CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

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ORDER R5-2019-0017
NPDES NO. CA0079260

WASTE DISCHARGE REQUIREMENTS FOR THE CITY OF YUBA CITY WASTEWATER TREATMENT FACILITY SUTTER COUNTY

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

Table 1. Discharger Information

Discharger	City of Yuba City
Name of Facility	Wastewater Treatment Facility
Facility Address	302 Burns Drive
	Yuba City, CA 95991
	Sutter County

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Secondary Treated Effluent	39º 05' 29"	121º 35' 53"	Feather River
002	Secondary Treated Effluent	39º 04' 53"	121º 35' 56"	Feather River via disposal ponds

Table 3. Administrative Information

This Order was adopted on:	**8 February 2019**
This Order shall become effective on:	**1 April 2019**
This Order shall expire on:	**31 March 2024**
The Discharger shall file a Report of Waste Discharge as an application for reissuance of WDR's 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:	**31 March 2023**
The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, Central Valley Region have classified this discharge as follows:	Major

I, Patrick Pulupa, 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 **8 February 2019**.

Original Signed by

PATRICK PULUPA, Executive Officer

CONTENTS

TABLES

ATTACHMENTS

I. FACILITY INFORMATION

Information describing the City of Yuba City, 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 waste discharge requirements (WDR's) pursuant to article 4, chapter 4, division 7 of the California 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 U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as a National Pollutant Discharge Elimination System (NPDES) permit authorizing the Discharger to discharge into waters of the United States at the discharge location described in Table 2 subject to the WDR's in this Order.

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 H are also incorporated into this Order.

C. Provisions and Requirements Implementing State Law. The provisions/requirements in subsections IV.B, IV.C, V.B, VI.C.4.a, and VI.C.4.c 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 C.F.R. section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Central Valley Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. The Monitoring and Reporting Program is provided in Attachment E.

The technical and monitoring reports in this Order are required in accordance with Water Code section 13267, which states the following in subsection (b)(1), *"In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged 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 Persons. The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDR's 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 R5-2013-0094-01 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 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. Discharge of waste classified as 'hazardous', as defined in the California Code of Regulations, title 22, section 66261.1 et seq., is prohibited.

E. Average Dry Weather Flow. Total combined discharges from Discharge Points 001 and002 exceeding an average dry weather flow of 10.5 million gallons per day (MGD) are prohibited.

F. Discharge to the Feather River at Discharge Point 001 when the depth of water over the diffuser is below an average of 0.8 feet is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Points 001 and 002

1. Final Effluent Limitations – Discharge Points 001 and 002

The Discharger shall maintain compliance with the following effluent limitations at Discharge Points 001 and 002 with compliance measured at EFF-001 and EFF-002, respectively as described in the Monitoring and Reporting Program, Attachment E. EFF-001 and EFF-002 are located at the same monitoring location; therefore, they will be referenced as EFF-001/EFF-002 throughout this Order.

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

Table 4. Effluent Limitations – Discharge Points 001 and 002

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	30	45	--	--	--
pH	standard units	--	--	--	6.5[1]	8.5
Total Suspended Solids	mg/L	30	45	--	--	--
Priority Pollutants						
Copper, Total Recoverable	µg/L	50	--	85	--	--
Dichlorobromomethane	µg/L	10	--	30	--	--
Non-Conventional Pollutants						
Ammonia Nitrogen, Total (as N)	mg/L	31	51	--	--	--
	lbs/day[2]	2,700	4,500	--	--	--
Nitrate Plus Nitrite (as N)	mg/L	10	21	--	--	--
Settleable Solids[3]	ml/L	0.1	--	0.2	--	--

1 The instantaneous minimum effluent limitation is limited to 6.0 standard units for discharges at Discharge Point 002.
2 Based on a design flow of 10.5 MGD.
3 Applicable at Discharge Point 001 only.

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 85 percent.

