBELs when it has been determined that the discharge has reasonable potential to cause or contribute to an exceedance of the CTR hardness-dependent metals criteria in the receiving water.

A 2006 Study[2] developed procedures for calculating the effluent concentration allowance (ECA)[3] for CTR hardness-dependent metals. The 2006 Study demonstrated that it is necessary to evaluate all discharge conditions (e.g. high and low flow conditions) and the hardness and metals concentrations of the effluent and receiving water when determining the appropriate ECA for these hardness-dependent metals. This method is superior to relying on downstream receiving water samples alone because it captures all possible mixed conditions in the receiving water. Both receiving water and effluent hardness vary based on flow and other factors, but the variability of receiving water and effluent hardness is sometimes independent. Using a calculated hardness value ensures that the Central Valley Water Board considers all possible mixed downstream values that may result from these two independent variables. Relying on receiving water sampling alone is less likely to capture all possible mixed downstream conditions.

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[1] The pollutant must also be detected in the effluent.

[2] Emerick, R.W.; Borroum, Y.; & Pedri, J.E., 2006. California and National Toxics Rule Implementation and Development of Protective Hardness Based Metal Effluent Limitations. WEFTEC, Chicago, Ill.

[3] The ECA is defined in Appendix 1 of the SIP (page Appendix 1-2). The ECA is used to calculate WQBELs in accordance with Section 1.4 of the SIP.

The equation describing the total recoverable regulatory criterion, as established in the CTR[1], is as follows:

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

Where:

H = hardness (as $CaCO_3$)[2]
WER = water-effect ratio
m, b = metal- and criterion-specific constants

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

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

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

Where:

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

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

ECA for Chronic Cadmium, Chromium (III), Copper, Nickel, and Zinc – For Concave Down Metals (i.e., chronic cadmium, chromium III, copper, nickel, and zinc) the 2006 Study demonstrates that when the effluent is in compliance with the CTR criteria and the upstream receiving water is in compliance with the CTR criteria, any mixture of the effluent and receiving

[1] 40 CFR 131.38(b)(2).
[2] For this discussion, all hardness values are in mg/L as $CaCO_3$.
[3] The 2006 Study assumes the ambient background metals concentration is equal to the CTR criterion (i.e. C ≤ B)

water will always be in compliance with the CTR criteria[1]. The 2006 Study proves that regardless of whether the effluent hardness is lower or greater than the upstream hardness, the reasonable worst-case flow condition is the effluent dominated condition (i.e., no receiving water flow)[2]. Consequently, for Concave Down Metals, the CTR criteria have been calculated using the downstream ambient hardness under this condition.

The effluent hardness ranged from 65 mg/L to 190 mg/L, based on 46 samples from July 2009 to May 2013. The receiving water hardness upstream of Discharge Point 001 (Fresno Canal) varied from 6.9 mg/L to 100 mg/L, based on 35 samples from May 2005 to May 2013, and the downstream receiving water (Fancher Creek) hardness varied from 7.6 mg/L to 93 mg/L, based on 26 samples from July 2009 to April 2013. The receiving water hardness upstream of Discharge Point 002 (Diversion Channel) ranged from 137.4 mg/L to 150 mg/L, based on two samples. The receiving water hardness upstream of the confluence of the Diversion Channel and Little Dry Creek varied from 95.6 mg/L to 190 mg/L based on seven samples taken between May 2005 to April 2013.

Under the effluent dominated condition, the reasonable worst-case downstream ambient hardness is 65 mg/L in all three receiving waters (Fancher Creek, the Diversion Channel, and Little Dry Creek). As demonstrated in the examples shown in Tables F-5, F-6, and F-7 below, using this hardness to calculate the ECA for all Concave Down Metals will result in WQBELs that are protective under all flow conditions, from the effluent dominated condition to high flow condition. These examples for copper assume the following conservative conditions for the upstream receiving waters:

- Upstream receiving water always at the lowest observed upstream receiving water hardness (i.e., 6.9 mg/L in Fancher Creek, 137.4 mg/L in the Diversion Channel, and 95.6 in Little Dry Creek)

- Upstream receiving water copper concentration always at the CTR criteria (i.e., no assimilative capacity).

Using these reasonable worst-case receiving water conditions, a simple mass balance (as shown in Equation 3, below) accounts for all possible mixtures of effluent and receiving water under all flow conditions.

[1] 2006 Study, p. 5700

[2] There are two typographical errors in the 2006 Study in the discussion of Concave Down Metals when the effluent hardness is less than the receiving water hardness. The effluent and receiving water hardness were transposed in the discussion, but the correct hardness values were used in the calculations. The typographical errors were confirmed by the author of the 2006 Study, by email dated 1 April 2011, from Dr. Robert Emerick to Mr. James Marshall, Central Valley Water Board.

$$C_{MIX} = C_{RW} \times (1\text{-}EF) + C_{Eff} \times (EF) \qquad \text{(Equation 3)}$$

Where:

C_{MIX} = Mixed concentration (e.g. metals or hardness)
C_{RW} = Upstream receiving water concentration
C_{Eff} = Effluent concentration
EF = Effluent fraction

In each example, for copper, for any receiving water flow condition (high flow to low flow) in Fancher Creek, the Diversion Channel, or Little Dry Creek, the fully-mixed downstream ambient copper concentration is in compliance with the CTR criteria.[1].

Table F-5: Copper ECA Evaluation in Fancher Creek

Lowest Observed Effluent Hardness					**65 mg/L (as $CaCO_3$)**
Lowest Observed Upstream Receiving Water Hardness					**6.9 mg/L (as $CaCO_3$)**
Highest Assumed Upstream Receiving Water Copper Concentration					**0.95 µg/L[1]**
Copper $ECA_{chronic}$[2]					**6.5 µg/L**
Effluent Fraction[6]		**Fully Mixed Downstream Ambient Concentration**			
		Hardness[3] (mg/L)	**CTR Criteria[4] (µg/L)**	**Copper[5] (µg/L)**	**Complies with CTR Criteria?**
High Flow	1%	7.5	1.0	1.0	**Yes**
	5%	9.8	1.3	1.2	**Yes**
	15%	16	1.9	1.8	**Yes**
	25%	21	2.5	2.3	**Yes**
	50%	36	3.9	3.7	**Yes**
	75%	50	5.2	5.1	**Yes**
Low Flow	100%	65	6.5	6.5	**Yes**

1 Highest assumed upstream receiving water copper concentration calculated using Equation 1 for chronic criterion at a hardness of 6.9 mg/L.

2 ECA calculated using Equation 1 for chronic criterion at a hardness of 65 mg/L.

3 Fully mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction using Equation 3.

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

5 Fully mixed downstream ambient copper concentration is the mixture of the receiving water and effluent copper concentrations at the applicable effluent fraction using Equation 3.

6 The effluent fraction ranges from 1% at the high receiving water flow condition, to 100% at the

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1 This method considers the actual lowest observed upstream hardness and actual lowest observed effluent hardness to determine the reasonable worst-case ambient downstream hardness under all possible receiving water flow conditions. Tables F-5, F-6, and F-7 demonstrate that the receiving waters are always in compliance with the CTR criteria at the fully-mixed location in the receiving waters. They also demonstrate that the receiving waters are in compliance with the CTR criteria for all mixtures from the point of discharge to the fully-mixed location. Therefore, a mixing zone is not used for compliance.

lowest receiving water flow condition (i.e., effluent dominated).

Table F-6: Copper ECA Evaluation in the Diversion Channel

Lowest Observed Effluent Hardness	**65 mg/L (as $CaCO_3$)**
Lowest Observed Upstream Receiving Water Hardness	**137.4 mg/L (as $CaCO_3$)**
Highest Assumed Upstream Receiving Water Copper Concentration	**12 µg/L[1]**
Copper $ECA_{chronic}$[2]	**6.5 µg/L**

Effluent Fraction[6]		Fully Mixed Downstream Ambient Concentration			
		Hardness[3] (mg/L)	CTR Criteria[4] (µg/L)	Copper[5] (µg/L)	Complies with CTR Criteria?
High Flow	1%	137	12	12	**Yes**
	5%	134	12	12	**Yes**
	15%	126	11	11	**Yes**
	25%	119	10	10	**Yes**
	50%	101	9.4	9.3	**Yes**
Low Flow	75%	83	8.0	7.9	**Yes**
	100%	65	6.5	6.5	**Yes**

1 Highest assumed upstream receiving water copper concentration calculated using Equation 1 for chronic criterion at a hardness of 137.4 mg/L.

2 ECA calculated using Equation 1 for chronic criterion at a hardness of 65 mg/L.

3 Fully mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction using Equation 3.

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

5 Fully mixed downstream ambient copper concentration is the mixture of the receiving water and effluent copper concentrations at the applicable effluent fraction using Equation 3.

6 The effluent fraction ranges from 1% at the high receiving water flow condition, to 100% at the lowest receiving water flow condition (i.e., effluent dominated).

Table F-7: Copper ECA Evaluation in Little Dry Creek

Lowest Observed Effluent Hardness	**65 mg/L (as $CaCO_3$)**
Lowest Observed Upstream Receiving Water Hardness	**95.6 mg/L (as $CaCO_3$)**
Highest Assumed Upstream Receiving Water Copper Concentration	**9.0 µg/L[1]**
Copper $ECA_{chronic}$[2]	**6.5 µg/L**

Effluent Fraction[6]		Fully Mixed Downstream Ambient Concentration			
		Hardness[3] (mg/L)	CTR Criteria[4] (µg/L)	Copper[5] (µg/L)	Complies with CTR Criteria?
High Flow	1%	95	9.0	9.0	**Yes**
	5%	94	8.9	8.9	**Yes**
	15%	91	8.6	8.6	**Yes**
	25%	88	8.4	8.3	**Yes**
	50%	80	7.7	7.7	**Yes**
Low Flow	75%	73	7.1	7.1	**Yes**
	100%	65	6.5	6.5	**Yes**

1 Highest assumed upstream receiving water copper concentration calculated using Equation 1 for chronic criterion at a hardness of 95.6 mg/L.

2 ECA calculated using Equation 1 for chronic criterion at a hardness of 65 mg/L.

[3] Fully mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction using Equation 3.

[4] Fully mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.

[5] Fully mixed downstream ambient copper concentration is the mixture of the receiving water and effluent copper concentrations at the applicable effluent fraction using Equation 3.

[6] The effluent fraction ranges from 1% at the high receiving water flow condition, to 100% at the lowest receiving water flow condition (i.e., effluent dominated).

ECA for Acute Cadmium, Lead, and Acute Silver – For Concave Up Metals (i.e., acute cadmium, lead, and acute silver), the relationship between hardness and the metals criteria is different than for Concave Down Metals. The 2006 Study demonstrates that for Concave Up Metals, the effluent and upstream receiving water can be in compliance with the CTR criteria, but the resulting mixture may contain metals concentrations that exceed the CTR criteria and could cause toxicity. For these metals, the 2006 Study provides a mathematical approach to calculate the ECA that is protective of aquatic life, in all areas of the receiving water affected by the discharge, under all discharge and receiving water flow conditions (see Equation 4, below).

The ECA, as calculated using Equation 4, is based on the reasonable worst-case upstream receiving water hardness, the lowest observed effluent hardness, and assuming no receiving water assimilative capacity for metals (i.e., ambient background metals concentrations are at their respective CTR criterion). Equation 4 is not used in place of the CTR equation (Equation 1). Rather, Equation 4, which is derived using the CTR equation, is used as a direct approach for calculating the ECA. This replaces an iterative approach for calculating the ECA. The CTR equation has been used to evaluate the receiving water downstream of the discharge at all discharge and flow conditions to ensure the ECA is protective (e.g., see Tables F-8, F-9, and F-10).

$$ECA = \left(\frac{m(H_e - H_{rw})\left(e^{m\{\ln(H_{rw})\}+b}\right)}{H_{rw}} \right) + e^{m\{\ln(H_{rw})\}+b} \qquad \text{(Equation 4)}$$

Where:

m, b = criterion specific constants (from CTR)
H_e = lowest observed effluent hardness
H_{rw} = reasonable worst-case upstream receiving water hardness

Examples similar to the Concave Down Metals are shown for lead, a Concave Up Metal, in Table F-8 for Fancher Creek, in Table F-9 for the Diversion Channel, and Table F-10 for Little Dry Creek, below. As previously mentioned, the lowest effluent hardness is 65 mg/L. The upstream receiving water hardness of (1) Discharge Point 001 (Fresno Canal) ranged from 6.9 mg/L to 100 mg/L, (2) Discharge Point 002 (Diversion Channel) ranged from 137.4 mg/L to 150 mg/L, and (3) the confluence of Little Dry Creek and the Diversion Channel (Little Dry Creek) ranged from 95.6 mg/L to 190 mg/L. In

this case, the reasonable worst-case upstream receiving water hardness to use in Equation 4 to calculate the ECA is 6.9 mg/L, 150 mg/L, and 190 mg/L for the Fresno Canal, Diversion Channel, and Little Dry Creek, respectively.

Using the procedures discussed above to calculate the ECA for all Concave Up Metals will result in WQBELs that are protective under all potential effluent/receiving water flow conditions (high flow to low flow) and under all known hardness conditions, as demonstrated in Table F-8, F-9 and F-10, for lead.

Table F-8: Lead ECA Evaluation in Fancher Creek

Lowest Observed Effluent Hardness					**65 mg/L**
Reasonable Worst-case Upstream Receiving Water Hardness					**6.9 mg/L**
Reasonable Worst-case Upstream Receiving Water Lead Concentration					**0.11 µg/L[1]**
Lead $ECA_{chronic}$ [2]					**1.2 µg/L**
Effluent Fraction[6]		**Fully Mixed Downstream Ambient Concentration**			
		Hardness [3] (mg/L) (as $CaCO_3$)	**CTR Criteria [4] (µg/L)**	**Lead [5] (µg/L)**	**Complies with CTR Criteria**
High Flow	1%	7.5	0.12	0.12	**Yes**
	5%	9.8	0.17	0.16	**Yes**
	15%	16	0.3	0.28	**Yes**
	25%	21	0.45	0.39	**Yes**
	50%	36	0.87	0.67	**Yes**
	75%	50	1.3	0.96	**Yes**
Low Flow	100%	65	1.8	1.2	**Yes**

1 Reasonable worst-case upstream receiving water lead concentration calculated using Equation 1 for chronic criterion at a hardness of 6.9 mg/L.

2 ECA calculated using Equation 4 for chronic criteria.

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

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

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

6 The effluent fraction ranges from 1% at the high receiving water flow condition, to 100% at the lowest receiving water flow condition (i.e., effluent dominated).

Table F-9: Lead ECA Evaluation in the Diversion Channel

Lowest Observed Effluent Hardness	**65 mg/L**
Reasonable Worst-case Upstream Receiving Water Hardness	**150 mg/L**
Reasonable Worst-case Upstream Receiving Water Lead Concentration	**5.3 µg/L [1]**
Lead $ECA_{chronic}$ [2]	**1.5 µg/L**

Effluent Fraction [6]		**Fully Mixed Downstream Ambient Concentration**			
		Hardness [3] (mg/L) (as $CaCO_3$)	**CTR Criteria [4] (µg/L)**	**Lead [5] (µg/L)**	**Complies with CTR Criteria**
High Flow	1%	149	5.3	5.3	**Yes**
	5%	146	5.1	5.1	**Yes**
	15%	137	4.8	4.8	**Yes**
	25%	129	4.4	4.4	**Yes**
	50%	108	3.5	3.4	**Yes**
	75%	86	2.6	2.4	**Yes**
Low Flow	100%	65	1.8	1.5	**Yes**

[1] Reasonable worst-case upstream receiving water lead concentration calculated using Equation 1 for chronic criterion at a hardness of 150 mg/L.

[2] ECA calculated using Equation 4 for chronic criteria.

[3] Fully mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction.

[4] Fully mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.

[5] Fully mixed downstream ambient lead concentration is the mixture of the receiving water and effluent lead concentrations at the applicable effluent fraction.

[6] The effluent fraction ranges from 1% at the high receiving water flow condition, to 100% at the lowest receiving water flow condition (i.e., effluent dominated).

Table F-10: Lead ECA Evaluation in the Little Dry Creek

Lowest Observed Effluent Hardness	**65 mg/L**
Reasonable Worst-case Upstream Receiving Water Hardness	**190 mg/L**
Reasonable Worst-case Upstream Receiving Water Lead Concentration	**7.2 µg/L[1]**
Lead $ECA_{chronic}$[2]	**1.2 µg/L**

Effluent Fraction[6]		**Fully Mixed Downstream Ambient Concentration**			
		Hardness[3] (mg/L) (as $CaCO_3$)	**CTR Criteria[4] (µg/L)**	**Lead[5] (µg/L)**	**Complies with CTR Criteria**
High Flow	1%	189	7.1	7.1	**Yes**
	5%	184	6.9	6.9	**Yes**
	15%	171	6.6	6.3	**Yes**
	25%	159	5.7	5.7	**Yes**
	50%	128	4.3	4.2	**Yes**
	75%	96	3.0	2.7	**Yes**
Low Flow	100%	65	1.8	1.2	**Yes**

1 Reasonable worst-case upstream receiving water lead concentration calculated using Equation 1 for chronic criterion at a hardness of 190 mg/L.

2 ECA calculated using Equation 4 for chronic criteria.

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

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

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

6 The effluent fraction ranges from 1% at the high receiving water flow condition, to 100% at the lowest receiving water flow condition (i.e., effluent dominated).

Based on the procedures discussed above, Table F-11 lists all the CTR hardness-dependent metals and the associated ECA used in this Order for the Facility's discharge to Fancher Creek (Discharge Point 001) and the Diversion Channel (Discharge Point 002).

Table F-11. ECA Evaluations for CTR Hardness-dependent Metals

CTR Metals	ECA (µg/L, total recoverable) *Fancher Creek*		ECA (µg/L, total recoverable) *Diversion Channel*		ECA (µg/L, total recoverable) *Little Dry Creek*	
	acute	chronic	acute	chronic	acute	chronic
Copper	9.3	6.5	9.3	6.5	9.3	6.5
Chromium (III)	1200	150	1200	150	1200	150
Cadmium	2.3	1.8	2.6	1.8	2.4	1.8
Lead	32	1.2	38	1.5	30	1.2
Nickel	330	36	330	36	330	36
Silver	0.63	--	0.21	--	-1.6	--
Zinc	83	83	83	83	83	83

3. Determining the Need for WQBELs

a. The RPA procedures from section 1.3 of the SIP were used in this Order to evaluate reasonable potential for CTR/NTR constituents based on information submitted as part of the Report of Waste Discharge, in studies, and as directed by monitoring and reporting programs. Non-CTR constituents were evaluated on an individual basis. Estimated concentrations (J-flags) are not quantifiable but do confirm the presence of a substance below the analytical method's minimum level. Section 1.3, Step 8 of the SIP allows the Central Valley Water Board to require additional monitoring for a pollutant in place of an effluent limitation if data are unavailable or insufficient. Additionally, section 2.4 of the SIP allows the Central Valley Water Board to require in the permit that the Discharger shall report the Reporting Level (RL) selected from the Minimum Levels (MLs) listed in Appendix 4 of the SIP.

b. Constituents with No Reasonable Potential. WQBELs are not included in this Order for constituents that do not demonstrate reasonable potential (i.e. constituents were not detected in the effluent or receiving water); however, monitoring for those pollutants is established in this Order as required by the SIP. If the results of effluent monitoring demonstrate reasonable potential, this Order may be reopened and modified by adding an appropriate effluent limitation.

