CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

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ORDER R5-2014-0042
NPDES NO. CA0079430

WASTE DISCHARGE REQUIREMENTS FOR THE MARIPOSA PUBLIC UTILITY DISTRICT MARIPOSA WASTEWATER TREATMENT FACILITY MARIPOSA COUNTY

The following Discharger is subject to waste discharge requirements (WDRs) set forth in this Order:

Table 1. Discharger Information

Discharger	Mariposa Public Utility District
Name of Facility	Mariposa Wastewater Treatment Facility
Facility Address	4956 Miller Road
	Mariposa, CA 95338
	Mariposa County

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Disinfected Secondary Effluent	37° 28' 45.11" N	119° 57' 32.76" W	Mariposa Creek

Table 3. Administrative Information

This Order was adopted on:	28 March 2014
This Order shall become effective on:	1 May 2014
This Order shall expire on:	30 April 2019
The Discharger shall file a Report of Waste Discharge as an application for reissuance of WDRs in accordance with title 23, California Code of Regulations, and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than:	1 November 2018
The U.S. Environmental Protection Agency (USEPA) and the California Regional Water Quality Control Board, Central Valley Region have classified this discharge as follows:	Minor

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

Original signed by:

PAMELA C. CREEDON, Executive Officer

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I. FACILITY INFORMATION

Information describing the Mariposa Public Utility District, Mariposa Wastewater Treatment Facility (Facility) is summarized in Table 1 and in sections I and II of the Fact Sheet (Attachment F). Section I of the Fact Sheet also includes information regarding the Facility's permit application.

II. FINDINGS

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

A. Legal Authorities. This Order serves as WDRs pursuant to article 4, chapter 4, division 7 of the California Water Code (Water Code; commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this Facility to surface waters.

B. 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 the requirements in this Order, is hereby incorporated into and constitutes Findings for this Order. Attachments A through E and G through I are also incorporated into this Order.

C. Provisions and Requirements Implementing State Law. The provisions/requirements in subsections IV.B, IV.C, and V.B 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.

D. Monitoring and Reporting. 40 CFR 122.48 requires that all NPDES permits must 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 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 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 and operates 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.

E. 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 the notification are provided in the Fact Sheet.

F. 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 R5-2007-0171 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 CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Central Valley Water Board from taking enforcement action for past violations of the previous Order.

III. DISCHARGE PROHIBITIONS

A. Discharge of wastewater from the Facility, as the Facility is specifically described in the Fact Sheet in section II.B., in a manner different from that described in this Order is prohibited.

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

C. Neither the discharge nor its treatment shall create a nuisance as defined in section 13050 of the 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 classifiable as 'hazardous', as defined in Section 2521(a) of Title 23, California Code of Regulations (CCR), Section 2510 et seq., is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001

1. Final Effluent Limitations – Discharge Point 001

The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001 as described in the Monitoring and Reporting Program, Attachment E.

a. The Discharger shall maintain compliance with the effluent limitations specified in Table 4:

Table 4. Final Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	--	--
	lbs/day[1]	51	76	102	--	--
pH	standard units	--	--	--	6.5	8.5

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Suspended Solids	mg/L	10	15	20	--	--
	lbs/day[1]	51	76	102	--	--
Priority Pollutants						
Chlorodibromomethane	µg/L	0.41	--	0.82	--	--
Copper, Total Recoverable	µg/L	6.8	--	13	--	--
Dichlorobromomethane	µg/L	0.56	--	1.3	--	--
Zinc, Total Recoverable	µg/L	80	--	110	--	--
Non-Conventional Pollutants						
Ammonia Nitrogen, Total (as N)	mg/L	0.74	--	2.1	--	--
	lbs/day[1]	3.8	--	11		
Nitrate plus Nitrite (as N)	mg/L	10.	--	--	--	--
Total Trihalomethanes[2]	µg/L	80	--	--	--	--

[1] Based on an average dry weather flow of 0.61 million gallons per day (MGD).
[2] Applies to the sum of bromoform, chlorodibromomethane, chloroform, and dichlorobromomethane.

b. **Percent Removal:** The average monthly percent removal of 5-day biochemical oxygen demand (BOD_5) and total suspended solids (TSS) shall not be less than 90 percent.

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

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

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

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

e. **Chronic Whole Effluent Toxicity.** There shall be no chronic toxicity in the effluent discharge.

f. **Total Coliform.** Effluent total coliform shall not exceed:

   i. 2.2 most probable number (MPN) per 100 mL, as a 7-day median;
   ii. 23 MPN/100 mL, more than once in any 30-day period;
   iii. 240 MPN/100 mL, at any time.

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

h. **Average Dry Weather Flow.** The average dry weather discharge flow shall not exceed 0.61 MGD.

2. Interim Effluent Limitations

During the period beginning 1 May 2014 and ending on 3 December 2017, the Discharger shall maintain compliance with the following limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001 as described in the attached MRP. These interim effluent limitations shall apply in lieu of the corresponding final effluent limitations specified for the same parameters during the time period indicated in this provision.

a. The Discharger shall maintain compliance with the interim effluent limitations specified in Table 5:

Table 5. Interim Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	30	45	60	--	--
	lbs/day[1]	153	229	458	--	--
Total Suspended Solids	mg/L	30	45	60	--	--
	lbs/day[1]	153	229	458	--	--
Settleable Solids	mL/L	0.1	--	0.2	--	--

[1] Based on an average dry weather flow of 0.61 MGD.

b. **Total Coliform.** Effluent total coliform shall not exceed:

i. 23 MPN/100 mL, as a 7-day median;
ii. 240 MPN/100 mL, at any time.

B. Land Discharge Specifications – Not Applicable

C. Recycling Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

The discharge shall not cause the following in Mariposa Creek:

1. **Bacteria.** The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mL, nor more than 10 percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.
2. **Biostimulatory Substances.** Water to contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.
3. **Chemical Constituents.** Chemical constituents to be present in concentrations that adversely affect beneficial uses.
4. **Color.** Discoloration that causes nuisance or adversely affects beneficial uses.
5. **Dissolved Oxygen:**
   a. The monthly median of the mean daily dissolved oxygen concentration to fall below 85 percent of saturation in the main water mass;
   b. The 95 percentile dissolved oxygen concentration to fall below 75 percent of saturation; nor
   c. The dissolved oxygen concentration to be reduced below 5.0 mg/L at any time.
6. **Floating Material.** Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.
7. **Oil and Grease.** Oils, greases, waxes, or other materials to be present in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.

8. **pH.** The pH to be depressed below 6.5 nor raised above 8.5.
9. **Pesticides:**
   a. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses;
   b. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses;
   c. Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by USEPA or the Executive Officer;
   d. Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Board Resolution No. 68-16 and 40 CFR 131.12.);
   e. Pesticide concentrations to exceed the lowest levels technically and economically achievable;
   f. Pesticides to be present in concentration in excess of the maximum contaminant levels (MCLs) set forth in CCR, Title 22, division 4, chapter 15; nor
   g. Thiobencarb to be present in excess of 1.0 µg/L.
10. **Radioactivity:**
   a. Radionuclides to be present in concentrations that are harmful to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
   b. Radionuclides to be present in excess of the MCLs specified in Table 64442 of section 64442 and Table 64443 of section 64443 of Title 22 of the CCR.
11. **Suspended Sediments.** The suspended sediment load and suspended sediment discharge rate of surface waters to be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
12. **Settleable Material.** Substances to be present in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.
13. **Suspended Material.** Suspended material to be present in concentrations that cause nuisance or adversely affect beneficial uses.
14. **Taste and Odors.** Taste- or odor-producing substances to be present in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.
15. **Temperature.** The natural temperature to be increased by more than 5°F. Compliance to be determined based on the difference in temperature at Monitoring Locations RSW-001 and RSW-002.
16. **Toxicity.** Toxic substances to be present, individually or in combination, in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.
17. **Turbidity.** Turbidity to:
   a. Exceed 2 Nephelometric Turbidity Units (NTU) where natural turbidity is less than 1 NTU;
   b. Increase more than 1 NTU where natural turbidity is between 1 and 5 NTUs;

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

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

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

B. Groundwater Limitation

Neither the Facility nor the discharge shall cause underlying groundwater to contain waste constituents in concentrations greater than background water quality unaffected by waste sources.

VI. PROVISIONS

A. Standard Provisions

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

2. The Discharger shall comply with the following provisions. In the event that there is any conflict, duplication, or overlap between provisions specified by this Order, the more stringent provision shall apply:

   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. 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.

p. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, instantaneous minimum effluent limitation, instantaneous maximum effluent limitation, maximum daily effluent limitation, 1-hour average effluent limitation, acute toxicity effluent limitation, or receiving water limitation of this Order, the Discharger shall notify the Central Valley Water Board by telephone at (559) 445-5116 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Central Valley Water Board waives confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal monitoring report.

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 (MRP) Requirements

The Discharger shall comply with the MRP, 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 numeric chronic toxicity effluent limitation, new acute toxicity effluent limitations, and/or effluent limitations 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. **Water Effects Ratios (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when developing effluent limitations for copper and zinc. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

e. **Methyl Bromide 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, this Order may be reopened and effluent limitations added for the applicable constituents.

f. **Mixing Zone and Dilution Credits.** This Order may be reopened for the calculation of dilution credits and a mixing zone for the Facility, provided that the Discharger submits a mixing zone study that provides sufficient information/data to determine compliance with the mixing zone requirements contained in Section 1.4.2.2 of the SIP, or an equivalent study, as approved by the Central Valley Water Board.

g. **Beneficial Use Dedesignation.** As allowed under Special Provision VI.C.2.b, if the Discharger chooses to complete a dedesignation study and it results in adoption of a Basin Plan amendment that dedesignates the beneficial use of municipal and domestic supply (MUN) for Mariposa Creek, this Order shall be reopened to implement the necessary changes.

h. **Ultraviolet Light (UV) Disinfection Operating Specifications.** The UV operating specifications in this Order are based on the UV guidelines developed by the National Water Research Institute (NRWI) and American Water Works Association Research Foundation (AWWRF) for media filtration systems titled, "*Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse*." If the Discharger conducts a site-specific UV engineering study that identifies site-specific UV operating specifications that will achieve the virus inactivation equivalent to Title 22 disinfected tertiary recycled water or if the Discharger installs an alternative filtration system (e.g., membrane filtration), this Order may be reopened to modify the UV operating specifications.

i. **Drinking Water Policy.** On 26 July 2013, the Central Valley Water Board adopted Resolution No. R5-2013-0098 amending the Basin Plan and establishing a Drinking Water Policy. The State Water Board adopted the Drinking Water Policy at its 3 December 2013 meeting. The Basin Plan amendment and Drinking Water Policy will be submitted to the Office of Administrative Law and to USEPA for approval. This Order may be reopened to incorporate monitoring of drinking water constituents to implement the Drinking Water Policy.

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

a. **Chronic Whole Effluent Toxicity.** For compliance with the Basin Plan's narrative toxicity objective and the narrative chronic toxicity effluent limitation, this Order requires the Discharger to conduct chronic whole effluent toxicity (WET) testing, as specified in MRP (Attachment E, section V). Furthermore, this Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity. If the discharge exceeds the numeric toxicity monitoring trigger during accelerated monitoring established in this Provision, 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 whole effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. This provision includes procedures for accelerated chronic toxicity monitoring and TRE initiation.

i. **TRE Work Plan.** By **30 July 2014**, 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 and be of adequate detail to allow the Discharger to immediately initiate a TRE as required in this Provision.[1]

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

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

any WET testing results exceed the numeric toxicity monitoring trigger during accelerated monitoring.

iii. **Numeric Toxicity Monitoring Trigger.** The numeric toxicity monitoring trigger to initiate a TRE is > 1 TUc (where TUc = 100/NOEC) (NOEC = No Observed Effect Concentration). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring and initiate a TRE.

iv. **Accelerated Monitoring Specifications.** If the 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 chronic toxicity tests in a six-week period (i.e., one test conducted 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 consecutive accelerated monitoring tests do not exceed the monitoring trigger, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring. However, notwithstanding the accelerated monitoring results, if there is adequate evidence of 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 Facility upset), the Discharger shall make necessary corrections to the Facility and shall continue accelerated monitoring until four 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.

b. **Dedesignation Study.** If the Discharger chooses to conduct a dedesignation study, it shall comply with the following schedule and further action by the Central Valley Water Board:

Task	Compliance Date
i. Submit a notice of intent to conduct a dedesignation study.	At Discharger's discretion.

Task	Compliance Date
ii. Submit a technical report in the form of a work plan and a proposed time schedule to provide the information/support necessary to conduct a dedesignation study for the MUN beneficial use designation for Mariposa Creek. The work plan must describe in detail the information/support which the Discharger intends to provide the Central Valley Water Board and how this information/support will address the requirements of 40 CFR 131.3(g) and 131.10(g) and the criteria in State Water Board Resolution No. 88-63.	Within 6 months following submittal of a notice of intent.
iii. Begin implementing approved work plan and time schedule.	Within 30 days following Executive Officer approval of the technical report.
iv. Provide the results of Task ii.	By the deadline approved by the Executive Officer.

Technical reports submitted pursuant to this provision are subject to the requirements of Standard Provision VI.A.2.l and approval by the Executive Officer. Upon completion of Task iv above, the Executive Officer will, consistent with State Board Order WQ-2002-0015, endeavor to expeditiously process a Basin Plan amendment for dedesignating MUN for Mariposa Creek.

c. **Methyl Bromide Study.** There are indications that the discharge may contain methyl bromide at concentrations that have a reasonable potential to cause or contribute to an exceedance of the CTR human health criterion. The Discharger shall comply with the following time schedule in conducting a study of the presence of methyl bromide in the effluent:

Task	Compliance Date
i. Submit Work Plan and Time Schedule	3 months following effluent monitoring detection above 48 µg/L.
ii. Complete Study	1 year following completion of Task i.
iii. Submit Study Report including findings, conclusions, and recommendations for subsequent actions.	3 months following completion of Task ii.

3. Best Management Practices and Pollution Prevention

a. **Salinity Evaluation and Minimization Plan.** The Discharger shall prepare a salinity evaluation and minimization plan to identify and address sources of salinity to and from the Facility. The Salinity Evaluation and Minimization Plan shall include an evaluation that identifies and quantifies chemical additives necessary for the proper operation and treatment of the Facility. The Plan shall evaluate and

implement feasible methods for reducing the amount of chemical additives that increase the salinity and other constituent concentrations or levels in the discharge, while still providing adequate treatment. The plan shall be completed and submitted to the Central Valley Water Board by **1 November 2018**.

4. Construction, Operation, and Maintenance Specifications

a. **Filtration System Operating Specifications**

i. **Effective 4 December 2017,** to ensure the filtration system is operating properly to provide adequate disinfection of the wastewater, the turbidity of the filter effluent measured at Monitoring Location FIL-002 shall not exceed any of the following when coagulation is used:

(a) 2 NTU, as a 24-hour average;
(b) 5 NTU, more than 5 percent of the time within a 24-hour period; and
(c) 10 NTU, at any time.

ii. **Effective 4 December 2017,** when coagulation is not used, the Discharger shall operate the treatment system to ensure:

(a) the turbidity of the influent to the filtration unit measured at FIL-001 (see MRP, Attachment E) shall not exceed 5 NTU for more than 15 minutes and never exceed 10 NTU; and

(b) the effluent turbidity measured at FIL-002 (see MRP, Attachment E) shall not exceed 2 NTU at any time

iii. During the period beginning **1 May 2014** and ending on **3 December 2017**, the turbidity of the effluent measured at Monitoring Location EFF-001 shall not exceed any of the following:

(a) 5 NTU, more than 5 percent of the time within a 24-hour period; and
(b) 10 NTU, at any time.

b. **Ultraviolet Light (UV) Disinfection System Operating Specifications.** The Discharger shall notify the Central Valley Water Board at least 30 days prior to start-up of the UV disinfection system. Once in operation, the UV disinfection system must be operated in accordance with an operations and maintenance program that ensures adequate disinfection, and shall meet the following minimum specifications to provide virus inactivation equivalent to Title 22 Disinfected Tertiary Recycled Water:

i. **UV Dose.** The minimum hourly average UV dose in the UV reactor shall be 100 millijoules per square centimeter (mJ/cm^2).

ii. **UV Transmittance.** The minimum hourly average UV transmittance (at 254 nanometers) in the wastewater measured at UVS-001 shall not fall below 55 percent.

iii. The lamp 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.

iv. The lamp sleeves must be cleaned periodically as necessary to meet the UV dose requirements.

v. 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.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. **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 Facility. Biosolids refer to sewage 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 the State Water Board or a Regional Water Board will satisfy these specifications.

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

The treatment of sludge generated at the Facility shall be confined to the Facility property and conducted in a manner that precludes infiltration of waste constituents into soils in a mass or concentration that will violate Groundwater Limitation 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 Limitation V.B. of this Order.

ii. 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.

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

iv. 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.

v. By **28 October 2014**, the Discharger shall submit a biosolids use or disposal plan to the Central Valley Water Board. The plan shall describe at a minimum:

(a) Sources and amounts of biosolids generated annually.

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

(c) Plans for ultimate disposal. For landfill disposal, include the present classification of the landfill and the name and location of the landfill.

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

vii. Use of biosolids as a soil amendment shall comply with valid WDRs issued by the State or Regional Water Boards. In most cases, this means the WDRs contained in State Water Board Water Quality Order 2004-0012-DWQ, General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities (Biosolids General Order). For a biosolids use project to be covered by the Biosolids General Order, the Discharger must file a complete Notice of Intent and receive a Notice of Applicability for each project.

b. **Collection System.** On 2 May 2006, the State Water Board adopted State Water Resources Control Board Order 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. The Discharger shall be subject to the requirements of Order 2006-0003-DWQ and any future revisions thereto. Order 2006-0003-DWQ requires that all public agencies that currently own or operate sanitary sewer systems apply for coverage. The Discharger has applied for and has been approved for coverage under Order 2006-0003-DWQ for operation and maintenance of its sanitary sewer collection system.

c. **Continuous Monitoring Systems.** This Order, and the Monitoring and Reporting Program which is a part of this Order, requires that certain parameters be monitored on a continuous basis. The Facility is not staffed on a full time basis. Violations of this Order 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 should already be installed. For systems installed following Order adoption, the notification system shall be installed simultaneously.

6. Other Special Provisions

a. By **4 December 2017,** wastewater shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to the California Department of Public Health (DPH) reclamation criteria, CCR, Title 22, division 4, chapter 3, (Title 22), or equivalent, in accordance with the compliance schedule in Section VI.C.7.a.

7. Compliance Schedules

a. **Compliance Schedules for Tertiary Treatment.** This Order requires compliance with the final effluent limitations for BOD_5, TSS, and total coliform in Section IV.A.1; the operational specifications for turbidity in Section VI.C.4.a, and the Title 22 disinfection requirements in Section VI.C.6.a of this Order by 4 December 2017. The Discharger shall comply with the following compliance schedule to ensure compliance with these requirements:

Task	Date Due
i. Continue to implement the July 2010 Facility Plan	Permit effective date
ii. Progress Reports[1]	**1 June** and **1 December**, semi-annually, until final compliance
iii. Submit draft California Environmental Quality Act documentation	**1 October 2014**
iv. Submit written certification that a Financial Assistance application has been submitted to the State Water Resources Control Board	**1 December 2014**
v. Submit documentation that the design of tertiary, UV, and nitrogen removal upgrades has been initiated.	**1 July 2015**
vi. Submit documentation that construction has initiated	**1 October 2016**
vii. Full Compliance	**4 December 2017**

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

VII. COMPLIANCE DETERMINATION

A. BOD_5 and TSS Effluent Limitations (Sections IV.A.1.a, IV.A.1.b, and IV.A.2.a). Compliance with the final and interim effluent limitations for BOD_5 and TSS required in Limitations and Discharge Requirements sections IV.A.1.a and IV.A.2.a shall be ascertained by composite samples (as noted in Footnote 1 in Tables E-2 and E-3 of Attachment E). Compliance with effluent limitations required in Limitations and Discharge Requirements section IV.A.1.b for percent removal shall be calculated using the arithmetic mean of BOD_5 and TSS in effluent samples collected over a monthly period as a percentage of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period.

B. Average Dry Weather Flow Effluent Limitation (Section IV.A.1.h). The average dry weather discharge flow represents the daily average flow when groundwater is at or near normal and runoff is not occurring. Compliance with the average dry weather flow effluent limitation will be determined annually based on the average daily flow over three consecutive dry weather months (e.g., July, August, and September).