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

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

d. **Total Residual Chlorine.** Effluent total residual chlorine at Discharge Point 001 shall not exceed:

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

e. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed the following with compliance measured immediately after disinfection:

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

f. **Mercury, Total.** For a calendar year, the total annual mass discharge of total mercury shall not exceed 0.67 pounds/year.

g. **Diazinon and Chlorpyrifos.** Effluent diazinon and chlorpyrifos concentrations shall not exceed the sum of one (1.0) as identified below:

i. **Average Monthly Effluent Limitation**

$$S_{AMEL} = \frac{C_{D\ M-avg}}{0.079} + \frac{C_{C\ M-avg}}{0.012} \leq 1.0$$

$C_{D\ M\text{-}avg}$ = average monthly diazinon effluent concentration in µg/L.
$C_{C\ M\text{-}avg}$ = average monthly chlorpyrifos effluent concentration in µg/L.

ii. **Average Weekly Effluent Limitation**

$$S_{AWEL} = \frac{C_{D\ W-avg}}{0.14} + \frac{C_{C\ W-avg}}{0.021} \leq 1.0$$

$C_{D\ W\text{-}avg}$ = average weekly diazinon effluent concentration in µg/L.
$C_{C\ W\text{-}avg}$ = average weekly chlorpyrifos effluent concentration in µg/L.

2. Interim Effluent Limitations – Not Applicable

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 the Feather River:

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 7.0 mg/L at any time.
6. **Floating Material.** Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.
7. **Oil and Grease.** Oils, greases, waxes, or other materials to be present in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.
8. **pH.** The pH to be depressed below 6.5 nor raised above 8.5.

9. **Pesticides:**

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

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

   c. Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by U.S. EPA 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 C.F.R. 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 (MCL's) 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 MCL's specified in Table 64442 of section 64442 and Table 64443 of section 64443 of Title 22 of the California Code of Regulations.

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

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

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

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

15. **Temperature.** The natural temperature to be increased by more than 5°F. Compliance to be determined based on the difference in temperature at Monitoring Locations RSW-001 and RSW-002 for discharges to Discharge Point 001.

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:**

   a. Shall not exceed 2 Nephelometric Turbidity Units (NTU) where natural turbidity is less than 1 NTU;

   b. Shall not increase more than 1 NTU where natural turbidity is between 1 and 5 NTUs;

c. Shall not increase more than 20 percent where natural turbidity is between 5 and 50 NTUs;

d. Shall not increase more than 10 NTU where natural turbidity is between 50 and 100 NTUs; nor

e. Shall not increase more than 10 percent where natural turbidity is greater than 100 NTUs.

18. **Electrical Conductivity.** Electrical conductivity, downstream of the discharge, to exceed 150 µmhos/cm as a 90th percentile over a 10-year running average.

B. Groundwater Limitations

Release of waste constituents from any storage, treatment, or disposal component associated with the facility, in combination with other sources, shall not cause the underlying groundwater to contain waste constituents greater than background quality or water quality objectives, whichever is greater.

VI. PROVISIONS

A. Standard Provisions

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

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:

      i. *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.

      ii. *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.

      iii. *Change in sludge use or disposal practice.* Under 40 C.F.R. section 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 U.S. EPA 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 U.S. EPA 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 13385, 13386, and 13387.

n. 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.

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, effluent limitation, or receiving water limitation of this Order, the Discharger shall notify the Central Valley Water Board by telephone (916) 464-3291 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within 5 days, unless the 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.

B. Monitoring and Reporting Program (MRP) Requirements

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

C. Special Provisions

1. Reopener Provisions

a. Conditions that necessitate a major modification of a permit are described in 40 C.F.R. section 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, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.

c. **Mercury.** If mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted, this Order shall be reopened and the mass effluent limitation modified (higher or lower) or an effluent concentration limitation imposed. If the Central Valley Water Board determines that a mercury offset program is feasible for Dischargers subject to a NPDES permit, then this Order may be reopened to reevaluate the mercury mass loading limitation(s) and the need for a mercury offset program for the Discharger.

d. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a revised chronic toxicity effluent limitation, a revised acute toxicity effluent limitation, and/or an effluent limitation for a specific toxicant identified in a TRE. Additionally, if the State Water Board adopts statewide toxicity provisions that establish numeric water quality objectives for acute and chronic toxicity and a program of implementation to control toxicity, this Order may be reopened to implement the new provisions.

e. **Water Effects Ratios (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating 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. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

f. **Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS).** On 31 May 2018, as part of the CV-SALTS initiative, the Central Valley Water Board approved Basin Plan Amendments to incorporate new strategies for addressing ongoing salt and nitrate accumulation in the Central Valley. If approved by the State Water Board, the Office of Administrative Law, and U.S. EPA, the Amendments would impose certain new requirements on salt and nitrate discharges. More information regarding these Amendments can be found at the following link:

https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/

If the Amendments ultimately go into effect, this Order may be amended or modified to incorporate any newly-applicable requirements.