Most constituents with no reasonable potential are not discussed in this Order. However, the following constituents were found to have no reasonable potential after assessment of the data:

i. Aluminum

(a) WQO. The Code of Federal Regulations promulgated criteria for priority toxic pollutants for California's surface waters as part of section 131.38 *Establishment of Numeric Criteria for Priority Pollutants for the State of California* (California Toxics Rule or CTR), including metals criteria. However, aluminum criteria were not promulgated as part of the CTR. Absent numeric aquatic life criteria for aluminum, WQBELs in the Central Valley Region's NPDES permits are based on the Basin Plans' narrative

toxicity objectives. The Basin Plans' *Application of Water Quality Objectives* requires the Central Valley Water Board to consider, "*on a case-by-case basis, direct evidence of beneficial use impacts, all material and relevant information submitted by the discharger and other interested parties, and relevant numerical criteria and guidelines developed and/or published by other agencies and organizations… In considering such criteria, the Board evaluates whether the specific numerical criteria, which are available through these sources and through other information supplied to the Regional Water Board, are relevant and appropriate to the situation at hand and, therefore, should be used in determining compliance with the narrative objective.*" (Tulare Lake Basin Plan, IV-22; San Joaquin Basin Plan, IV-17). Relevant information includes, but is not limited to the following: (1) USEPA Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses, (2) National USEPA Ambient Water Quality Criteria (NAWQC), (3) NAWQC-Correction, (4) site-specific aluminum studies conducted by dischargers within the Central Valley Region, and (5) site specific conditions at the Facility. (Tulare Lake Basin Plan, IV-22; San Joaquin Basin Plan, IV-17.00; see also, 40 CFR 122.44(d)(vi).)

USEPA's NAWQC. USEPA recommended the NAWQC aluminum acute criterion of 750 µg/L based on test waters with a pH of 6.5 to 9.0. USEPA also recommended in the NAWQC an aluminum chronic criterion at 87 µg/L based upon the following two toxicity tests. All test waters contained hardness at 12 mg/L as $CaCO_3$.

(1) Acute toxicity tests at various aluminum doses were conducted in various acidic waters (pH 6.0 – 6.5) on 159- and 160-day old striped bass. The 159-day old striped bass showed no mortality in waters with pH at 6.5 and aluminum doses at 390 µg/L, and the 160-day old striped bass showed 58% mortality at a dose of 174.4 µg/L in same pH waters. However, the 160-day old striped bass showed 98% mortality at aluminum dose of 87.2 µg/L in waters with pH at 6.0, which is USEPA's basis for the 87 µg/L chronic criterion. The varied results draw into question this study and the applicability of the chronic criterion of 87 µg/L recommended in the NAWQC.

(2) Chronic toxicity effects on 60-day old brook trout were evaluated in circumneutral pH waters (6.5-6.9 pH) in five cells at various aluminum doses (4, 57, 88, 169, and 350 µg/L). Chronic evaluation started upon hatching of eyed eggs of brook trout, and their weight and length were measured after 45 days and 60 days. The 60-day old brook trout showed 24% weight loss at 169 µg/L of aluminum and 4% weight loss at 88 µg/L of aluminum, which is the basis for USEPA's chronic criterion. Though this test study shows chronic toxic effects of 4% reduction in weight after exposure for 60-days, the chronic criterion is based on 4-day exposure; so again, the applicability of the NAWQC chronic criterion of 87 µg/L is questionable.

Site-specific Conditions. As described above, USEPA developed the chronic criterion of 87 µg/L under low pH and hardness conditions. The table below compares the test conditions for the applicability of the chronic criterion to site-specific water quality conditions.

Monitoring data for the Facility's effluent, the Diversion Channel, and Little Dry Creek indicate that the pH and hardness values within the effluent, the Diversion Channel, and Little Dry Creek are not similar to the low pH and hardness conditions under which the chronic criterion for aluminum was developed, as shown in the table F-12 below, and therefore, the Central Valley Water Board does not expect aluminum to be as reactive in the Diversion Channel or Little Dry Creek as in the previously described toxicity tests.

For the reasons listed below, the Central Valley Water Board believes the USEPA chronic criterion of 87 µg/L is overly stringent for the Facility's discharge to Fancher Creek:

1) The Central Valley Water Board does not expect aluminum to be as reactive in Fancher Creek as in the previously described toxicity tests since the pH and hardness values generally are not similar to the low pH and hardness conditions under which the chronic criterion for aluminum was developed. The pH in Fancher Creek ranged from 5.9 to 8.5 with an average of 7.4 based on 134 monitoring results obtained between July 2009 and May 2013. The hardness in Fancher Creek ranged from 6.9 mg/L to 100 mg/L with an average of 23 mg/L based on 35 monitoring results obtained between May 2005 to April 2013.

2) The Central Valley Water Board does not generally expect striped bass or brook trout to be located in Fancher Creek. As described above, the USEPA's aluminum chronic criterion was lowered to 87 µg/L in the NAWQC for Aluminum due to the results of two independent aluminum toxicity tests for striped bass and brook trout. Water upstream of Discharge Point 001 in Fancher Creek is either storm water or water diverted from the Kings River. According to recent Kings River fish population studies, neither striped bass nor brook trout are found within the Kings River at the diversion point. Recent Kings River fish population studies have reported rainbow trout in the Kings River further upstream from the diversion point; however, any rainbow trout diverted into the Fresno Irrigation District canal system would be incidental. In addition, the Tulare Lake Basin Plan does not designate cold freshwater habitat (COLD) for Fancher Creek. Therefore, staff does not expect either striped bass or trout within Fancher Creek.

Table F-12. Site Specific pH and Hardness Characteristics

Parameter	Units	Test Conditions for Applicability of Chronic Criterion	Effluent	Fancher Creek	Diversion Channel	Little Dry Creek
pH	standard units	6.0 – 6.5	6.4 - 8.1	5.9 – 8.5	7.2 - 7.3 [1]	N/A[2]
Hardness, Total (as $CaCO_3$)	mg/L	12	65 – 190	6.9 -100	137 – 150 [1]	95.6 - 190

[1] Based on two sample results.
[2] N/A – No monitoring results available

Local Environmental Conditions. Twenty-one site-specific aluminum toxicity tests have been conducted within the Central Valley Region. As shown in the following table, all EC_{50} toxicity study result values are at concentrations of aluminum above 5,000 µg/L. Thus, the toxic effects of aluminum in surface waters within the Central Valley Region, including Fancher Creek, the Diversion Channel, and Little Dry Creek, are less toxic (or less reactive) to aquatic species than demonstrated in the toxicity tests that USEPA used for the basis of establishing the chronic criterion of 87 µg/L.

Table F-13. Central Valley Region Site Specific Toxicity Data

Discharger (City)	Species	Test Waters	Hardness Value	pH	Total Aluminum EC_{50} Value	WER
Auburn	*Ceriodaphnia dubia*	Effluent	99	7.44	>5270	>19.3
	" "	Surface Water	16	7.44	>5160	>12.4
Manteca	" "	Surface Water/Effluent	124	9.14	>8000	N/C
	" "	Effluent	117	7.21	>8700	>27.8
	" "	Surface Water	57	7.58	7823	25.0
	" "	Effluent	139	7.97	>9500	>21.2
	" "	Surface Water	104	8.28	>11000	>24.5
	" "	Effluent	128	7.78	>9450	>25.0
	" "	Surface Water	85	7.85	>9700	>25.7
	" "	Effluent	106	7.66	>11900	>15.3
	" "	Surface Water	146	7.81	>10650	>13.7
Modesto	" "	Surface Water/Effluent	120/156	8.96	31604	211
Yuba City	" "	Surface Water/Effluent	114/164[2]	7.60/7.46	>8000	>53.5
Placer County	" "	Effluent	150	7.4 – 8.7	>5000	>13.7
Manteca	*Daphnia magna*	Surface Water/Effluent	124	9.14	>8350	N/C
Modesto	" "	Surface Water/Effluent	120/156	8.96	>11900	>79.6
Yuba City	" "	Surface Water/Effluent	114/164[2]	7.60/7.46	>8000	>53.5
Manteca	*Oncorhynchus mykiss* (rainbow trout)	Surface Water/Effluent	124	9.14	>8600	N/C
Auburn	" "	Surface Water	16	7.44	>16500	N/C

Discharger (City)	Species	Test Waters	Hardness Value	pH	Total Aluminum EC_{50} Value	WER
Modesto	" "	Surface Water/Effluent	120/156	8.96	>34250	>229
Yuba City	" "	Surface Water/Effluent	114/164[2]	7.60/7.46	>8000	>53.5

[1] N/C = Not calculated

[2] Hardness values may be biased high because the EDTA titrimetic method is subject to interferences that measure as hardness (barium, cadmium, lead, manganese, strontium, and zinc will be measured as hardness) producing hardness numbers that are likely to be greater than the calculation of hardness based upon the ICP analysis of calcium and magnesium. Upstream receiving water hardness ranged from 30 to 50.9 mg/L as $CaCO_3$ between January 2008 and August 2011. Furthermore, the upstream receiving water hardness was 37 mg/L as $CaCO_3$ on 4 October 2005, seven days prior to the Feasibility Assessment (first phase of a Water Effects Ratio study) sample collection date of 11 October 2005. It is likely that matrix interferences from other metals were responsible for the unexpected hardness values reported by Pacific EcoRisk.

The Discharger has not conducted a toxicity test for aluminum; however, the City of Auburn conducted two toxicity tests in Auburn Ravine, shown highlighted in the previous table. As shown, the test water quality characteristics of Auburn Ravine are somewhat similar to Fancher Creek, the Diversion Channel, and Little Dry Creek with the pH at 7.4 and hardness at 16 mg/L as CaCO3. Thus, based on these two similar primary water quality characteristics (pH and hardness) that drive aluminum speciation, the aluminum toxicity within Auburn Ravine is expected to be similar in Fancher Creek, the Diversion Channel, and Little Dry Creek. Therefore, the Auburn Ravine aluminum toxicity test study is relevant and appropriate in this case for use in determining the specific numerical criteria to be used in determining compliance with the Basin Plans' narrative toxicity objective. The Auburn Ravine aluminum toxicity study resulted in a site-specific aluminum objective at 1,080 µg/L. This new information, and review of the toxicity tests USEPA used to establish the chronic criterion, indicates that 87 µg/L is overly stringent and not applicable to Fancher Creek, the Diversion Channel, and Little Dry Creek. State of California Department of Public Health (DPH) has established Secondary MCLs to assist public drinking water systems in managing their drinking water for aesthetic conditions such as taste, color, and odor. The Secondary MCL for aluminum is 200 µg/L.

(b) RPA Results. For priority pollutants, the SIP dictates the procedures for conducting the RPA. Aluminum is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions in the discharge, the Central Valley Water Board has used best professional judgment in determining the appropriate method for this non-priority pollutant constituent.

The Discharger reported 47 effluent monitoring results for total recoverable aluminum. The maximum effluent concentration (MEC) for aluminum was 89 µg/L, as total recoverable. The Discharger did not report any receiving water (Fancher Creek, the Diversion Channel, or Little Dry Creek) monitoring results for aluminum. Only three of the other 46

effluent samples had detected and quantifiable detections for aluminum, the highest of which being 36 µg/L.

Staff conducted a statistical test of the aluminum data to evaluate the 89 µg/L aluminum detection. Using the Shapiro-Wilk W test, staff found the aluminum effluent data to be normally distributed at a 95% confidence level. The Rosner's test for outliers was then used to determine if the 89 µg/L aluminum detection was an outlier. When a 99% confidence level is used, the test value (4.56) is greater than the crucial value (3.46), indicating the 89 µg/L detection is a potential outlier. Furthermore, the aluminum MEC of 89 µg/L was sampled on 20 July 2009, and the Facility began operations and discharging on 17 July 2009. The high aluminum concentration is likely the result of the initial start-up of the Facility and not representative of the actual current discharge from the Facility. Therefore, the Central Valley Water Board considers the July 2009 89 µg/L aluminum detection unrepresentative of the Facility's discharge and inappropriate for use in the RPA.

The most stringent objective, as described above, is the acute aquatic life criterion of 750 µg/L and the Secondary Drinking Water MCL of 200 µg/L, which is derived from human welfare considerations (e.g., taste, odor, laundry, staining), not for toxicity to humans or aquatic life. The aluminum MEC (36 µg/L) does not exceed the criterion or the objective. Therefore, the Central Valley Water Board finds the Facility's discharge does not demonstrate reasonable potential to cause or contribute to an instream excursion for aluminum. Additional effluent and receiving waters monitoring for aluminum is established. Should monitoring results indicate that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified by adding an appropriate effluent limitation.

ii. Bis (2-ethylhexyl) Phthalate

(a) WQO. The CTR includes a criterion of 1.8 µg/L for bis (2-ethylhexyl) phthalate for the protection of human health for waters from which both water and organisms are consumed, applicable to discharges to Little Dry Creek (Discharge Point 002), and 5.9 µg/L for which organisms only are consumed, applicable to discharges to Fancher Creek (Discharge Point 001).

(b) RPA Results. The Discharger reported six effluent monitoring results for bis (2-ethylhexyl) phthalate between July 2009 to October 2012. All six effluent results for bis (2-ethylhexyl) phthalate were reported as below analytical method detection levels (lowest MDL = 0.43 µg/L). The maximum observed upstream receiving water concentration in Fresno Canal (Fancher Creek), Little Dry Creek, and the Diversion Channel is 0.66 µg/L (estimated value, MDL = 0.43 µg/L, RL = 5 µg/L), 6.2 µg/L, and below analytical method detection levels (lowest MDL = 0.43 µg/L).

Therefore, bis (2-ethylhexyl) phthalate in the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above applicable water quality criteria or objectives. However, this Order requires additional bis (2-ethylhexyl) phthalate monitoring. Should monitoring results indicate that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened or modified by adding an appropriate effluent limitation.

iii. Chlorine Residual

(a) WQO. USEPA developed NAWQC for protection of freshwater aquatic life for chlorine residual. The recommended 4-day average (chronic) and 1-hour average (acute) criteria for chlorine residual are 0.011 µg/L and 0.019 µg/L, respectively. Order R5-2008-0036 included effluent limitations for chlorine residual based on the NAWQC criteria.

(b) RPA Results. Ultraviolet light, not chlorine, is used for disinfection of the tertiary-treated wastewater. However, the Discharger periodically uses sodium hypochlorite and citric acid to disinfect the membranes. The chlorine-bearing cleaning solution is cycled back to the headworks of the Facility. Chlorine is not expected to survive the high organic-rich primary and secondary treatment process. The Facility had not commenced operations when Order R5-2008-0036 was issued. Therefore, due to the lack of effluent monitoring data to adequately characterize the discharge, the previous Order included total chlorine residual effluent limitations. To adequately characterize the discharge, the previous Permit required the Discharger to continuously monitoring the effluent for total chlorine. Monitoring results from July 2009 to May 2013 did not report any total residual chlorine detection in the effluent (MDL = 0.01 mg/L). Since chlorine is only used in small amounts during periodic cleaning of the membranes and the effluent did not have a reported detection for total residual chlorine, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the NAWQC for chlorine and the effluent limitations for chlorine have not been retained in this Order. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet). This Order retains the continuous effluent monitoring requirement for total chlorine. Should monitoring results indicate that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality standard for total chlorine, this Order may be reopened or modified by adding an appropriate effluent limitation.

iv. Silver

(a) WQO. The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for silver. Using the default conversion factors and reasonable worst-case measured hardness as described in section

IV.C.2.d. of this Fact Sheet, the applicable acute (1-hour average) and criteria for the effluent are 0.63 µg/L (Fancher Creek), -1.6 µg/L (Little Dry Creek), and 0.21 µg/L (the Diversion Channel), as total recoverable. Using the default conversion factors and reasonable worst-case measured hardness as described in section IV.C.2.d. of this Fact Sheet, the applicable acute (1-hour average) criteria for Fancher Creek, Little Dry Creek, and the Diversion Channel are 0.0 µg/L, 3.8 µg/L, and 7.0 µg/L, respectively, as total recoverable.

(b) RPA Results. The Discharger reported six effluent monitoring results for silver between July 2009 to May 2013. All six effluent results for silver were reported as not detected (lowest MDL = 1.1 µg/L). The maximum observed upstream receiving water concentration in Fresno Canal (Fancher Creek), Little Dry Creek, and the Diversion Channel was 1.3 µg/L (estimated value, MDL = 1.1 µg/L, RL = 5.0 µg/L), 0.09 µg/L (estimated value, MDL = 0.05 µg/L, RL = 10 µg/L), and 1.3 µg/L (estimated value, MDL = 1.1, RL = 5.0 µg/L), respectively, as total recoverable. Since silver was not detected in the effluent, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above applicable water quality criteria or objectives for silver. However, this Order requires additional silver monitoring. Should monitoring results indicate that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality standard for silver, this Order may be reopened or modified by adding an appropriate effluent limitation.

c. Constituents with Insufficient Data. Reasonable potential cannot be determined for the following constituents because effluent data are insufficient or ambient background concentrations are not available. The Discharger is required to continue to monitor for these constituents in the effluent and receiving waters using analytical methods that provide the best feasible detection limits. When additional data become available, further analysis will be conducted to determine whether to add numeric effluent limitations or to continue monitoring.

i. Mercury

(a) WQO. The current NAWQC for protection of freshwater aquatic life, continuous concentration for mercury is 0.77 µg/L (30-day average, chronic criteria). The CTR contains a human health criterion (based on a threshold dose level causing neurological effects in infants) of 0.050 µg/L for waters from which both water and aquatic organisms are consumed and 0.051 µg/L for waters which only aquatic organisms are consumed. These values are controversial and subject to change. In 40 CFR Part 131, USEPA acknowledges that the human health criteria may not be protective of some aquatic or endangered species and that "…*more stringent mercury limits may be determined and implemented through use of the State's narrative criterion.*" In the CTR, USEPA reserved the

mercury criteria for freshwater and aquatic life and may adopt new criteria at a later date.

The San Joaquin Basin Plan designates beneficial uses of water and aquatic organism consumption for the San Joaquin River at the confluence of Little Dry Creek and the San Joaquin River. Therefore, the applicable criterion for the Facility's discharge to Little Dry Creek via the Diversion Channel (Discharge Point 002) is the CTR human health criterion of 0.050 µg/L. Fancher Creek does not have the MUN designated beneficial use. Therefore, the applicable criterion for the Facility's discharge to Fancher Creek (Discharge Point 001) is the CTR human health criterion of 0.051 µg/L.

(b) RPA Results. The MEC for mercury was 0.12 µg/L (estimated value, MDL = 0.062 µg/L, RL = 0.2 µg/L). The maximum reported receiving water concentration in the Fresno Canal (Fancher Creek), Little Dry Creek, and the Diversion Channel was 0.13 µg/L (estimated value, MDL = 0.062 µg/L, RL = 0.2 µg/L), 0.096 µg/L (estimated value, MDL = 0.062 µg/L, RL = 0.2 µg/L), and 0.38 µg/L (estimated value, MDL = 0.19 µg/L, RL = 0.6 µg/L), respectively. The MEC of 0.12 µg/L was the only reported effluent mercury detection out of six reported effluent monitoring results.

Effluent and receiving water mercury data are summarized in Table F-14 below.