C. Total Coliform Effluent Limitations (Sections IV.A.1.f and IV.A.2.b). For each day that an effluent sample is collected and analyzed for total coliform, 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 exceeds a most probable number (MPN) of 2.2 per 100 milliliters (beginning 4 December 2017) or 23 MPN/100 mL (on permit effective date and ending on 3 December 2017), the Discharger will be considered out of compliance.

D. **Total Residual Chlorine Effluent Limitations (Section IV.A.1.d).** A continuous monitoring analyzer for chlorine residual in the effluent is an appropriate method for compliance determination. Continuous monitoring data showing a chlorine residual at or below the prescribed limitations are sufficient to show compliance with the total residual chlorine effluent limitations, as long as the instruments are maintained and calibrated in accordance with the manufacturer's recommendations.

Any excursion above the 1-hour average or 4-day average total residual chlorine effluent limitations is a violation. If the Discharger conducts continuous monitoring and the Discharger can demonstrate, through data collected from a back-up monitoring system, that a chlorine spike recorded by the continuous monitor was not actually due to chlorine, then any excursion resulting from the recorded spike will not be considered an exceedance, but rather reported as a false positive. Records supporting validation of false positives shall be maintained in accordance with Section IV Standard Provisions (Attachment D).

E. **Mass Effluent Limitations.** The mass effluent limitations contained in the Final Effluent Limitations IV.A.1.a and Interim Effluent Limitations IV.A.2.a. are based on the permitted average dry weather flow and calculated as follows:

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

If the effluent flow exceeds the permitted average dry weather flow during wet-weather seasons, the effluent mass limitations contained in Final Effluent Limitations IV.A.1.a and Interim Effluent Limitations IV.A.2.a shall not apply. If the effluent flow is below the permitted average dry weather flow during wet-weather seasons, the effluent mass limitations do apply.

F. **Priority Pollutant Effluent Limitations.** Compliance with effluent limitations for priority pollutants shall be determined in accordance with Section 2.4.5 of the SIP, as follows:

1. The Discharger shall be deemed out of compliance with an effluent limitation, if the concentration of the priority pollutant in the effluent sample is greater than the effluent limitation and greater than or equal to the lowest reporting level (RL) in Attachment I of this Order.

2. The Discharger shall be required to conduct a Pollutant Minimization Program (PMP) in accordance with section 2.4.5.1 of the SIP when there is evidence (e.g., sample results reported as DNQ when the effluent limitation is less than the MDL, sample results from analytical methods more sensitive than those methods included in the permit in accordance with sections 2.4.2 or 2.4.3 of the SIP, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that the priority pollutant is present in the effluent above an effluent limitation and either:

   a. A sample result is reported as detected, but not quantified (DNQ) and the effluent limitation is less than the lowest RL in Attachment I of this Order; or

   b. A sample result is reported as non-detect (ND) and the effluent limitation is less than the method detection limit (MDL).

3. When determining compliance with an average monthly effluent limitation (AMEL) and more than one sample result is available in a month, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of

DNQ or 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, 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.

4. If a sample result, or the arithmetic mean or median of multiple sample results, is below the lowest RL in Attachment I of this Order, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the discharger conducts a PMP (as described in section 2.4.5.1 of the SIP), the Discharger shall <u>not</u> be deemed out of compliance.

G. Chronic Whole Effluent Toxicity Effluent Limitation (Section IV.A.1.e). Compliance with the accelerated monitoring and TRE provisions of Provision VI.C.2.a. shall constitute compliance with the effluent limitation.

ATTACHMENT A – DEFINITIONS

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

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

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

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

Best Practicable Treatment or Control (BPTC)
BPTC is a requirement of State Water Resources Control Board (State Water Board) Resolution No. 68-16 – "Statement of Policy with Respect to Maintaining High Quality of Waters in California" (referred to as the "Antidegradation Policy"). BPTC is the treatment or control of a discharge necessary to ensure that "*(a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained*." Pollution is defined in California Water Code (Water Code) section 13050(l). In general, an exceedance of a water quality objective in the Basin Plan constitutes "pollution".

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 one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

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

Detected, but Not Quantified (DNQ)
DNQ are those sample results less than the Minimum Level, but greater than or equal to the laboratory's Method Detection Limit. Sample results reported as DNQ are estimated concentrations.

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

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

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

Estimated Chemical Concentration
The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the Minimum Level value. Same as Detected, but not Quantified.

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

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

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

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

LC50
The concentration of effluent that is lethal to 50% of exposed test organisms in a toxicity test, measured in a dilution series ranging from 100% effluent to 0% effluent.

Lowest Observed Effect Concentration (LOEC)
The lowest concentration of an effluent at which adverse effects are observed on an aquatic test organism.

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.

No Observed Effect Concentration (NOEC)
The highest concentration of toxicant to which organisms are exposed in a full life-cycle or partial life-cycle (short-term) test, that causes no observable adverse effects on the test organisms (i.e., the highest concentration of toxicant in which the values for the observed responses are not statistically significantly different from the controls).

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

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

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

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

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

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

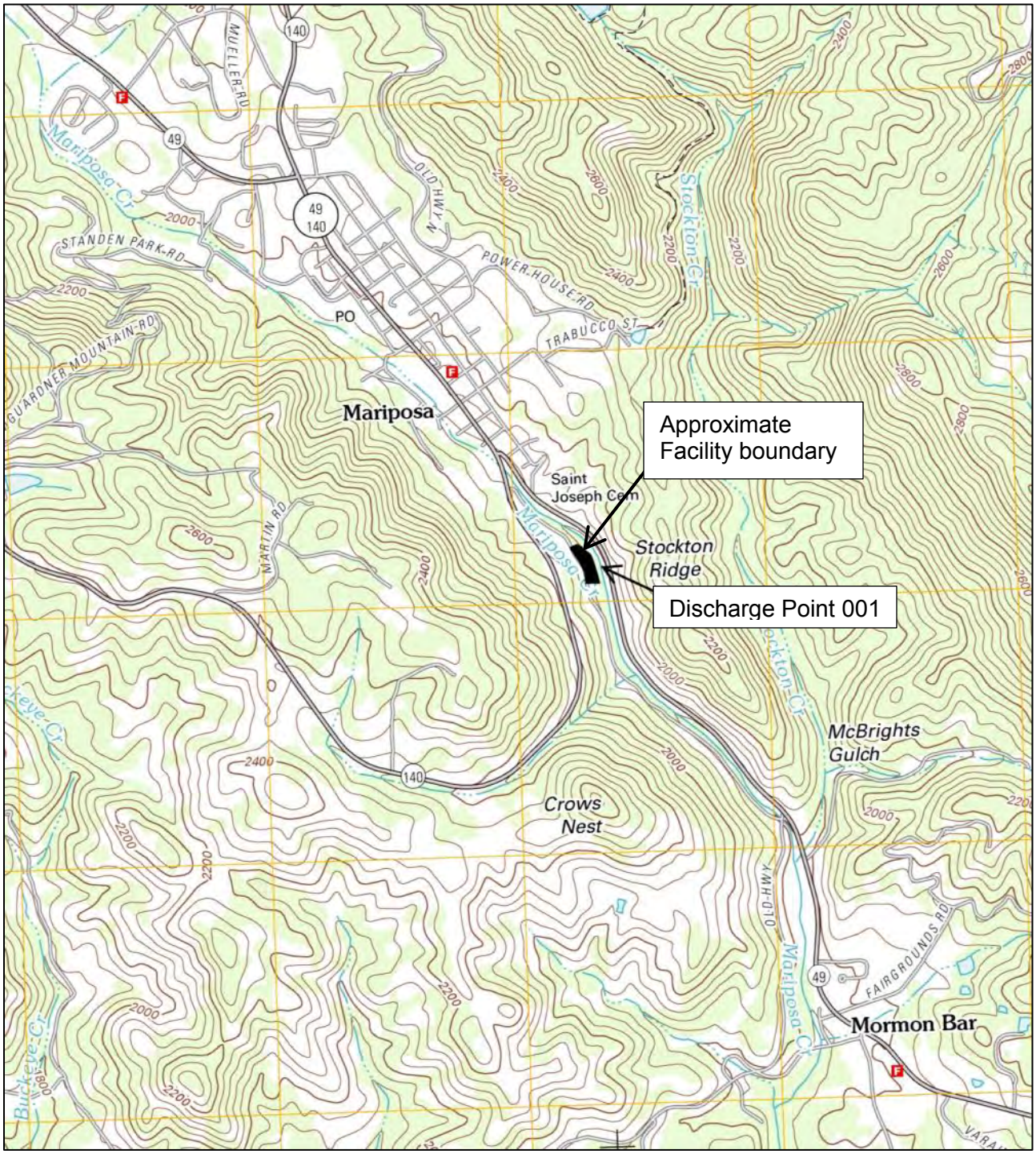
Standard Deviation (σ)
Standard deviation is a measure of variability that is calculated as follows:

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

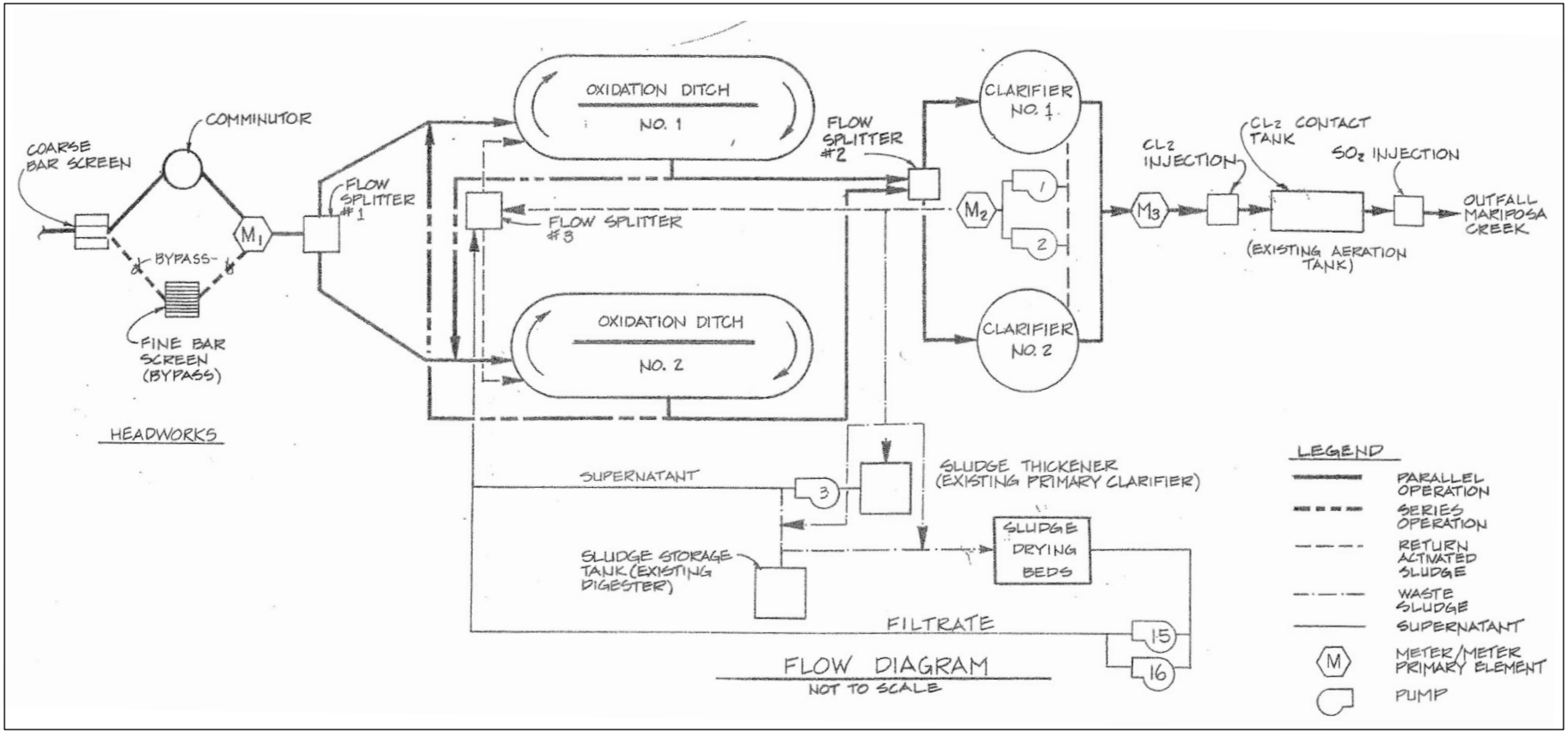
where:
x is the observed value;
μ is the arithmetic mean of the observed values; and
n is the number of samples.

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



ATTACHMENT C – WASTEWATER 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 Regional Water Quality Control Board (Central Valley Water Board), State Water Resources Control 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); § 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 unless otherwise specified in 40 CFR Part 503 unless other test procedures have been specified in this Order. (40 CFR 122.41(j)(4); § 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 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

The Discharger shall furnish to the Central Valley Water Board, State Water Board, USEPA and/or their authorized representatives (including an authorized contractor acting as their representative) within a reasonable time, any information which the Central Valley Water Board, State Water Board, USEPA and/or their authorized representatives (including an authorized contractor acting as their representative) 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, USEPA and/or their authorized representatives (including an authorized contractor acting as their representative) copies of records required to be kept by this Order. (40 CFR 122.41(h); Water Code section 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 122.41(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 another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such 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 scheduled date. (40 CFR 122.41(l)(5).)

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 CFR 122.41(l)(6)(i).)
2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 CFR 122.41(l)(6)(ii)):
   a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 CFR 122.41(l)(6)(ii)(A).)
   b. Any upset that exceeds any effluent limitation in this Order. (40 CFR 122.41(l)(6)(ii)(B).)
3. The 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 section 122.29(b) (40 CFR 122.41(l)(1)(i)); or

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

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

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Central Valley Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order's 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 (MRP)

The Code of Federal Regulations (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 MRP establishes monitoring and reporting requirements that implement 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 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 (DO), 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, DO, 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 average and the daily maximum discharge flows.

II. MONITORING LOCATIONS

The Discharger shall monitor the following 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 entering the treatment process.
001	EFF-001	A location where a representative sample of the effluent can be collected downstream from the last connection through which wastes can be admitted to the outfall.
--	RSW-001	Approximately 100 feet upstream from Discharge Point 001 in Mariposa Creek.
--	RSW-002	Approximately 300 feet downstream from Discharge Point 001 in Mariposa Creek.
--	BIO-001	Location(s) where a representative sample of biosolids can be obtained.
--	SPL-001	Location(s) where a representative sample of the municipal water supply can be collected.
--	FIL-001	Monitoring of the filter effluent to be measured immediately downstream of the filters prior to the disinfection system.
--	UVS-001	A location where a representative sample of wastewater can be collected immediately downstream of the ultraviolet light (UV) 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	--
Conventional Pollutants				
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	Composite[1]	1/Week	[2]
Total Suspended Solids	mg/L	Composite[1]	1/Week	[2]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Non-Conventional Pollutants				
Electrical Conductivity @ 25°C	µmhos/cm	Grab or Composite	1/Week	[2]

[1] Composite samples shall be 8-hour composites. The Discharger shall alternate the 8-hour period during which composite samples are collected, where one composite sample captures morning/mid-morning peak flows and the next composite sample captures afternoon/evening peak flows. Beginning on **4 December 2017**, the Discharger shall collect 24-hour flow proportional composite samples.

[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.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor the effluent at Monitoring Location EFF-001 as follows.

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	Continuous	--
Conventional Pollutants				
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	Composite[1]	1/Week	[2]
	lbs/day	Calculate	1/Week	--
	% removal	Calculate	1/Month	--
pH	standard units	Grab	1/Week[3]	[2,4]
Total Suspended Solids	mg/L	Composite[1]	1/Week	[2]
	lbs/day	Calculate	1/Week	--
	% removal	Calculate	1/Month	--
Priority Pollutants				
Chlorodibromomethane	µg/L	Grab	1/Month	[2,5,15]
Copper, Total Recoverable	µg/L	Composite[1]	1/Month[8]	[2,5]
Dichlorobromomethane	µg/L	Grab	1/Month	[2,5,15]
Methyl Bromide (Bromomethane)	µg/L	Grab	1/Month[19]	[2,5,15]
Zinc, Total Recoverable	µg/L	Composite[1]	1/Month[8]	[2,5]
Priority Pollutants and Other Constituents of Concern	vary	Grab/ Composite[1,15]	1/Quarter[16,17]	[2,5,13,14]
Non-Conventional Pollutants				
Aluminum, Total Recoverable	µg/L	Grab	1/Year[8]	[18]
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Week[3,6]	[2]
	lbs/day	Calculate	1/Week	--
Chlorine, Total Residual	mg/L	Meter	Continuous	[2,7]
Electrical Conductivity @ 25°C	µmhos/cm	Grab or Composite	1/Week	[2,4]
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Month[8]	[2]
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/Month[9]	[2]
Nitrate plus Nitrite (as N)	mg/L	Grab	1/Month[9]	[2]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Nitrite Nitrogen, Total (as N)	mg/L	Grab	1/Month[9]	[2]
Settleable Solids	ml/L	Grab	1/Week	[2]
Standard Minerals[10]	mg/L	Grab	1/Year	[2]
Temperature	°C/°F	Grab	1/Week[3]	[2,4]
Total Coliform	MPN/100 mL	Grab	3/Week[11]	[2]
Total Trihalomethanes[12]	µg/L	Grab	1/Month	[2,15]
Turbidity	NTU	Grab	1/Month	[2,4]

1 Composite samples shall be 8-hour composites. The Discharger shall alternate the 8-hour period during which composite samples are collected, where one composite sample captures morning/mid-morning peak flows and the next composite sample captures afternoon/evening peak flows. Beginning on **4 December 2017**, the Discharger shall collect 24-hour flow proportional composite samples.

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

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 this Monitoring and Reporting Program shall be maintained at the Facility.

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

6 Concurrent with whole effluent toxicity monitoring.

7 Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.01 mg/L. Total chlorine residual monitoring is only required when chlorine is used in the treatment process.

8 Hardness samples shall be collected concurrently with metals samples.

9 Monitoring for nitrite, nitrate, and nitrate plus nitrite shall be conducted concurrently.

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 Samples for total coliform may be collected at any point following disinfection.

12 Total trihalomethanes include bromoform, chlorodibromomethane, chloroform, and dichlorobromomethane.

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

14 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), and shall be analyzed by USEPA method 1630/1631 (Revision E) with a method detection limit of 0.2 ng/L.

15 Samples for volatile constituents shall be collected in accordance with 40 CFR Part 136.

16 Samples shall be collected quarterly (1/quarter) for four consecutive quarters during the fourth year of the permit, beginning with the fourth quarter of 2017. Samples shall be spaced evenly throughout the year.

17 Samples shall be collected at approximately the same time as receiving water samples for priority pollutants and other constituents of concern.

18 Aluminum shall be analyzed 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.

19 Monitoring shall be conducted monthly (1/month) for the first year following the effective date of the permit. However, if methyl bromide is detected at or above the criterion, thereby triggering the study contained in Provision VI.C.2.c., then monitoring shall continue for the entirety of the study.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

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

1. *Monitoring Frequency* – The Discharger shall perform **annual (1/year)** acute toxicity testing, concurrent with effluent ammonia sampling. The Discharger may use chronic toxicity tests conducted during the same period to derive acute toxicity results if the acute toxicity testing requirements are satisfied with the chronic toxicity test.
2. *Sample Types* – The samples shall be composite samples as described in Footnote 1 of Table E-3, and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001.
3. *Test Species* – Test species shall be fathead minnows (*Pimephales promelas*).
4. *Test Type and Duration* – Test type shall be static renewal, and the test duration shall be 96 hours.
5. *Dilutions* – The acute toxicity testing shall be performed using undiluted effluent.
6. *Test Methods* – 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 **annual (1/year)** three species chronic toxicity testing.
2. *Sample Types* – Effluent samples shall be composite samples as described in Footnote 1 of Table E-3, and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001. If the receiving water is used as a control, the sample shall be a grab sample obtained from Monitoring Location RSW-001, 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 Methods* – The presence of chronic toxicity shall be estimated as specified in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA/821-R-02-013, October 2002.

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

7. *Dilutions* – For routine and accelerated chronic toxicity monitoring, it is not necessary to perform the test using a dilution series. The chronic toxicity testing 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, unless an alternative dilution series is detailed in the submitted TRE Work Plan or Action Plan. A receiving water control or laboratory water control may be used as the diluent.