g. **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 approved the Drinking Water Policy on

3 December 2013. 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. **Toxicity Reduction Evaluation Requirements.** 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 chronic toxicity thresholds defined in this Provision, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE) in accordance with an approved TRE Work Plan, and take actions to mitigate the impact of the discharge and prevent 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.

i. **Numeric Toxicity Monitoring Trigger.** The numeric toxicity monitoring trigger is 12 TUc (where TUc = 100/NOEC) for Discharge Point 001. The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to initiate additional actions to evaluate effluent toxicity as specified in subsection ii, below.

ii. **Chronic Toxicity Monitoring Trigger Exceeded.** When a chronic whole effluent toxicity result during routine monitoring exceeds the chronic toxicity monitoring trigger, the Discharger shall proceed as follows:

(a) **Initial Toxicity Check.** If the percent effect is less than 25 percent at 8.3 percent effluent (the instream waste concentration), check for any operation or sample collection issues and return to routine chronic toxicity monitoring. Otherwise, proceed to step (b).

(b) **Evaluate 6-week Median**. The Discharger may take two additional samples within 6 weeks of the initial routine sampling event exceeding the chronic toxicity monitoring trigger to evaluate compliance using a 6-week median. If the 6-week median is greater than 12 TUc (100/NOEC), and the percent effect is greater than 25 percent at 8.3 percent effluent at Discharge Point 001 proceed with subsection (c). Otherwise, the Discharger shall check for any operation or sample collection issues and return to routine chronic toxicity monitoring.

(c) **Toxicity Source Easily Identified.** If the source(s) of the toxicity is easily identified (e.g., temporary plant upset), the Discharger shall make necessary corrections to the Facility and shall resume routine chronic toxicity monitoring. If the source of toxicity is not easily identified the Discharger shall conduct a site-specific TRE as described in the following subsections.

(d) **Toxicity Reduction Evaluation.** The Discharger shall initiate a site-specific TRE as follows:

(1) **Within thirty (30) days** of exceeding the 6-week median chronic toxicity monitoring trigger, the Discharger shall submit a TRE Action Plan to the Central Valley Water Board including, at minimum:

- Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including a TRE WET monitoring schedule;
- Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and
- A schedule for these actions.

b. **Low Dissolved Oxygen Assessment.** To further determine the effects of the ammonia discharged and potential low dissolving oxygen levels in the receiving water, the Central Valley Water Board is requiring a Low Dissolved Oxygen Assessment to be completed after the Discharger installs the proposed diffuser in its new location. The Low Dissolved Oxygen Assessment shall include, at a minimum, modeling of a dissolved oxygen sag curve possibly created by the discharge and a comparison of varied ammonia concentrations effect on the dissolved oxygen sag curve. The Discharger shall comply with the time schedule in the Technical Reports Table to complete the assessment.

c. **Antidegradation Analysis.** The Discharger shall conduct a complete antidegradation analysis to evaluate whether the lowering of water quality associated with the proposed discharge condition (i.e., direct discharge of secondary wastewater to the Feather River as primary means of disposal with new aquatic life and human health mixing zones) is consistent with the federal and state antidegradation policies in 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California*. The Discharger shall conduct the analysis in accordance with State Water Board Administrative Procedures Update (APU) No. 90-004, *Antidegradation Policy Implementation for NPDES Permitting.*

When determining whether the proposed discharge is necessary to accommodate social or economic development and is consistent with maximum public benefit, the analysis shall consider the implementation of feasible alternative control measures which might reduce, eliminate, or compensate for negative impacts of the proposed action including, but not limited to, upgrading the Facility to provide a higher level of treatment (e.g., advanced secondary or tertiary treatment, alternative disinfection technologies, nitrogen removal, etc.) and regionalization with the Linda County Water District Wastewater Treatment Plant. The Discharger shall assess the costs associated with the proposed discharge and each alternative in accordance with U.S. EPA's March 1995 *Interim Economic Guidance for Water Quality Standards: Workbook* (EPA-823-B-95-002). The Discharger shall submit the Antidegradation Analysis Report as specified in the Technical Reports Table.