Table F-14. Mercury Monitoring Results

Date	Location	Result (µg/L)	MDL (µg/L)	RL (µg/L)	SIP Minimum Level (µg/L)	Criteria (µg/L)
9/23/2009	Effluent	ND [1, 3]	0.062	0.2	0.2	0.05
6/30/2010	Effluent	ND [1, 3]	0.062	0.2	0.2	0.05
11/29/2010	Effluent	ND [1]	0.062	0.2	0.2	0.05
4/5/2011	Effluent	ND [1]	0.062	0.2	0.2	0.05
9/8/2011	Effluent	**DNQ [2] (0.12) [3]**	0.062	0.2	0.2	0.05
5/1/2012	Effluent	ND [1]	0.062	0.2	0.2	0.05
9/23/2009	Fresno Canal (R-001U)	**DNQ [2] (0.071) [3]**	0.062	0.2	0.2	0.051
10/13/2010	Fresno Canal (R-001U)	ND [1]	0.062	0.2	0.2	0.051
6/1/2011	Fresno Canal (R-001U)	**DNQ [2] (0.13) [3]**	0.062	0.2	0.2	0.051
5/1/2012	Fresno Canal (R-001U)	ND [1]	0.062	0.2	0.2	0.051
12/16/2009	Little Dry Creek (R-002U)	**DNQ [2] (0.06) [3]**	0.05	0.4	0.2	0.05
12/1/2010	Little Dry Creek (R-002U)	**DNQ [2] (0.095)**	0.062	0.2	0.2	0.05
4/5/2011	Little Dry Creek (R-002U)	ND [1]	0.062	0.2	0.2	0.05
2/9/2012	Little Dry Creek (R-002U)	ND [1]	0.062	0.2	0.2	0.05
5/1/2012	Little Dry Creek (R-002U)	ND [1]	0.062	0.2	0.2	0.05
4/9/2013	Little Dry Creek (R-002U)	**DNQ [2] (0.096) [3]**	0.062	0.2	0.2	0.05
12/23/2010	Diversion Channel (R-003U)	**DNQ [2] (0.38)**	0.19	0.6	0.2	0.051
4/5/2011	Diversion Channel (R-003U)	ND [1]	0.062	0.2	0.2	0.051
5/1/2012	Diversion Channel (R-003U)	**DNQ [2] (0.068) [3]**	0.062	0.2	0.2	0.051

[1] ND – Reported as Not Detected
[2] DNQ – Reported as Detected, but Not Quantified
[3] Reported detection in the associated laboratory blank

Section 2.4.2 of the SIP states that the Minimum Level (ML) is the lowest quantifiable concentration in a sample based on the proper application of all method-based analytical procedures and the absence of any matrix interferences.

a) Required MLs are listed in Appendix 4 of the SIP. Where more than one ML is listed in Appendix 4, the discharger may select any one of the cited analytical methods for compliance determination. The selected ML used for compliance determination is referred to as the Reported Level (RL).

b) A RL can be lower than the ML in Appendix 4 only when the discharger agrees to use a RL that is lower than the ML listed in Appendix 4. The Central Valley Water Board and the Discharger have no agreement to use a RL lower than the listed MLs.

c) Section 1.2 of the SIP requires that the Regional Board use all available, valid, relevant, representative data and information, as determined by the Central Valley Water Board, to implement the SIP. Section 1.2 further states that the Regional Board has the discretion to consider if any data are inappropriate or insufficient for use in implementing the SIP.

d) Data reported below the ML indicates the data may not be valid due to possible matrix interferences during the analytical procedure.

e) Further, Section 2.4.5 of the SIP (Compliance Determination) supports the insufficiency of data reported below the Minimum Level or Reporting Level. In part it states, "*Dischargers shall be deemed out of compliance with an effluent limitation, for reporting and administrative enforcement purposes, if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the RL.*" Thus, if submitted data are below the Reporting Limit, that data cannot be used to determine compliance with effluent limitations.

f) Data reported below the ML are not considered valid data for use in determining Reasonable Potential. Therefore, in accordance with Section 1.2 of the SIP, the Board has determined that data reported below the ML are inappropriate and insufficient to be used to determine Reasonable Potential.

g) In implementing its discretion, the Board is not finding that Reasonable Potential does not exist; rather the Board cannot make such a determination given the invalid data. Therefore, the Board will require additional monitoring for such constituents until such time a determination can be made in accordance with the SIP.

Appendix 4 of the SIP cites two MLs for mercury. The lowest ML cited for mercury is 0.2 µg/L. All reported effluent and receiving waters detections

were estimated values, which were also reported/estimated at a concentration below the required ML (excluding one mercury detection in the Diversion Channel). Therefore, the submitted effluent and receiving waters data are insufficient to determine reasonable potential under the SIP.

The Central Valley Water Board has evidence that low level mercury results are not consistently accurate and reliable when EPA sampling method 1669 is not used. For example, a groundwater remediation site (Rockwell Automation) had shown similar mercury estimated concentration values when EPA sampling method 1669 was not used. However, after Rockwell Automation started using EPA test method 1630/1631 and EPA sampling method 1669, mercury sampling results were consistently detected below 0.0007 µg/L, which is significantly lower than the mercury water quality criterion of 0.050 µg/L or 0.0051 µg/L. Mercury can easily be introduced into a sample and, consequently, contaminate the sample. EPA sampling method 1669 lists clean hands/dirty hands procedures that help reduce the potential contamination of mercury in the sample.

The only reported detectable concentration in the effluent, 0.12 µg/L, had a reported detection of 0.081 µg/L in the associated laboratory blank. In addition, five of the seven reported detectable concentrations in the receiving waters had a reported detection in each associated laboratory blank. Thus, the effluent and receiving waters detections are suspected to be the result of laboratory contamination or error.

In accordance with Section 1.3, Step 8 of the SIP, the Central Valley Water Board considers the mercury data insufficient to determine whether mercury in the discharge has reasonable potential to cause or contribute to an in-stream excursion above applicable water quality criteria or objectives. This Order requires additional monitoring for mercury using clean hands/dirty hands procedures, as described in EPA Method 1669. Should the monitoring results indicate that that the discharge has the reasonable potential to cause or contribute to an exceedance of applicable criteria, then this Order may be reopened and modified by adding an appropriate effluent limitation.

ii. Copper

(a) WQO. The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for copper. Using the default conversion factors and reasonable worst-case measured hardness as described in section IV.C.2.d. of this Fact Sheet, the applicable acute (1-hour average) and chronic (4-day average) criteria for the effluent are 9.3 µg/L and 6.5 µg/L, respectively, as total recoverable. Using the default conversion factors and reasonable worst-case measured hardness as described in section IV.C.2.d. of this Fact Sheet, the applicable acute (1-hour average) and

chronic (4-day average) criteria for the Fancher Creek are 1.1 µg/L and 0.9 µg/L, respectively, as total recoverable. The applicable acute and chronic copper criteria for Little Dry Creek are 13 µg/L and 9.0 µg/L, respectively. The applicable acute and chronic copper criteria for the Diversion Channel are 19 µg/L and 12 µg/L, respectively.

(b) RPA Results. The MEC for copper was 4.9 µg/L (estimated value, MDL = 0.95 µg/L, RL = 5.0 µg/L). The Discharger reported six total recoverable effluent monitoring results for copper. All six reported effluent copper detects were estimated values. The maximum recorded copper monitoring result in the Fresno Canal (Fancher Creek), Little Dry Creek, and the Diversion Channel was 4.4 µg/L (estimated value, MDL = 0.95 µg/L, RL = 5.0 µg/L), 2.4 µg/L (estimated value, MDL = 0.95 µg/L, RL = 5.0 µg/L), and 9.3 µg/L.

Effluent and receiving water copper data are summarized in Table F-15 below.

Table F-15. Copper Monitoring Results

Date	Location	Result (µg/L)	MDL (µg/L)	RL (µg/L)	SIP Minimum Level (µg/L)	Criteria (µg/L)
09/23/2009	Effluent	DNQ [2] (1.4)	0.95	5	10	6.5
06/30/2010	Effluent	DNQ [2] (4.9)	0.95	5	10	6.5
11/29/2010	Effluent	DNQ [2] (3.7)	0.95	5	10	6.5
04/05/2011	Effluent	DNQ [2] (3.5)	0.95	5	10	6.5
09/08/2011	Effluent	DNQ [2] (2.1)	0.95	5	10	6.5
05/01/2012	Effluent	DNQ [2] (3.7)	0.95	5	10	6.5
09/23/2009	Fresno Canal (R-001U)	ND [1]	0.95	5	10	0.95
10/13/2010	Fresno Canal (R-001U)	ND [1]	0.95	5	10	0.95
06/01/2011	Fresno Canal (R-001U)	**DNQ [2] (4.4) [3]**	0.95	5	10	0.95
05/01/2012	Fresno Canal (R-001U)	**DNQ [2] (1.3)**	0.95	5	10	0.95
12/16/2009	Little Dry Creek (R-002U)	DNQ [2] (0.94)	0.05	5	10	9.0
12/01/2010	Little Dry Creek (R-002U)	ND [1]	0.95	5	10	9.0
04/05/2011	Little Dry Creek (R-002U)	DNQ [2] (1.7)	0.95	5	10	9.0
02/09/2012	Little Dry Creek (R-002U)	ND [1]	0.95	5	10	9.0
05/01/2012	Little Dry Creek (R-002U)	DNQ [2] (2.4)	0.95	5	10	9.0
4/6/2013	Little Dry Creek (R-002U)	8.0	0.95	5	10	9.0
12/23/2010	Diversion Channel (R-003U)	9.3	0.95	5	10	12
04/05/2011	Diversion Channel (R-003U)	5.6	0.95	5	10	12
05/01/2012	Diversion Channel (R-003U)	DNQ [2] (4.7) [3]	0.95	5	10	12

[1] ND – Reported as Not Detected
[2] DNQ – Reported as Detected, but Not Quantified
[3] Reported detection in the associated laboratory blank

Section 2.4.2 of the SIP states that the Minimum Level (ML) is the lowest quantifiable concentration in a sample based on the proper application of all method-based analytical procedures and the absence of any matrix interferences.

a) Required MLs are listed in Appendix 4 of the SIP. Where more than one ML is listed in Appendix 4, the discharger may select any one of the

cited analytical methods for compliance determination. The selected ML used for compliance determination is referred to as the Reported Level (RL).

b) A RL can be lower than the ML in Appendix 4 only when the discharger agrees to use a RL that is lower than the ML listed in Appendix 4. The Central Valley Water Board and the discharger have no agreement to use a RL lower than the listed MLs.

c) Section 1.2 of the SIP requires that the Regional Board use all available, valid, relevant, representative data and information, as determined by the Regional Board, to implement the SIP. Section 1.2 further states that the Regional Board has the discretion to consider if any data are inappropriate or insufficient for use in implementing the SIP.

d) Data reported below the ML indicates the data may not be valid due to possible matrix interferences during the analytical procedure.

e) Further, Section 2.4.5 of the SIP (Compliance Determination) supports the insufficiency of data reported below the ML or RL. In part it states, "*Dischargers shall be deemed out of compliance with an effluent limitation, for reporting and administrative enforcement purposes, if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the RL.*" Thus, if submitted data are below the RL, that data cannot be used to determine compliance with effluent limitations.

f) Data reported below the ML are not considered valid data for use in determining Reasonable Potential. Therefore, in accordance with Section 1.2 of the SIP, the Board has determined that data reported below the ML are inappropriate and insufficient to be used to determine Reasonable Potential.

g) In implementing its discretion, the Central Valley Water Board is not finding that Reasonable Potential does not exist; rather the Board cannot make such a determination given the invalid data. Therefore, the Board will require additional monitoring for such constituents until such time a determination can be made in accordance with the SIP.

Appendix 4 of the SIP cites several MLs for copper. The lowest ML for copper is 0.5 µg/L when using the Inductively Coupled Plasma - Mass Spectrometry (ICPMS) test to test for copper. However, the effluent and receiving water samples were tested for copper using EPA Method 200.7, an Inductively Coupled Plasma (ICP) test. The SIP minimum level for an ICP test for copper is 10 µg/L. The RL for all the effluent and receiving waters copper monitoring results (5.0 µg/L) was below the ML. Furthermore, all the effluent samples and upstream receiving water samples in the Fresno Canal were estimated detections.

The upstream receiving water detections of 4.4 µg/L (estimated) and 1.3 µg/L (estimated) in Fancher Creek exceed the CTR criteria for the protection of freshwater aquatic life for copper. Section 1.3, Step 6 of the SIP states that if the receiving water concentration exceeds the criteria and the pollutant is detected in the effluent, an effluent limitation is required. However, as stated above, all the effluent and Fresno Canal copper monitoring results between July 2009 to May 2013 for the effluent and the Fresno Canal were estimated values and were also below the SIP ML for the ICP test. In addition, the 1 June 2011 estimated copper value of 4.4 µg/L in the Fresno Canal had a reported detection in the applicable method blank (1.17 µg/L). Thus, the 1 June 2011 Fresno Canal copper detection is suspected to be the result of laboratory contamination or error. Therefore, as discussed in detail above, the effluent and Fresno Canal copper data are insufficient to justify establishing an effluent limitation for copper at this time.

Section 1.3, Step 8 of the SIP allows the Central Valley Water Board to require additional monitoring for a pollutant in place of an effluent limitation if data are unavailable or insufficient. Instead of limitations, additional monitoring has been established for copper. This permit also requires the Discharger to monitor for copper using an approved method that meets the lowest ML in the SIP (i.e., ICPMS test). Additionally, this Order requires the Discharger to conduct a Constituent Study for copper. Should the monitoring results and/or Study results indicate that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified by adding an appropriate effluent limitation for copper.

iii. Lead

(a) WQO. The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for lead. Using the default conversion factors and reasonable worst-case measured hardness as described in section IV.C.2.d. of this Fact Sheet, the applicable acute (1-hour average) and chronic (4-day average) criteria for the effluent are 1.2 µg/L and 30 µg/L, respectively, as total recoverable. Using the default conversion factors and reasonable worst-case measured hardness as described in section IV.C.2.d. of this Fact Sheet, the applicable acute (1-hour average) and chronic (4-day average) criteria for Fancher Creek are 2.7 µg/L and 0.11 µg/L, respectively, as total recoverable. The applicable acute and chronic lead criteria for Little Dry Creek are 77 µg/L and 3.0 µg/L, respectively. The applicable acute and chronic lead criteria for the Diversion Channel are 120 µg/L and 4.8 µg/L, respectively.

(b) RPA Results. The MEC for lead is 0.13 µg/L (estimated value, MDL = 0.029 µg/L, RL = 0.5 µg/L). The Discharger reported six total recoverable effluent monitoring results for lead. The maximum recorded lead monitoring result in the Fresno Canal (Fancher Creek), Little Dry Creek,

and the Diversion Channel was 1.4 µg/L (estimated value, MDL = 1.4 µg/L, RL = 5.0 µg/L), 1.4 µg/L, and 1.0 µg/L, respectively.

Effluent and receiving water lead data are summarized in Table F-16 below

Table F-16. Lead Monitoring Results

Date	Location	Result (µg/L)	MDL (µg/L)	RL (µg/L)	SIP Minimum Level (µg/L)	Criteria (µg/L)
09/23/2009	Effluent	DNQ [2] (0.13)	0.029	0.5	0.5	1.2
06/30/2010	Effluent	DNQ [2] (0.041)	0.029	0.5	0.5	1.2
11/29/2010	Effluent	ND	0.029	0.5	0.5	1.2
04/05/2011	Effluent	DNQ [2] (0.086)	0.029	0.5	0.5	1.2
09/08/2011	Effluent	DNQ [2] (0.076)	0.029	0.5	0.5	1.2
05/01/2012	Effluent	DNQ [2] (0.074)	0.029	0.5	0.5	1.2
09/23/2009	Fresno Canal (R-001U)	DNQ [2] (0.086)	0.029	0.5	0.5	0.11
10/13/2010	Fresno Canal (R-001U)	ND [1]	0.029	0.5	0.5	0.11
06/01/2011	Fresno Canal (R-001U)	**DNQ [2] (1.4)**	1.4	5	5.0	0.11
05/01/2012	Fresno Canal (R-001U)	DNQ [2] (0.055)	0.029	0.5	0.5	0.11
12/16/2009	Little Dry Creek (R-002U)	ND [1]	0.08	5	0.5	3.0
12/01/2010	Little Dry Creek (R-002U)	DNQ [2] (0.065)	0.029	0.5	0.5	3.0
04/05/2011	Little Dry Creek (R-002U)	ND [1]	1.4	5	0.5	3.0
02/09/2012	Little Dry Creek (R-002U)	ND [1]	1.4	5	0.5	3.0
05/01/2012	Little Dry Creek (R-002U)	DNQ [2] (0.48)	0.029	0.5	0.5	3.0
04/09/2013	Little Dry Creek (R-002U)	1.4	0.29	1	0.5	3.0
12/23/2010	Diversion Channel (R-003U)	1.0	0.029	0.5	0.5	4.8
04/05/2011	Diversion Channel (R-003U)	DNQ [2] (1.8)	1.4	5	0.5	4.8
05/01/2012	Diversion Channel (R-003U)	DNQ [2] (0.19)	0.029	0.5	0.5	4.8

[1] ND – Reported as Not Detected
[2] DNQ – Reported as Detected, but Not Quantified
[3] Reported detection in the associated laboratory blank

Section 2.4.2 of the SIP states that the Minimum Level (ML) is the lowest quantifiable concentration in a sample based on the proper application of all method-based analytical procedures and the absence of any matrix interferences.

a) Required MLs are listed in Appendix 4 of the SIP. Where more than one ML is listed in Appendix 4, the discharger may select any one of the cited analytical methods for compliance determination. The selected ML used for compliance determination is referred to as the Reported Level (RL).

b) A RL can be lower than the ML in Appendix 4 only when the discharger agrees to use a RL that is lower than the ML listed in Appendix 4. The Regional Board and the discharger have no agreement to use a RL lower than the listed MLs.

c) Section 1.2 of the SIP requires that the Central Valley Water Board to use all available, valid, relevant, representative data and information, as

determined by the Central Valley Water Board, to implement the SIP. Section 1.2 further states that the Central Valley Water Board has the discretion to consider if any data are inappropriate or insufficient for use in implementing the SIP.

d) Data reported below the ML indicates the data may not be valid due to possible matrix interferences during the analytical procedure.

e) Further, Section 2.4.5 of the SIP (Compliance Determination) supports the insufficiency of data reported below the ML or RL. In part it states, "*Dischargers shall be deemed out of compliance with an effluent limitation, for reporting and administrative enforcement purposes, if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the RL.*" Thus, if submitted data are below the RL, that data cannot be used to determine compliance with effluent limitations.

f) Data reported below the ML are not considered valid data for use in determining Reasonable Potential. Therefore, in accordance with Section 1.2 of the SIP, the Board has determined that data reported below the ML are inappropriate and insufficient to be used to determine Reasonable Potential.

g) In implementing its discretion, the Board is not finding that Reasonable Potential does not exist; rather the Board cannot make such a determination given the invalid data. Therefore, the Board will require additional monitoring for such constituents until such time a determination can be made in accordance with the SIP.

Appendix 4 of the SIP cites several MLs for lead. The lowest ML for lead is 0.5 µg/L. As shown in Table F-16, five of the six reported lead effluent monitoring results were estimated values. All five of the reported estimated effluent concentrations were estimated at concentrations below the required ML. Furthermore, all the upstream receiving water sample results in the Fresno Canal were estimated concentrations.

The upstream receiving water estimated concentration of 1.4 µg/L in Fancher Creek exceeds the CTR criteria for the protection of freshwater aquatic life for copper. Section 1.3, Step 6 of the SIP states that if the receiving water concentration exceeds the criteria and the pollutant is detected in the effluent, an effluent limitation is required. However, as stated above, all the effluent and Fresno Canal lead monitoring results were estimated concentrations. Furthermore, all the effluent estimated concentrations were below the SIP ML. Therefore, as discussed in detail above, the effluent and Fresno Canal lead data are insufficient to justify establishing an effluent limitation for lead at this time.