Table E-4. Chronic Toxicity Testing Dilution Series

Sample	Dilutions[a] (%)					Control (laboratory or receiving water)
	100	75	50	25	12.5	
% Effluent	100	75	50	25	12.5	0
% Control Water (laboratory or receiving water)	0	25	50	75	87.5	100

[a] Receiving water control or laboratory water control may be used as the diluent.

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

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

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

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 **within 30 days** following completion of the test, 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 discharger self-monitoring reports** and reported as percent survival.

3. **TRE Reporting.** Reports for TREs shall be submitted in accordance with the schedule contained in the Discharger's TRE Work Plan, or as amended by the Discharger's TRE Action 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 – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS

A. Monitoring Locations RSW-001 and RSW-002

1. The Discharger shall monitor Mariposa Creek at Monitoring Location RSW-001 as follows:

Table E-5. Receiving Water Monitoring Requirements – Monitoring Location RSW-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Conventional Pollutants				
pH	standard units	Grab	1/Week	[1,5]
Priority Pollutants				
Priority Pollutants and Other Constituents of Concern	vary	Grab	1/Quarter[3,4]	[1,2,6,7]
Non-Conventional Pollutants				
Aluminum, Total Recoverable	µg/L	Grab	1/Year[8]	[9]
Dissolved Oxygen	mg/L	Grab	1/Week	[1,5]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Week	[1,5]
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Month[4]	[1]
Temperature	°C/°F	Grab	1/Week	[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

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method

approved by the Central Valley Water Board or the State Water Board.

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

[3] Samples shall be collected quarterly (1/quarter) for four consecutive quarters during the fourth year of the permit, beginning with the fourth quarter of 2017. Samples shall be spaced evenly throughout the year.

[4] Samples shall be collected at the same time as effluent samples at EFF-001.

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

[7] 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), and shall be analyzed by USEPA method 1630/1631 (Revision E) with a method detection limit of 0.2 ng/L.

[8] Samples shall be collected at the same time as receiving water hardness samples.

[9] Aluminum samples shall be analyzed 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.

2. The Discharger shall monitor Mariposa Creek at Monitoring Location RSW-002 as follows. Samples shall be collected at approximately the same time as RSW-001.

Table E-6. Receiving Water Monitoring Requirements – Monitoring Location RSW-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Conventional Pollutants				
pH	standard units	Grab	1/Week	[1,2]
Non-Conventional Pollutants				
Dissolved Oxygen	mg/L	Grab	1/Week	[1,2]
Temperature	°C/°F	Grab	1/Week	[1,2]
Turbidity	NTU	Grab	1/Week	[1,2]

[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] 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.

3. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions bounded by Monitoring Locations RSW-001 and RSW-002. Notes on receiving water conditions shall be summarized in the monitoring report. Attention shall be given to the presence or absence of:

   a. Floating or suspended matter,
   b. Discoloration,

c. Aquatic life (including plants, fish, shellfish, birds),
d. Visible film, sheen, or coating,
e. Fungi, slime, or objectionable growths, and
f. Potential nuisance conditions.

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

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids

1. Monitoring Location BIO-001

a. A composite sample of sludge shall be collected **annually (1/year)** 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, CCR, Section 66261.24 (Table II).

b. Biosolids monitoring shall be conducted using the methods in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (EPA publication SW-846), as required in 40 CFR 503.8(b)(4). All results must be reported on a 100% dry weight basis. Records of all analyses must state on each page of the laboratory report whether the results are expressed in "100% dry weight" or "as is".

c. Sampling records shall be retained for a minimum of 5 years. A log shall be maintained of sludge quantities generated and of handling and disposal activities.

B. Municipal Water Supply

1. Monitoring Location SPL-001

The Discharger shall monitor the municipal water supply at Monitoring Location SPL-001 as follows. 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 the supporting calculations.

Table E-7. Municipal Water Supply Monitoring Requirements

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

[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.

C. Filtration System and Ultraviolet Light (UV) Disinfection System

1. Monitoring Locations UVS-001 and FIL-001

Beginning on 4 December 2017, the Discharger shall monitor the UV disinfection system as follows:

Table E-8. Ultraviolet Light Disinfection System Monitoring Requirements

Parameter	Units	Sample Type	Monitoring Location	Minimum Sampling Frequency
Flow	MGD	Meter	UVS-001	Continuous[1]
Turbidity	NTU	Meter	FIL-001	Continuous[1,2]
Number of UV banks in operation	Number	Observation	N/A	Continuous[1]

Parameter	Units	Sample Type	Monitoring Location	Minimum Sampling Frequency
UV Transmittance	Percent (%)	Meter	UVS-001	Continuous[1]
UV Dose[3]	[4]	Calculated	UVS-001	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. If analyzer(s) fail to provide continuous monitoring for more than 2 hours and influent and/or effluent from the disinfection process is not diverted for retreatment, the Discharger shall obtain and report hourly manual and/or grab sample results. The Discharger shall not decrease power settings or reduce the number of UV lamp banks in operation while the continuous analyzers are out of service and water is being disinfected.

[2] Report daily average and maximum turbidity.

[3] Report daily minimum hourly UV dose and daily average UV dose. The minimum hourly average dose shall consist of lowest hourly average dose provided in any channel that had at least one bank of lamps operating during the hour interval. For channels that did not operate for the entire hour interval, the dose will be averaged based on the actual operation time.

[4] Units are millijoule per square centimeter (mJ/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 Schedules.** For compliance schedules included in this Order, the Discharger shall submit to the Central Valley Water Board, on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board by letter when it returns to compliance with the compliance schedule.

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 information for SMR submittal in the event there will be a planned service interruption for electronic submittal.

2. 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	All	Submit with monthly SMR
3/Week 1/Week	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	Sunday through Saturday	Submit with monthly SMR
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	1st day of calendar month through last day of calendar month	First day of second calendar month following month of sampling.
1/Quarter (Priority Pollutants)	1 October 2017	1 October 2017 through 31 December 2017 1 January 2018 through 31 March 2018 1 April 2018 through 30 June 2018 1 July 2018 through 30 September 2018	Submit with the monthly SMR in which sample was taken (e.g., if a sample is taken in March, the result must be included in the March SMR [due 1 May])
1/Year (Acute Toxicity)	1 January following (or on) permit effective date	1 January through 31 December	Submit with the monthly SMR in which sample was taken (e.g., if a sample is taken in March, the result must be included in the March SMR [due 1 May])
1/Year (Chronic Toxicity)	1 January following (or on) permit effective date	1 January through 31 December	Submit within 30 days of test completion
1/Year	1 January following (or on) permit effective date	1 January through 31 December	Submit with the monthly SMR in which sample was taken (e.g., if a sample is taken in March, the result must be included in the March SMR [due 1 May])
1/Year (Annual Report)	1 January following (or on) permit effective date	1 January through 31 December	1 February of the following year

3. **Reporting Protocols.** The Discharger shall report with each sample result the applicable 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 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. 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 Minimum Level (ML) value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

4. **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.

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

   a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.

   b. 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. Violations must be entered into CIWQS under the Violations tab for the reporting period in which the violation occurred.

d. The Discharger shall attach or enter a cover letter with each eSMR. The cover letter shall include any information the Discharger would like to convey to Central Valley Water Board staff. If violations have been entered with complete entries on corrective actions and time frames, that information does not need to be repeated in the cover letter.

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.

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

a. **Average Dry Weather Flow.** The Discharger shall calculate and report the average dry weather flow for the effluent at Monitoring Location EFF-001. The average dry weather flow shall be calculated as specified in Section VII.B and reported in the Annual Report.

b. **Annual Average Limitations**. For constituents with effluent limitations specified as "annual average" (electrical conductivity) the Discharger shall report the annual average in the Annual Report. The annual average shall be calculated as the average of the samples gathered for the calendar year.

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

$$\text{Mass Loading (lbs/day)} = \text{Flow (MGD)} \times \text{Concentration (mg/L)} \times 8.34$$

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 Effluent Limitations**. The Discharger shall calculate and report the 7-day median of total coliform for the effluent. The 7-day median of total coliform shall be calculated as specified in Section VII.C. of the Limitations and Discharge Requirements.

f. **Dissolved Oxygen Receiving Water Limitations**. The Discharger shall calculate and report 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.17.a-e. of the Limitations and Discharge Requirements.

h. **Temperature Receiving Water Limitations**. The Discharger shall calculate and report the temperature increase in the receiving water based on the difference in temperature at Monitoring Locations RSW-001 and RSW-002.

C. Discharge Monitoring Reports (DMRs) – Not Applicable

D. Other Reports

1. **Special Study Reports and Progress Reports.** As specified in the compliance schedules required in the Special Provisions contained in section VI of the Order, special study and progress reports shall be submitted in accordance with the following reporting requirements. At minimum, the progress reports shall include a discussion of the status of final compliance, whether the Discharger is on schedule to meet the final compliance date, and the remaining tasks to meet the final compliance date.

Table E-10. Reporting Requirements for Special Provisions Reports

Special Provision	Reporting Requirements
Compliance Schedule for Final Effluent Limitations for Tertiary Treatment, Progress Reports (Special Provision VI.C.7.a.)	1 June and 1 December, semi-annually

2. The Discharger shall report the results of any special studies, acute and chronic toxicity testing, and TRE/TIE required by Special Provisions VI.C. The Discharger shall report the progress in satisfaction of compliance schedule dates specified in Special Provisions VI.C.7.a. The Discharger shall submit reports with the first monthly SMR scheduled to be submitted on or immediately following the report due date.

3. **Reporting Levels Report.** By **27 May 2014**, the Discharger shall submit a report outlining reporting levels (RLs), method detection limits, 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 reporting levels 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 one ML value for a given substance, the Central Valley Water Board has included as RLs, in this Order, all ML values, and their associated analytical methods, listed in Appendix 4 that are below the calculated effluent limitations. The Discharger may select any one of those analytical methods and RLs listed in Appendix I for compliance determination. Where no ML value is below the effluent limitation(s), the Central Valley Water Board selected as the RL the lowest ML value, and its associated analytical method, listed in Appendix 4 for inclusion in this Order. Attachment I provides required reporting levels in accordance with the SIP.

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

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

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

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

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

e. The Discharger may also be requested to submit an annual report to the 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.

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in section I, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) incorporates this Fact Sheet as findings of the Central Valley Water Board supporting the issuance 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	5C221012001
Discharger	Mariposa Public Utility District
Name of Facility	Mariposa Wastewater Treatment Facility
Facility Address	4956 Miller Road
	Mariposa, CA 95338
	Mariposa County
Facility Contact, Title and Phone	Mark Rowney, General Manager, (209) 966-2515
Authorized Person to Sign and Submit Reports	Mark Rowney, General Manager, (209) 966-2515 Curt Farrell, Operations Supervisor, (209) 966-3983
Mailing Address	P.O. Box 494 Mariposa, CA 95338
Billing Address	Same as mailing address.
Type of Facility	Publicly Owned Treatment Works (POTW)
Major or Minor Facility	Minor
Threat to Water Quality	2
Complexity	B
Pretreatment Program	Not Applicable
Recycling Requirements	Not Applicable
Facility Permitted Flow	0.61 million gallons per day (MGD), average dry weather flow
Facility Design Flow	0.61 MGD, average dry weather flow
Watershed	Mariposa Hydrologic Unit No. 538
Receiving Water	Mariposa Creek
Receiving Water Type	Inland Surface Water

A. The Mariposa Public Utility District (hereinafter Discharger) is the owner and operator of the Mariposa Wastewater Treatment Facility (hereinafter Facility), a POTW.

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

B. The Facility discharges wastewater to Mariposa Creek, a water of the United States and tributary to Duck Slough which flows to the San Joaquin River, within the Mariposa Hydrologic Unit. The Discharger was previously regulated by Order R5-2007-0171 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0079430 adopted on 6 December 2007 and expired on 4 December 2012. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

C. The Discharger filed a report of waste discharge (ROWD) and submitted an application for reissuance of its WDRs and NPDES permit on 27 June 2012. The application was deemed complete on 10 April 2013.

II. FACILITY DESCRIPTION

The Discharger provides sewerage service for the community of Mariposa and serves a population of approximately 2,000. The design average dry weather flow capacity of the Facility is 0.61 MGD.

A. Description of Wastewater and Biosolids Treatment and Controls

The treatment system at the Facility consists of preliminary influent screening and grinding, oxidation, secondary clarification, chlorination and dechlorination. The treatment train consists of one bar screen, one comminutor, two oxidation ditches, and chlorine gas disinfection applied in one contact chamber. Sludge is taken from the secondary clarifiers and dewatered through one belt filter press and disposed via landfill.

B. Discharge Points and Receiving Waters

1. The Facility is located in Section 23, T5S, R18E, MDB&M, as shown in Attachment B, a part of this Order.
2. Treated municipal wastewater is discharged at Discharge Point No. 001 to Mariposa Creek, a water of the United States and a tributary to the San Joaquin River via Duck Slough, at a point latitude 37° 28’ 45.11” N and longitude 119° 57’ 32.76” W.

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

Effluent limitations contained in Order R5-2007-0171 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of the Order R5-2007-0171 are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitations			Monitoring Data (February 2008 – February 2013)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Average Dry Weather Flow	MGD	--	--	0.61	--	--	0.61[1]
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	30[11]	45[11]	60[11]	4.7	7.4	7.4
	lbs/day	153[11]	229[11]	458[11]	6.9	11	11
	% Removal	90	--	--	NR	--	--
Total Suspended Solids	mg/L	30[11]	45[11]	60[11]	8.2	11	11
	lbs/day	153[11]	229[11]	458[11]	10	14	14
	% Removal	90	--	--	NR	--	--

Parameter	Units	Effluent Limitations			Monitoring Data (February 2008 – February 2013)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
pH	standard units	--	--	6.5 – 8.5	--	--	5.6 – 7.6
Copper, Total Recoverable	µg/L	6.1	--	12.3	9.7	--	9.7
Dichlorobromomethane	µg/L	0.6	--	1.1	13	--	13
Zinc, Total Recoverable	µg/L	53	--	106	52	--	52
Chlorine, Total Residual	mg/L	0.011[2]	--	0.019[3]	--	--	<0.1
Electrical Conductivity @ 25°C	µmhos/cm	--	--	700[4]	--	--	778
Nitrate Nitrogen, Total (as N)	mg/L	--	--	68[11]	57	--	--
Settleable Solids	mL/L	0.1	--	0.2	<0.1	--	<0.1
Total Coliform	MPN/ 100 mL	--	23[5,11]	240[11]	--	--	9.3
Turbidity	NTU	--	--	5[7,11]/10[6,11]	--	--	4.7
Acute Toxicity	% Survival	--	--	70[8]/90[9]	--	--	100[10]

NR = Not Reported
1 Represents the maximum observed daily flow for the period of record.
2 Applied as a 4-day average effluent limitation.
3 Applied as a 1-hour average effluent limitation.
4 Applied as an annual average effluent limitation.
5 Applied as a 7-day median effluent limitation.
6 Instantaneous maximum effluent limitation.
7 Not to be exceeded more than 5 percent of the time within a 24-hour period.
8 Minimum for one bioassay.
9 Median for any three consecutive bioassays.
10 Represents the minimum observed percent survival.
11 Interim effluent limitations.

D. Compliance Summary

1. A compliance and enforcement inspection (CEI) of the Facility was conducted on 30 September 2010. During the course of the inspection, the inspector documented the following adverse findings:

   a. Order R5-2007-0171 specified an average monthly effluent limitation (AMEL) of 0.6 µg/L and a maximum daily effluent limitation (MDEL) of 1.1 µg/L for dichlorobromomethane, with compliance required by 18 May 2010 in accordance with Special Provision VI.C.7.1. The discharge exceeded both effluent limitations in June 2010 (3.5 µg/L), July 2010 (3.6 µg/L), and August 2010 (2.3 µg/L).

   b. Attachment E, Section IV.A.1 of Order R5-2007-0171 requires the Discharger to monitor effluent flow at Monitoring Location EFF-001. Monitoring Location EFF-001 is defined as "*downstream from the last connection through which wastes can be admitted to the outfall*". The effluent flow meter is located at the weir between the

two secondary clarifiers and the chlorine contact basin rather than at the outfall. The Facility representative stated that the return sludge cycle for the secondary clarifiers affects the effluent flow meter readings and does not provide an accurate measurement of total flow on the chart recorder. Therefore, the Discharger does not use the effluent reading and reports influent flow at the Facility headworks as the effluent flow on the self-monitoring reports (SMRs).

c. Attachment E, Provision I.D of Order R5-2007-0171 requires appropriate flow measurement devices and methods to ensure reliability of measurements of the volume of the monitored discharges. All monitoring instruments and devices used by the Discharger shall be properly maintained and calibrated as necessary to ensure their continued accuracy. The Facility representative stated the effluent totalizer was not functional. As stated above, the effluent flow meter does not provide an accurate measurement of flow on the chart recorder so the Discharger has chosen to report Facility influent flow as the effluent flow on the SMRs.

d. Attachment E, Section X.D.4.c of Order R5-2007-0171 requires that the Discharger include "*A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration*" in their Annual Operations Report by 30 January of each year. Flow measurement devices are to be calibrated at least once per year. The Annual Operations report for 2009 did not contain this statement and no records were available at the Facility to confirm that the influent and effluent flow meters were calibrated. This was a recurring Major Finding from a previous inspection.

e. Special Provision VI.C.7.d of Order R5-2007-0171 required the submittal of a Work Plan and time schedule by 5 March 2008, for the installation of a continuous chlorine residual meter. A review of records for the Facility maintained at the Central Valley Water Board office indicated that this work plan had not been submitted to the Central Valley Water Board. It should be noted that full compliance with the requirement to install a continuous chlorine residual meter was required by 4 December 2012, which the Discharger met.

2. An inspection of Mariposa Creek downstream of Discharge Point 001 was conducted on 30 September 2010 in response to a 22 July 2010 complaint. The complainant indicated that the Facility could be causing an absence of aquatic life in the receiving water downstream of Discharge Point 001. During the inspection, Central Valley Water Board staff found unidentified species of fish and tadpoles alive in the receiving water at several downstream points in Mariposa Creek.

E. Planned Changes

In order to comply with the requirements of this Order, the Discharger is planning to construct upgrades to the treatment system to provide tertiary treatment, nitrification/denitrification, and ultraviolet light (UV) disinfection. The planned upgrades are scheduled to be completed in December 2017, contingent on funding.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

This Order serves as WDRs pursuant to article 4, chapter 4, division 7 of the California Water Code (Water Code; commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by

the United States Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this Facility to surface waters.

B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt a NPDES permit is exempt from the provisions of Chapter 3 of CEQA, (commencing with section 21100) of Division 13 of the Public Resources Code.

C. State and Federal Laws, Regulations, Policies, and Plans

1. **Water Quality Control Plan.** Requirements of this Order specifically implement the applicable Water Quality Control Plan.

Basin Plan. The Central Valley Water Board adopted a *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, Fourth Edition, revised October 2011, (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Requirements in this Order implement the Basin Plan. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply (MUN).

Order R5-2007-0171 included a finding that Mariposa Creek flows to Duck Slough and then into Eastside Canal, which can discharge to the San Joaquin River. The Order indicated that the tributary rule cannot be applied to manmade conveyances, such as Eastside Canal, and included beneficial uses for Mariposa Creek based on a study the Discharger conducted in 2001. The Central Valley Water Board reevaluated the watershed and found, based on aerial maps, that there is still some direct connection between Mariposa Creek and San Joaquin River via natural water bodies, and that flows are not always diverted to Eastside Canal. The Basin Plan at page II-2.00 states that the beneficial uses of any specifically identified water body generally apply to its tributary streams. The Basin Plan in Table II-1, Section II, does not specifically identify beneficial uses for Mariposa Creek, but does identify present and potential uses for San Joaquin River from Sack Dam to mouth of Merced River, to which Mariposa Creek, via Duck Slough, is tributary.

Pursuant to Order 5-00-122, the Discharger conducted a study and submitted a report entitled *Draft Public Exposure and Prevention Plan, Mariposa Creek* (Plan). Information in the Plan indicates the existing beneficial uses of Mariposa Creek downstream of the discharger are AGR, REC-1, REC-2, WARM, and WILD. Thus, beneficial uses applicable to Mariposa Creek are as follows:

Table F-3. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Mariposa Creek	Municipal and domestic water supply (MUN); Agricultural supply for 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); Migration of Aquatic Organisms – warm & cold (MIGR); Spawning, Reproduction, and/or Early Development – warm and cold (SPWN); and Wildlife habitat (WILD)
--	Groundwater	MUN; AGR; Industrial service supply (IND); PRO

2. **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 forty 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 federal water quality criteria for priority pollutants.