3. Best Management Practices and Pollution Prevention

a. **Salinity Evaluation and Minimization Plan.** The Discharger shall continue to implement a salinity evaluation and minimization plan to identify and address sources of salinity discharged from the Facility.

The Discharger shall evaluate the effectiveness of the salinity evaluation and minimization plan and provide a summary with the Report of Waste Discharge as specified in the Technical Reports Table. Furthermore, if the effluent calendar annual average electrical conductivity concentration exceeds 800 µmhos/cm during the term of this Order, the salinity evaluation and minimization plan shall be reviewed and updated. The updated salinity evaluation and minimization plan shall

be submitted by 1 April following the calendar year in which the calendar annual average electrical conductivity concentration exceeded 800 µmhos/cm.

4. Construction, Operation and Maintenance Specifications

a. **Treatment Pond Operating Requirements.** With the exception of the disposal ponds located within the Feather River levees, the treatment, storage, and disposal facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

b. **Diffuser Maintenance Requirements.** To ensure the proper operation of the diffuser, after 1 January of each year, and as soon as the Feather River flow is 1 foot above the diffuser or less at its deepest location in the Feather River, the Discharger shall assess the Discharge Point 001 effluent multi-port diffuser located in the Feather River with regards to the operational condition of the diffuser. Maintenance measures must be implemented to clear all 40 ports from blockage on an annual basis. If the assessment shows that the diffuser is not achieving the operational condition, the Discharger shall immediately implement corrective actions to ensure that the operational condition is achieved by no later than 1 July of each year.

The Discharger shall submit technical reports as specified in the Technical Reports Table describing the results of the diffuser assessment and any maintenance or corrective actions that have taken place to assure proper operation. If at any time during the term of this Order the Central Valley Water Board determines that the operational condition of the diffuser will significantly affect the mixing zone conditions in the Feather River in the vicinity of the diffuser, the Central Valley Water Board may reopen the Order to incorporate changes to applicable effluent limitations that reflect the changes in diffuser operation.

c. **Disposal Pond Operating Requirements**

i. The average dry weather discharge flow to the disposal ponds, measured at EFF-001/EFF-002, shall not exceed 10.5 MGD.

ii. The discharge of waste classified as “hazardous” as defined in section 2521(a) of Title 23, California Code of Regulations (CCR) to the disposal ponds is prohibited.

iii. Objectionable odors originating at the Facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas.

(a) As a means of discerning compliance with Disposal Pond Operating Requirement VI.C.4.c.iii, the dissolved oxygen content in the upper zone (1 foot) of wastewater in ponds shall not be less than 1.0 mg/L for three consecutive sampling events.

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

v. Ponds shall be managed to prevent breeding of mosquitos. In particular:

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

(b) Weeds shall be minimized.

(c) Dead algae, vegetation, and debris shall not accumulate on the water surface.

vi. During non-flood conditions, pond freeboard shall never be less than 2 feet (measured vertically to the lowest, non-spillway point of overflow from the perimeter berm) of the pond system.

5. Special Provisions for Publicly-Owned Treatment Works (POTW's)

a. **Pretreatment Requirements**

i. The Discharger shall be responsible and liable for the performance of all Control Authority pretreatment requirements contained in 40 C.F.R. part 403, including any subsequent regulatory revisions to 40 C.F.R. part 403. Where 40 C.F.R. part 403 or subsequent revision places mandatory actions upon the Discharger as Control Authority but does not specify a timetable for completion of the actions, the Discharger shall complete the required actions within 6 months from the issuance date of this permit or the effective date of the 40 C.F.R. part 403 revisions, whichever comes later. For violations of pretreatment requirements, the Discharger shall be subject to enforcement actions, penalties, fines, and other remedies by U.S. EPA or other appropriate parties, as provided in the CWA. U.S. EPA may initiate enforcement action against a nondomestic user for noncompliance with applicable standards and requirements as provided in the CWA.

ii. The Discharger shall enforce the requirements promulgated under sections 307(b), 307(c), 307(d), and 402(b) of the CWA with timely, appropriate and effective enforcement actions. The Discharger shall cause all nondomestic users subject to federal categorical standards to achieve compliance no later than the date specified in those requirements or, in the case of a new nondomestic user, upon commencement of the discharge.

iii. The Discharger shall perform the pretreatment functions as required in 40 C.F.R. part 403 including, but not limited to:

(a) Implement the necessary legal authorities as provided in 40 C.F.R. section 403.8(f)(1);

(b) Enforce the pretreatment requirements under 40 C.F.R. section 403.5 and 403.6;

(c) Implement the programmatic functions as provided in 40 C.F.R. section 403.8(f)(2); and

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

iv. **Pretreatment Reporting Requirements.** Pretreatment reporting requirements are included in the Monitoring and Reporting Program, section X.D.5 of Attachment E.