Section 1.3, Step 8 of the SIP allows the Central Valley Water Board to require additional monitoring for a pollutant in place of an effluent limitation

if data are unavailable or insufficient. Instead of limitations, additional monitoring has been established for lead. Additionally, this Order requires the Discharger to conduct a Constituent Study for lead. Should the monitoring results and/or Study results indicate that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified by adding an appropriate effluent limitation for lead.

d. Constituents with Reasonable Potential. The Central Valley Water Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for ammonia, BOD_5, electrical conductivity, pH, total coliform organisms, and TSS. WQBELs for these constituents are included in this Order. A summary of the RPA is provided in Attachment G, and a detailed discussion of the RPA for each constituent is provided below.

i. Ammonia

(a) WQO. The NAWQC for the protection of freshwater aquatic life for total ammonia, recommends acute (1-hour average; criteria maximum concentration or CMC) standards based on pH and chronic (30-day average; criteria continuous concentration or CCC) standards based on pH and temperature. USEPA also recommends that no 4-day average concentration should exceed 2.5 times the 30-day CCC. USEPA found that as pH increased, both the acute and chronic toxicity of ammonia increased. Salmonids were more sensitive to acute toxicity effects than other species. However, while the acute toxicity of ammonia was not influenced by temperature, it was found that invertebrates and young fish experienced increasing chronic toxicity effects with increasing temperature. Because Little Dry Creek is a tributary to the San Joaquin River and therefore has a beneficial use of cold freshwater habitat and potential beneficial use of cold spawning, the recommended criteria for waters where salmonids and early life stages are present were used for Discharge Point 002. Because Fancher Creek does not include the cold freshwater habitat or cold spawning beneficial uses and any fish diverted into the Fresno Irrigation District canal system would be incidental, the recommended criteria for waters where salmonids and early life stages are not present were used for Discharge Point 001.

The maximum permitted effluent pH is 8.2 for Discharge Point 001 and 8.1 for Discharge Point 002. In order to protect against the worst-case short-term exposure of an organism, a pH value of 8.2 for Discharge Point 001 and 8.1 for Discharge Point 002 was used to derive the acute criterion. The resulting acute criterion for Discharge Points 001 and 002 are 5.73 mg/L (as N) and 4.64 mg/L (as N), respectively.

Between July 2009 and May 2013, weekly temperature and pH data were collected at the downstream monitoring point in Fancher Creek

(RSW-001D). The 30-day CCC (early life stages absent) for Discharge Point 001 was calculated for each pair of data. From the five years of data, the rolling 30-day average was calculated and the 99.9th percentile was selected as the 30-day CCC for Discharge Point 001; 1.58 mg/L (as N). Between July 2009 and May 2013, daily effluent temperature and pH data were collected. The paired 30-day rolling average effluent pH and temperature were used to calculate the 30-day CCC for Discharge point 002 (early life stages present). The 99.9th percentile of the calculated CCCs was selected as the 30-day CCC for Discharge Point 002; 1.93 mg/L (as N).

The 4-day average concentration is derived in accordance with the USEPA criterion as 2.5 times the 30-day CCC. Based on the 30-day CCC of 1.58 mg/L (as N) for Discharge Point 001 and 1.93 mg/L (as N) for Discharge Point 002, the 4-day average concentration that should not be exceeded for Discharge Points 001 and 002 are 3.95 mg/L (as N) and 4.83 mg/L (as N), respectively.

(b) RPA. The Facility is a POTW that treats domestic wastewater. Untreated domestic wastewater contains ammonia in concentrations that, without treatment, would be harmful to aquatic life and would violate the Basin Plans' narrative toxicity objective if discharged to the receiving water. Reasonable potential therefore exists and WQBELs are required.

Federal regulations at 40 C.F.R. §122.44(d)(1)(i) requires that, "*Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or **may** be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.*" For priority pollutants, the SIP dictates the procedures for conducting the RPA. Ammonia is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

USEPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters).*" USEPA's *Technical Support Document for Water Quality-based Toxics Control,* EPA/505/2-90-001, March 1991 (TSD) also recommends that factors other than effluent data

should be considered in the RPA, "*When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data*." With regard to POTWs, USEPA recommends that, "*POTWs should also be characterized for the possibility of chlorine and ammonia problems.*" (TSD, p. 50)

Nitrification is a biological process that converts ammonia to nitrite and nitrite to nitrate. Denitrification is a process that converts nitrate to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas, which is then released to the atmosphere. The Discharger currently uses nitrification and partial denitrification to remove ammonia from the waste stream. Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving stream. Ammonia is known to cause toxicity to aquatic organisms in surface waters. Discharges of ammonia in concentrations that produce detrimental physiological responses to human, plant, animal, or aquatic life would violate the Basin Plans' narrative toxicity objective. Although the Discharger nitrifies and partially denitrifies the discharge, inadequate or incomplete nitrification creates the potential for ammonia to be discharged in concentrations that would cause or contribute to an exceedance of the Basin Plans' narrative toxicity objective. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for ammonia and WQBELs are required.

(c) WQBELs. The Central Valley Water Board calculated WQBELs for ammonia in accordance with SIP procedures; however, the Central Valley Water Board is not obligated to use the SIP procedures for non-CTR constituents. The SIP procedures assume a 4-day averaging period for calculating the long-term average (LTA) discharge condition. However, USEPA recommends modifying the procedure for calculating effluent limitations for ammonia using a 30-day averaging period for the calculation of the LTAs corresponding to the 30-day CCC. Therefore, while the LTAs corresponding to the acute and 4-day chronic criteria were calculated according to the SIP procedures, the LTA corresponding to the 30-day chronic criterion was calculated assuming a 30-day averaging period. The lowest LTA representing the acute criterion, 4-day chronic criterion, and 30-day chronic criterion are then selected for deriving the AMELs and the MDELs. The remainder of the WQBEL calculations for ammonia was performed according to the SIP procedures.

For Discharge Point 001, the chronic criterion had the lowest LTA. The chronic criterion for Discharge Point 001 resulted in an AMEL of 2.1 mg/L (as N) and a MDEL of 5.4 mg/L (as N). For Discharge Point 002, the acute criterion had the lowest LTA. The acute criterion for Discharge Point 002 resulted in an AMEL of 1.8 mg/L (as N) and a MDEL of 4.6 mg/L

(as N). However, in accordance with federal regulations, WQBELs for ammonia are compared to TBELs for ammonia to determine the most protective of the two types of limitations. The TBEL of 1.0 mg/L for ammonia as an AMEL is more stringent than the water quality based AMEL of 2.1 for Discharge Point 001 and 1.8 mg/L for Discharge Point 002. The TBEL does not include an average MDEL. Therefore, this Order contains a final AMEL of 1.0 mg/L (as N) for Discharge Points 001 and 002 based of the TBEL established in the previous Order and a final MDEL of 5.4 mg/L (as N) for Discharge Point 001 and 4.6 mg/L (as N) for Discharge Point 002.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the MEC of 4.5 mg/L does not exceed the applicable ammonia MDELs and the maximum average monthly ammonia effluent concentration of 0.79 mg/L does not exceed the applicable ammonia AMEL. The Central Valley Water Board concludes, therefore, that immediate compliance with these ammonia effluent limitations is feasible.

ii. Pathogens

(a) WQO. DPH has developed recycling criteria, CCR, Division 4, Chapter 3 (Title 22), for the reuse of wastewater. Title 22 requires that for spray irrigation of food crops, parks, playgrounds, schoolyards, and other areas of similar public access, wastewater be adequately disinfected, oxidized, coagulated, clarified, and filtered, and that the effluent total coliform levels not exceed 2.2 MPN/100 mL as a 7-day median; 23 MPN/100 mL, not to be exceeded more than once in a 30-day period; and 240 MPN/100 mL, at any time.

Title 22 also requires that recycled water used as a source of water supply for non-restricted recreational impoundments be disinfected tertiary recycled water that has been subjected to conventional treatment. A non-restricted recreational impoundment is defined as *"…an impoundment of recycled water, in which no limitations are imposed on body-contact water recreational activities.*" Title 22 is not directly applicable to surface waters; however, the Central Valley Water Board finds that it is appropriate to apply an equivalent level of treatment to that required by the DPH's recycling criteria because the Discharger is already required to provide the same quality water for recycled water users and the receiving waters are used for irrigation agricultural land and for contact recreation purposes. Coliform organisms are intended as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing other pathogens.

(b) RPA Results. Raw domestic wastewater inherently contains human pathogens that threaten human health, and constitute a threatened pollution and nuisance under Water Code section 13050 if discharged untreated to the receiving water. Reasonable potential therefore exists and WQBELs are required.

Federal regulations at 40 C.F.R. §122.44(d)(1)(i) requires that, "*Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or **may** be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.*" For priority pollutants, the SIP dictates the procedures for conducting the RPA. Pathogens are not priority pollutants. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

USEPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters).*" USEPA's TSD also recommends that factors other than effluent data should be considered in the RPA, "*When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data.*" (TSD, p. 50)

The beneficial uses of both Fancher Creek and the Diversion Channel include water contact recreation and agricultural irrigation supply. The beneficial uses of Little Dry Creek include municipal and domestic supply, water contact recreation, and agricultural irrigation supply. To protect these beneficial uses, the Central Valley Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease. Although the Discharger provides disinfection, inadequate or incomplete disinfection creates the potential for pathogens to be discharged. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for pathogens and WQBELs are required.

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

In addition to coliform limitations, turbidity operational specifications have been included as a second indicator of the effectiveness of the treatment process, and to assure compliance with the required level of treatment. A tertiary treatment process that uses membrane filtration can consistently produce an effluent that does not exceed 0.2 nephelometric turbidity units (NTU) more than 5% of the time within a 24-hour period and 0.5 NTU at any time. Failure of the filtration system such that virus removal is impaired would normally result in increased particles in the effluent, which results in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid correction action. Coliform testing, by comparison, is not conducted continuously and requires several hours, to days, to identify high coliform concentrations. Therefore, to ensure a level of treatment consistent with DPH recommended Title 22 disinfection criteria, this Order includes operational specification for turbidity of 0.2 NTU not to be exceeded more than 5% of the time within a 24-hour period; and 0.5 NTU as an instantaneous maximum.

This Order contains effluent limitations for BOD_5, total coliform, and TSS and requires a tertiary level of treatment, or equivalent, necessary to protect the beneficial uses of the receiving waters. The Central Valley Water Board has previously considered the factors in Water Code section 13241 in establishing these requirements.

Final WQBELs for BOD_5 and TSS are based on the technical capability of the tertiary process, which is necessary to protect the beneficial uses of the receiving waters. BOD_5 is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The tertiary treatment standards for BOD_5 and TSS are indicators of the effectiveness of the tertiary treatment process. The principal design parameter for wastewater treatment plants is the daily BOD_5 and TSS loading rates and the corresponding removal rate of the system. The application of tertiary treatment processes results in the ability to achieve lower levels for BOD_5 and TSS than the secondary standards currently prescribed. Therefore, this Order requires AMELs for BOD_5 and TSS of 10 mg/L and AWELs for BOD_5 and TSS of 15 mg/L, which are technically based on the capability of a tertiary system. In addition to the average weekly and average monthly effluent limitations, a daily maximum effluent limitation for BOD_5 and TSS of 20 mg/L is included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities. This Order also includes an average monthly effluent limitation requiring at least 90% removal of BOD_5 and TSS compared to influent concentrations.

(d) Plant Performance and Attainability. The Facility is designed to provide disinfected tertiary level treatment that can comply with the WQBELs for BOD_5, total coliform, and TSS. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

iii. pH

(a) WQO. The Tulare Lake Basin Plan includes a water quality objective for surface waters that, "*The pH of water shall not be depressed below 6.5, raised above 8.*3." The San Joaquin Basin Plan includes a water quality objective for surface waters (except for Goose Lake) that the "*…pH shall not be depressed below 6.5 nor raised above 8.5.*" The Discharger requested a more stringent instantaneous maximum effluent pH limitation of 8.2 for Discharge Point 001 and 8.1 for Discharge Point 002 to allow for less stringent ammonia effluent limitations, which are calculated based on pH and temperature.

(b) RPA Results. Raw domestic wastewater inherently has variable pH. Additionally, some wastewater treatment processes can increase or decrease wastewater pH which if not properly controlled, would violate the Basin Plans' numeric objective for pH in the receiving waters. Therefore, reasonable potential exists for pH and WQBELs are required.

Federal regulations at 40 C.F.R. §122.44(d)(1)(i) requires that, "*Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or **may** be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.*" For priority pollutants, the SIP dictates the procedures for conducting the RPA. pH is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

USEPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters).*" USEPA's TSD also recommends that factors other than effluent data should be considered in

the RPA, "*When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data.*" (TSD, p. 50)

The Facility is a POTW that treats domestic wastewater. Based on 1,458 samples taken from July 2009 to May 2013, the minimum and maximum pH reported was 6.4 and 8.1, respectively. Although the Discharger has proper pH controls in place, the pH for the Facility's influent varies due to the nature of municipal sewage, which provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plans' numeric objective for pH in the receiving waters. Therefore, WQBELs for pH are required in this Order.

(c) WQBELs. An instantaneous minimum effluent limitation for pH of 6.5 (for Discharge Points 001 and 002) and instantaneous maximum effluent limitation of 8.2 for Discharge Point 001 and 8.1 for Discharge Point 002 are included in this Order based on protection of the Basin Plans' objectives for pH.

(d) Plant Performance and Attainability. Effluent data from July 2009 to May 2013 show that the pH ranged from 6.4 to 8.1. The Discharger reported 1,458 pH effluent monitoring results, only one of which was not in the pH range of 6.5 to 8.1. Therefore, the Central Valley Water Board concludes that immediate compliance with these effluent limitations is feasible.

iv. Salinity

(a) WQO. The Basin Plans contain a chemical constituent objective that incorporates state MCLs, contains a narrative objective, and contains numeric water quality objectives for certain specified water bodies for electrical conductivity, total dissolved solids, sulfate, and chloride. The USEPA National Ambient Water Quality Criteria (NAWQC) for chloride recommends acute and chronic criteria for the protection of aquatic life. There are no USEPA water quality criteria for the protection of aquatic life for boron, electrical conductivity, total dissolved solids, and sulfate. Additionally, there are no USEPA numeric water quality criteria for the protection of agricultural, livestock, and industrial uses. Numeric values for the protection of these uses are typically based on site specific conditions and evaluations to determine the appropriate constituent threshold necessary to interpret the narrative chemical constituent Basin Plans objective. The Central Valley Water Board must determine the applicable numeric limit to implement the narrative objective for the protection of agricultural supply. The Central Valley Water Board is

currently implementing the CV-SALTS initiative to develop a Basin Plan Amendment that will establish salt and nitrate Management Plan for the Central Valley. Through this effort the Basin Plans will be amended to define how the narrative water quality objective is to be interpreted for the protection of agricultural use. All studies conducted through this Order to establish an agricultural limit to implement the narrative objective will be reviewed by and consistent with the efforts currently underway by CV-SALTS.

Table F-17. Salinity Water Quality Criteria/Objectives

Parameter	Agricultural WQ Objective [1]	Secondary MCL [2]	USEPA NAWQC	Tulare Lake Basin Plan	Effluent	
					Average	Maximum
Boron (mg/L)	Varies	N/A	N/A	1.0	0.23	0.3
Chloride (mg/L)	Varies	250, 500, 600	860 (1-hr) 230 (4-day)	175	67	80
EC (µmhos/cm)	Varies [3]	900, 1600, 2200	N/A	1000 [4]	542	940
Sulfate (mg/L)	Varies	250, 500, 600	N/A	N/A	24	30
TDS (mg/L)	Varies	500, 1000, 1500	N/A	N/A	345	620

[1] Narrative chemical constituent objective of the Basin Plans. Procedures for establishing the applicable numeric limitation to implement the narrative objective can be found in the Policy for Application of Water Quality, Chapter IV, Section 8 of the Basin Plan. However, the Basin Plans do not require improvement over naturally occurring background concentrations. In cases where the natural background concentration of a particular constituent exceeds an applicable water quality objective, the natural background concentration will be considered to comply with the objective.

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

[3] The electrical conductivity level in irrigation water that harms crop production depends on the crop type, soil type, irrigation methods, rainfall, and other factors.

[4] The San Joaquin Basin Plan contains a numeric water quality objective for electrical conductivity of 150 µmhos/cm for the San Joaquin River from Friant Dam to Gravelly Ford.

(1) Boron. The Tulare Lake Basin Plan includes an effluent boron limitation of 1.0 mg/L for discharge to surface waters.

(2) Chloride. The Secondary MCL for chloride is 250 mg/L as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum. The USEPA Ambient Water Quality Criteria for chloride recommends acute (1-hour) and chronic (4-day) criteria for the protection of freshwater aquatic life of 860 mg/L and 230 mg/L, respectively. In addition, the Tulare Lake Basin Plan includes an effluent chloride limitation of 175 mg/L for discharge to surface waters.

(3) Electrical Conductivity. The Secondary MCL for electrical conductivity is 900 µmhos/cm as a recommended level, 1600 µmhos/cm as an upper level, and 2200 µmhos/cm as a short-term maximum. The Tulare Lake Basin Plan includes an effluent electrical conductivity stating that the maximum electrical conductivity of a discharge shall not exceed the quality of the source water plus 500 µmhos/cm or 1,000 µmhos/cm, whichever is more stringent.

The San Joaquin Basin Plan contains an electrical conductivity objective of 150 µmhos/cm (90th percentile) for the San Joaquin River from Friant Dam to Gravelly Ford. As established in previous Order R5-2008-0036, the San Joaquin Basin Plan electrical conductivity objective of 150 µmhos/cm does not apply to the Facility discharge to Little Dry Creek, via the Diversion Channel. The Discharger's antidegradation analysis shows that under worst-case conditions the discharge would not cause an exceedance of the San Joaquin River salinity objective. During Phase I of the Facility, the discharge will utilize up to approximately 50 - 53 percent of the assimilative capacity and 16 – 19 percent during Phase II. Phase II discharges are expected to utilize less of the available assimilative capacity because restoration flows in the San Joaquin River required by the 2006 settlement agreement between the Natural Resources Defense Council and the United States Bureau of Reclamation are to begin by 1 January 2014.

(4) Sulfate. The Secondary MCL for sulfate is 250 mg/L as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum.

(5) Total Dissolved Solids. The Secondary MCL for TDS is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum.

(b) RPA Results.

(1) Boron. Boron concentrations in the effluent ranged from below analytical method detection levels (MDL = 0.26 mg/L) to 0.3 mg/L, based on samples collected between July 2009 to May 2013. Based on these results, the discharge does not have reasonable potential to cause or contribute to an in stream excursion of the applicable water quality objective.

(2) Chloride. Chloride concentrations in the effluent ranged from 55 mg/L to 80 mg/L, with an average of 67 mg/L, based on samples collected between July 2009 to May 2013. Chloride was not monitored for in any of the receiving waters. Based on these results, the discharge does not have reasonable potential to cause or contribute to an in stream excursion of the applicable water quality objective.

(3) Electrical Conductivity. A review of the Discharger's monitoring reports shows an average effluent electrical conductivity concentration of 542 µmhos/cm, with a range from 190 µmhos/cm to 940 µmhos/cm, based on monitoring results submitted between July 2009 to May 2013. The Discharger reported 1,391 effluent monitoring results for electrical conductivity. Only one of the 1,391 effluent monitoring results for electrical conductivity had a value higher than the Secondary MCL recommended level of 900 µmhos/cm.

(4) Sulfate. Sulfate concentrations in the effluent ranged from 20 mg/L to 30 mg/L, with an average of 24 mg/L, based on samples collected between July 2009 to May 2013. These levels do not exceed the secondary MCL. Sulfate was not monitored for in the receiving waters.

(5) Total Dissolved Solids. The average TDS effluent concentration was 345 mg/L with concentrations ranging from 250 mg/L to 620 mg/L, based on samples collected between July 2009 and May 2013. The highest calendar year average was 387 mg/L, which does not exceed the Secondary MCL. TDS was not monitored for in the receiving waters.