3. **State Implementation Policy.** On 2 March 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on 28 April 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Central Valley Water Board in the Basin Plan. The SIP became effective on 18 May 2000, with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on 24 February 2005, which 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.

4. **Antidegradation Policy.** Federal regulation 40 CFR 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 is deemed to incorporate 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. The permitted discharge must be consistent with the antidegradation provision of 40 CFR 131.12 and State Water Board Resolution No. 68-16.

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

6. **Human Right to Water Act.** In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.

7. **Endangered Species Act Requirements.** 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, §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 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.

8. **Emergency Planning and Community Right to Know Act.** Section 13263.6(a) of the Water Code, requires that "*[t]he regional 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 board or the regional board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective.*"

   The most recent toxic chemical data report does not indicate any reportable off-site releases or discharges to the collection system for this Facility. Therefore, a reasonable potential analysis (RPA) based on information from EPCRA cannot be conducted. Based on information from EPCRA, there is no reasonable potential to cause or contribute to an excursion above any numeric water quality objectives included within the Basin Plan or in any State Water Board plan, so no effluent limitations are included in this permit pursuant to 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 facilities are applicable industries under the storm water program and are obligated to comply with the federal regulations. The State Water Board does not require wastewater treatment facilities with design flows less than 1 MGD to obtain coverage under the Industrial Storm Water General Order. This Order does not regulate storm water.

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 2011, USEPA gave final approval to California's 2010 section 303(d) List of Water Quality Limited Segments (WQLSs). The Basin Plan references this list of WQLSs, which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 CFR 130, et seq.).*" The Basin Plan also states, "*Additional treatment beyond minimum federal requirements 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*." Mariposa Creek is not listed as a WQLS in the 303(d) list of impaired water bodies.

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. TMDLs have not been developed for Mariposa Creek.

E. Other Plans, Polices, and Regulations

1. **Title 27.** 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 limitations 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 limitations that control all pollutants that "*are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality*." Federal regulations, 40 CFR 122.44(d)(1)(vi), further provide that "*[w]here a State has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits…*"

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 CFR 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 CFR 122.44(d) requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established. The Basin Plan at page IV-17.00, contains an implementation policy, "*Policy for Application of Water Quality Objectives*", that specifies that the 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 Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, discoloration, radionuclides, and tastes and odors. The narrative

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

A. Discharge Prohibitions

1. **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 40 CFR 122.41(m)(4)).** This Order prohibits bypass pursuant to 40 CFR 122.41(m)(4), with federal allowance for exceptions set forth in Section I.G. of Attachment D – Federal Standard Provisions. It also prohibits overflows, which concerns release of untreated and partially treated wastewater to surface waters.

3. **Prohibition III.C (No controllable condition shall create a nuisance).** This prohibition is based on Water Code section 13050, which requires water quality objectives be established for the prevention of nuisance within a specific area. The Basin Plan prohibits conditions that create a nuisance. A violation of Prohibition III.C. may result in 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 40 CFR 122.41 et seq., which requires the proper design and operation of treatment facilities.

5. **Prohibition III.E (No discharge of waste classified as 'hazardous').** This prohibition concerns a category of waste that is subject to full containment as prescribed by Title 23 and Title 27 of the CCR and, if discharged, has a 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.

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 BOD_5, TSS, and pH.

2. Applicable Technology-Based Effluent Limitations

a. **BOD_5 and TSS.** Federal regulations at 40 CFR Part 133, establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD_5 and TSS. 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 establishes WQBELs that are equal to or more stringent than the secondary treatment technology-based effluent limitations described in 40 CFR Part 133 and are necessary to protect the beneficial uses of the receiving stream (see Section IV.C.3.c of the Fact Sheet for the discussion on WQBELs for pathogens.)

b. **Flow.** The Facility was designed to provide a secondary level of treatment for up to a design flow of 0.61 MGD. Therefore, this Order contains an average dry weather discharge flow effluent limitation of 0.61 MGD.

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

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

Table F-4. Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	--	--	0.61[1]	--	--
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	30	45	--	--	--
	lbs/day[2]	153	229	--	--	--
	% Removal	85	--	--	--	--
pH	standard units	--	--	--	6.0	9.0
Total Suspended Solids[2]	mg/L	30	45	--	--	--
	lbs/day[2]	153	229	--	--	--
	% Removal	85	--	--	--	--

1 Average dry weather flow.
2 Based on an average dry weather flow of 0.61 MGD.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

CWA Section 301(b) and 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements, expressed as a technology equivalence requirement, more stringent than secondary treatment requirements that are necessary to meet applicable water quality standards. The rationale for these requirements, which consist of tertiary treatment or equivalent requirements or other provisions, is discussed in section IV.C.3.c.vii of this Fact Sheet.

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

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

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Board Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Order R5-2007-0171 applied the MUN beneficial use based on Resolution No. 88-63, and included a finding that the flow conditions of Mariposa Creek may prevent MUN from being attainable downstream of the discharge. Given this, and consistent with State Water Board Order WQ-2002-0015, Order R5-2007-0171 provided the Discharger the opportunity to provide the Central Valley Water Board the technical information necessary to conduct a dedesignation study and Basin Plan amendment for the Central Valley Water Board to expeditiously consider dedesignation of MUN for Mariposa Creek. The Discharger indicated it would pursue a dedesignation study, but never did. This Order carries over the opportunity for the Discharger to pursue a dedesignation study.

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

The federal CWA section 101(a)(2), states: "*it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and*

propagation of fish, shellfish, and wildlife and 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 regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. 40 CFR 131.3(e), defines existing beneficial uses as those uses actually attained after 28 November 1975, whether or not they are included in the water quality standards. Federal Regulation, 40 CFR 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

a. **Receiving Water and Beneficial Uses.** Refer to Section III.C.1. of this Fact Sheet for a complete description of the receiving water and beneficial uses.

b. **Effluent and Ambient Background Data.** The RPA, as described in section IV.C.3 of this Fact Sheet, was based on data from February 2008 through February 2013, which includes effluent and ambient background data submitted in SMRs and in the ROWD. At the request of the Central Valley Water Board, supplemental effluent monitoring for mercury and methyl bromide was conducted from February 2013 to April 2013 and was also utilized in the RPA.

   In February 2010, the Discharger began adding calcium polysulfide, a chelating agent, and polyaluminum chloride to precipitate copper and zinc in order to bring the discharge into compliance with effluent limitations contained in Order R5-2007-0171. In addition to metals precipitation, the addition of calcium polysulfide has the effect of increasing the concentration of ions in the effluent that contribute to hardness. As discussed in section IV.C.2.e of this Fact Sheet, effluent hardness data are utilized in the calculation of hardness-dependent CTR metals criteria. Therefore, the Central Valley Water Board does not consider effluent hardness data collected prior to February 2010 to be representative of the existing discharge and has not considered it in the RPA. In addition, the Central Valley Water Board does not consider copper and zinc effluent monitoring data collected prior to February 2010 to be representative of the existing discharge and has not considered it in the RPA.

c. **Assimilative Capacity/Mixing Zone.** Based on the available information, the worst-case dilution for Mariposa Creek is assumed to be zero at the point of discharge to provide protection for the receiving water beneficial uses. The impact of assuming zero assimilative capacity within the receiving water is that effluent limitations are end-of-pipe limitations with no allowance for dilution within the receiving water.

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, 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. 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 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

[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.

water affected by the discharge. Therefore, for comparing the MEC to the applicable criterion, the reasonable worst-case downstream ambient 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 is 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[3]. 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 WQBELs.** 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[4] developed procedures for calculating the effluent concentration allowance (ECA)[5] 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.

The equation describing the total recoverable regulatory criterion, as established in the CTR[6], is as follows:

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

Where:

H = hardness (as $CaCO_3$)[7]

[3] The pollutant must also be detected in the effluent.
[4] 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.
[5] 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.
[6] 40 CFR 131.38(b)(2).
[7] For this discussion, all hardness values are in mg/L as $CaCO_3$.

WER = water-effects 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:

$ECA = C$ (when $C \leq B$)[8] (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 water will always be in compliance with the CTR criteria[9]. 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)[10]. Consequently, for concave down metals, the CTR criteria have been calculated using the downstream ambient hardness under this condition.

The effluent hardness ranged from 89 mg/L to 140 mg/L, based on 18 samples from February 2010 to February 2013. The upstream receiving water hardness varied from 63 mg/L to 260 mg/L, based on 66 samples from February 2008 to February 2013. Under the effluent dominated condition, the reasonable worst-

[8] The 2006 Study assumes the ambient background metals concentration is equal to the CTR criterion (i.e., $C \leq B$).
[9] 2006 Study, p. 5700
[10] 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.

case downstream ambient hardness is 89 mg/L. As demonstrated in the example shown in Table F-5, 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. This example for copper assumes the following conservative conditions for the upstream receiving water:

- Upstream receiving water always at the lowest observed upstream receiving water hardness (i.e., 63 mg/L)
- 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.

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

Where:

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

In this example, for copper, for any receiving water flow condition (high flow to low flow), the fully-mixed downstream ambient copper concentration is in compliance with the CTR criteria.[11]

Table F-5. Copper ECA Evaluation

Lowest Observed Effluent Hardness					**89 mg/L (as $CaCO_3$)**
Lowest Observed Upstream Receiving Water Hardness					**63 mg/L (as $CaCO_3$)**
Highest Assumed Upstream Receiving Water Copper Concentration					**6.3 µg/L[1]**
Copper $ECA_{chronic}$[2]					**8.4 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%	63	6.3	6.3	**Yes**
	5%	64	6.4	6.4	**Yes**
	15%	67	6.6	6.6	**Yes**
	25%	70	6.8	6.8	**Yes**
	50%	76	7.4	7.4	**Yes**
	75%	83	7.9	7.9	**Yes**
Low Flow	100%	89	8.4	8.4	**Yes**

[11] 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. Table F-5 demonstrates that the receiving water is always in compliance with the CTR criteria at the fully-mixed location in the receiving water. It also demonstrates that the receiving water is 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.

[1] Highest assumed upstream receiving water copper concentration calculated using Equation 1 for chronic criterion at a hardness of 63 mg/L.
[2] ECA calculated using Equation 1 for chronic criterion at a hardness of 89 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 Table F-6).

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

Where:

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

An example similar to the concave down metals is shown for lead, a concave up metal, in Table F-6, below. As previously mentioned, the lowest effluent hardness is 89 mg/L, while the upstream receiving water hardness ranged from 63 mg/L to 260 mg/L. In this case, the reasonable worst-case upstream receiving water hardness to use in Equation 4 to calculate the ECA is 260 mg/L.

In this case for lead, the lowest possible fully-mixed downstream hardness is 89 mg/L (see last row of Table F-6), which corresponds to a total recoverable chronic ECA of 2.7 µg/L, using Equations 1 and 2. However, a lower chronic ECA is required to ensure the discharge does not cause toxicity at any location

in the receiving water, at or downstream of the discharge, which would be a violation the Basin Plan's narrative toxicity objective[12]. This is because for concave up metals, mixing two waters with different hardness with metals concentrations at their respective CTR criteria will always result in CTR criterion exceedances[13]. As shown in Table F-6, a chronic ECA of 1.7 µg/L is necessary to be protective under all discharge conditions. In this example for lead, for any receiving water flow condition (high flow to low flow), the fully-mixed downstream ambient lead concentration is in compliance with the CTR criteria.

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-6, for lead.

Table F-6. Lead ECA Evaluation

Lowest Observed Effluent Hardness					**89 mg/L**
Reasonable Worst-case Upstream Receiving Water Hardness					**260 mg/L**
Reasonable Worst-case Upstream Receiving Water Lead Concentration					**1.8 µg/L[1]**
Lead $ECA_{chronic}$[2]					**1.7 µg/L**
Effluent Fraction[6]		**Fully Mixed Downstream Ambient Concentration**			
		Hardness[3] (mg/L)	**CTR Criteria[4] (µg/L)**	**Lead[5] (µg/L)**	**Complies with CTR Criteria?**
High Flow	1%	258	11	11	**Yes**
	5%	251	10	10	**Yes**
	15%	234	9.4	9.4	**Yes**
	25%	217	8.5	8.5	**Yes**
	50%	175	6.5	6.2	**Yes**
	75%	132	4.5	4.0	**Yes**
Low Flow	100%	89	2.7	1.7	**Yes**

1 Reasonable worst-case upstream receiving water lead concentration calculated using Equation 1 for chronic criterion at a hardness of 260 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-7 lists all the CTR hardness-dependent metals and the associated ECA used in this Order.

[12] "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan, p. III-8.01.)
[13] 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. (p. 5702)

Table F-7. Summary of ECA Evaluations for CTR Hardness-dependent Metals

CTR Metals	ECA (µg/L, total recoverable)	
	acute	chronic
Copper	13	8.4
Chromium III	1600	190
Cadmium	3.4	2.2
Lead	45	1.7
Nickel	430	47
Silver	-2.8	--
Zinc	110	110

3. Determining the Need for WQBELs

a. **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. **Mercury, Total Recoverable**

(a) **WQO.** The CTR contains a human health criterion (based on a threshold dose level causing neurological effects in infants) of 0.050 µg/L, as total recoverable, for waters from which both water and aquatic organisms are consumed.

(b) **RPA Results.** The MEC for total mercury was 0.21 µg/L based on 10 samples collected between February 2008 and April 2013, which exceeds the CTR human health criterion of 0.050 µg/L. Of these samples, five were obtained between February 2008 and September 2012 (including the MEC) using USEPA Method 7470A (minimum reporting limit of RL 0.2 µg/L) with a RL equal to the lowest SIP ML. 40 CFR Part 136, which specifies USEPA's approved methods, does not include USEPA Method 7470A as an acceptable method for analysis of mercury. In addition, the Discharger did not utilize clean hands/dirty hands sampling techniques during this monitoring period.

Section 1.2 of the SIP states, "*the RWQCB shall have discretion to consider if any data are inappropriate or insufficient for use in implementing this Policy*." Because USEPA Method 7470A is not an approved method under 40 CFR Part 136 and the Discharger did not use clean hands/dirty hands sampling techniques, the Central Valley Water Board finds that the samples collected between February 2008 and September 2012 are inappropriate and did not use the data in conducting the RPA.

Subsequently, the Discharger collected five additional samples between December 2012 and April 2013, which were analyzed using USEPA Method 1631E, which is approved under Part 136 and has an RL below the CTR criterion (minimum MDL 0.0002 µg/L; minimum RL 0.0005 µg/L).

The Discharger conducted this monitoring using clean hands/dirty hands sampling techniques. The maximum observed concentration observed in samples analyzed using USEPA Method 1631E was 0.0114 µg/L, which does not exceed the CTR criterion.

Mercury was detected, but not quantified in the upstream receiving water at an estimated concentration of 0.12 µg/L based on five samples collected between February 2008 through April 2013 (minimum MDL 0.062 µg/L; minimum RL 0.2 µg/L), which exceeds the CTR human health criterion. Mercury was not detected in the remaining four samples. The receiving water samples were analyzed using USEPA Method 7470A and these samples were not collected using clean hands/dirty hands techniques.

Table F-8. Mercury Data Summary

Sample Date	Analytical Method	Mercury (µg/L)	MDL (µg/L)	ML (µg/L)	RL (µg/L)
Effluent					
20 November 2008	EPA 7470A	ND	--	0.2	0.2
31 December 2009	EPA 7470A	ND	--	0.2	0.2
1 December 2010	EPA 7470A	ND	--	0.2	0.2
29 August 2011	EPA 7470A	0.21	--	0.2	0.2
4 September 2012	EPA 7470A	J 0.095	0.062	0.2	0.2
3 December 2012	EPA 1631E	0.00517	0.0002	0.2	0.0005
1 January 2013	EPA 1631E	0.00234	0.0002	0.2	0.0005
4 February 2013	EPA 1631E	0.0114	0.0002	0.2	0.0005
4 March 2013	EPA 1631E	0.00428	0.0002	0.2	0.0005
1 April 2013	EPA 1631E	0.00328	0.0002	0.2	0.0005
Upstream Receiving Water					
20 November 2008	EPA 7470A	ND	--	0.2	0.2
31 December 2009	EPA 7470A	ND	--	0.2	0.2
1 December 2010	EPA 7470A	ND	--	0.2	0.2
29 August 2011	EPA 7470A	ND	--	0.2	0.2
4 September 2012	EPA 7470A	J 0.12	0.062	0.2	0.2

Based on the available data, which utilizes clean hands/dirty hands techniques and which utilizes analytical methods approved under 40 CFR Part 136, mercury in the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of human health.

ii. **Persistent Chlorinated Hydrocarbon Pesticides**

(a) **WQO.** The Basin Plan requires that no individual pesticides shall be present in concentrations that adversely affect beneficial uses; discharges shall not result in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses; persistent chlorinated hydrocarbon pesticides shall not be present in the water column at detectable concentrations; and pesticide concentrations shall not exceed those allowable by applicable antidegradation policies. Persistent chlorinated hydrocarbon pesticides include aldrin; alpha-BHC; beta-BHC; gamma-BHC; delta-BHC; chlordane; 4,4-DDT; 4,4-DDE; 4,4'-DDD; dieldrin; alpha-endosulfan; beta-endosulfan; endosulfan sulfate; endrin; endrin aldehyde; heptachlor; heptachlor epoxide; and toxaphene.

(b) **RPA Results.** Eleven individual pesticides (4,4-DDD, 4,4-DDE, 4,4-DDT, alpha-endosulfan, beta-endosulfan, gamma-BHC, dieldrin, endosulfan sulfate, endrin, heptachlor, and heptachlor epoxide) were each detected but not quantified in a single sample collected on 1 August 2012. In addition, aldrin was detected but not quantified in the effluent in two out of 64 monitoring events between February 2008 and February 2013 (minimum MDL 0.0013 µg/L; minimum RL 0.005 µg/L). Other persistent chlorinated hydrocarbon pesticides were non-detect and generally met the lowest MLs in the SIP.

Section 1.2 of the SIP states, "*the RWQCB shall have discretion to consider if any data are inappropriate or insufficient for use in implementing this Policy*." All of the detections of persistent chlorinated hydrocarbon pesticides were reported as estimated concentrations. Estimated concentrations do not provide an adequate level of scientific certainty to use as evidence that the effluent exceeds criteria. Additionally, out of 64 effluent samples, the constituents were only detected in one sample, with the exception of aldrin, which was detected in two samples, all of the detections were estimated concentrations, and all of the detections were on the same day (with the exception of aldrin). Therefore, the Central Valley Water Board finds that the sample results are inappropriate and did not use the data in conducting the RPA.

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. Monitoring for persistent chlorinated hydrocarbons is required with the priority pollutant monitoring. This Order does not carry over monthly monitoring requirements in Order R5-2007-0171.

iii. **Thallium, Total Recoverable**

(a) **WQO.** The CTR includes a criterion of 1.7 µg/L for thallium for the protection of human health for waters from which both water and organisms are consumed.

(b) **RPA Results.** Thallium was detected but not quantified in the effluent in one out of five monitoring events between February 2008 and February 2013 (minimum MDL 2.4 µg/L; minimum RL 20 µg/L). Thallium was detected but not quantified in one out of five samples in the upstream receiving water. Both detections were for samples collected and analyzed on the same dates. The laboratory QA/QC sheets for the analyses show that thallium was detected in the method blank. Therefore, the Central Valley Water Board has determined that the detections (estimated) of thallium in the effluent and receiving water are inappropriate to be used in the RPA. This Order includes annual monitoring for priority pollutants.

Section 1.2 of the SIP states, "*the RWQCB shall have discretion to consider if any data are inappropriate or insufficient for use in implementing this Policy*." Both detections of thallium were reported as estimated concentrations. Estimated concentrations do not provide an adequate level of scientific certainty to use as evidence that the effluent exceeds criteria. Additionally, the laboratory QA/QC sheets show a detection in the method blank. Therefore, the Central Valley Water Board finds that the sample results are inappropriate and did not use the data in

conducting the RPA.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. Monitoring for thallium is required with the priority pollutant monitoring.

b. **Constituents with Limited Data.** Reasonable potential cannot be determined for the following constituents because effluent data are limited or ambient background concentrations are not available. The Discharger is required to continue to monitor for these constituents in the effluent 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. **Methyl Bromide**

(a) **WQO.** The CTR includes a human health criterion for the protection of waters where both water and organisms are consumed of 48 µg/L.

(b) **RPA Results.** The MEC for methyl bromide was 55 µg/L based on 10 samples collected between February 2008 and April 2013. Methyl bromide was not detected in the upstream receiving water (minimum MDL 0.32 µg/L; minimum RL 2 µg/L) based on five samples collected from February 2008 through February 2013.