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

i. Collected screenings, residual sludge, biosolids, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer, and consistent with Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste, as set forth in Title 27, CCR, division 2, subdivision 1, section 20005, et seq. Removal for further treatment, storage, disposal, or reuse at sites (e.g., landfill, composting sites, soil amendment sites) that are operated in accordance with valid waste discharge requirements issued by a 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 limitations in section V.B. of this Order. In addition, the storage of residual sludge, solid waste, and biosolids on Facility property shall be temporary and controlled, and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate groundwater limitations included in section V.B. of this Order.

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 C.F.R. part 503. If the State Water Board and the Central Valley Water Board are given the authority to implement regulations contained in 40 C.F.R. 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 C.F.R. 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. The onsite sludge/biosolids treatment, processing, and storage for the Facility is described in the Fact Sheet (Attachment F, Section II.A). Any proposed change in the onsite treatment, processing, or storage of sludge/biosolids shall be reported to the Executive Officer at least **90 days** in advance of the change, and shall not be implemented until written approval by the Executive Officer.

c. **Resource Recovery from Anaerobically Digestible Material.** If the Discharger will receive hauled-in anaerobically digestible material for injection into an anaerobic digester, the Discharger shall notify the Central Valley Water Board and develop and implement Standard Operating Procedures for this activity. The Standard Operating Procedures shall be developed prior to receiving hauled-in anaerobically digestible material. The Standard Operating Procedures shall address material handling, including unloading, screening, or other processing prior to anaerobic digestion; transportation; spill prevention; and spill response. In addition, the Standard Operating Procedures shall address avoidance of the introduction of materials that could cause interference, pass-through, or upset of the treatment processes; avoidance of prohibited material; vector control; odor control; operation and maintenance; and the disposition of any solid waste segregated from introduction to the digester. The Discharger shall train its staff on the Standard Operating Procedures and shall maintain records for a minimum of five years for each load received, describing the hauler, waste type, and quantity received. In

addition, the Discharger shall maintain records for a minimum of five years for the disposition, location, and quantity of cumulative pre-digestion-segregated solid waste hauled off-site.

6. Other Special Provisions – Not Applicable

7. Compliance Schedules – Not Applicable

VII. COMPLIANCE DETERMINATION

A. BOD_5 and TSS Effluent Limitations (Sections IV.A.1.a and IV.A.1.b). Compliance with the final effluent limitations for BOD_5 and TSS required in Waste Discharge Requirements section IV.A.1.a shall be ascertained by 24-hour composite samples. Compliance with effluent limitations required in Waste 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. Total Mercury Mass Loading Effluent Limitations (Section IV.A.1.f). The procedures for calculating mass loadings are as follows:

1. The total pollutant mass load for each individual calendar month shall be determined using an average of all concentration data collected that month and the corresponding total monthly flow. All effluent monitoring data collected under the monitoring and reporting program, pretreatment program, and any special studies shall be used for these calculations. The total annual mass loading shall be the sum of the individual calendar months.

2. In calculating compliance, the Discharger shall count all non-detect measures at one-half of the detection level. If compliance with the effluent limitation is not attained due to the non-detect contribution, the Discharger shall improve and implement available analytical capabilities and compliance shall be evaluated with consideration of the detection limits.

C. Average Dry Weather Flow Prohibition (Section III.E). 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 discharge prohibition will be determined annually based on the average daily flow over three consecutive dry weather months (e.g., July, August, and September).

D. Total Coliform Organisms Effluent Limitations (Section IV.A.1.e). For each day that an effluent sample is collected and analyzed for total coliform organisms, the 7-day median shall be determined by calculating the median concentration of total coliform bacteria in the effluent utilizing the bacteriological results of the last 7 days. For example, if a sample is collected on a Wednesday, the result from that sampling event and all results from the previous 6 days (i.e., Tuesday, Monday, Sunday, Saturday, Friday, and Thursday) are used to calculate the 7-day median. If the 7-day median of total coliform organisms exceeds a most probable number (MPN) of 23 per 100 milliliters at Discharge Point 001 and 002, the Discharger will be considered out of compliance.