(c) WQBELs. Previous Order R5-2008-0036 contained an average annual electrical conductivity effluent limitation of 1,000 µmhos/cm or the flow-weighted average annual electrical conductivity of the source water plus 500 µmhos/cm, whichever more stringent. The Basin Plan electrical conductivity effluent limits are generally applied as rolling annual averages. Therefore, this Order includes the following electrical conductivity effluent limitation: The 12-month rolling average electrical conductivity (@ 25°C) of the discharge shall not exceed the 12-month rolling average electrical conductivity (@ 25°C) of the source water plus 500 µmhos/cm, or a maximum of 1,000 µmhos/cm, whichever is more stringent.

(d) Plant Performance and Attainability. Based on historical performance data, the treatment works is capable of meeting the effluent limit for electrical conductivity. The Central Valley Water Board concludes, therefore, that immediate compliance with the electrical conductivity effluent limitation is feasible.

v. Whole Effluent Toxicity (See Section IV.C.5. of the Fact Sheet)

4. WQBEL Calculations

a. This Order includes WQBELs for ammonia, BOD_5, electrical conductivity, pH, total coliform, and TSS. The general methodology for calculating WQBELs based on the different criteria/objectives is described in subsections IV.C.4.b through e, below. See Attachment H for the WQBEL calculations.

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

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

where:

ECA = effluent concentration allowance
D = dilution credit
C = the priority pollutant criterion/objective
B = the ambient background concentration.

According to the SIP, the ambient background concentration (B) in the equation above shall be the observed maximum with the exception that an ECA calculated from a priority pollutant criterion/objective that is intended to protect human health from carcinogenic effects shall use the arithmetic mean concentration of the ambient background samples. For ECAs based on MCLs, which implement the Basin Plan's chemical constituents objective and are applied as annual averages, an arithmetic mean is also used for B due to the long-term basis of the criteria.

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

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

e. Human Health Criteria. WQBELs based on human health criteria, are also calculated in accordance with Section 1.4 of the SIP. The ECAs are set equal to the AMEL and a statistical multiplier is used to calculate the MDEL.

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

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

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

where:
$mult_{AMEL}$ = statistical multiplier converting minimum LTA to AMEL
$mult_{MDEL}$ = statistical multiplier converting minimum LTA to MDEL
M_A = statistical multiplier converting acute ECA to LTA_{acute}
M_C = statistical multiplier converting chronic ECA to $LTA_{chronic}$

Summary of Water Quality-Based Effluent Limitations
Discharge Points 001 and 002

Table F-18 Summary of Water Quality-Based Effluent Limitations

Parameter	Units	Effluent Limitations					
		Average Monthly	Average Weekly	Maximum Daily	Annual Average	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants							
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	10	15	20	--	--	--
	lbs/day [1]	234	350	467	--	--	--
	lbs/day [2]	467	701	935	--	--	--
pH	standard units	--	--	--	--	6.5	8.2 [3]/ 8.1 [4]
Total Suspended Solids	mg/L	10	15	20	--	--	--
	lbs/day [1]	234	350	467	--	--	--
	lbs/day [2]	467	701	935	--	--	--
Non-Conventional Pollutants							
Ammonia	mg/L	--	--	5.4 [3]/ 4.6 [4]	--	--	--
	lbs/day [1]	--	--	126 [3]/107 [4]			
	lbs/day [2]	--	--	252 [3]/215 [4]			
Electrical Conductivity (@ 25°C)	µmhos/cm	--	--		1,000 [5]	--	--
Total Coliform Organisms	MPN/100 mL	23 [6]	2.2 [7]	--	--	--	240

[1] Based on a design flow of 2.8 mgd for Phase I.
[2] Based on a design flow of 5.6 mgd for Phase II.
[3] Applicable to Discharge Point 001 only.
[4] Applicable to Discharge Point 002 only.
[5] The 12-month average electrical conductivity of the discharge shall not exceed the 12-month rolling average electrical conductivity of the source water plus 500 µmhos/cm, or a maximum of 1,000 µmhos/cm, whichever is more stringent.
[6] Not to be exceeded more than once in any 30-day period.
[7] Applied as a 7-day median effluent limitation.

5. Whole Effluent Toxicity (WET)

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

a. Acute Aquatic Toxicity. The Basin Plans contain a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (San Joaquin Basin Plan at page III-8.01 and Tulare Lake Basin Plan at page III-6).

For priority pollutants, the SIP dictates the procedures for conducting the RPA. Acute toxicity is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. The Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA. USEPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters).*" Acute toxicity effluent limits are required to ensure compliance with the Basin Plans' narrative toxicity objective.

USEPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "*In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc.*" Accordingly, effluent limitations for acute toxicity have been included in this Order as follows:

> **Acute Toxicity.** Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
>
> Minimum for any one bioassay---------- 70%
> Median for any three consecutive bioassays---------- 90%

b. Chronic Aquatic Toxicity. The Basin Plans contain a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*." (San Joaquin Basin Plan at page III-8.01 and Tulare Lake Basin Plan at III-6.) Based on chronic WET testing performed by the Discharger from July 2009 through May 2013, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plans' narrative toxicity objective. As shown in Table F-19 below.

Table F-19. Whole Effluent Chronic Toxicity Testing Results

Date	Fathead Minnow *Pimephales promelas* Survival (TUc)	Fathead Minnow *Pimephales promelas* Growth (TUc)	Water Flea *Ceriodaphnia dubia* Survival (TUc)	Water Flea *Ceriodaphnia dubia* Reproduction (TUc)	Green Algae *Selenastrum capricornutum* Growth (TUc)
9/22/2009	1	1	1	1	1
12/7/2009	1	1	1	1	>1
1/14/2010	--	--	--	--	1 [1]
1/21/2010	--	--	--	--	>1 [1]
1/28/2010	--	--	--	--	>1 [1]
2/3/2010	--	--	--	--	1 [1]
2/25/2010	--	--	--	--	1 [1]
3/4/2010	--	--	--	--	1 [1]
3/11/2010	--	--	--	--	1 [1]
3/29/2010	1	1	1	1	1
6/14/2010	>1	>1	1	1	1
7/19/2010	1	1	--	--	--
7/26/2010	1	1	--	--	--
8/9/2010	1	1	--	--	--
8/23/2010	1	1	--	--	--
9/13/2010	1	1	1	1	1
12/13/2010	1	1	1	1	1
3/14/2011	1	1	1	1	1
6/13/2011	1	1	1	1	1
9/6/2011	1	1	1	1	1
10/13/2011	1	1	1	1	1
1/23/2012	1	1	1	1	1 [1]
4/9/2012	1	1	1	1	1
7/9/2012	1	1	1	1	1
10/23/2012	1	1	1	1	1
1/9/2013	1	1	1	1	1 [1]
4/9/2013	1	>1 [2]	1	1	1 [1]
5/7/2013	1	1	--	--	--

[1] Resuspended

[2] The laboratory noted that the growth of the fathead minnow for the lab control was significantly greater than the historical mean. The laboratory recommended the Discharger conduct a retest. The retest showed that neither the survival nor growth of fathead minnows exposed to 100% effluent was significantly reduced from the control.

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

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

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

To ensure compliance with the Basin Plans' narrative toxicity objective, the Discharger is required to conduct chronic WET testing, as specified in the Monitoring and Reporting Program (Attachment E section V.). If the discharge demonstrates toxicity exceeding the numeric toxicity monitoring trigger, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE) in accordance with an approved TRE work plan. 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 effluent toxicity has been demonstrated.

D. Final Effluent Limitations

1. Mass-based Effluent Limitations

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

Mass-based effluent limitations have been established in this Order for ammonia, BOD5, and TSS because they are oxygen demanding substances. Mass-based effluent limitations were calculated based upon the average annual discharge flows

permitted in section IV.A.1.f. of this order. Except for the pollutants listed above, the mass-based effluent limitations are not included in this Order for pollutant parameters for which effluent limitations are based on water quality objectives and criteria that are concentration-based.

2. Averaging Periods for Effluent Limitations

40 CFR 122.45 (d) requires average weekly and average monthly discharge limitations for publicly owned treatment works (POTWs) unless impracticable. However, for toxic pollutants and pollutant parameters in water quality permitting, USEPA recommends the use of a maximum daily effluent limitation in lieu of average weekly effluent limitations for two reasons. "*First, the basis for the 7-day average for POTWs derives from the secondary treatment requirements. This basis is not related to the need for assuring achievement of water quality standards. Second, a 7-day average, which could comprise up to seven or more daily samples, could average out peak toxic concentrations and therefore the discharge's potential for causing acute toxic effects would be missed.*" (TSD, pg. 96) For ammonia, BOD_5, pH, total coliform, and TSS, weekly average effluent limitations have been replaced or supplemented with effluent limitations utilizing shorter averaging periods. The rationale for using shorter averaging periods for these constituents is discussed in section IV.C.3 of this Fact Sheet.

3. Satisfaction of Anti-Backsliding Requirements

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

All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order, with the exception of effluent limitations for total residual chlorine, settleable solids, and turbidity. The effluent limitations for these pollutants have been removed, consistent with the anti-backsliding requirements of the CWA and federal regulations, as discussed in detail below.

a. CWA section 402(o)(1) and 303(d)(4). CWA section 402(o)(1) specifies that, in the case of effluent limitations established on the basis of CWA section 301(b)(1)(c) (i.e., WQBELs), a permit may not be renewed reissued, or modified to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit unless requirements in CWA section 303(d)(4) are met. The WQBELs established in Order R5-2008-0036 for chlorine residual are removed in this Order in accordance with CWA section 303(d)(4).

CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters. For attainment waters, CWA section 303(d)(4)(B) specifies that a limitation based on a water quality standard may be relaxed where the action is consistent with the antidegradation policy. The 303(d) listings for the Fancher Creek, Little Dry Creek, and the Diversion Channel, as described in section III.D.1 of this Fact

Sheet, do not include chlorine residual. Thus, the receiving water is an attainment water for this constituent. As discussed in section IV.D.4, the removal or relaxation of WQBELs for chlorine residual is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. Therefore, the modifications to these effluent limitations do not violate anti-backsliding requirements.

b. CWA section 402(o)(2). CWA section 402(o)(2) provides specific exceptions to the anti-backsliding prohibition contained in section 402(o)(1). CWA 402(o)(2)(B)(i) allows a renewed, reissued, or modified permit to contain a less stringent effluent limitation for a pollutant if information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.

As described in section IV.C.3.b of this Fact Sheet, updated information that was not available at the time Order R5-2008-0036 was issued indicates chlorine residual in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. In addition, the Discharger cannot always comply with the settleable solid technology-based effluent limitations established in Order R5-2008-0036. The updated information that supports the removal of effluent limitations for these constituents includes the following:

i. Chlorine Residual. The Discharger uses ultraviolet light for disinfection, not chlorine. Order R5-2008-0036 required continuous effluent monitoring for chlorine. Based on effluent monitoring conducted form July 2009 to May 2013, the Discharger did not report any effluent detections for chlorine.

ii. Settleable Solids. Previous Order R5-2008-0036 established technology-based settleable solids effluent limitations based on the level of treatment achievable with the proposed treatment train. At the time of adoption of Order R5-2008-0036, the Facility was under construction and had not yet commenced operation. Based on samples collected between July 2009 and May 2013, two exceedances of the settleable solids MDEL of 0.1 mL/L were reported. Central Valley Water Board staff looked at the circumstances surrounding each exceedance and could not identify a specific cause for any of the exceedances. Therefore, the effluent monitoring data demonstrates that the Discharger cannot always comply with the settleable solid effluent limitations established in R5-2008-0036.

This Order requires continuous effluent monitoring for turbidity and includes turbidity specifications. Thus, if the Discharger began having difficulties with removal of settleable solids it would result in an exceedance of the turbidity specifications.

Thus, the removal of effluent limitations for chlorine residual and settleable solids is in accordance with CWA section 402(o)(2)(B)(i), which allows for the relaxation

and removal of effluent limitations based on information that was not available at the time of permit issuance.

c. Turbidity. Order RF-2008-0036 contained effluent limitations for turbidity. The prior limitations were solely an operational check to ensure the treatment system was functioning properly and could meet the limits for solids and coliform. The prior effluent limitations were not intended to regulate turbidity in the receiving water. Rather, turbidity is an operational parameter to determine proper system functioning and not a WQBEL.

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

The revised operational specifications for turbidity are the same as the effluent limitations in Order R5-2008-0036. These revisions are consistent with State regulations implementing recycled water requirements. The revision in the turbidity limitations is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16 because this Order imposes equivalent or more stringent requirements than Order R5-2008-0036 and, therefore, does not allow any additional degradation.

4. Satisfaction of Antidegradation Policy

The Facility was planned in three phases. The Facility, currently under Phase I, discharges up to 2.8 MGD as an annual average. Phase II of the Facility will discharge up to 5.6 MGD as an annual average. Order R5-2008-0036 authorizes an increase in permitted flow to 5.6 MGD (annual average) when specified conditions are met. Since the Facility has yet to meet the specified conditions to increase permitted flow to 5.6 MGD (Phase II) and are currently limited to an annual average discharge flow of 2.8 MGD (Phase I), the specified conditions are carried over in this Order. The Central Valley Water Board found in Order R5-2008-0036 that "*the permitted discharge is consistent with the antidegradation provisions of 40 CFR section 131.12 and State Water Board Resolution No. 68-16.*" An increase in the discharge flow up to 5.6 MGD (annual average) was authorized under R5-2008-0036 (pending satisfaction of specified conditions) and this Order does not provide for an expansion from the previously authorized discharge rate of 5.6 MGD. Therefore, a complete antidegradation analysis is not necessary. The Order requires compliance with applicable federal technology-based standards and with WQBELs where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. Compliance with these requirements will result in the best practicable treatment or control of the discharge.

This Order removes existing effluent limitations for chlorine residual in which new monitoring demonstrates that the effluent does not cause or contribute to an exceedance of the applicable water quality criteria or objectives in the receiving

water. The Central Valley Water Board finds that the removal of the chlorine effluent limitations does not result in an allowed increased in pollutants or any additional degradation of the receiving waters. The removal of the chlorine residual effluent limitations is not expected to trigger any change in the Facility operation that would increase the mass of pollutants since the Facility uses ultraviolet light for disinfection, not chlorine. This Order carries over the continuous effluent monitoring requirement for chlorine residual. Thus, there is no reason to believe that existing water quality will be reduced due to adoption of this Order. Consequently, the removal of the total residual chlorine effluent limitation mentioned above is consistent with the antidegradation provisions 40 CFR 131.12 and State Water Board Resolution No. 68-16.

This Order also removes existing effluent limitations for settleable solids in which new monitoring demonstrates that the Discharger cannot always comply with the technology-based effluent limitations established in Order R5-2008-0036. The Central Valley Water Board finds that the removal of the settleable solids effluent limitations does not result in an allowed increased in pollutants or any additional degradation of the receiving waters. This Order requires continuous effluent monitoring for turbidity and includes turbidity specifications. Thus, if the Discharger began having difficulties with removal of settleable solids it would result in an exceedance of the turbidity specifications. Furthermore, the Facility provides tertiary level of treatment which should consistently remove settleable solids to non-detect levels. Thus, there is no reason to believe that existing water quality will be reduced due to adoption of this Order. Consequently, the removal of the settleable solid effluent limitation mentioned above is consistent with the antidegradation provisions 40 CFR 131.12 and State Water Board Resolution No. 68-16.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on flow, ammonia (as N), and nitrogen. The WQBELs consist of restrictions on ammonia, BOD_5, electrical conductivity, pH, total coliform organisms, and TSS. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

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

this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

Summary of Final Effluent Limitations
Discharge Points 001 and 002

Table F-20. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations						Basis [1]
		Average Monthly	Average Weekly	Maximum Daily	Average Annually	Instantaneous Minimum	Instantaneous Maximum	
Flow [2]	mgd	3.1	--	--	2.8	--	--	DF
Flow [3]	mgd	6.2	--	--	5.6	--	--	DF
Conventional Pollutants								
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	--	--	--	TTC
	lbs/day [4]	234	350	467	--	--	--	
	lbs/day [5]	467	701	935	--	--	--	
	% removal	90	--	--	--	--	--	
pH	standard units	--	--	--	--	6.5	8.2 [6]/ 8.1 [7]	BP
Total Suspended Solids	mg/L	10	15	20	--	--	--	TTC
	lbs/day [4]	234	350	467	--	--	--	
	lbs/day [5]	467	701	935	--	--	--	
	% removal	90	--	--	--	--	--	
Non-Conventional Pollutants								
Ammonia Nitrogen, Total (as N)	mg/L	1.0	--	5.4 [6]/4.6 [7]	--	--	--	BPJ & NAWQC
	lbs/day [4]	23		126 [6]/107 [7]				
	lbs/day [5]	47		252 [6]/215 [7]				
Electrical Conductivity (@ 25°C)	µmhos/cm	--	--		1,000 [8]	--	--	BP
Nitrogen, Total (as N)	mg/L	10	--	--	--	--	--	BPJ
Total Coliform Organisms	MPN/100 mL	23 [9]	2.2 [10]	--	--	--	240	Title 22
Acute Toxicity	% Survival	--	--	[11]	--	--	--	BP

[1] **BP** – Based on water quality objectives contained in the Basin Plan.
BPJ – Best professional judgment
DF – Based on the design flow of the Facility.
NAWQC – Based on USEPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
Title 22 – Based on CA Department of Public Health Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22).
TTC – Based on tertiary treatment capability. These effluent limitations reflect the capability of a properly operated tertiary treatment plant.

[2] Flow limitation during Phase I of the Facility.

[3] Flow limitation during Phase II of the Facility.

[4] Based on a design flow of 2.8 mgd for Phase I of the Facility.

[5] Based on a design flow of 5.6 mgd of Phase II of the Facility.

[6] Applicable to Discharge Point 001 only.

[7] Applicable to Discharge Point 002 only.

[8] The 12-month rolling average electrical conductivity (@ 25°C) of the discharge shall not exceed the 12-month rolling average electrical conductivity (@ 25°C) of the source water plus 500 µmhos/cm, or a maximum of 1,000 µmhos/cm, whichever is more stringent.

[9] Not to be exceeded more than once in any 30-day period.

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

[11] Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
Minimum for any one bioassay: 70%
Median for any three consecutive bioassays: 90%.

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications – Not Applicable

G. Recycling Specifications

The Discharger distributes and uses recycled water produced at the Facility throughout the City as recycled water opportunities become available. This Order includes recycled water specifications as well as a Master Recycling Permit, which are necessary to ensure that the use of recycled water does not unreasonable affect present and anticipated uses of groundwater and surface water.

Title 22, CCR requires disinfected tertiary recycled water for spray irrigation of food crops, parks, playgrounds, unrestricted access golf courses, and other areas of similar public access. As the recycled water produced at the ST/WRF will be used to irrigate unrestricted access public space, disinfected tertiary treatment is required pursuant to Title 22, CCR and has been proposed. This Order contains water recycling specifications pursuant to Title 22, CCR.

Title 22, CCR, Section 60323(a) states that no person shall produce or supply recycled water for direct reuse from a proposed reclamation plant unless an engineering report is submitted for review and approval by DPH. The Discharger submitted two Title 22 engineering reports, *City of Clovis ST/WRF Engineering Report for the Production, Distribution, and Use of Recycled Water*, and *City-wide Engineering Report for the Production, Distribution, and Use of Recycled Wate*r to the DPH for review and approval. DPH conditionally approved the engineering reports on 28 November 2007. The recycling specifications also include various requirements for the recycled water use areas to protect public health. Included in the recycling specifications are criteria contained in Title 22, CCR, Section 60310 and DPH "*Guidelines for the Use of Reclaimed Water*" incorporated by reference in the Tulare Lake Basin Plan.

1. **BOD_5, TSS, and BOD_5 and TSS Percent removal.** The recycling specifications for BOD_5, TSS, and BOD_5 and TSS Percent Removal are based on limitations that are achievable by the Discharger with a tertiary treatment system, consistent with requirements established for other tertiary treatment systems, and consistent with the "best practicable treatment or control" provision of State Water Board Resolution No. 68-16. The recycled water specifications for BOD, TSS, and BOD and TSS percent removal are carried over from Order R5-2008-0036.