Table F-9. Methyl Bromide Data Summary

Sample Date	Methyl Bromide (µg/L)	MLs (µg/L)	RL (µg/L)
Effluent			
29 July 2008	1.4	1.0, 2	0.5
27 August 2008	55	1.0, 2	2
20 November 2008	7.1	1.0, 2	2
31 December 2009	2.8	1.0, 2	2
1 December 2010	ND	1.0, 2	2
29 August 2011	ND	1.0, 2	2
4 September 2012	28	1.0, 2	2
3 December 2012	ND	1.0, 2	1
1 January 2013	ND	1.0, 2	1
4 February 2013	ND	1.0, 2	1
4 March 2013	ND	1.0, 2	1
1 April 2013	1.2	1.0, 2	1
Upstream Receiving Water			
20 November 2008	ND	1.0, 2	2
31 December 2009	ND	1.0, 2	2
1 December 2010	ND	1.0, 2	2
29 August 2011	ND	1.0, 2	2
4 September 2012	ND	1.0, 2	2

Methyl bromide is a soil fumigant which was once widely used in agricultural applications, and as a space fumigant for the control of insects, fungi, and rodents. Since methyl bromide has ozone depleting properties, its production and import to the U.S. has been eliminated as of 2005 consistent with the Montreal Protocol on Substances that Deplete the Ozone Layer (1988) and the Clean Air Act. Methyl bromide use was

phased out nationally in 2005 and is only allowed for a small number of exempted uses, which continues to diminish every year.

Section 1.2 of the SIP states, "*the RWQCB shall have discretion to consider if any data are inappropriate or insufficient for use in implementing this Policy*." Because methyl bromide use has been largely prohibited on a nation-wide basis and the source of contamination in the discharge is not known, the Central Valley Water Board finds that the available data are inappropriate and insufficient for use in establishing effluent limitations 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. The Central Valley Water Board is not establishing effluent limitations for methyl bromide at this time. Instead of limitations, additional monitoring has been established for methyl bromide. Should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified by adding appropriate effluent limitations.

c. **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 (as N), BOD_5, chlorodibromomethane, chlorine residual, copper, dichlorobromomethane, nitrate plus nitrite, pH, settleable solids, total coliform, TSS, total trihalomethanes, and zinc. 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 National Ambient Recommended Water Quality Criteria (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.

The maximum permitted effluent pH is 8.5, as the Basin Plan objective for pH in the receiving stream is the range of 6.5 to 8.5. In order to protect against the worst-case short-term exposure of an organism, a pH value of 8.5 was used to derive the acute criterion. The resulting acute criterion is 2.14 mg/L (as N).

A chronic criterion was calculated for each day when paired temperature and pH were measured using downstream receiving water data for temperature and pH. Rolling 30-day average criteria were calculated from

downstream data using the criteria calculated for each day and the minimum observed 30 day average criterion was established as the applicable 30-day average chronic criterion, or 30-day CCC. The resulting 30-day CCC is 2.46 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 2.46 mg/L (as N), the 4-day average concentration that should not be exceeded is 6.15 mg/L (as N).

(b) **RPA Results.** The Facility is a POTW that treats domestic wastewater. Untreated domestic wastewater contains ammonia in concentrations that, without treatment, would be harmful to fish and would violate the Basin Plan narrative toxicity objective if discharged to the receiving water. Reasonable potential therefore exists and effluent limitations are required.

Federal regulations at 40 CFR 122.44(d)(1)(i) require 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 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. 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 Plan narrative toxicity objective. Inadequate or incomplete nitrification creates the potential for ammonia to be discharged and provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the NAWQC. 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 generally calculates WQBELs in accordance with SIP procedures for non-CTR constituents, and ammonia is a non-CTR constituent. The SIP procedure assumes a 4-day averaging period for calculating the long-term average discharge condition (LTA). However, USEPA recommends modifying the procedure for calculating permit limits for ammonia using a 30-day averaging period for the calculation of the LTA corresponding to the 30-day CCC. Therefore, while the LTAs corresponding to the acute and 4-day chronic criteria were calculated according to SIP procedures, the LTA corresponding to the 30-day CCC was calculated assuming a 30-day averaging period. The lowest LTA representing the acute, 4-day CCC, and 30-day CCC is then selected for deriving the AMEL and the MDEL. The remainder of the WQBEL calculation for ammonia was performed according to the SIP procedures. This Order contains a final AMEL and MDEL for ammonia of 0.74 mg/L as N and 2.1 mg/L as N based on the NAWQC.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows the Facility can meet these WQBELs.

ii. **Chlorodibromomethane**

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

(b) **RPA Results.** The MEC for chlorodibromomethane was 1.3 µg/L based on 54 samples collected between February 2008 through February 2013 (minimum MDL 0.11 µg/L; minimum RL 0.5 µg/L). Chlorodibromomethane was not detected in the upstream receiving water (minimum MDL 0.11 µg/L; minimum RL 0.5 µg/L) based on five samples collected between February 2008 through February 2013. Therefore, chlorodibromomethane in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of the human health.

(c) **WQBELs.** This Order contains a final AMEL and MDEL for chlorodibromomethane of 0.41 µg/L and 0.82 µg/L based on the CTR criterion for the protection of human health for waters where both water and organisms are consumed.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 1.3 µg/L is greater than applicable WQBELs. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the new effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Furthermore, the

effluent limitations for chlorodibromomethane are a new regulatory requirement within this Order, which becomes applicable to the waste discharge with the adoption of this Order, and which was adopted after 1 July 2000. Therefore, a time schedule for compliance with the chlorodibromomethane effluent limitations is established in Time Schedule Order (TSO) R5-2014-0043 in accordance with Water Code section 13300, which requires preparation and implementation of a pollution prevention plan in compliance with Water Code section 13263.3.

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 mg/L and 0.019 mg/L, respectively. These criteria are protective of the Basin Plan's narrative toxicity objective.

(b) **RPA Results.** The concentrations of chlorine used to disinfect wastewater are high enough to harm aquatic life and violate the Basin Plan narrative toxicity objective if discharged to the receiving water. Reasonable potential therefore does exist and effluent limitations are required.

Federal regulations at 40 CFR 122.44(d)(1)(i) require 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. Chlorine 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 its 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*." With regard to POTWs, USEPA recommends that, "*POTWs should also be*

characterized for the possibility of chlorine and ammonia problems." (TSD, p. 50)

The Discharger uses chlorine for disinfection, which is extremely toxic to aquatic organisms. Although the Discharger uses a sulfur dioxide process to dechlorinate the effluent prior to discharge to Mariposa Creek, the existing chlorine use and the potential for chlorine to be discharged provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the NAWQC.

(c) **WQBELs.** The TSD contains statistical methods for converting chronic (4-day) and acute (1-hour) aquatic life criteria to AMELs and MDELs based on the variability of the existing data and the expected frequency of monitoring. However, because chlorine is an acutely toxic constituent that can and will be monitored continuously, an average 1-hour limitation is considered more appropriate than an average daily limitation. This Order contains a 4-day average effluent limitation and 1-hour average effluent limitation for chlorine residual of 0.011 µg/L and 0.019 µg/L, respectively, based on USEPA's NAWQC, which implements the Basin Plan's narrative toxicity objective for protection of aquatic life.

(d) **Plant Performance and Attainability.** The Facility is designed to provide chlorine disinfection and dechlorination of the discharge. Therefore, the Central Valley Water Board concludes that immediate compliance with these effluent limitations is feasible.

iv. **Copper, Total Recoverable**

(a) **WQO.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for copper. These criteria for copper are presented in dissolved concentrations, as 1-hour acute criteria and 4-day chronic criteria. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. Default USEPA translators were used for the receiving water and effluent.

(b) **RPA Results.** Section IV.C.2 of this Fact Sheet includes procedures for conducting the RPA for hardness-dependent CTR metals, such as copper. The CTR includes hardness-dependent criteria for copper for the receiving water. The MEC for copper was 9.7 µg/L based on 58 samples collected between February 2010 and February 2013 (minimum MDL 0.094 µg/L; minimum RL 0.5 µg/L). The maximum observed upstream receiving water copper concentration was 1.8 µg/L, based on six samples collected between February 2008 and February 2013 (minimum MDL 0.95 µg/L; minimum RL 5 µg/L). The RPA was conducted using the upstream receiving water hardness to calculate the criteria for comparison to the maximum ambient background concentration, and likewise using the reasonable worst-case downstream hardness to compare the MEC. The table below shows the specific criteria used for the RPA.

Table F-10. Copper RPA Summary

	CTR Chronic Criterion (Total Recoverable)	Maximum Concentration (Total Recoverable)	Reasonable Potential? (Y/N)
Receiving Water	6.3 µg/L[1]	1.8 µg/L	No[2]
Effluent	8.4 µg/L[3]	9.7 µg/L	Yes[4]

[1] Based on lowest observed upstream hardness of 63 mg/L (as $CaCO_3$)
[2] Per Section 1.3, step 6 of the SIP.
[3] Based on reasonable worst-case downstream hardness of 89 mg/L (as $CaCO_3$).
[4] Per Section 1.3, step 4 of the SIP.

Based on the available data, copper in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for the protection of freshwater aquatic life

(c) **WQBELs.** This Order contains a final AMEL and MDEL for copper of 6.8 µg/L and 13 µg/L based on the CTR criterion for the protection of freshwater aquatic life.

(d) **Plant Performance and Attainability.** Based on an analysis of the available effluent copper data, the Central Valley Water Board finds that the Discharger is able to consistently comply with the applicable WQBELs.

v. **Dichlorobromomethane**

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

(b) **RPA Results.** The MEC for dichlorobromomethane was 13 µg/L based on 75 samples collected between February 2008 through February 2013 (minimum MDL 0.13 µg/L; minimum RL 0.5 µg/L). Dichlorobromomethane was not observed in the upstream receiving water (minimum MDL 0.13 µg/L; minimum RL 0.5 µg/L) based on five samples collected between February 2008 through February 2013. Therefore, dichlorobromomethane in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of the human health.

(c) **WQBELs.** This Order establishes a final AMEL and MDEL for dichlorobromomethane of 0.56 µg/L and 1.3 µg/L based on the CTR criterion for the protection of human health for waters where both water and organisms are consumed.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC is greater than applicable WQBELs. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. TSO R5-2011-0905 provided a compliance schedule to achieve compliance with the final effluent limitations for dichlorobromomethane by 18 May 2015. Consistent with TSO R5-2011-0905, a time schedule for compliance with the dichlorobromomethane effluent limitations is established in TSO R5-2014-0043, with compliance with final effluent limitations required by 18 May 2015, in accordance with Water Code section 13300, which requires preparation and

implementation of a pollution prevention plan in compliance with Water Code section 13263.3.

vi. **Nitrate and Nitrite**

(a) **WQO.** DPH has adopted Primary MCLs for the protection of human health for nitrite (as N) and nitrate (as NO_3) that are equal to 1 mg/L and 45 mg/L, respectively. DPH has also adopted a primary MCL of 10 mg/L for the sum of nitrate and nitrite, measured as nitrogen.

USEPA has developed a primary MCL and an MCL goal of 1 mg/L for nitrite (as nitrogen). For nitrate, USEPA has developed Drinking Water Standards (10 mg/L as Primary MCL) and NAWQC for protection of human health (10 mg/L for non-cancer health effects).

(b) **RPA Results.** The Facility is a POTW that treats domestic wastewater. Untreated domestic wastewater contains ammonia in concentrations that, if untreated, will be harmful to fish and will violate the Basin Plan's narrative toxicity objective. This Order, therefore, requires removal of ammonia (i.e., nitrification). Nitrification is a biological process that converts ammonia to nitrate and nitrite, and will result in effluent nitrate concentrations above the primary MCL for nitrate plus nitrite. Nitrate concentrations in a drinking water supply above the primary MCL threatens the health of human fetuses and newborn babies by reducing the oxygen-carrying capacity of the blood (methemoglobinemia). Reasonable potential for nitrate and nitrite therefore exists and WQBELs are required.

Federal regulations at 40 CFR 122.44(d)(1)(i) require 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. Nitrate and nitrite 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." With regard to POTWS, USEPA recommends that, "*POTWs should also be characterized for the possibility of chlorine and ammonia problems.*" (TSD, p. 50)

The concentration of nitrogen in raw domestic wastewater is sufficiently high that the resultant treated wastewater has a reasonable potential to exceed or threaten to exceed the Primary MCL for nitrate plus nitrite unless the wastewater is treated for nitrogen removal, and therefore an effluent limitation for nitrate plus nitrite is required. 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. Inadequate or incomplete denitrification may result in the discharge of nitrate and/or nitrite to the receiving stream. Discharges of nitrate plus nitrite in concentrations that exceed the Primary MCL would violate the Basin Plan narrative chemical constituents objective. Inadequate or incomplete denitrification creates the potential for nitrate and nitrite to be discharged and provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the Primary MCL. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for nitrate plus nitrite and WQBELs are required.

(c) **WQBELs.** This Order contains a final AMEL for nitrate plus nitrite of 10 mg/L (total as N), based on the Primary MCL. This effluent limitation is included in this Order to ensure the treatment process adequately nitrifies and denitrifies the waste stream to protect the beneficial use of municipal and domestic supply.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 57 mg/L is greater than applicable WQBEL. Based on the sample results for the effluent, the limitation appears to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the effluent limitation, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Order R5-2007-0171 included a final effluent limitation for nitrate (as N) of 10 mg/L, with final compliance required by 4 December 2017. This Order revises the effluent limitation to nitrate plus nitrate (as N), consistent the California Primary MCL. The effluent limitation is not considered a "new, revised, or newly interpreted water quality objective" for purposes of including a compliance schedule within this Order. However, the effluent limitation for nitrate plus nitrite is a new regulatory requirement within this Order, which becomes applicable to the waste discharge with the adoption of this Order, and which was adopted after 1 July 2000. Therefore, a time schedule for compliance with the nitrate plus nitrite (as N) effluent limitation is established in TSO R5-2014-0043 in accordance with Water Code section 13300, which requires preparation and implementation of a pollution prevention plan in compliance with Water Code section 13263.3.

vii. **Pathogens**

(a) **WQO.** DPH has developed reclamation criteria at Title 22, 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 reclamation criteria because the receiving water is used for irrigation of agricultural land and for contact recreation purposes. The stringent disinfection criteria of Title 22 are appropriate since the undiluted effluent may be used for the irrigation of food crops and/or for body-contact water recreation. Coliform organisms are intended as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing other pathogens.

(b) **RPA Results.** Raw domestic wastewater inherently contains human pathogens that threaten human health and life, and constitute a threatened pollution and nuisance under Water Code Section 13050 if discharged untreated to the receiving water. Reasonable potential for pathogens therefore exists and WQBELs are required.

Federal regulations at 40 CFR 122.44(d)(1)(i) require 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 Mariposa Creek include municipal and domestic supply, water contact recreation, and agricultural irrigation supply, and there is, at times, less than 20:1 dilution. To protect these beneficial uses, the 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 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 ensure compliance with the required level of treatment. The tertiary treatment process, or equivalent, is capable of reliably meeting a turbidity of 2 nephelometric turbidity units (NTU). 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. Coliform testing, by comparison, is not conducted continuously and requires several hours, to days, to identify high coliform concentrations. Therefore, to ensure compliance with the required level of disinfection (based on Title 22 disinfection criteria), weekly average specifications are impracticable for turbidity. This Order includes operational specifications for turbidity that vary depending on whether the Discharger is using coagulation.

This Order contains effluent limitations, operating specifications, and requires a tertiary level of treatment, or equivalent, necessary to protect the beneficial uses of the receiving water. The Central Valley Water Board has previously considered the factors in Water Code section 13241 in establishing these requirements (see Order R5-2007-0171).

Final WQBELs for BOD_5 and TSS are based on the technical capability of the tertiary process, which is necessary to protect the beneficial uses of the receiving water. BOD_5 is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The tertiary treatment standards for BOD_5 and TSS are indicators of the effectiveness of the tertiary treatment process. The principal design parameter for wastewater treatment plants is the daily BOD_5 and TSS loading rates and the

corresponding removal rate of the system. The application of tertiary treatment processes results in the ability to achieve lower levels for BOD_5 and TSS than the secondary standards currently prescribed. Therefore, this Order requires AMELs for BOD_5 and TSS of 10 mg/L and an average monthly percent removal requirement of 90%, which is technically based on the capability of a tertiary system. In addition to the average weekly effluent limitations (AWELs) and AMELs, an MDEL 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.

(d) **Plant Performance and Attainability.** The Facility is not designed to provide a tertiary level of treatment. New or modified control measures are necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. This Order includes a compliance schedule at Section VI.C.7.a for the Discharger to achieve compliance with the final effluent limitations for BOD_5, TSS, and total coliform in Section IV.A.1.; the operational specifications for turbidity in Section VI.C.4.a, and the Title 22 disinfection requirements in Section VI.C.6.a of this Order by 4 December 2017.

viii. **pH**

(a) **WQO.** The Basin Plan includes a water quality objective for surface waters (except for Goose Lake) that the *"…pH shall not be depressed below 6.5 nor raised above 8.5.*"

(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 Plan's numeric objective for pH in the receiving water. Therefore, reasonable potential exists for pH and WQBELs are required.

Federal regulations at 40 CFR 122.44(d)(1)(i) require 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 265 samples taken from February 2008 to February 2013, the maximum pH reported was 7.6 and the minimum was 5.6. The Discharger adds soda ash in the chlorine contact chamber for pH control. 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 Plan's numeric objective for pH in the receiving water. Therefore, WQBELs for pH are required in this Order.

(c) **WQBELs.** Effluent limitations for pH of 6.5 as an instantaneous minimum and 8.5 as an instantaneous maximum are included in this Order based on protection of the Basin Plan objectives for pH.

(d) **Plant Performance and Attainability.** The effluent pH was below the instantaneous minimum effluent limitation in one sample (5.6) and did not exceed the instantaneous maximum effluent limitation based on 265 samples. Therefore, the Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

ix. **Settleable Solids**

(a) **WQO.** For inland surface waters, the Basin Plan states that *"[w]ater shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses*."

(b) **RPA Results.** The discharge of municipal secondary treated effluent has a reasonable potential to cause or contribute to an excursion above the Basin Plan's narrative objective for settleable solids.

(c) **WQBELs.** This Order contains an AMEL and MDEL for settleable solids. Because the amount of settleable solids is measured in terms of volume per volume without a mass component, it is impracticable to calculate mass limitations for inclusion in this Order. An MDEL for settleable solids is included in the Order, in lieu of an AWEL, to ensure that the treatment works operate in accordance with design capabilities.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the settleable solids were not detected in the effluent. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

x. **Total Trihalomethanes**

(a) **WQO.** DPH has developed a Primary MCL for total trihalomethanes of 80 µg/L. Total trihalomethanes include bromoform, chlorodibromomethane, chloroform, and dichlorobromomethane.

(b) **RPA Results.** Total trihalomethanes are chlorine disinfection byproducts. Bromoform was not detected in the effluent discharge based on 48 samples (minimum MDL 0.17 µg/L, minimum RL 0.5 µg/L) obtained between February 2008 and February 2013. Chloroform was detected in the discharge at a maximum observed concentration of 100 µg/L based on 48 samples, chlorodibromomethane at 1.3 µg/L based on 54 samples, and dichlorobromomethane at 13 µg/L based on 75 samples. All samples were collected between February 2008 and February 2013. The maximum observed total trihalomethanes concentration for the discharge was 120 µg/L based on 41 samples obtained between February 2008 and February 2013. Total trihalomethanes were not detected in the upstream receiving water based on five samples for each contributing constituent collected between February 2008 and February 2013. Therefore, total trihalomethanes in the discharge demonstrates reasonable potential to cause or contribute to an in-stream excursion above the Primary MCL.

(c) **WQBELs.** This Order contains an AMEL for total trihalomethanes of 80 µg/L based on the Basin Plan's narrative chemical constituents objective for protection of the MUN beneficial use.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 120 µg/L is greater than applicable WQBEL. Based on the sample results for the effluent, the limitation appears it may put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the new effluent limitation, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Furthermore, the effluent limitation for total trihalomethanes is a new regulatory requirement within this Order, which becomes applicable to the waste discharge with the adoption of this Order, and which was adopted after 1 July 2000. Therefore, a time schedule for compliance with the total trihalomethanes effluent limitation is established in TSO R5-2014-0043 in accordance with Water Code section 13300, which requires preparation and implementation of a pollution prevention plan in compliance with Water Code section 13263.3.

xi. **Zinc, Total Recoverable**

(a) **WQO.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for zinc. These criteria for zinc are presented in dissolved concentrations, as 1-hour acute criteria and 4-day chronic criteria. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. Default USEPA translators were used for the receiving water and effluent.