E. Total Residual Chlorine Effluent Limitations (Section IV.A.1.d). Continuous monitoring analyzers for chlorine residual or for dechlorination agent residual in the effluent are appropriate methods for compliance determination. A positive residual dechlorination agent in the effluent indicates that chlorine is not present in the discharge, which demonstrates compliance with the effluent limitations. This type of monitoring can also be used to prove that some chlorine residual exceedances are false positives. Continuous monitoring data showing either a positive dechlorination agent residual or a chlorine residual at or below the prescribed limit are sufficient to show compliance with the total residual chlorine effluent

limitations, as long as the instruments are maintained and calibrated in accordance with the manufacturer's recommendations.

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

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

Mass (lbs/day) = Flow (MGD) x Concentration (mg/L) x 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 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.

G. 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. Dischargers shall be deemed out of compliance with an effluent limitation, if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).
2. Dischargers 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 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 RL; 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 RL, 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), the discharger shall not be deemed out of compliance.

H. Dissolved Oxygen Receiving Water Limitation (Section V.A.5.a-c). Weekly receiving water monitoring is required in the Monitoring and Reporting Program (Attachment E) and is sufficient to evaluate the impacts of the discharge and compliance with this Order. Weekly receiving water monitoring data, measured at Monitoring Locations RSW-001 and RSW-002 for discharges to Discharge Point 001 will be used to determine compliance with part "c" of the dissolved oxygen receiving water limitation to ensure the discharge does not cause the dissolved oxygen concentrations in the Feather River to be reduced below 7.0 mg/L at any time. However, should more frequent dissolved oxygen and temperature receiving water monitoring be conducted, Central Valley Water Board staff may evaluate compliance with parts "a" and "b".

I. Chlorpyrifos and Diazinon Effluent Limitations (Section IV.A.1.g). Compliance shall be determined by calculating the sum (S), as provided in this Order, with analytical results that are reported as ND concentrations to be considered to be zero.

J. Discharge Prohibition III.F (Section III.F). When discharging to the Feather River at Discharge Point 001, the Discharger will be considered in compliance with Discharge Prohibition III.F when the daily average flow in the Feather River meets or exceeds 10,000 cfs as determined using California Data Exchange Center (CDEC) data from the Feather River at Gridley (GRL) and/or Yuba River at Marysville (MRY) or flow and stage at Feather River at Boyd's Landing (FBL) or Feather River at Star Bend (FSB). If the flow is less than daily average 10,000 cfs, compliance will be determined based on the measured average depth over the diffuser.

ATTACHMENT A – DEFINITIONS

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

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

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

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

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

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

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

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

The daily discharge may be determined by the analytical results of a composite sample taken over the course of 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 RL, but greater than or equal to the laboratory's MDL. 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.

Dynamic Models
Dynamic models are used for calculating effluent limitations and predict the effects of receiving water and effluent flow and of concentration variability. The outputs of dynamic models can be used to base effluent limitations on probability estimates of receiving water concentrations rather than critical conditions (which are used in the steady-state model). The three dynamic modeling techniques recommended by U.S. EPA for calculating effluent limitations are continuous simulation, Monte Carlo simulation, and lognormal probability modeling.

Effect Concentration (EC)
A point estimate of the toxicant concentration that would cause an observable adverse effect (e.g. death, immobilization, or serious incapacitation) in a given percent of the test organisms, calculated from a continuous model (e.g., Probit Model). EC_{25} is a point estimate of the toxicant concentration that would cause an observable adverse effect in 25 percent of the test organisms.

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 U.S. EPA 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.

Endpoint
An effect that is measured in a toxicity study. Endpoints in toxicity tests may include, but are not limited to survival, reproduction, and growth.

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

Estuaries
Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in 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 limitation).

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

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

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

Method Detection Limit (MDL)
MDL is the minimum measured concentration of a substance that can reported with 99 percent confidence that the measured concentration is distinguishable from method blank results, as defined in in 40 C.F.R. part 136, Attachment 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.