2. **Total Coliform and Turbidity.** DPH promulgated water recycling criteria in Title 22, CCR, Division 4, Chapter 3, to ensure reuse of wastewater does not pose an

unacceptable health risk in various use situations. Title 22 requires that for sprinkler irrigation of food crops, parks, playgrounds, schoolyards, and other areas of similar public access, recycled water must be adequately disinfected, oxidized, coagulated (under certain circumstances), clarified, and filtered, and that the effluent total coliform levels not exceed 2.2 MPN/100 mL as a 7-day median, not exceed 23 MPN/100 mL in more than one sample in any 30-day period, and never exceed 240 MPN/100 mL (disinfected tertiary treatment). This Order carries over the recycled water specifications for total coliform from Order R5-2008-0036, which are consistent with Title 22 recycled water criteria.

Title 22, CCR, Section 60301.320 contains filtration requirements for membrane systems. These requirements specify the turbidity of the effluent, after it has passed through microfiltration, shall not exceed 0.2 NTU more than 5 percent of the time within a 24-hour period and 0.5 NTU at any time. This Order incorporates filtration requirements consistent with Title 22 recycled water criteria.

3. **Total Nitrogen.** This Order carries over the recycled water specifications for total nitrogen from Order R5-2008-0036, see Fact Sheet, Section IV.B.2.d.

4. **pH.** It is expected that a portion of the recycled water applied to the recycled water use areas to percolate to groundwater. The Tulare Lake Basin Plan includes a water quality objective for groundwater that "*[g]round waters shall not contain taste or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses."* USEPA has a Secondary Maximum Contaminant Level for drinking water pH of 6.5 to 8.5 units. A pH limitation range of 6.5 to 8.5 helps to ensure that the Discharger's wastewater treatment activities do not cause the groundwater taste and odor objective to be violated. Potential corrosion and deposits caused by a pH outside of 6.5 to 8.5 range could adversely affect the beneficial use of industrial service supply and may disrupt the ability of bacteria to effectively break down certain wastewater constituents. In addition, low pH values cause metals to dissolve, allowing them to percolate into groundwater in concentrations that may affect beneficial uses.

5. **Salinity.** The previous Order R5-2008-0036 established a recycling specification for electrical conductivity requiring that average annual electrical conductivity of the discharge not exceed the flow-weighted average annual electrical conductivity of the source water plus 500 µmhos/cm or maximum of 1,000 µmhos/cm, whichever is most stringent, based on the Tulare Lake Basin Plan discharge limitation. The Tulare Lake Basin Plan electrical conductivity effluent limits are generally applied as rolling annual averages. Therefore, this Order includes the following electrical conductivity effluent limitation: The 12-month rolling average electrical conductivity (@ 25°C) of the discharge shall not exceed the 12-month rolling average electrical conductivity (@ 25°C) of the source water plus 500 µmhos/cm, or a maximum of 1,000 µmhos/cm, whichever is more stringent.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

Basin Plan water quality objectives to protect the beneficial uses of surface water and groundwater include numeric objectives and narrative objectives, including objectives for

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

A. Surface Water

1. CWA section 303(a-c), requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Central Valley Water Board adopted water quality criteria as water quality objectives in the Basin Plans. The Basin Plans state 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 Plans include numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains receiving surface water limitations based on the Basin Plans numerical and narrative water quality objectives for un-ionized ammonia, bacteria, biostimulatory substances, color, chemical constituents, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, suspended sediment, settleable substances, suspended material, tastes and odors, temperature, toxicity, and turbidity.

2. **Turbidity.** Order R5-2008-0036 established a receiving water (Little Dry Creek) limitation for turbidity specifying that discharges from the Facility shall not cause the turbidity to increase more than 1 NTU where natural turbidity is between 0 and 5 NTU based on the water quality objective for turbidity in the San Joaquin Basin Plan. The Central Valley Water Board adopted Resolution R5-2007-0136 on 25 October 2007, amending the Basin Plan to limit turbidity to 2 NTU when the natural turbidity is less than 1 NTU. The San Joaquin Basin Plan amendment has been approved by the State Water Board, the Office of Administrative Law, and USEPA. Consistent with the revised water quality objective in the Basin Plan, this Order limits turbidity to 2 NTU when the natural turbidity is less than 1 NTU.

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

This Order includes operational specifications that require the Discharger to operate the treatment system to ensure that turbidity shall not exceed 0.2 NTU more than 5 percent of the time within a 24-hour period and 0.5 NTU, at any time. Because this Order limits the discharge of turbidity to 0.5 NTU at any time, the Order will be protective of the receiving water under all natural background conditions as defined in the San Joaquin Basin Plan's revised water quality objective for turbidity. The relaxation of the turbidity receiving water limitation will protect aquatic life and other beneficial uses and will not unreasonably affect present and anticipated beneficial uses nor result in water quality less than prescribed in applicable policies. The relaxation of the receiving water limitation is not expected to cause other impacts on water quality. The Central Valley Water Board finds that the relaxation of the turbidity receiving water limitation in this Order is to the maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of waters, will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy.

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

B. Groundwater

1. The beneficial uses of the groundwater underlying potential recycled water use areas municipal and domestic supply, agricultural supply, industrial service supply, industrial process supply, and contact and non-contact water recreation.

2. Tulare Lake Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, and toxicity of groundwater. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use. The tastes and odors objective prohibits taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Tulare Lake Basin Plan also establishes numerical water quality objectives for chemical constituents and radioactivity in groundwaters designated as municipal supply. These include, at a minimum, compliance with MCLs in Title 22 of

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

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

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

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

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., BOD_5 and TSS reduction requirements). The monitoring frequencies for flow (continuous), BOD_5 (3/week), TSS (3/week), and electrical conductivity (3/week) have been retained from Order R5-2008-0036. The settleable solids (weekly) and pH (5/week) monitoring requirements have not been retained from Order R5-2008-0036 as they are not necessary to determine compliance with the requirements of this Order.

B. Effluent Monitoring

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

2. Effluent monitoring frequencies and sample types for flow (continuous), total coliform organisms (5/week or daily), temperature (continuous), dissolved oxygen (continuous), electrical conductivity, hardness (1/month), total dissolved solids (1/month), ammonia (1/week), nitrate (1/week), nitrite (1/week), total nitrogen (1/week), total residual chlorine (continuous), standard minerals (1/year), and turbidity (continuous) have been retained from Order No. R5-2008-0036 to determine compliance with effluent limitations for these parameters, where applicable, and to characterize the effluent.

3. This Order reduces the monitoring frequency for BOD_5, and TSS (from five times per week to three times per week). The Discharger has been in compliance with the

BOD_5 and TSS effluent limitations during the term of Order R5-2008-0036. The Central Valley Water Board finds that this frequency will provide sufficient information to determine compliance with effluent limitations and monitor the performance of the Facility.

4. This Order removes the weekly settleable solids effluent monitoring requirement as it is not necessary to determine compliance with the requirements of this Order.

5. This Order increases the pH effluent monitoring requirement (5/week to daily) to determine compliance with the instantaneous minimum and maximum pH effluent limitations.

6. The monitoring frequency for aluminum has been revised from monthly to quarterly, as a robust data set has been established for the effluent and less frequent monitoring is warranted.

7. Total kjeldahl nitrogen (1/week) is established in this Order. This Order retains the total nitrogen effluent limitation and monitoring frequency (1/week) from previous Order R5-2008-0036. Total nitrogen is the summation of nitrate, nitrite, and total kjeldahl nitrogen. Therefore, total kjeldahl nitrogen monitoring requirement is necessary to determine compliance with the total nitrogen effluent limitation.

8. Monthly effluent monitoring requirements for copper and lead and quarterly effluent monitoring requirements for mercury have been established in this Order to determine if there is reasonable potential for the discharge to cause an exceedance above water quality criteria or objectives for copper, lead, or mercury.

9. Effluent monitoring frequency for priority pollutants has changed from twice per year to once per year, as a robust data set has been established for the effluent and less frequent monitoring is warranted.

10. California Water Code section 13176, subdivision (a), states: "*The analysis of any material required by* [Water Code sections 13000-16104] *shall be performed by a laboratory that has accreditation or certification pursuant to Article 3* (commencing with Section 100825) of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code." The DPH certifies laboratories through its Environmental Laboratory Accreditation Program (ELAP).

Section 13176 cannot be interpreted in a manner that would violate federal holding time requirements that apply to NPDES permits pursuant to the CWA. (Water Code sections 13370(c), 13372, 13377.) Section 13176 is inapplicable to NPDES permits to the extent it is inconsistent with CWA requirements. (Wat. Code § 13372, subd. (a).) The holding time requirements are 15 minutes for chlorine residual, dissolved oxygen, and pH, and immediate analysis is required for temperature. (40 C.F.R. § 136.3(e), Table II). Due to the location of the Facility, it is both legally and factually impossible for the Discharger to comply with section 13176 for constituents with short holding times.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Consistent with Order R5-2008-0031, quarterly (1/quarter) 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.

2. **Chronic Toxicity.** Quarterly chronic whole effluent toxicity testing is required in order to demonstrate compliance with the Basin Plans' narrative toxicity objective.

D. Receiving Water Monitoring

1. Surface Water

a. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream.

b. The Discharger submitted priority pollutant upstream receiving monitoring data over the term of Order R5-2008-0036. The Central Valley Water Board used the priority pollutant monitoring data to conduct a meaningful RPA. In accordance with Section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. The monitoring frequency for priority pollutants has been established once a year for Fancher Creek and Little Dry Creek and twice during the permit term for the Diversion Channel in order to collect data to conduct an RPA. See Attachment I for more detailed requirements related to performing priority pollutant monitoring.

E. Other Monitoring Requirements

1. Biosolids Monitoring

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

2. Water Supply Monitoring

Water supply monitoring is required to evaluate the source of constituents in the wastewater and to determine compliance with effluent limitations contained in this Order.

3. Recycling Discharge Monitoring

Recycling discharge monitoring is required to determine compliance with recycling discharge specifications and to assess compliance with the disinfected tertiary recycled water limitations, as required by Title 22, CCR, Section 60301 et. seq.

4. Ultraviolet Light Disinfection System Monitoring

Ultraviolet light system specifications and monitoring and reporting are required to ensure that adequate ultraviolet light dosage is applied to the wastewater to inactivate pathogens in the wastewater. Ultraviolet light disinfection system monitoring is imposed pursuant to recommendations established by the California Department of Public Health (DPH), and the National Water Research Institute (NWRI), and American Water Works Association Research Foundation NWRI/AWWARF's *"Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse."*

5. Tertiary Treatment Filters Monitoring

Turbidity monitoring after the tertiary treatment filters but before disinfection is required to determine the effectiveness of the treatment process and to ensure compliance with the required level of disinfection and Title 22, CCR.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

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

40 CFR 122.41(a)(1) and (b) through (n) establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. 40 CFR 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 CFR 123.25, this Order omits federal conditions that address enforcement authority specified in 40 CFR 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

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

b. Mercury. There are indications that the discharge may contain mercury in concentrations that have a reasonable potential to cause or contribute to an exceedance of applicable water quality objectives. This Order requires the Discharger to conduct additional monitoring to determine the presence of mercury in the effluent. This reopener provision allows the Central Valley Water Board to reopen this Order for addition of effluent limitations and requirements for mercury, if after review of the additional monitoring data, it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of applicable water quality objectives.

c. Constituent Study. There are indications that the discharge may contain constituents that have a reasonable potential to cause or contribute to an exceedance of water quality objectives. This Order requires the Discharger to complete a study of these constituents' potential effect in the receiving water. This reopener provision allows the Central Valley Water Board to reopen this Order for addition of effluent limitations and requirements for these constituents if after review of the monitoring results or the study results it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective.

d. Water Effects Ratio (WER) and Metal Translators. A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable inorganic constituents. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

2. Special Studies and Additional Monitoring Requirements

a. Chronic Whole Effluent Toxicity Requirements. The Basin Plans contain a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (San Joaquin Basin Plan at page III-8.01 and Tulare Lake Basin Plan at page III-6). Based on whole effluent chronic toxicity testing performed by the Discharger from July 2009 through October 2012, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plans' narrative toxicity objective.

The Monitoring and Reporting Program of this Order requires chronic WET monitoring for demonstration of compliance with the narrative toxicity objective. In addition to WET monitoring, this provision includes a numeric toxicity monitoring trigger, requirements for accelerated monitoring, and requirements for TRE initiation if toxicity is demonstrated.

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

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

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

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

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

- *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants*, EPA/833-B-99/002, August 1999.
- *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs)*, EPA/600/2-88/070, April 1989.
- *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures, Second Edition*, EPA 600/6-91/003, February 1991.
- *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I*, EPA/600/6-91/005F, May 1992.
- *Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity,* Second Edition, EPA/600/R-92/080, September 1993.

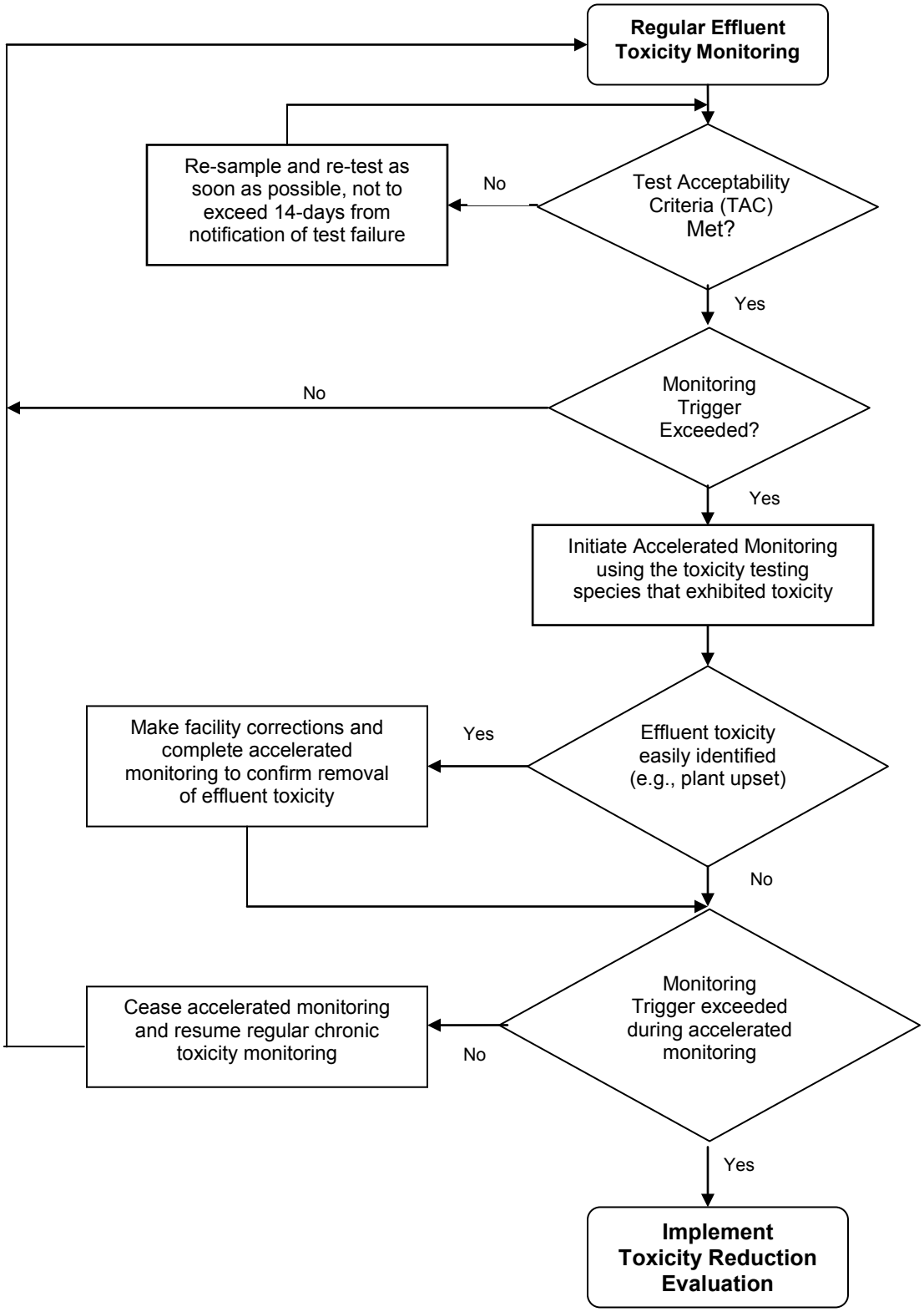
- *Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity*, Second Edition, EPA 600/R-92/081, September 1993.

- *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, Fifth Edition, EPA-821-R-02-012, October 2002.

- *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, EPA-821-R-02-013, October 2002.

- *Technical Support Document for Water Quality-based Toxics Control*, EPA/505/2-90-001, March 1991.

Figure F-1
WET Accelerated Monitoring Flow Chart



3. Best Management Practices and Pollution Prevention – Not Applicable

4. Construction, Operation, and Maintenance Specifications

a. Turbidity and Ultraviolet Light Disinfection Operating Specifications. This Order requires disinfection at a level equivalent to Title 22 disinfected tertiary recycled water to protect the public from contact with undiluted treated municipal wastewater. The Discharger utilizes tertiary filtration and ultraviolet disinfection to meet this level of disinfection.

The DPH developed requirements for turbidity and total coliform organisms to demonstrate that the desired pathogen removal is achieved for Title 22 disinfected tertiary recycled water. Therefore, this Order includes effluent turbidity specifications and total coliform organisms effluent limits. However, for ultraviolet light disinfection, additional operating specifications are necessary. DPH developed the total coliform organisms levels based on the use of chlorine disinfection. Ultraviolet light disinfection does not disinfect the wastewater in the same manner as chlorine. For facilities that utilize ultraviolet disinfection, DPH requires compliance with additional operating specifications to ensure adequate disinfection is provided. Therefore, in addition to turbidity specifications and total coliform organisms effluent limits, this Order includes ultraviolet light disinfection system operating specifications (e.g., ultraviolet light dose, ultraviolet light transmittance, etc.) as recommended by DPH.

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

The minimum ultraviolet light dosage specifications included in section VI.C.3.b. of this Order are recommended by the NWRI Guidelines for ultraviolet light disinfection following membrane filtration to achieve the virus inactivation equivalent to Title 22 disinfected tertiary recycled water. Operating specifications to require proper maintenance of the lamp sleeves are also required. If the Discharger conducts a site-specific ultraviolet light engineering study that

identifies site-specific ultraviolet light operating specifications that will achieve the virus inactivation equivalent to Title 22 disinfected tertiary recycled water, this Order may be reopened to modify the ultraviolet light operating specifications, in accordance with Reopener Provision VI.C.1.a.

Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. The operational specification requires that turbidity prior to disinfection shall not exceed 0.2 NTU, more than 5 percent of the time within a 24-hour period; and an instantaneous maximum of 0.5 NTU.

Minimum ultraviolet light dosage and turbidity specifications and monitoring requirements are included in section VI.C.4.a and b of this Order section IX.C. of the Monitoring and Reporting Program (Attachment E) to ensure that adequate disinfection of wastewater is achieved.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Pretreatment Requirements.

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

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

b. Collection System. The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order 2006-0003-DWQ on 2 May 2006. Order 2006-0003-DWQ requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage Order 2006-0003-DWQ. Order 2006-0003-DWQ requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), among other requirements and prohibitions. The Discharger has applied for and has been approved for coverage under Order 2006-0003-DWQ for operation of its wastewater collection system.

c. This Order, and the Monitoring and Reporting Program which is a part of this Order, requires that certain parameters be monitored on a continuous basis. The wastewater treatment plant is not staffed on a full time basis. Permit violations or

system upsets can go undetected during this period. The Discharger shall establish an electronic system for operator notification for continuous recording device alarms if not already installed. For existing continuous monitoring systems, the electronic notification system shall be installed within 6 months of adoption of this permit. For systems installed following permit adoption, the notification system shall be installed simultaneously.