(b) **RPA Results.** Section IV.C.2 of this Fact Sheet includes procedures for conducting the RPA for hardness-dependent CTR metals, such as zinc. The CTR includes hardness-dependent criteria for zinc for the receiving water. The MEC for zinc was 52 µg/L based on 47 samples collected

between February 2008 and February 2013 (minimum MDL 2.3 µg/L; minimum RL 5 µg/L). The maximum observed upstream receiving water zinc concentration was 2.3 µg/L, based on 5 samples collected between February 2008 and February 2013 (minimum MDL 0.8 µg/L; minimum RL 5 µg/L). The RPA was conducted using the upstream receiving water hardness to calculate the criteria for comparison to the maximum ambient background concentration, and likewise using the reasonable worst-case downstream hardness to compare the MEC. The table below shows the specific criteria used for the RPA.

Table F-11. Zinc RPA Summary

	CTR Chronic Criterion (Total Recoverable)	Maximum Concentration (Total Recoverable)	Reasonable Potential? (Y/N)
Receiving Water	81 µg/L[1]	2.3 µg/L	No [2]
Effluent	110 µg/L[3]	52 µg/L	No [4]

1 Based on lowest observed upstream hardness of 63 mg/L (as $CaCO_3$)
2 Per Section 1.3, step 6 of the SIP.
3 Based on reasonable worst-case downstream hardness of 89 mg/L (as $CaCO_3$)
4 Per Section 1.3, step 4 of the SIP.

Based on the available data, zinc in the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for the protection of freshwater aquatic life. However, the Discharger currently utilizes a chemical chelating agent, calcium polysulfide, in order to remove zinc in order to meet effluent limitations. If the chelation/precipitation treatment were discontinued, zinc concentrations may increase to levels that could cause or contribute to an in-stream excursion above the CTR criterion. In addition, the Discharger utilizes zinc orthophosphate as a corrosion inhibitor in its potable water system.

Section 1.3 of the SIP contains procedures for determining reasonable potential for priority pollutants. Step 7 of this procedure states that reasonable potential may be determined based on "*[r]eview of other information available to determine if a water quality-based effluent limitation is required, not withstanding the above analysis in Steps 1 through 6, to protect beneficial uses.*"

Based on the potential for inadequate zinc removal, the Central Valley Water Board has determined that zinc in the discharge demonstrates reasonable potential to cause or contribute to an exceedance of the CTR criteria based on Step 7 of the SIP.

(c) **WQBELs.** This Order contains an AMEL and MDEL for zinc of 80 µg/L and 110 µg/L based on the CTR criteria.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 52 µg/L is below the applicable WQBELs. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

4. WQBEL Calculations

a. This Order includes WQBELs for ammonia (as N), BOD_5, chlorodibromomethane, chlorine residual, copper, dichlorobromomethane, nitrate plus nitrite, pH, settleable solids, TSS, total coliform, total trihalomethanes, and zinc. 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:

$$ECA = C + D(C - B) \qquad \text{where } C>B, \text{ and}$$
$$ECA = C \qquad \text{where } C \leq B$$

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 was used to calculate the MDEL.

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

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

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

where:

$mult_{AMEL}$ = 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 Point 001

Table F-12. Summary of Water Quality-Based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	10	15	20	--	--
	lbs/day[1]	51	76	102	--	--
	% Removal	90	--	--	--	--
pH	standard units	--	--	--	6.5	8.5
Total Suspended Solids	mg/L	10	15	20	--	--
	lbs/day[1]	51	76	102	--	--
	% Removal	90	--	--	--	--
Priority Pollutants						
Chlorodibromomethane	µg/L	0.41	--	0.82	--	--
Copper, Total Recoverable	µg/L	6.8	--	13	--	--
Dichlorobromomethane	µg/L	0.56	--	1.3	--	--
Zinc, Total Recoverable	µg/L	80	--	110	--	--
Non-Conventional Pollutants						
Ammonia Nitrogen, Total (as N)	mg/L	0.74	--	2.1	--	--
	lbs/day[1]	3.8	--	11	--	--
Chlorine, Total Residual	mg/L	0.011[2]	--	0.019[3]	--	--
Nitrate plus Nitrite (as N)	mg/L	10.	--	--	--	--
Settleable Solids	mL/L	0.1	--	0.2	--	--
Total Coliform	MPN/100 mL	--	2.2[4]	23[5]	--	240
Total Trihalomethanes	µg/L	80	--	--	--	--

1 Based on an average dry-weather flow of 0.61 MGD.
2 Applied as a 4-day average effluent limitation.
3 Applied as a 1-hour average effluent limitation.
4 Applied as a 7-day median.
5 Not to be exceeded more than once in any 30-day period.

5. Whole Effluent Toxicity (WET)

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

a. **Acute Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at page III-8.01) The Basin Plan also states that, *"…effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate…*"

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. Acute whole effluent toxicity is not a priority pollutant. Therefore, 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. 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).*" Although the discharge has been consistently in compliance with the acute effluent limitations, the Facility is a POTW that treats domestic wastewater containing ammonia and other acutely toxic pollutants. Acute toxicity effluent limitations are required to ensure compliance with the Basin Plan's 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*." Consistent with Order R5-2007-0171, 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 Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in*

concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at page III-8.01). Based on chronic WET testing performed by the Discharger from February 2008 through June 2013, the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

Table F-13. Whole Effluent Chronic Toxicity Testing Results

Date	Fathead Minnow *Pimephales promelas*		Water Flea *Ceriodaphnia dubia*		Green Algae *Selenastrum capricornutum*
	Survival (TUc)	Growth (TUc)	Survival (TUc)	Reproduction (TUc)	Growth (TUc)
7 September 2008	1	1	1	1.33	1
2 November 2009	1	1	1	1	1
12 July 2010	1	1	1	1	1
15 June 2011	1	1	1	1	1
11 June 2012	1[1]	1[1]	1	1	1
3 June 2013	1[1]	1[1]	1	1	1

[1] Receiving water diluent did not meet test acceptability criteria as a control.

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

The Monitoring and Reporting Program of this Order requires annual chronic WET monitoring for demonstration of compliance with the narrative toxicity objective. In addition to WET monitoring, Special Provision VI.C.2.a of this Order includes a numeric toxicity monitoring trigger, requirements for accelerated monitoring, and requirements for TRE initiation if toxicity is demonstrated.

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 limitations. This has resulted in the petitioning of a NPDES permit in the Los Angeles Region[14] that contained numeric chronic toxicity effluent limitations. To address the petition, the State Water Board adopted WQO 2003-0012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-0012, "*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

[14] 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).

clarifying the appropriate form of effluent toxicity limits in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process. Since the toxicity control provisions in the SIP are under revision it is infeasible to develop numeric effluent limitations for chronic toxicity. Therefore, this Order requires that the Discharger meet best management practices for compliance with the Basin Plan's narrative toxicity objective, as allowed under 40 CFR 122.44(k).

To ensure compliance with the Basin Plan's narrative toxicity objective, the Discharger is required to conduct chronic WET testing, as specified in the Monitoring and Reporting Program (Attachment E section V.). Furthermore, Special Provision VI.C.2.a. of this Order requires the Discharger to investigate the causes of, and identify and implement corrective actions to reduce or eliminate effluent toxicity. If the discharge demonstrates toxicity exceeding the numeric toxicity monitoring trigger, the Discharger is required to initiate a 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. Performance-based Effluent Limitation

1. Applicable Performance-based Effluent Limitation

Order R5-2007-0171 included an annual average effluent limitation for electrical conductivity of 700 µmhos/cm. The limitation was based on the recommended level from Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome 1985). The Discharger has not conducted a study to determine the applicable electrical conductivity level for Mariposa Creek. As such, the recommended level is not being applied. However, the electrical conductivity effluent limitation is carried over as a performance-based effluent limitation. Effluent data show that the highest calendar year average for electrical conductivity was 532 µmhos/cm. As discussed elsewhere, the Discharger began using calcium polysulfide and polyaluminum chloride for treatment of metals in the wastewater. These chemicals may contribute to salinity in the discharge. Therefore, the electrical conductivity effluent limitation is reasonable to minimize salinity impact from controllable discharges. This Order also requires the Discharger to complete and implement a Salinity Evaluation and Minimization Study.

The Central Valley Water Board, in cooperation with the State Water Board, has begun the process to develop a new policy for the regulation of salinity in the Central Valley. The effort includes adoption of long-term solutions that will lead to enhanced water quality and economic sustainability. Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) is a collaborative basin planning effort aimed at developing and implementing a comprehensive salinity management program.

E. Final Effluent Limitation Considerations

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, BOD_5, and TSS because they are oxygen demanding substances. Except for the pollutants listed above, mass-based effluent limitations are not included in this Order for pollutant parameters for which effluent limitations are based on water quality objectives and criteria that are concentration-based.

Mass-based effluent limitations were calculated based upon the design flow (average dry weather flow) permitted in section IV.A.1.h of this Order.

2. Averaging Periods for Effluent Limitations

40 CFR 122.45 (d) requires AWELs and AMELs for POTWs unless impracticable. However, for toxic pollutants and pollutant parameters in water quality permitting, USEPA recommends the use of MDELs in lieu of AWELs for two reasons. "*First, the basis for the 7-day average for POTWs derives from the secondary treatment requirements. This basis is not related to the need for assuring achievement of water quality standards. Second, a 7-day average, which could comprise up to seven or more daily samples, could average out peak toxic concentrations and therefore the discharge's potential for causing acute toxic effects would be missed.*" (TSD, pg. 96) This Order uses MDELs in lieu of AWELs for ammonia, chlorodibromomethane, copper, dichlorobromomethane, settleable solids, and zinc as recommended by the TSD for the achievement of water quality standards and for the protection of the beneficial uses of the receiving stream. Furthermore, for BOD_5, chlorine residual, pH, total coliform, and TSS, AWELs 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 Order R5-2007-0171 unless a less stringent limitation is justified based on exceptions to the anti-backsliding provisions contained in CWA sections 402(o) or 303(d)(4), or, where applicable, 40 CFR 122.44(l).

The effluent limitations in this Order are at least as stringent as the effluent limitations in Order R5-2007-0171, with the exception of effluent limitations for settleable solids, copper, dichlorobromomethane, turbidity, and zinc. The effluent limitations for these pollutants are less stringent than those in Order No R5-2007-0171. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

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 except in compliance with CWA section 303(d)(4). The effluent limitations for settleable solids, copper, dichlorobromomethane, turbidity, and zinc established in Order R5-2007-0171 are WQBELs and may be relaxed if the requirements of CWA section 303(d)(4) are satisfied.

   CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters.

i. **Non-Attainment Waters.** For waters where standards are not attained, CWA section 304(d)(4)(A) specifies that any effluent limitation based on a Total Maximum Daily Load (TMDL) or other Waste Load Allocation (WLA) may be revised only if the cumulative effect of all such revised effluent limitations based on such TMDLs or WLAs will assure the attainment of such water quality standards. Mariposa Creek is not on the 2010 303(d) list and there are no TMDLs.

ii. **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 receiving water, Mariposa Creek, is an attainment water for settleable solids. The removal or relaxation of WQBELs for this pollutant once tertiary treatment is implemented 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. Any impact on existing water quality will be insignificant. 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 several exceptions to the anti-backsliding regulations. 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. The updated information that supports the relaxation of effluent limitations for these constituents includes the following:

i. **Settleable Solids.** Order R5-2007-0171 contained final effluent limitations for settleable solids, applicable to the discharge upon the effective date of the Order. This Order revises the settleable solids effluent limitations to include them as interim effluent limitations, which will not be applicable once the Discharger upgrades to tertiary treatment (required by 4 December 2017). The tertiary treatment process provides a consistent and high level of treatment with respect to settleable solids. Furthermore, automated monitoring of similar parameters (e.g., turbidity) is designed to control treatment processes and detect potential release of inadequately treated or disinfected effluent, and provides information to support the Discharger's operations and protection of receiving water quality.

ii. **Turbidity.** Order R5-2007-0171 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 limitations 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. 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 R5-2007-0171. These revisions are consistent with State

regulations implementing recycled water requirements. The revision of the turbidity effluent limitations is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16 because this Order imposes equivalent or more stringent requirements than Order R5-2007-0171 and therefore does not allow degradation.

iii. **Copper, Dichlorobromomethane, and Zinc.** The MDEL and AMEL for copper, dichlorobromomethane, and zinc have been changed from Order R5-2007-0171. The Effluent Concentration Allowance (ECA) in this Order and the previous Order are identical. The ECA provides a definition of effluent quality that is necessary to meet the water quality standards of receiving water and is used to derive WQBELs that are used to enforce the WLA.

The new effluent data used to calculate WQBELs for this Order has different statistical variability (i.e., coefficient of variation is different) than used in Order R5-2007-0171. Changes in the coefficient of variation can result in small changes to the effluent limitations. However, the slight changes in effluent limitations do not allow for an increase in the pollutants discharged. The TSD states, "*[s]ince effluents are variable and permit limits are developed based on a low probability of exceedance, the permit limits should consider effluent variability and ensure that the requisite loading from the WLA [ECA] is not exceeded under normal conditions. In effect then, the limits must "force" treatment plant performance, which, after considering acceptable effluent variability, will only have a low statistical probability of exceeding the WLA and will achieve the desired loadings*." (TSD, p. 97) Therefore, although there are slight differences in the effluent limitations, the ECAs are identical, so the level of treatment needed to maintain compliance with the effluent limitations remains the same. Consequently, the effluent limitations are not less stringent than the previous Order, and there is no backsliding.

WQBELs for copper and zinc were calculated based on 58 and 47 effluent samples, respectively, collected between February 2010 and February 2013. WQBELs for dichlorobromomethane were calculated based on 76 effluent samples collected between February 2008 and February 2013. This dataset is representative of the Facility effluent and represents the required monitoring frequency to determine compliance with the effluent limitations in Order R5-2007-0171. Therefore, Central Valley Water Board staff considers this dataset to be the most representative and reliable dataset to use to determine current Facility performance and development of WQBELs.

4. Antidegradation Policies

a. **Surface Water.** This Order does not allow for an increase in flow or mass of pollutants to the receiving water. 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 surface water 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 use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant and for certain constituents will result in water quality improvements.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based and WQBELs for individual pollutants. The technology-based effluent limitation consists of restrictions on flow. Restrictions on this parameter are discussed in section IV.B.2 of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order contains effluent limitations more stringent than the minimum, federal technology-based requirements that are necessary to meet water quality standards.

WQBELs have been 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 procedures for calculating the individual WQBELs for priority pollutants are based on the CTR implemented by the SIP, which was approved by USEPA on 18 May 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to 30 May 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to 30 May 2000, but not approved by USEPA before that date, are nonetheless "*applicable water quality standards for purposes of the CWA*" pursuant to 40 CFR 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

This Order contains pollutant restrictions that are more stringent than applicable federal requirements and standards. Specifically, this Order includes effluent limitations for BOD, TSS, and BOD and TSS percent removal that are more stringent than applicable federal standards, but that are nonetheless necessary to meet numeric objectives or protect beneficial uses. The rationale for including these limitations is explained in section IV.C.3 in this Fact Sheet. The Central Valley Water Board has previously considered the factors in Water Code section 13241 in Order R5-2007-0171.

Summary of Final Effluent Limitations
Discharge Point 001

Table F-14. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Average Dry Weather Flow	MGD	0.61	--	--	--	--	DC
Conventional Pollutants							
Biochemical Oxygen Demand (5 day @ 20°C)	mg/L	10	15	20	--	--	TTC
	lbs/day[2]	51	76	102	--	--	
	% Removal	90	--	--	--	--	
pH	standard units	--	--	--	6.5	8.5	BP
Total Suspended Solids	mg/L	10	15	20	--	--	TTC
	lbs/day[2]	51	76	102	--	--	
	% Removal	90	--	--	--	--	

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Priority Pollutants							
Chlorodibromo-methane	µg/L	0.41	--	0.82	--	--	CTR
Copper, Total Recoverable	µg/L	6.8	--	13	--	--	CTR
Dichlorobromo-methane	µg/L	0.56	--	1.3	--	--	CTR
Zinc, Total Recoverable	µg/L	80	--	110	--	--	CTR
Non-Conventional Pollutants							
Ammonia Nitrogen, Total (as N)	mg/L	0.74	--	2.1	--	--	NAWQC
	lbs/day[2]	3.8	--	11	--	--	
Chlorine, Total Residual	mg/L	0.011[3]	--	0.019[4]	--	--	NAWQC
Electrical Conductivity @ 25°C	µmhos/cm	700[5]	--	--	--	--	PB
Nitrate plus Nitrite (as N)	mg/L	10.	--	--	--	--	MCL
Settleable Solids	mL/L	0.1	--	0.2	--	--	BP
Total Coliform	MPN/ 100 mL	--	2.2[6]	23[7]	--	240	Title 22
Total Trihalomethanes	µg/L	80[8]	--	--	--	--	MCL
Acute Toxicity	% Survival	70[9]/90[10]	--	--	--	--	BP
Chronic Toxicity	TUc	[11]	--	--	--	--	BP

[1] DC – Based on the design capacity of the Facility.
TTC – Based on tertiary treatment capability. These effluent limitations reflect the capability of a properly operated tertiary treatment plant.
BP – Based on water quality objectives contained in the Basin Plan.
CTR – Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.
NAWQC – Based on USEPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
MCL – Based on the Primary Maximum Contaminant Level.
PB – Based on Facility performance.
Title 22 – Based on CA Department of Public Health Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22).

[2] Based on an average dry weather flow of 0.61 MGD.

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

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

[5] Applied as an annual average effluent limitation.

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

[7] Not to be exceeded more than once in any 30-day period.

[8] Applies to the sum of bromoform, chlorodibromomethane, chloroform, and dichlorobromomethane.

[9] 70 percent minimum for any one bioassay.

[10] 90 percent median for any three consecutive bioassays.

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

F. Interim Effluent Limitations

The State Water Board's Resolution No. 2008-0025 "Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits" (Compliance Schedule Policy) requires the Central Valley Water Board to establish interim numeric effluent limitations in this Order for compliance schedules longer than 1 year. As discussed in section VI.B.7 of this Fact Sheet, the Central Valley Water Board is approving a compliance schedule longer than one year for the effluent limitations for BOD_5, TSS, and total coliform. The Compliance Schedule Policy requires that interim effluent limitations must be based on current treatment plant performance or existing permit limitations, whichever is more stringent.

The interim effluent limitations for BOD_5, TSS, and total coliform are based on the limitations in Order 5-00-122.

1. **Compliance Schedule for Tertiary Treatment.** Consistent with Order R5-2007-0171, the Discharger is being required to achieve compliance with tertiary treatment standards. This Order carries over the compliance schedule established in Order R5-2007-0171 for meeting the more stringent limitations that reflect Title 22 equivalent treatment requirements. The Central Valley Water Board is establishing interim requirements based on permit limitations established prior to Order R5-2007-0171 in Order 5-00-122.

   A compliance schedule is necessary because the Discharger must implement actions, including designing and constructing facilities or implementing new or significantly expanded programs and securing financing to develop tertiary treatment capabilities. Construction includes related activities such as the purchase of property needed for the construction, performance of the environmental studies and reviews, identification of social and environmental mitigation, and purchase and installation of necessary equipment.

2. **Interim Limitations for BOD_5, TSS, and Total Coliform.** The Compliance Schedule Policy requires the Central Valley Water Board to establish interim requirements and dates for their achievement in the NPDES permit. Interim numeric effluent limitations are required for compliance schedules longer than one year. Interim effluent limitations must be based on current treatment plant performance or previous final permit limitations, whichever is more stringent. When feasible, interim limitations must correspond with final permit effluent limitations with respect to averaging bases (e.g., AMEL, AWEL, MDEL, etc.) for effluent limitations for which compliance protection is intended.

   The interim limitations for BOD_5, TSS, and total coliform in this Order are based on the limitations in Order 5-00-122. The Central Valley Water Board finds that the Discharger can undertake source control and treatment plant measures to maintain compliance with the interim limitations included in this Order. Interim limitations are established when compliance with final effluent limitations cannot be achieved by the existing discharge. Discharge of constituents in concentrations in excess of the final effluent limitations, but in compliance with the interim effluent limitations, can significantly degrade water quality and adversely affect the beneficial uses of the receiving stream on a long-term basis. The interim limitations, however, establish an enforceable ceiling concentration until compliance with the effluent limitation can be achieved.