6. Other Special Provisions

a. Discharge Flow Expansion (Phase II Improvements). The Discharger has requested to be permitted to expand discharge flows up to 5.6 mgd (average annual) to Fancher Creek and/or the Diversion Channel. This Order Permits the Discharger to discharge up to 5.6 mgd to Fancher Creek and/or the Diversion Channel upon compliance with requirements listed in section VI.C.6.a. of the Order.

b. Title 22, CCR requires disinfected tertiary recycled water to be oxidized, coagulated (in some instances), filtered, and adequately disinfected. Title 22, CCR does not require coagulation for facilities such as the Facility that use microfiltration.

c. This Order requires that the Discharger has obtained the necessary agreements to flow disinfected tertiary-treated wastewater through the Division Channel prior to discharging to Discharge Point 002.

7. Compliance Schedules – Not Applicable

8. Master Recycling Permit Provisions

The master recycling permit provisions are included in this Order to ensure compliance with Water Code section 13523.1 (see section III.C.2 of this Fact Sheet)

VIII. PUBLIC PARTICIPATION

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

A. Notification of Interested Parties

The Central Valley 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: direct mailing to agencies and known interested parties; posting of a Notice of Public Hearing at the Facility entrance, local post office, nearest city hall or county courthouse, and the Central Valley Regional Water Board's web site; and publication in the Fresno Bee on 21 November 2013.

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 Central Valley Water Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Central Valley Water Board, written comments must be received at the Central Valley Water Board offices by 5:00 p.m. on **23 December 2013**.

C. Public Hearing

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

Date: 6/7 February 2014
Time: 9:00 a.m.
Location: Regional Water Quality Control Board, Central Valley Region
11020 Sun Center Dr., Suite #200
Rancho Cordova, CA 95670

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

Please be aware that dates and venues may change. Our Web address is www.waterboards.ca.gov/centralvalley where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Board to review the decision of the Central Valley Water Board regarding the final WDRs. The petition must be received by the State Water Board within 30 days of the Central Valley Water Board's action, and must be submitted to the following address:

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

E. Information and Copying

The Report of Waste Discharge, related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:00 a.m. and 4:30 p.m., Monday through Friday. Copying of documents may be arranged through the Central Valley

Water Board by calling (559) 445-5116. Our office is located at 1685 “E” Street, Fresno, CA 93706.

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 Central Valley 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 Alexander Mushegan at (559) 488-4397 or at amushegan@waterboards.ca.gov.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS FOR CONSTITUENTS OF CONCERN

Constituent	Units	MEC	B_1	B_2	B_3	$C_{Effluent}$	C_1	C_2	C_3	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Aluminum, Total Recoverable	µg/L	36 [1]	N/A	N/A	N/A	200	200			750 [3]	--	--	--	--	200	No
Ammonia Nitrogen, Total (as N)	mg/L	4.5	3.1	N/A	N/A	1.58[8] 1.93[9]	1.58	1.93	1.93	5.73[8] 4.64[9]	1.58[8] 1.90[9]	--	--	--	--	Yes [11]
Bis (2-ethylhexyl) Phthalate	µg/L	<0.43	0.66[2]	6.2	<0.43	1.8	5.9	1.8	5.9	--	--	1.8	5.9	--	4	No
Chlorine Residual	mg/L	<0.01	N/A	N/A	N/A	0.011	0.011			0.019	0.011	--	--	--	4,000	No
Copper, Total Recoverable	µg/L	4.9[2]	4.4[2]	8.0	9.3	6.5	0.95	9.0	12	9.3	6.5	1,300	--	--	1,000	Insufficient Data [4]
Lead, Total Recoverable	µg/L	0.13[2]	1.4 [2]	1.4	1.0	1.2	0.11	3.0	4.77	[5]	[6]	--	--	--	15	Insufficient Data [4]
Mercury, Total Recoverable	µg/L	<0.062[10]	<0.062[10]	0.095 [2]	0.38 [2]	0.050	0.051	0.050	0.051	--	--	0.050	0.051	--	2	No
Silver, Total Recoverable	µg/L	<1.1	1.3[2]	0.09[2]	1.3[2]	-1.6	0.0	3.8	7.0	[7]	--	--	--	--	100	No

Constituent	Units	MEC	B_1	B_2	B_3	$C_{Effluent}$	C_1	C_2	C_3	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential

General Note: All inorganic concentrations are given as a total recoverable.
MEC = Maximum Effluent Concentration
B_1 = Maximum receiving water concentration in the Fresno Canal (Fancher Creek)
B_2 = Maximum receiving water concentration in Little Dry Creek
B_3 = Maximum receiving water concentration in the Diversion Channel
$C_{Effluent}$ = Criterion to be compared to the maximum effluent concentration
C_1 = Criterion to be compared to the maximum receiving water sample in Fancher Creek
C_2 = Criterion to be compared to the maximum receiving water sample in Little Dry Creek
C_3 = Criterion to be compared to the maximum receiving water sample in Diversion Channel
CMC = Effluent Criterion Maximum Concentration (CTR or NTR)
CCC = Effluent Criterion Continuous Concentration (CTR or NTR)
Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)
Org. Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)
Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective
MCL = Drinking Water Standards Maximum Contaminant Level
N/A = Not Available

Footnotes:
(1) The MEC of 89 µg/L is considered unrepresentative, the second highest detected total recoverable aluminum concentration is 36 µg/L. See section IV.C.3. of the Fact Sheet (Attachment F).
(2) Estimated value(s); considered invalid for reasonable potential determination.
(3) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 1-hour
(4) Insufficient data to conduct RPA. See section IV.C.3 of the Fact Sheet (Attachment F).
(5) The effluent CMC for lead applicable to discharges to Fancher Creek, Little Dry Creek, and the Diversion Channel are 32 µg/L, 30 µg/L, and 18 µg/L, respectively.
(6) The effluent CCC for lead applicable to discharges to Fancher Creek, Little Dry Creek, and the Diversion Channel are 1.2 µg/L, 1.2 µg/L, and 1.5 µg/L, respectively.
(7) The effluent CMC for silver applicable to discharges to Fancher Creek, Little Dry Creek, and the Diversion Channel are 0.63 µg/L, -1.6 µg/L, and 0.21 µg/L, respectively.
(8) Applicable to Discharge Point 001 only
(9) Applicable to Discharge Point 002 only
(10) Highest detection without a detection reported in the associated laboratory blank.
(11) The Facility is a POTW that treats domestic wastewater. Reasonable potential therefore exists and WQBELs are required. See section IV.C.3. of the Fact Sheet (Attachment F) for more details.

ATTACHMENT H – CALCULATION OF WQBELS

Parameter	Units	Most Stringent Criteria			Dilution Factors			HH Calculations			Aquatic Life Calculations									Final Effluent Limitations	
		HH	CMC	CCC	HH	CMC	CCC	ECA_{HH} = $AMEL_{HH}$	AMEL/MDEL $Multiplier_{HH}$	$MDEL_{HH}$	ECA $Multiplier_{acute}$	LTA_{acute}	ECA $Multiplier_{chronic}$	$LTA_{chronic}$	Lowest LTA	AMEL $Multiplier_{95}$	$AMEL_{AL}$	MDEL $Multiplier_{99}$	$MDEL_{AL}$	Lowest AMEL	Lowest MDEL
Discharge Point 001																					
Ammonia Nitrogen, Total (as N)	mg/L	--	5.73	1.58	--	--	--	--	--	--	0.19	1.08	0.64	1.02	1.02	2.03	2.1	5.30	5.4	1.0[1]	5.4
Discharge Point 002																					
Ammonia Nitrogen, Total (as N)	mg/L	--	4.64	1.93	--	--	--	--	--	--	0.19	0.88	0.64	1.2	0.88	2.03	1.8	5.30	4.6	1.0[1]	4.6

[1] A more stringent AMEL of 1.0 mg/L is retained as a technology-based effluent limit in this this Order. (see Section IV.B.2.d. of the Fact Sheet for a detailed discussion)

ATTACHMENT I – EFFLUENT AND RECEIVING WATER CHARACTERIZATION

I. Background. Sections 2.4.1 through 2.4.4 of the SIP provide minimum standards for analyses and reporting. (Copies of the SIP may be obtained from the State Water Resources Control Board, or downloaded from http://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/sip2005.pdf). To implement the SIP, effluent and receiving water data are needed for all priority pollutants. Effluent and receiving water pH and hardness are required to evaluate the toxicity of certain priority pollutants (such as heavy metals) where the toxicity of the constituents varies with pH and/or hardness. Section 3 of the SIP prescribes mandatory monitoring of dioxin congeners. In addition to specific requirements of the SIP, the Central Valley Water Board is requiring the following monitoring:

A. Drinking water constituents. Constituents for which drinking water Maximum Contaminant Levels (MCLs) have been prescribed in the California Code of Regulation are included in the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition (Revised October 2011)* and *Water Quality Control Plan for the Tulare Lake Basin, Second Edition (Revised January 2004)* (collectively hereinafter Basin Plans)**.** The Basin Plans define virtually all surface waters within the Central Valley Region as having existing or potential beneficial uses for municipal and domestic supply. The Basin Plans further require that, at a minimum, water designated for use as domestic or municipal supply shall not contain concentrations of chemical constituents in excess of the MCLs contained in the California Code of Regulations.

B. Effluent and receiving water temperature. This is both a concern for application of certain temperature-sensitive constituents, such as fluoride, and for compliance with the Basin Plans' thermal discharge requirements.

C. Effluent and receiving water hardness and pH. These are necessary because several of the CTR constituents are hardness and pH dependent.

II. Monitoring Requirements.

A. Monitoring. Annual (1/year) priority pollutant samples shall be collected from the effluent and upstream receiving water monitoring points in Fancher Creek (Fresno Canal) and Little Dry Creek (Monitoring Locations EFF-A, RSW-001U, and RSW-002U) and analyzed for the constituents listed in Table I-1, unless otherwise noted. Priority pollutant samples shall be collected once between **1 January 2015 - 30 June 2015** and once between **1 July 2016 and 31 December 2016** from the upstream receiving water monitoring point in the Diversion Channel (Monitoring Location RSW-003U) and analyzed for the constituents listed in Table I-1, unless otherwise noted. If there is no measurable flow at Monitoring Location RSW-003U during either of the specified sampling date ranges, the Discharger shall conduct the required upstream receiving water monitoring the next time water is released from Big Dry Creek Reservoir to the Diversion Channel. The results of such monitoring shall be submitted to the Central Valley Water Board with the monthly self-monitoring report in which the samples were collected.

B. Sample type. All effluent samples shall be taken as 24-hour flow proportioned composite samples except samples for constituents which 40 CFR Part 136 indicates composite samples are inappropriate (e.g., volatile organic compounds). All receiving water samples shall be taken as grab samples.

C. Additional Monitoring/Reporting Requirements. The Discharger shall conduct the monitoring and reporting in accordance with the General Monitoring Provisions and Reporting Requirements in Attachment E.

Table I-1. Priority Pollutants and Other Constituents of Concern

			Effluent (EFF-A)		Fancher Creek (RSW-001U)		Little Dry Creek (RSW-002U)		Diversion Channel (RSW-003U)	
CTR #	Constituent	CAS Number	Reporting Level [2]	Method Type [1]	Reporting Level [2]	Method Type [1]	Reporting Level [2]	Method Type [1]	Reporting Level [2]	Method Type [1]
1	Antimony	7440360	5	GFAA	5	GFAA	5	GFAA	5	GFAA
					10	FAA			10	FAA
			0.5	ICPMS	0.5	ICPMS	0.5	ICPMS	0.5	ICPMS
					50	ICP			50	ICP
			5	SPGFAA	5	SPGFAA	5	SPGFAA	5	SPGFAA
			0.5	HYDRIDE	0.5	HYDRIDE	0.5	HYDRIDE	0.5	HYDRIDE
					1000	DCP			1000	DCP
2	Arsenic	7440382	2	GFAA	2	GFAA	2	GFAA	2	GFAA
			10	ICP	10	ICP	10	ICP	10	ICP
			2	ICPMS	2	ICPMS	2	ICPMS	2	ICPMS
			2	SPGFAA	2	SPGFAA	2	SPGFAA	2	SPGFAA
			1	HYDRIDE	1	HYDRIDE	1	HYDRIDE	1	HYDRIDE
					20	COLOR			20	COLOR
3	Beryllium	7440417	0.5	GFAA	0.5	GFAA	0.5	GFAA	0.5	GFAA
			2	ICP	2	ICP	2	ICP	2	ICP
			0.5	ICPMS	0.5	ICPMS	0.5	ICPMS	0.5	ICPMS
			1	SFGFAA	1	SFGFAA	1	SFGFAA	1	SFGFAA
					20	FAA			20	FAA
4	Cadmium	7440439	0.25	ICPMS	0.25	ICPMS	0.5	GFAA	0.5	GFAA
							0.25	ICPMS	0.25	ICPMS
							0.5	SPGFAA	0.5	SPGFAA
5A	Chromium (III)	7440473	--	--	--	--	--	--	--	--
5B	Chromium (VI)	18540299	5	FAA	5	FAA	5	FAA	5	FAA
			10	COLOR	10	COLOR	10	COLOR	10	COLOR
6	Copper	7440508	0.5	ICPMS	0.5	ICPMS	5	GFAA	5	GFAA
							0.5	ICPMS	0.5	ICPMS
							2	SPGFAA	2	SPGFAA

			Effluent (EFF-A)		Fancher Creek (RSW-001U)		Little Dry Creek (RSW-002U)		Diversion Channel (RSW-003U)	
CTR #	**Constituent**	**CAS Number**	**Reporting Level [2]**	**Method Type [1]**	**Reporting Level [2]**	**Method Type [1]**	**Reporting Level [2]**	**Method Type [1]**	**Reporting Level [2]**	**Method Type [1]**
7	Lead	7439921	0.5	ICPMS	0.5	ICPMS	0.5	ICPMS	0.5	ICPMS
							2	SPGFAA	2	SPGFAA
8	Mercury [3]	7439976	0.2	CVAA	0.2	CVAA	0.2	CVAA	0.2	CVAA
9	Nickel	7440020	5	GFAA	5	GFAA	5	GFAA	5	GFAA
			1	ICPMS	1	ICPMS	1	ICPMS	1	ICPMS
			5	SPGFAA	5	SPGFAA	5	SPGFAA	5	SPGFAA
							20	ICP	20	ICP
10	Selenium	7782492	5	GFAA	5	GFAA	5	GFAA	5	GFAA
			2	ICPMS	2	ICPMS	2	ICPMS	2	ICPMS
			5	SPGFAA	5	SPGFAA	5	SPGFAA	5	SPGFAA
			1	HYDRIDE	1	HYDRIDE	1	HYDRIDE	1	HYDRIDE
11	Silver	7440224	0.25	ICPMS	0.25	ICPMS	1	GFAA	1	GFAA
							0.25	ICPMS	0.25	ICPMS
							2	SPGFAA	2	SPGFAA
12	Thallium	7440280	1	ICPMS	1	ICPMS	1	ICPMS	1	ICPMS
13	Zinc	7440666	1	ICPMS	1	ICPMS	1	ICPMS	1	ICPMS
							20	FAA	20	FAA
							20	ICP	20	ICP
							10	SPGFAA	10	SPGFAA
14	Cyanide	57125	5	COLOR	5	COLOR	5	COLOR	5	COLOR
15	Asbestos	1332214	-- (MFL)	--	-- (MFL)	--	-- (MFL)	--	-- (MFL)	--
16	2,3,7,8-TCDD (Dioxin)	1746016	--	--	--	--	--	--	--	--
17	Acrolein	107028	2	GC	2	GC	2	GC	2	GC
			5	GCMS	5	GCMS	5	GCMS	5	GCMS
18	Acrylonitrile	107131	2	GC	2	GC	2	GC	2	GC
			2	GCMS	2	GCMS	2	GCMS	2	GCMS
19	Benzene	71432	0.5	GC	0.5	GC	0.5	GC	0.5	GC
					2	GCMS			2	GCMS
20	Bromoform	75252	0.5	GC	0.5	GC	0.5	GC	0.5	GC

			Effluent (EFF-A)		Fancher Creek (RSW-001U)		Little Dry Creek (RSW-002U)		Diversion Channel (RSW-003U)	
CTR #	**Constituent**	**CAS Number**	**Reporting Level [2]**	**Method Type [1]**	**Reporting Level [2]**	**Method Type [1]**	**Reporting Level [2]**	**Method Type [1]**	**Reporting Level [2]**	**Method Type [1]**
			2	GCMS	2	GCMS	2	GCMS	2	GCMS
21	Carbon tetrachloride	56235	0.5	GC	0.5	GC	0.5	GC	0.5	GC
22	Chlorobenzene (mono chlorobenzene)	108907	0.5	GC	0.5	GC	0.5	GC	0.5	GC
			2	GCMS	2	GCMS	2	GCMS	2	GCMS
23	Dibromochloromethane	124481	0.5	GC	0.5	GC	0.5	GC	0.5	GC
					2	GCMS			2	GCMS
24	Chloroethane	75003	0.5	GC	0.5	GC	0.5	GC	0.5	GC
			2	GCMS	2	GCMS	2	GCMS	2	GCMS
25	2- Chloroethyl vinyl ether	110758	1	GC	1	GC	1	GC	1	GC
			1	GCMS	1	GCMS	1	GCMS	1	GCMS
26	Chloroform	67663	0.5	GC	0.5	GC	0.5	GC	0.5	GC
			2	GCMS	2	GCMS	2	GCMS	2	GCMS
27	Dichlorobromomethane	75274	0.5	GC	0.5	GC	0.5	GC	0.5	GC
					2	GCMS			2	GCMS
28	1,1-Dichloroethane	75343	0.5	GC	0.5	GC	0.5	GC	0.5	GC
			1	GCMS	1	GCMS	1	GCMS	1	GCMS
29	1,2-Dichloroethane	107062	0.5	GC	0.5	GC	0.5	GC	0.5	GC
					2	GCMS			2	GCMS
30	1,1-Dichloroethylene	75354	0.5	GC	0.5	GC	0.5	GC	0.5	GC
					2	GCMS			2	GCMS
31	1,2-Dichloropropane	78875	0.5	GC	0.5	GC	0.5	GC	0.5	GC
					1	GCMS			1	GCMS
32	1,3-Dichloropropylene	542756	0.5	GC	0.5	GC	0.5	GC	0.5	GC
					2	GCMS			2	GCMS
33	Ethylbenzene	100414	0.5	GC	0.5	GC	0.5	GC	0.5	GC
			2	GCMS	2	GCMS	2	GCMS	2	GCMS
34	Bromomethane	74839	1	GC	1	GC	1	GC	1	GC
			2	GCMS	2	GCMS	2	GCMS	2	GCMS