G. Land Discharge Specifications – Not Applicable

H. Recycling Specifications – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

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 Plan. The Basin Plan states that "*[t]he numerical and narrative water quality objectives define the least stringent standards that the Regional Water board will apply to regional waters in order to protect the beneficial uses.*" The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains receiving surface water limitations based on the Basin Plan numerical and narrative water quality objectives for bacteria, biostimulatory substances, color, chemical constituents, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, suspended sediment, settleable substances, suspended material, tastes and odors, temperature, toxicity, and turbidity.

   a. **pH.** Order R5-2007-0171 established a receiving water limitation for pH specifying that discharges from the Facility shall not cause the ambient pH to change by more than 0.5 units based on the water quality objective for pH in the Basin Plan. The Central Valley Water Board adopted Resolution No. R5-2007-0136 on 25 October 2007, amending the Basin Plan to delete the portion of the pH water quality objective that limits the change in pH to 0.5 units and the allowance of averaging periods for pH. The Basin Plan amendment has been approved by the State Water Board, the Office of Administrative Law, and USEPA. Consistent with the revised water quality objective in the Basin Plan, this Order does not require a receiving water limitation for pH change.

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

   Ammonia is the only constituent in the discharge regulated by this Order directly related to pH. The fixed ammonia effluent limitations in this Order are based on reasonable worse-case conditions. Although ammonia criteria are based on pH, and the pH receiving water limitations are more lenient in this Order than in the previous Order, the fixed ammonia limitations are new limitations, and were developed to protect aquatic life and other beneficial uses and will not unreasonably affect present and anticipated beneficial uses nor result in water quality less than described in applicable policies. The relaxation of the receiving water limitation is not expected to cause other impacts on water quality. The Central Valley Water Board finds that the relaxation of the pH receiving water limitation (i) is to the maximum benefit to the people of the State, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (40 CFR 131.12).

   The revised receiving water limitation for pH, which is based on the amendment to the Basin Plan's pH water quality objective, reflects current scientifically supported pH requirements for the protection of aquatic life and other beneficial uses. The revised receiving water limitation for pH is more consistent with the current USEPA

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

b. **Turbidity.** Order R5-2007-0171 established a receiving water limitation for turbidity specifying that discharges from the Facility shall not cause the turbidity to increase more than 1 NTU where natural turbidity is between 0 and 5 NTU based on the water quality objective for turbidity in the Basin Plan and allowed a 1-month averaging period when wastewater is treated to a tertiary level. The Central Valley Water Board adopted Resolution No. R5-2007-0136 on 25 October 2007, amending the Basin Plan to limit turbidity to 2 NTU when the natural turbidity is less than 1 NTU. The Basin Plan amendment has been approved by the State Water Board, the Office of Administrative Law, and USEPA. Consistent with the revised water quality objective in the Basin Plan, this Order limits turbidity to 2 NTU when the natural turbidity is less than 1 NTU.

In Finding No. 14 of Resolution No. R5-2007-0136, the 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 use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (40 CFR 131.12).

This Order includes operational specifications that require the Discharger to operate the treatment system to insure that turbidity shall not exceed 2 NTU as a daily average, and 5 NTU more than 5 percent of the time within a 24 hour period, and 10 NTU, at any time. Because this Order limits the average daily discharge of turbidity to 2 NTU, the Order will be protective of the receiving water under all natural background conditions as defined in the Basin Plan's revised water quality objective for turbidity. The relaxation of the turbidity receiving water limitation will protect aquatic life and other beneficial uses and will not unreasonably affect present and anticipated beneficial uses nor result in water quality less than described in applicable policies. The relaxation of the receiving water limitation is not expected to cause other impacts on water quality. The Central Valley Water Board finds that the relaxation of the turbidity receiving water limitation (i) is to the maximum benefit to the people of the State, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (40 CFR 131.12).

The revised receiving water limitation for turbidity, which is based on the amendment to the Basin Plan's turbidity water quality objective, reflects current scientifically supported turbidity requirements for the protection of aquatic life and other beneficial uses and, therefore, will be fully protective of aquatic life and the other beneficial uses listed in the Basin Plan. Changes in turbidity allowed by the revised receiving water limitation, when ambient turbidity is below 1 NTU, would not adversely affect beneficial uses and would maintain water quality at a level higher

than necessary to protect beneficial uses. Restricting low-level turbidity changes further may require costly upgrades, which would not provide any additional protection of beneficial uses. Thus, any changes in turbidity that would occur under the amended turbidity receiving water limitation would not only be protective of beneficial uses, but also would be consistent with maximum benefit to people of the State. Therefore, the relaxed receiving water limitations for turbidity will not violate antidegradation policies.

B. Groundwater – Not Applicable

VI. 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 TRE. This Order may be reopened to include a numeric chronic toxicity effluent limitation, new acute toxicity effluent limitations, and/or limitations for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective is adopted by the State Water Board, this Order may be reopened to include a numeric chronic toxicity effluent limitation based on that objective.

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

c. **Methyl Bromide Study.** There are indications that the discharge may contain methyl bromide in concentrations 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 the presence of methyl bromide in the effluent if methyl bromide is detected at or above the CTR criterion of 48 µg/L. This reopener provision allows the Central Valley Water Board to reopen this Order for addition of effluent limitations and requirements for methyl bromide 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.

d. **Mixing Zone and Dilution Credit.** Based on the available information, the worst-case dilution is assumed to be zero to provide protection for the receiving water beneficial uses and effluent limitations have been established in this Order without allowance for dilution within the receiving water. If the Discharger conducts a dilution/mixing zone study demonstrating that receiving water flow is available to allow dilution credits and mixing zones that comply with the requirements of Section 1.4.2 of the SIP, this Order may be reopened to adjust effluent limitations based on allowable dilution credits/mixing zones.

e. **Beneficial Use Dedesignation.** As allowed under Special Provision VI.C.2.b of this Order, if the Discharger chooses to complete a dedesignation study and it results in adoption of a Basin Plan amendment that dedesignates the beneficial use of MUN for Mariposa Creek, this Order shall be reopened to implement the necessary changes.

f. **Ultraviolet Light (UV) Disinfection Operating Specifications.** As part of the Discharger's proposed upgrades, the Discharger is planning to replace the chlorine disinfection system with a UV disinfection system. UV system operating specifications are required to ensure that the UV system is operated to achieve the required pathogen removal. UV disinfection system specifications and monitoring and reporting requirements are required to ensure that adequate UV dosage is applied to the wastewater to inactivate pathogens (e.g., viruses) in the wastewater. UV dosage is dependent on several factors such as UV transmittance, UV power setting, wastewater turbidity, and wastewater flow through the UV disinfection system. The UV specifications in this Order are based on the NWRI guidelines for media filtration systems. If the Discharger conducts a site-specific UV engineering study that identifies site-specific UV operating specifications that will achieve the virus inactivation required by Title 22 for disinfected tertiary recycled water, or if the Discharger installs an alternative filtration system (e.g., membrane filtration), this Order may be reopened to modify the UV specifications. The UV Operating Specifications only apply when the Discharger begins operation of a yet-to-be-installed UV disinfection system.

2. Special Studies and Additional Monitoring Requirements

a. **Chronic Whole Effluent Toxicity Requirements.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*." (Basin Plan at page III-8.01). Based on whole effluent chronic toxicity testing performed by the Discharger from February 2008 through June 2013, the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

This provision requires the Discharger to develop a TRE Work Plan in accordance with USEPA guidance. In addition, the provision provides a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as, requirements for TRE initiation if toxicity has been demonstrated.

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

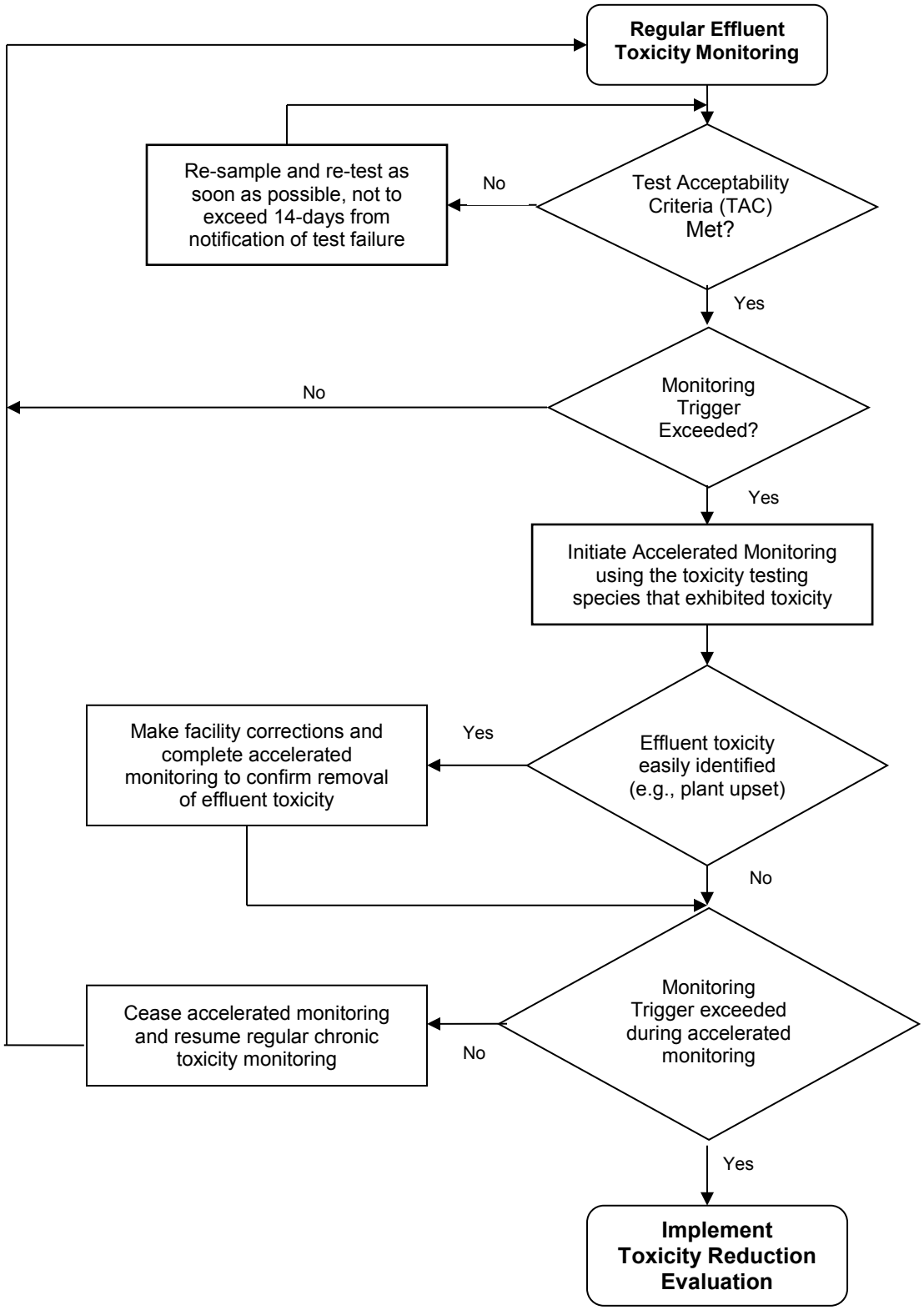
See the WET Accelerated Monitoring Flow Chart (Figure F-1), below, for further clarification of the accelerated monitoring requirements and for the decision points for determining the need for TRE initiation.

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



b. **Dilution/Mixing Zone Study.** Although evidence indicates that seasonal flows exist in Mariposa Creek, the Discharger has not submitted information that documents dilution sufficient to derive seasonal effluent limitations. Section 1.4.2 of the SIP establishes procedures for granting mixing zones and dilution credits. Before establishing a mixing zone and a dilution credit for a discharge, it must first be determined if, and how much (if any), receiving water is available to dilute the discharge. In determining the appropriate available receiving water flow, the Central Valley Water Board may take into account actual and seasonal variations of the receiving water and the effluent. This Order may be reopened for the calculation of dilution credits and a mixing zone for the Facility, provided that the Discharger submits a mixing zone study that provides sufficient information/data to determine compliance with the mixing zone requirements contained in Section 1.4.2.2 of the SIP, or an equivalent study as approved by the Central Valley Water Board.

c. **Dedesignation Study.** As a result of the MUN designation of Mariposa Creek, this Order establishes effluent limitations for chlorodibromomethane and dichlorobromomethane based on the CTR human health criteria for consumption of water and nitrate plus nitrite and total trihalomethanes based the Primary MCLs. This Order allows the Discharger to choose whether to comply with the final effluent limitations and an associated compliance schedules for chlorodibromomethane, dichlorobromomethane, and nitrate plus nitrite or to provide information/support for the Central Valley Water Board to dedesignate the MUN beneficial use designation for Mariposa Creek.

If the dedesignation study indicates that the Basin Plan should be amended to remove this designated beneficial use, the Central Valley Water Board will process the Basin Plan amendment, if appropriate, with support provided by the Discharger. The Discharger should be aware that the State Water Board Order WQO-2002-0015 (Vacaville Order) makes it clear that the Discharger bears the responsibility for providing the information to support this evaluation including efforts to amend the Basin Plan. To the extent that beneficial use designation/dedesignation issues are relevant in this case, the Discharger should consider evaluating alternatives for the discharge to determine the most cost effective course of action (e.g., increased treatment, alternative disposal of the effluent, studies to support dedesignating beneficial uses).

d. **Methyl Bromide Study.** There are indications that the discharge may contain methyl bromide at concentrations 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 the presence of methyl bromide in the effluent. If after a 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 this Order may be reopened and effluent limitations added for methyl bromide.

3. Best Management Practices and Pollution Prevention

a. **Salinity Evaluation and Minimization Plan.** An Evaluation and Minimization Plan for salinity is required in this Order to ensure adequate measures are developed and implemented by the Discharger to reduce the discharge of salinity to Mariposa Creek. The Plan shall identify sources of salinity to and from the Facility.

The Discharger currently adds calcium polysulfide and polyaluminum chloride to the treatment process to control copper and zinc. The Central Valley Water Board generally discourages the addition of chemicals when unnecessary for treatment, because it increases the potential for hardness and salinity to be discharged to the

receiving water. Therefore, the Plan shall include an evaluation that identifies and quantifies chemical additives necessary for the proper operation and treatment of the Facility (e.g., calcium polysulfide for metals control, polymer addition for tertiary filter performance, etc.). The Plan shall evaluate and implement feasible methods for reducing the amount of chemical additives that increase the salinity and other constituent concentrations or levels in of the discharge, while still providing adequate treatment.

4. Construction, Operation, and Maintenance Specifications

a. **Filtration System Operating Specifications.** Operational specifications for turbidity are included as an indicator of the effectiveness of the tertiary treatment process, to ensure compliance with effluent limitations for total coliform, and to ensure pathogen removal is sufficient to protect human health. The tertiary treatment process at the Facility should be capable of reliably meeting a turbidity lower than 2 NTU. Failure of the treatment system such that virus removal is impaired would normally result in increased particles in the effluent, which can result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure, and rapid corrective action. The operational specifications for turbidity included in this Order are specified in Title 22, CCR, section 60301.320 and 60304. This Order contains interim operational specifications for turbidity during the period before final compliance is required for tertiary treatment in Section VI.C.7.a. The interim operational specifications specified in Section VI.C.4.a. require that turbidity in the effluent shall not exceed 5 NTU, more than 5 percent of the time within a 24-hour period, and an instantaneous maximum of 10 NTU.

b. **Ultraviolet Light (UV) Disinfection System Operating Specifications.** This Order requires that wastewater shall be oxidized, coagulated, filtered, and adequately disinfected consistent with DPH reclamation criteria, CCR, Title 22, division 4, chapter 3, (Title 22), or equivalent. To ensure that the UV disinfection system is operated to achieve the required pathogen removal, this Order includes effluent limitations for total coliform, filtration system operating specifications, and UV disinfection system operating specifications. Compliance with total coliform effluent limitations alone does not ensure that pathogens in the municipal wastewater have been deactivated by the UV disinfection system. Compliance with the effluent limitations and the filtration system and UV disinfection operating specifications demonstrates compliance with the equivalency to Title 22 disinfection requirement.

The National Water Research Institute (NWRI) and American Water Works Association Research Foundation (AWWRF) "*Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse*" first published in December 2000 and revised as a Third Edition dated August 2012 (NWRI guidelines) includes UV operating specifications for compliance with Title 22. For water recycling in accordance with Title 22, the UV system shall be an approved system included in the Treatment Technology Report for Recycled Water, December 2009 (or a later version, as applicable) published by DPH. The UV system shall also conform to all requirements and operating specifications of the NWRI guidelines. A Memorandum dated 1 November 2004 issued by DPH to Regional Water Board executive officers recommended that provisions be included in permits for water recycling treatment plants employing UV disinfection requiring dischargers to establish fixed cleaning frequency of lamp sleeves, as well as, include provisions that specify minimum delivered UV dose that must be maintained (per the NWRI Guidelines).

For granular media filtration, the NWRI guidelines recommend a minimum hourly average UV dose of 100 mJ/cm^2. Therefore, this Order includes UV operating specifications requiring a minimum hourly average UV dose of 100 mJ/cm^2 and a minimum hourly average UV transmittance of 55%, per the NWRI Guidelines. If the Discharger conducts a site-specific UV engineering study that demonstrates a lower UV dose meets a Title 22 equivalent virus removal, or if the Discharger installs an alternative filtration system (e.g., membrane filtration), this Order may be reopened to revise the UV operating specifications accordingly.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order 2006-0003-DWQ (General Order) on 2 May 2006. The Monitoring and Reporting Requirements for the General Order were amended by Water Quality Order WQ 2008-0002-EXEC on 20 February 2008. The General Order requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), among other requirements and prohibitions.

Furthermore, the General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. The Discharger is enrolled under the General Order.

b. **Continuous Monitoring Systems.** This Order, and the Monitoring and Reporting Program which is a part of this Order, requires that certain parameters be monitored on a continuous basis. Permit violations or system upsets can go undetected during period when the Facility is unstaffed or unmonitored. The Discharger is required to have an electronic system for operator notification based on continuous recording device alarms. For any future facility upgrades, the Discharger shall upgrade the continuous monitoring and notification system simultaneously.

6. Other Special Provisions

a. Consistent with Order R5-2007-0171, this Order requires wastewater to be oxidized, coagulated, filtered, and adequately disinfected pursuant to DPH reclamation criteria, CCR, Title 22, division 4, chapter 3 (Title 22), or equivalent, by 4 December 2017.

7. Compliance Schedules

a. **Compliance Schedules for Tertiary Treatment.** Consistent with Order R5-2007-0171, a compliance schedule has been included in this Order for the Discharger to install tertiary treatment unit processes at the Facility. To protect the beneficial uses of the receiving water, the effluent wastewater from the Discharger must be disinfected and adequately treated to prevent disease. Tertiary treatment standards have been established for this discharge. Tertiary treatment necessitates achieving lower levels for BOD_5 and TSS than the secondary standards currently prescribed. Until process upgrades at the Facility are complete, the Discharger will be unable to comply with tertiary treatment requirements. Therefore, a compliance schedule for achieving compliance is included in this Order. Until the compliance date becomes effective, interim effluent limitations for BOD_5, TSS, and total coliform are prescribed in this Order based on those contained in Order R5-2007-0171.

A compliance schedule is necessary because the Discharger must implement actions, including upgrades to the Facility to comply with a more stringent effluent limitation. Construction includes related activities such as the purchase of property needed for the construction, performance of the environmental studies and reviews, identification of social and environmental mitigation, and purchase and installation of necessary equipment.

VII. 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 Central Valley Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (MRP), Attachment E, establishes monitoring and reporting requirements that implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., BOD_5 and TSS reduction requirements). The monitoring frequencies for BOD_5 and TSS (weekly) and flow (continuous) have been retained from Order R5-2007-0171.
2. Influent monitoring requirements for electrical conductivity (weekly) have been established to collect data on sources of salinity in the discharge.