			Effluent (EFF-A)		Fancher Creek (RSW-001U)		Little Dry Creek (RSW-002U)		Diversion Channel (RSW-003U)	
CTR #	Constituent	CAS Number	Reporting Level [2]	Method Type [1]	Reporting Level [2]	Method Type [1]	Reporting Level [2]	Method Type [1]	Reporting Level [2]	Method Type [1]
35	Chloromethane	74873	0.5	GC	0.5	GC	0.5	GC	0.5	GC
			2	GCMS	2	GCMS	2	GCMS	2	GCMS
36	Dichloromethane	75092	0.5	GC	0.5	GC	0.5	GC	0.5	GC
			2	GCMS	2	GCMS	2	GCMS	2	GCMS
37	1,1,2,2-Tetrachloroethane	79345	0.5	GC	0.5	GC	0.5	GC	0.5	GC
					1	GCMS			1	GCMS
38	Tetrachloroethene	127184	0.5	GC	0.5	GC	0.5	GC	0.5	GC
					1	GCMS			1	GCMS
39	Toluene	108883	0.5	GC	0.5	GC	0.5	GC	0.5	GC
			2	GCMS	2	GCMS	2	GCMS	2	GCMS
40	trans-1,2-Dichloroethylene	156605	0.5	GC	0.5	GC	0.5	GC	0.5	GC
			1	GCMS	1	GCMS	1	GCMS	1	GCMS
41	1,1,1-Trichloroethane	71556	0.5	GC	0.5	GC	0.5	GC	0.5	GC
			2	GCMS	2	GCMS	2	GCMS	2	GCMS
42	1,1,2-Trichloroethane	79005	0.5	GC	0.5	GC	0.5	GC	0.5	GC
					2	GCMS			2	GCMS
43	Trichloroethylene	79016	0.5	GC	0.5	GC	0.5	GC	0.5	GC
			2	GCMS	2	GCMS	2	GCMS	2	GCMS
44	Vinyl chloride	75014	0.5	GC	0.5	GC	0.5	GC	0.5	GC
					2	GCMS			2	GCMS
45	2-Chlorophenol	95578	2	GC	2	GC	2	GC	2	GC
			5	GCMS	5	GCMS	5	GCMS	5	GCMS
46	2,4-Dichlorophenol	120832	1	GC	1	GC	1	GC	1	GC
			5	GCMS	5	GCMS	5	GCMS	5	GCMS
47	2,4-Dimethylphenol	105679	1	GC	1	GC	1	GC	1	GC
			2	GCMS	2	GCMS	2	GCMS	2	GCMS
48	4,6-Dinitro-2-methylphenol	534521	10	GC	10	GC	10	GC	10	GC
			5	GCMS	5	GCMS	5	GCMS	5	GCMS

			Effluent (EFF-A)		Fancher Creek (RSW-001U)		Little Dry Creek (RSW-002U)		Diversion Channel (RSW-003U)	
CTR #	Constituent	CAS Number	Reporting Level [2]	Method Type [1]	Reporting Level [2]	Method Type [1]	Reporting Level [2]	Method Type [1]	Reporting Level [2]	Method Type [1]
49	2,4-Dinitrophenol	51285	5	GC	5	GC	5	GC	5	GC
			5	GCMS	5	GCMS	5	GCMS	5	GCMS
50	2-Nitrophenol	25154557	10	GCMS	10	GCMS	10	GCMS	10	GCMS
51	4-Nitrophenol	100027	5	GC	5	GC	5	GC	5	GC
			5	GCMS	5	GCMS	5	GCMS	5	GCMS
52	4-Chloro-3-methylphenol	59507	5	GC	5	GC	5	GC	5	GC
			1	GCMS	1	GCMS	1	GCMS	1	GCMS
53	Pentachlorophenol	87865	1	GC	1	GC	1	GC	1	GC
					5	GCMS			5	GCMS
54	Phenol	108952	1	GC	1	GC	1	GC	1	GC
			1	GCMS	1	GCMS	1	GCMS	1	GCMS
55	2,4,6-Trichlorophenol	88062	10	GC	10	GC	10	GC	10	GC
			10	GCMS	10	GCMS	10	GCMS	10	GCMS
56	Acenaphthene	83329	1	GC	1	GC	1	GC	1	GC
			1	GCMS	1	GCMS	1	GCMS	1	GCMS
			0.5	LC	0.5	LC	0.5	LC	0.5	LC
57	Acenaphthylene	208968	10	GCMS	10	GCMS	10	GCMS	10	GCMS
			0.2	LC	0.2	LC	0.2	LC	0.2	LC
58	Anthracene	120127	10	GCMS	10	GCMS	10	GCMS	10	GCMS
			2	LC	2	LC	2	LC	2	LC
59	Benzidine	92875	5	GCMS	5	GCMS	5	GCMS	5	GCMS
60	1,2-Benzanthracene	56553	5	GCMS	5	GCMS	5	GCMS	5	GCMS
61	Benzo(a)pyrene (3,4-Benzopyrene)	50328	2	LC	2	LC	2	LC	2	LC
62	3,4-Benzofluoranthene	205992	10	GCMS	10	GCMS	10	GCMS	10	GCMS
			10	LC	10	LC	10	LC	10	LC
63	Benzo(g,h,i)perylene	191242	5	GCMS	5	GCMS	5	GCMS	5	GCMS
			0.1	LC	0.1	LC	0.1	LC	0.1	LC
64	Benzo(k)fluoranthene	207089	2	LC	2	LC	2	LC	2	LC
65	Bis(2-chloroethoxy) methane	111911	5	GCMS	5	GCMS	5	GCMS	5	GCMS

			Effluent (EFF-A)		Fancher Creek (RSW-001U)		Little Dry Creek (RSW-002U)		Diversion Channel (RSW-003U)	
CTR #	**Constituent**	**CAS Number**	**Reporting Level [2]**	**Method Type [1]**	**Reporting Level [2]**	**Method Type [1]**	**Reporting Level [2]**	**Method Type [1]**	**Reporting Level [2]**	**Method Type [1]**
66	Bis(2-chloroethyl) ether	111444	1	GCMS	1	GCMS	1	GCMS	1	GCMS
67	Bis(2-chloroisopropyl) ether	39638329	10	GC	10	GC	10	GC	10	GC
			2	GCMS	2	GCMS	2	GCMS	2	GCMS
68	Bis(2-ethylhexyl) phthalate [4]	117817	5	GCMS	5	GCMS	5	GCMS	5	GCMS
69	4-Bromophenyl phenyl ether	101553	10	GC	10	GC	10	GC	10	GC
			5	GCMS	5	GCMS	5	GCMS	5	GCMS
70	Butyl benzyl phthalate	85687	10	GC	10	GC	10	GC	10	GC
			10	GCMS	10	GCMS	10	GCMS	10	GCMS
71	2-Chloronaphthalene	91587	10	GCMS	10	GCMS	10	GCMS	10	GCMS
72	4-Chlorophenyl phenyl ether	7005723	5	GCMS	5	GCMS	5	GCMS	5	GCMS
73	Chrysene	218019	5	LC	5	LC	5	LC	5	LC
74	Dibenzo(a,h)-anthracene	53703	0.1	LC	0.1	LC	0.1	LC	0.1	LC
75	1,2-Dichlorobenzene	95501	2	GC	2	GC	2	GC	2	GC
			2	GCMS	2	GCMS	2	GCMS	2	GCMS
76	1,3-Dichlorobenzene	541731	2	GC	2	GC	2	GC	2	GC
			1	GCMS	1	GCMS	1	GCMS	1	GCMS
77	1,4-Dichlorobenzene	106467	2	GC	2	GC	2	GC	2	GC
			1	GCMS	1	GCMS	1	GCMS	1	GCMS
78	3,3'-Dichlorobenzidine	91941	5	GCMS	5	GCMS	5	GCMS	5	GCMS
79	Diethyl phthalate	84662	10	GC	10	GC	10	GC	10	GC
			2	GCMS	2	GCMS	2	GCMS	2	GCMS
80	Dimethyl phthalate	131113	10	GC	10	GC	10	GC	10	GC
			2	GCMS	2	GCMS	2	GCMS	2	GCMS
81	Di-n-butylphthalate	84742	10	GCMS	10	GCMS	10	GCMS	10	GCMS
82	2,4-Dinitrotoluene	121142	5	GCMS	5	GCMS	5	GCMS	5	GCMS
83	2,6-Dinitrotoluene	606202	5	GCMS	5	GCMS	5	GCMS	5	GCMS
84	Di-n-octylphthalate	117840	10	GCMS	10	GCMS	10	GCMS	10	GCMS
85	1,2-Diphenylhydrazine	122667	1	GCMS	1	GCMS	1	GCMS	1	GCMS

			Effluent (EFF-A)		Fancher Creek (RSW-001U)		Little Dry Creek (RSW-002U)		Diversion Channel (RSW-003U)	
CTR #	**Constituent**	**CAS Number**	**Reporting Level [2]**	**Method Type [1]**	**Reporting Level [2]**	**Method Type [1]**	**Reporting Level [2]**	**Method Type [1]**	**Reporting Level [2]**	**Method Type [1]**
86	Fluoranthene	206440	10	GC	10	GC	10	GC	10	GC
			1	GCMS	1	GCMS	1	GCMS	1	GCMS
			0.05	LC	0.05	LC	0.05	LC	0.05	LC
87	Fluorene	86737	10	GCMS	10	GCMS	10	GCMS	10	GCMS
			0.1	LC	0.1	LC	0.1	LC	0.1	LC
88	Hexachlorobenzene	118741	1	GCMS	1	GCMS	1	GCMS	1	GCMS
89	Hexachlorobutadiene	87683	1	GCMS	5	GC	1	GCMS	5	GC
					1	GCMS			1	GCMS
90	Hexachlorocyclopentadiene	77474	5	GC	5	GC	5	GC	5	GC
			5	GCMS	5	GCMS	5	GCMS	5	GCMS
91	Hexachloroethane	67721	1	GCMS	5	GC	1	GCMS	5	GC
					1	GCMS			1	GCMS
92	Indeno(1,2,3-c,d)pyrene	193395	0.05	LC	0.05	LC	0.05	LC	0.05	LC
93	Isophorone	78591	1	GCMS	10	GC	1	GCMS	10	GC
					1	GCMS			1	GCMS
94	Naphthalene	91203	10	GC	10	GC	10	GC	10	GC
			1	GCMS	1	GCMS	1	GCMS	1	GCMS
			0.2	LC	0.2	LC	0.2	LC	0.2	LC
95	Nitrobenzene	98953	10	GC	10	GC	10	GC	10	GC
			1	GCMS	1	GCMS	1	GCMS	1	GCMS
96	N-Nitrosodimethylamine	62759	5	GCMS	5	GCMS	5	GCMS	5	GCMS
97	N-Nitrosodi-n-propylamine	621647	5	GCMS	5	GCMS	5	GCMS	5	GCMS
98	N-Nitrosodiphenylamine	86306	1	GCMS	10	GC	1	GCMS	10	GC
					1	GCMS			1	GCMS
99	Phenanthrene	85018	5	GCMS	5	GCMS	5	GCMS	5	GCMS
			0.05	LC	0.05	LC	0.05	LC	0.05	LC
100	Pyrene	129000	10	GCMS	10	GCMS	10	GCMS	10	GCMS
			0.05	LC	0.05	LC	0.05	LC	0.05	LC

			Effluent (EFF-A)		Fancher Creek (RSW-001U)		Little Dry Creek (RSW-002U)		Diversion Channel (RSW-003U)	
CTR #	**Constituent**	**CAS Number**	**Reporting Level [2]**	**Method Type [1]**	**Reporting Level [2]**	**Method Type [1]**	**Reporting Level [2]**	**Method Type [1]**	**Reporting Level [2]**	**Method Type [1]**
101	1,2,4-Trichlorobenzene	120821	1	GC	1	GC	1	GC	1	GC
			5	GC	5	GCMS	5	GCMS	5	GCMS
102	Aldrin	309002	0.005	GC	0.005	GC	0.005	GC	0.005	GC
103	alpha-Hexachlorocyclohexane (BHC)	319846	0.01	GC	0.01	GC	0.01	GC	0.01	GC
104	beta-Hexachlorocyclohexane	319857	0.005	GC	0.005	GC	0.005	GC	0.005	GC
105	Lindane (gamma-Hexachlorocyclohexane)	58899	0.02	GC	0.02	GC	0.02	GC	0.02	GC
106	delta-Hexachlorocyclohexane	319868	0.005	GC	0.005	GC	0.005	GC	0.005	GC
107	Chlordane	57749	0.1	GC	0.1	GC	0.1	GC	0.1	GC
108	4,4'-DDT	50293	0.01	GC	0.01	GC	0.01	GC	0.01	GC
109	4,4'-DDE	72559	0.05	GC	0.05	GC	0.05	GC	0.05	GC
110	4,4'-DDD	72548	0.05	GC	0.05	GC	0.05	GC	0.05	GC
111	Dieldrin	60571	0.01	GC	0.01	GC	0.01	GC	0.01	GC
112	alpha-Endosulfan	959988	0.02	GC	0.02	GC	0.02	GC	0.02	GC
113	beta-Endosulfan	33213659	0.01	GC	0.01	GC	0.01	GC	0.01	GC
114	Endosulfan sulfate	1031078	0.05	GC	0.05	GC	0.05	GC	0.05	GC
115	Endrin	72208	0.01	GC	0.01	GC	0.01	GC	0.01	GC
116	Endrin Aldehyde	7421934	0.01	GC	0.01	GC	0.01	GC	0.01	GC
117	Heptachlor	76448	0.01	GC	0.01	GC	0.01	GC	0.01	GC
118	Heptachlor Epoxide	1024573	0.01	GC	0.01	GC	0.01	GC	0.01	GC
119	PCB-1016	12674112	0.5	GC	0.5	GC	0.5	GC	0.5	GC
120	PCB-1221	11104282	0.5	GC	0.5	GC	0.5	GC	0.5	GC
121	PCB-1232	11141165	0.5	GC	0.5	GC	0.5	GC	0.5	GC
122	PCB-1242	53469219	0.5	GC	0.5	GC	0.5	GC	0.5	GC
123	PCB-1248	12672296	0.5	GC	0.5	GC	0.5	GC	0.5	GC
124	PCB-1254	11097691	0.5	GC	0.5	GC	0.5	GC	0.5	GC
125	PCB-1260	11096825	0.5	GC	0.5	GC	0.5	GC	0.5	GC
126	Toxaphene	8001352	0.5	GC	0.5	GC	0.5	GC	0.5	GC
	cis-1,2-Dichloroethylene [8]	156592	--	--	--	--	--	--	--	--

			Effluent (EFF-A)		Fancher Creek (RSW-001U)		Little Dry Creek (RSW-002U)		Diversion Channel (RSW-003U)	
CTR #	**Constituent**	**CAS Number**	**Reporting Level [2]**	**Method Type [1]**	**Reporting Level [2]**	**Method Type [1]**	**Reporting Level [2]**	**Method Type [1]**	**Reporting Level [2]**	**Method Type [1]**
	Methyl-tert-butyl ether (MTBE) [8]	1634044	--	--	--	--	--	--	--	--
	Trichlorofluoromethane [8]	75694	--	--	--	--	--	--	--	--
	1,1,2-Trichloro-1,2,2-Trifluoroethane [8]	76131	--	--	--	--	--	--	--	--
	Styrene [8]	100425	--	--	--	--	--	--	--	--
	Xylenes [8]	1330207	--	--	--	--	--	--	--	--
	Tributyltin	688733	--	--	--	--	--	--	--	--
	Alachlor [8]	15972608	--	--	--	--	--	--	--	--
	Atrazine [8]	1912249	--	--	--	--	--	--	--	--
	Bentazon [8]	25057890	--	--	--	--	--	--	--	--
	Carbofuran [8]	1563662	--	--	--	--	--	--	--	--
	2,4-D [8]	94757	--	--	--	--	--	--	--	--
	Dalapon [8]	75990	--	--	--	--	--	--	--	--
	1,2-Dibromo-3-chloropropane (DBCP) [8]	96128	--	--	--	--	--	--	--	--
	Di(2-ethylhexyl)adipate [8]	103231	--	--	--	--	--	--	--	--
	Dinoseb [8]	88857	--	--	--	--	--	--	--	--
	Diquat [8]	85007	--	--	--	--	--	--	--	--
	Endothal [8]	145733	--	--	--	--	--	--	--	--
	Ethylene Dibromide [8]	106934	--	--	--	--	--	--	--	--
	Glyphosate [8]	1071836	--	--	--	--	--	--	--	--
	Methoxychlor [8]	72435	--	--	--	--	--	--	--	--
	Molinate (Ordram) [8]	2212671	--	--	--	--	--	--	--	--
	Oxamyl [8]	23135220	--	--	--	--	--	--	--	--
	Picloram [8]	1918021	--	--	--	--	--	--	--	--
	Simazine (Princep) [8]	122349	--	--	--	--	--	--	--	--
	Thiobencarb [8]	28249776	--	--	--	--	--	--	--	--
	2,4,5-TP (Silvex) [8]	93765	--	--	--	--	--	--	--	--
	Diazinon [8]	333415	--	--	--	--	--	--	--	--
	Chlorpyrifos [8]	2921882	--	--	--	--	--	--	--	--
	Foaming Agents (MBAS) [8]		--	--	--	--	--	--	--	--

			Effluent (EFF-A)		Fancher Creek (RSW-001U)		Little Dry Creek (RSW-002U)		Diversion Channel (RSW-003U)	
CTR #	**Constituent**	**CAS Number**	**Reporting Level [2]**	**Method Type [1]**	**Reporting Level [2]**	**Method Type [1]**	**Reporting Level [2]**	**Method Type [1]**	**Reporting Level [2]**	**Method Type [1]**
	Ammonia (as N) [7]	7664417	--	--	--	--	--	--	--	--
	Aluminum [5, 7]	7429905	--	--	--	--	--	--	--	--
	Barium [8]	7440393	--	--	--	--	--	--	--	--
	Fluoride [8]	7782414	--	--	--	--	--	--	--	--
	Iron [6]	7439896	--	--	--	--	--	--	--	--
	Manganese [6]	7439965	--	--	--	--	--	--	--	--
	Chloride [6]	16887006	--	--	--	--	--	--	--	--
	Hardness (as $CaCO_3$)		--	--	--	--	--	--	--	--
	Nitrate (as N) [6]	14797558	--	--	--	--	--	--	--	--
	Nitrite (as N) [6]	14797650	--	--	--	--	--	--	--	--
	Phosphorus, Total (as P) [6]	7723140	--	--	--	--	--	--	--	--
	Specific conductance (EC) [7]		--	--	--	--	--	--	--	--
	Sulfate		--	--	--	--	--	--	--	--

[1] **GC** = Gas Chromatography; **GCMS** = Gas Chromatography/Mass Spectrometry; **LC** = High Pressure Liquid Chromatography; **FAA** = Flame Atomic Absorption; **GFAA** = Graphite Furnace Atomic Absorption; **Hydride** = Gaseous Hydride Atomic Absorption; **CVAA** = Cold Vapor Atomic Absorption; **ICP** = Inductively Coupled Plasma; **ICPMS** = Inductively Coupled Plasma/Mass Spectrometry; **SPGFAA** = Stabilized Platform Graphite Furnace Atomic Absorption (i.e., EPA 200.9); **DCP** = Direct Current Plasma; **COLOR** = Colorimetric

[2] µg/L or otherwise noted

[3] Unfiltered total mercury samples shall be taken using clean hands/dirty hands procedures, as described in USEPA method 1669: *Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels, for collection of equipment blanks* (section 9.4.4.2).

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

[5] Aluminum can either be total or acid-soluble (inductively coupled plasma/atomic emission spectrometry or inductively coupled plasma/mass spectrometry) analysis methods, as supported by USEPA's Ambient Water Quality Criteria for Aluminum document (EPA 440/5-86-008), or other standard methods that exclude aluminum silicate particles as approved by the Executive Officer.

[6] Monitoring is only required for Fancher Creek (RSW-001U), Little Dry Creek (RSW-002U), and the Diversion Channel (RSW-003U).

[7] Monitoring is only required for the Diversion Channel (RSW-003U).

[8] Monitoring is only required during the second, third, and fourth priority pollutant scans and only for the effluent (EFF-A) and Little Dry Creek (RSW-002U).

ATTACHMENT J – RECYCLED WATER SIGNAGE

From Title 22, California Code of Regulations, Figure 60310-A