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), BOD_5 (weekly), TSS (weekly), pH (weekly), copper (monthly), chlorine residual (continuous), electrical conductivity (weekly), dichlorobromomethane (monthly), nitrate (monthly), settleable solids (weekly), standard minerals (annually), temperature (weekly), total coliform (three times per week), turbidity (monthly), and zinc (monthly) have been retained from Order R5-2007-0171 to determine compliance with effluent limitations for these parameters.
3. Monitoring data collected over the previous permit term for persistent chlorinated hydrocarbon pesticides did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific monitoring requirements for persistent chlorinated hydrocarbon pesticides have not been retained from Order R5-2007-0171.
4. Monitoring data collected over the term of Order R5-2007-0171 indicate that ammonia, chlorodibromomethane, nitrite, and total trihalomethanes are present in the effluent at concentrations that have the potential to cause or contribute to an exceedance of water quality objectives. Therefore, this Order increases the monitoring frequency for ammonia from monthly to weekly and establishes monthly monitoring for chlorodibromomethane, nitrite, and total trihalomethanes. The Central Valley Water Board finds that these frequencies are necessary to determine compliance with effluent limitations and monitor the performance of the Facility.

5. Order R5-2007-0171 required effluent monitoring for hardness once per year. This Order increases the monitoring frequency from annually to monthly to ensure that adequate data are available to properly adjust water quality criteria for hardness-based metals.

6. Methyl bromide is a soil fumigant which was once widely used in agricultural applications, and as a space fumigant for the control of insects, fungi, and rodents. Since methyl bromide has ozone depleting properties, its production and import to the United States has been eliminated as of 2005 consistent with the Montreal Protocol on Substances that Deplete the Ozone Layer (1988) and the Clean Air Act. As discussed in Section IV.C.3.b.i., the Central Valley Water Board has determined that the available effluent data are insufficient for purposes of conducting an RPA and additional monitoring is required. Therefore, this Order establishes monthly monitoring for methyl bromide for the first year of the permit.

7. 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. This Order requires effluent monitoring for priority pollutants quarterly during the fourth year of the permit term, beginning with the fourth quarter of 2017.

8. 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*." DPH certifies laboratories through its Environmental Laboratory Accreditation Program (ELAP).

   Water Code 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) Water Code section 13176 is inapplicable to NPDES permits to the extent it is inconsistent with CWA requirements. (Water Code section 13372(a)) The holding time requirements are 15 minutes for chlorine residual, dissolved oxygen, and pH and immediate analysis is required for temperature. (40 CFR 136.3(e), Table II) The Discharger has an ELAP-certified laboratory on-site.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Consistent with Order R5-2007-0171, annual 96-hour bioassay testing is required to demonstrate compliance with the effluent limitations for acute toxicity. If the acute toxicity testing requirements can be satisfied during chronic toxicity tests, the Discharger may use the chronic toxicity test to derive acute toxicity results.

2. **Chronic Toxicity.** Consistent with Order R5-2007-0171, annual chronic whole effluent toxicity testing is required in order to demonstrate compliance with the Basin Plan's narrative toxicity objective and the effluent limitation for chronic toxicity.

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 receiving water monitoring frequency and sample type for dissolved oxygen (weekly), hardness (monthly), electrical conductivity (weekly), pH (weekly), temperature (weekly), and turbidity (weekly) at Monitoring Location RSW-001 have been retained from Order R5-2007-0171.

c. Monitoring requirements at Monitoring Locations RSW-001 and RSW-002 chlorine residual and nitrate have not been retained from Order R5-2007-0171 as monitoring is not necessary to determine compliance with permit requirements.

d. The receiving water monitoring frequency and sample type for dissolved oxygen (weekly), pH (weekly), temperature (weekly), and turbidity (weekly) at Monitoring Location RSW-002 have been retained from Order R5-2007-0171.

e. In accordance with Section 1.3 of the SIP, periodic monitoring for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order requires monitoring for priority pollutants and other pollutants of concern quarterly during the fourth year of the permit term at Monitoring Location RSW-001, concurrent with effluent monitoring, in order to collect data to conduct an RPA for the next permit renewal.

2. **Groundwater – Not Applicable**

E. Other Monitoring Requirements

1. **Biosolids Monitoring**

Biosolids monitoring is required to ensure compliance with the biosolids disposal requirements contained in Special Provision VI.C.5.a. 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 salinity in the wastewater. Therefore, this Order establishes annual monitoring for electrical conductivity and total dissolved solids.

3. **UV Disinfection System Monitoring**

UV system monitoring and reporting are required to ensure that the UV system is operated to adequately inactivate pathogens in the wastewater. UV disinfection system monitoring is imposed to achieve equivalency to requirements established by DPH, and the NWRI/AWWARF's "*Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse*."

VIII. PUBLIC PARTICIPATION

The Central Valley Water Board has considered the issuance of WDRs that will serve as a NPDES permit for the Facility. As a step in the WDR adoption process, the Central Valley Water Board staff has developed tentative WDRs and has encouraged public participation in the WDR adoption process.

A. Notification of Interested Parties

The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through the Central Valley Water Board web site, by posting at the Facility entrance, by posting at the nearest city hall or county courthouse, and by posting at the nearest post office (if allowed).

The public had access to the agenda and any changes in dates and locations through the Central Valley Water Board's website at: http://www.waterboards.ca.gov/centralvalley/

B. Written Comments

Interested persons were invited to submit written comments concerning tentative WDRs as provided through the notification process. Comments were due either in person or by mail to the Executive Officer at the Central Valley Water Board at the address on the cover page of this Order.

To be fully responded to by staff and considered by the Central Valley Water Board, the written comments were due at the Central Valley Water Board office by 5:00 p.m. on 21 February 2014.

C. Public Hearing

The Central Valley Water Board held a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date:	27/28 March 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 were invited to attend. At the public hearing, the Central Valley Water Board heard testimony pertinent to the discharge, WDRs, and permit. For accuracy of the record, important testimony was requested in writing.

D. Reconsideration of Waste Discharge Requirements

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 at the following address within 30 calendar days of the Central Valley Water Board's action:

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

For instructions on how to file a petition for review, see
http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml

E. Information and Copying

The Report of Waste Discharge, other supporting documents, and comments received are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the 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 Aidé Ortiz at (559) 445-6083.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS FOR CONSTITUENTS OF CONCERN

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
4,4-DDD	µg/L	0.024 J	<0.002	ND	1.1	0.001	0.00083	0.00084	ND	--	No
4,4-DDE	µg/L	0.018 J	<0.002	ND	1.1	0.001	0.00059	0.00059	ND	--	No
4,4-DDT	µg/L	0.022 J	<0.002	ND	1.1	0.001	0.00059	0.00059	ND	--	No
Aldrin	µg/L	0.021 J	<0.002	ND	3.0	--	0.00013	0.00014	ND	--	No
Ammonia Nitrogen, Total (as N)	mg/L	0.81	NA	2.14	2.14[2]	2.46[3]	--	--	--	--	Yes[8]
alpha-Endosulfan	µg/L	0.023 J	<0.004	ND	0.22	0.056	110	240	ND	--	No
beta-Endosulfan	µg/L	0.034 J	<0.003	ND	0.22	0.056	110	240	ND	--	No
Chlorodibromomethane	µg/L	1.3	<0.11	0.41	--	--	0.41	34	--	80[4]	Yes
Copper, Total Recoverable	µg/L	9.7	1.8	8.4[5]/6.3[6]	13[5]/9.1[6]	8.4[5]/6.3[6]	1,300	--	--	1,000	Yes
Dichlorobromomethane	µg/L	13	<0.13	0.56	--	--	0.56	46	--	80[4]	Yes
Dieldrin	µg/L	0.023 J	<0.002	ND	0.24	0.056	0.00014	0.00014	ND	--	No
Endosulfan Sulfate	µg/L	0.039 J	<0.003	ND	--	--	110	240	ND	--	No
Endrin	µg/L	0.027 J	<0.005	ND	0.086	0.036	0.76	0.81	ND	2	No
gamma-BHC	µg/L	0.021 J	<0.002	ND	0.95	0.08	0.019	0.063	ND	0.2	No
Heptachlor	µg/L	0.016 J	<0.003	ND	0.52	0.0038	0.00021	0.00021	ND	0.01	No
Heptachlor Epoxide	µg/L	0.021 J	<0.003	ND	0.52	0.0038	0.0001	0.00011	ND	0.01	No
Mercury, Total Recoverable	µg/L	0.011	NA	0.050	--	--	0.050	0.051	--	2.0	No
Methyl Bromide	µg/L	55	<0.32	48	--	--	48	4,000	--	--	Inconclusive[1]
Nitrate Nitrogen, Total (as N)	mg/L	57	1.11	10	--	--	--	--	--	10	Yes
Nitrite Nitrogen, Total (as N)	mg/L	<0.011	NA	1.0	--	--	--	--	--	1.0	Yes[7]
Thallium, Total Recoverable	µg/L	15	11	1.7	--	--	1.7	6.3	--	2	No
Total Trihalomethanes	µg/L	120	NA	80	--	--	--	--	--	80[4]	Yes[7]
Zinc, Total Recoverable	µg/L	84	2.3	109[5]/81[6]	109[5]/81[6]	109[5]/81[6]	7,400	26,000	--	5,000	Yes[7]

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

General Note: All inorganic concentrations are given as a total recoverable.
MEC = Maximum Effluent Concentration
B = Maximum Receiving Water Concentration or lowest detection level, if non-detect
C = Criterion used for Reasonable Potential Analysis
CMC = Criterion Maximum Concentration (CTR or NTR)
CCC = Criterion Continuous Concentration (CTR or NTR)
Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)
Org. Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)
Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective
MCL = Drinking Water Standards Maximum Contaminant Level
NA = Not Available
ND = Non-detect
J = Detected below the reporting limit. Reported as an estimated concentration.

Footnotes:
(1) See Section IV.C.3.b of the Fact Sheet (Attachment F) for further discussion.
(2) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 1-hour average.
(3) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 30-day average.
(4) Represents the Primary MCL for total trihalomethanes which include bromoform, chlorodibromomethane, chloroform, and dichlorobromomethane.
(5) Criteria to be compared to the MEC.
(6) Criteria to be compared to the upstream receiving water concentration.
(7) See Section IV.C.3.c of the Fact Sheet (Attachment F) for further discussion.
(8) 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			HH Calculations			Aquatic Life Calculations									Final Effluent Limitations	
		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
Ammonia Nitrogen, Total (as N)	mg/L	--	2.14	2.46	--	--	--	0.14	0.30	0.55	1.6	0.30	2.4	0.74	6.9	2.08	0.74	2.1
Chlorodibromomethane	µg/L	0.41	--	--	0.41	2.01	0.82	--	--	--	--	--	--	--	--	--	0.41	0.82
Copper, Total Recoverable	µg/L	1,000	13	8.4	1,000	1.91	1,910	0.35	4.56	0.56	4.7	4.6	1.5	6.8	2.9	13	6.8	13
Dichlorobromomethane	µg/L	0.56	--	--	0.56	2.32	1.3	--	--	--	--	--	--	--	--	--	0.56	1.3
Nitrate plus Nitrite (as N)	mg/L	10	--	--	10	2.37	24	--	--	--	--	--	--	--	--	--	10.	--
Zinc, Total Recoverable	µg/L	--	110	110	--	--	--	0.61	67	0.77	85	67	1.2	80	1.7	110	80	110

[1] As described in section IV.C.2.c of the Fact Sheet (Attachment F), calculation of effluent limitations for the protection of human health and aquatic life are determined without the allowance of dilution credits.

ATTACHMENT I – REQUIRED REPORTING LEVELS FOR PRIORITY POLLUTANTS

Table I-1. Required Reporting Levels for Priority Pollutants

CTR#	Constituent	CAS Number	Reporting Level (µg/L or noted)	Associated Analytical Method Type[1]
1	Antimony, Total Recoverable	7440360	5	GFAA
			0.5	ICPMS
			5	SPGFAA
			0.5	HYDRIDE
2	Arsenic, Total Recoverable	7440382	2	GFAA
			10	ICP
			2	ICPMS
			2	SGFAA
			1	HYDRIDE
3	Beryllium, Total Recoverable	7440417	0.5	GFAA
			2	ICP
			0.5	ICPMS
			1	SGFAA
4	Cadmium, Total Recoverable	7440439	0.25	ICPMS
5a	Chromium (III), Total Recoverable	16065831	--	--
5b	Chromium (VI), Total Recoverable	18540299	5	FAA
			10	COLOR
6	Copper, Total Recoverable	7440508	0.5	ICPMS
7	Lead, Total Recoverable	7439921	0.5	ICPMS
8	Mercury, Total Recoverable	7439976	0.2	CVAA
9	Nickel, Total Recoverable	7440020	1	ICPMS
10	Selenium, Total Recoverable	7782492	5	GFAA
			2	ICPMS
			5	SGFAA
			1	HYDRIDE
11	Silver, Total Recoverable	7440224	0.25	ICPMS
12	Thallium, Total Recoverable	7440280	1	ICPMS
13	Zinc, Total Recoverable	7440666	1	ICPMS
14	Cyanide, Total (as CN)	57125	5	COLOR
15	Asbestos	1332214	-- (MFL)	--
16	2,3,7,8-TCDD (Dioxin)	1746016	--	--
17	Acrolein	107028	2.0	GC
			5	GCMS
18	Acrylonitrile	107131	2.0	GC
			2	GCMS
19	Benzene	71432	0.5	GC
20	Bromoform	75252	0.5	GC
			2	GCMS
21	Carbon tetrachloride	56235	0.5	GC
22	Chlorobenzene (mono chlorobenzene)	108907	0.5	GC
			2	GCMS
23	Dibromochloromethane (Chlorodibromomethane)	124481	0.5	GC
24	Chloroethane	75003	0.5	GC
			2	GCMS

CTR#	Constituent	CAS Number	Reporting Level (µg/L or noted)	Associated Analytical Method Type[1]
25	2-Chloroethyl vinyl ether	110758	1	GC
			1	GCMS
26	Chloroform	67663	0.5	GC
			2	GCMS
27	Dichlorobromomethane (Bromodichloromethane)	75274	0.5	GC
28	1,1-Dichloroethane	75343	0.5	GC
			1	GCMS
29	1,2-Dichloroethane	107062	0.5	GC
30	1,1-Dichloroethylene	75354	0.5	GC
31	1,2-Dichloropropane	78875	0.5	GC
32	1,3-Dichloropropylene	542756	0.5	GC
33	Ethylbenzene	100414	0.5	GC
			2	GCMS
34	Bromomethane (Methyl Bromide)	74839	1.0	GC
			2	GCMS
35	Chloromethane (Methyl Chloride)	74873	0.5	GC
			2	GCMS
36	Dichloromethane (Methylene Chloride)	75092	0.5	GC
			2	GCMS
37	1,1,2,2-Tetrachloroethane	79345	0.5	GC
38	Tetrachloroethylene	127184	0.5	GC
39	Toluene	108883	0.5	GC
			2	GCMS
40	trans-1,2-Dichloroethylene	156605	0.5	GC
			1	GCMS
41	1,1,1-Trichloroethane	71556	0.5	GC
			2	GCMS
42	1,1,2-Trichloroethane	79005	0.5	GC
43	Trichloroethylene	79016	0.5	GC
			2	GCMS
44	Vinyl chloride	75014	0.5	GC
45	2-Chlorophenol	95578	2	GC
			5	GCMS
46	2,4-Dichlorophenol	120832	1	GC
			5	GCMS
47	2,4-Dimethylphenol	105679	1	GC
			2	GCMS
48	4,6-Dinitro-2-methylphenol	534521	10	GC
			5	GCMS
49	2,4-Dinitrophenol	51285	5	GC
			5	GCMS
50	2-Nitrophenol	25154557	10	GCMS
51	4-Nitrophenol	100027	5	GC
			10	GCMS
52	4-Chloro-3-methylphenol	59507	5	GC
			1	GCMS
53	Pentachlorophenol	87865	1	GC

CTR#	Constituent	CAS Number	Reporting Level (µg/L or noted)	Associated Analytical Method Type[1]
54	Phenol	108952	1	GC
			1	GCMS
			50	COLOR
55	2,4,6-Trichlorophenol	88062	10	GC
			10	GCMS
56	Acenaphthene	83329	1	GC
			1	GCMS
			0.5	LC
57	Acenaphthylene	208968	10	GCMS
			0.2	LC
58	Anthracene	120127	10	GCMS
			2	LC
59	Benzidine	92875	5	GCMS
60	1,2-Benzanthracene (Benzo(a)anthracene)	56553	5	GCMS
61	Benzo(a)pyrene (3,4-Benzopyrene)	50328	2	LC
62	3,4-Benzofluoranthene (Benzo(b)fluoranthene)	205992	10	GCMS
			10	LC
63	Benzo(g,h,i)perylene	191242	5	GCMS
			0.1	LC
64	Benzo(k)fluoranthene	207089	2	LC
65	Bis(2-chloroethoxy) methane	111911	5	GCMS
66	Bis(2-chloroethyl) ether	111444	1	GCMS
67	Bis(2-chloroisopropyl) ether	39638329	10	GC
			2	GCMS
68	Bis(2-ethylhexyl) phthalate	117817	5	GCMS
69	4-Bromophenyl phenyl ether	101553	10	GC
			5	GCMS
70	Butyl benzyl phthalate	85687	10	GC
			10	GCMS
71	2-Chloronaphthalene	91587	10	GCMS
72	4-Chlorophenyl phenyl ether	7005723	5	GCMS
73	Chrysene	218019	5	LC
74	Dibenzo(a,h)anthracene	53703	0.1	LC
75	1,2-Dichlorobenzene (volatile)	95501	0.5	GC
			2	GCMS
75	1,2-Dichlorobenzene (semi-volatile)	95501	2	GC
			2	GCMS
76	1,3-Dichlorobenzene (volatile)	541731	0.5	GC
			2	GCMS
76	1,3-Dichlorobenzene (semi-volatile)	541731	2	GC
			1	GCMS
77	1,4-Dichlorobenzene (volatile)	106467	0.5	GC
			2	GCMS
77	1,4-Dichlorobenzene (semi-volatile)	106467	2	GC
			1	GCMS
78	3,3'-Dichlorobenzidine	91941	5	GCMS
79	Diethyl phthalate	84662	10	GC
			2	GCMS

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80	Dimethyl phthalate	131113	10	GC
			2	GCMS
81	Di-n-butyl phthalate	84742	10	GCMS
82	2,4-Dinitrotoluene	121142	5	GCMS
83	2,6-Dinitrotoluene	606202	5	GCMS
84	Di-n-octyl phthalate	117840	10	GCMS
85	1,2-Diphenylhydrazine	122667	1	GCMS
86	Fluoranthene	206440	10	GC
			1	GCMS
			0.05	LC
87	Fluorene	86737	10	GCMS
			0.1	LC
88	Hexachlorobenzene	118741	1	GCMS
89	Hexachlorobutadiene	87683	1	GCMS
90	Hexachlorocyclopentadiene	77474	5	GC
			5	GCMS
91	Hexachloroethane	67721	1	GCMS
92	Indeno(1,2,3-c,d)pyrene	193395	0.05	LC
93	Isophorone	78591	1	GCMS
94	Naphthalene	91203	10	GC
			1	GCMS
			0.2	LC
95	Nitrobenzene	98953	10	GC
			1	GCMS
96	N-Nitrosodimethylamine	62759	5	GCMS
97	N-Nitrosodi-n-propylamine	621647	5	GCMS
98	N-Nitrosodiphenylamine	86306	1	GCMS
99	Phenanthrene	85018	5	GCMS
			0.05	LC
100	Pyrene	129000	10	GCMS
			0.05	LC
101	1,2,4-Trichlorobenzene	120821	1	GC
			5	GCMS
102	Aldrin	309002	0.005	GC
103	alpha-Hexachlorocyclohexane (BHC)	319846	0.01	GC
104	beta-BHC	319857	0.005	GC
105	Lindane (gamma-BHC)	58899	0.02	GC
106	delta-BHC	319868	0.005	GC
107	Chlordane	57749	0.1	GC
108	4,4'-DDT	50293	0.01	GC
109	4,4'-DDE	72559	0.05	GC
110	4,4'-DDD	72548	0.05	GC
111	Dieldrin	60571	0.01	GC
112	alpha-Endosulfan (Endosulfan I)	959988	0.02	GC
113	beta-Endosulfan (Endosulfan II)	33213659	0.01	GC
114	Endosulfan sulfate	1031078	0.05	GC
115	Endrin	72208	0.01	GC
116	Endrin Aldehyde	7421934	0.01	GC

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117	Heptachlor	76448	0.01	GC
118	Heptachlor Epoxide	1024573	0.01	GC
119	PCB-1242	53469219	0.5	GC
120	PCB-1254	11097691	0.5	GC
121	PCB-1221	11104282	0.5	GC
122	PCB-1232	11141165	0.5	GC
123	PCB-1248	12672296	0.5	GC
124	PCB-1260	11096825	0.5	GC
125	PCB-1016	12674112	0.5	GC
126	Toxaphene	8001352	0.5	GC

[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