Percent Effect
The percent effect at the instream waste concentration (IWC) shall be calculated using untransformed data and the following equation:

$$\text{Percent Effect at the IWC} = \frac{\text{Mean Control Response} - \text{Mean IWC Response}}{\text{Mean Control Response}} \bullet 100$$

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 Resources Control Board (State Water Board) or Central Valley Water Board.

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

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

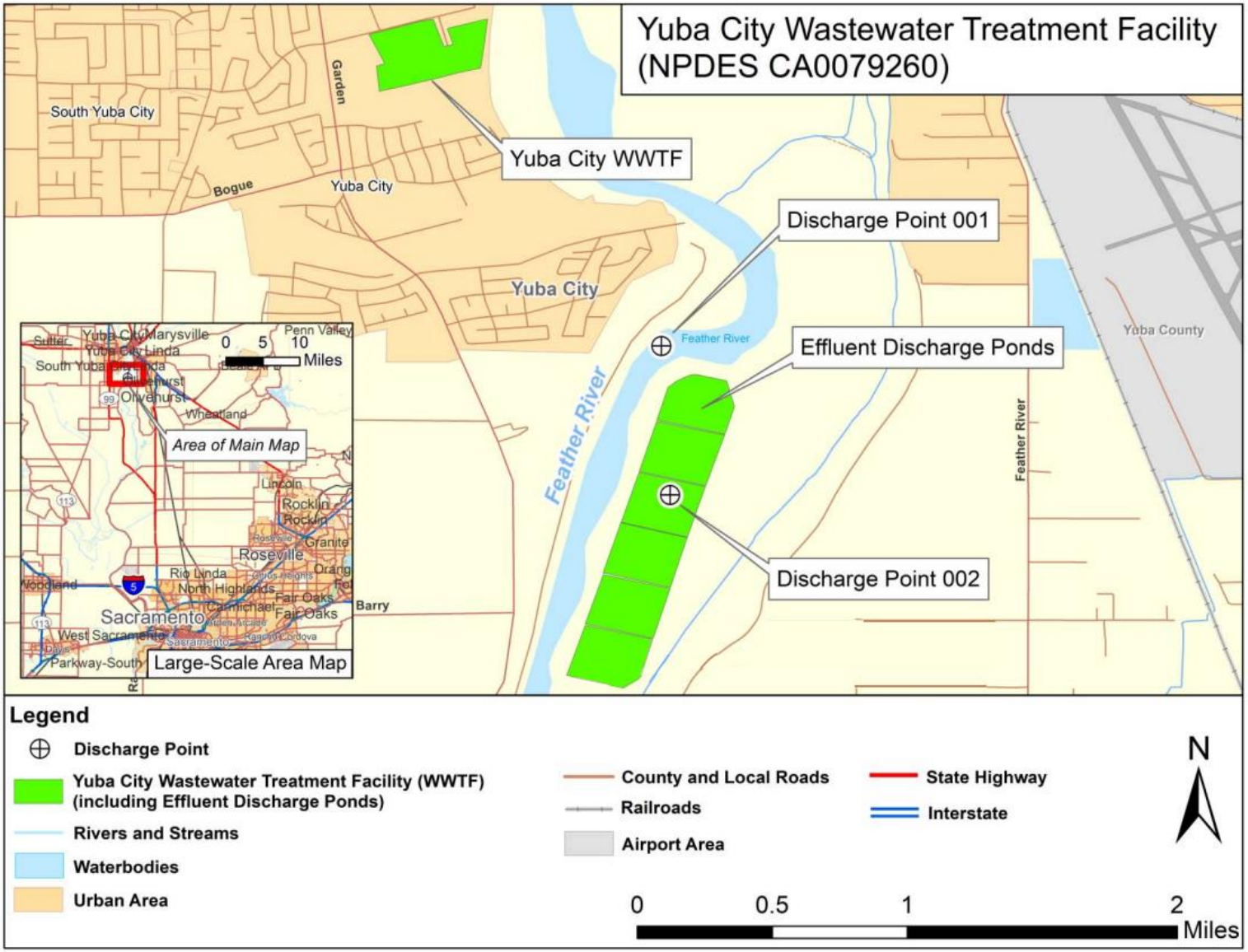
Standard Deviation (σ)
Standard Deviation is a measure of variability that is calculated as follows:

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

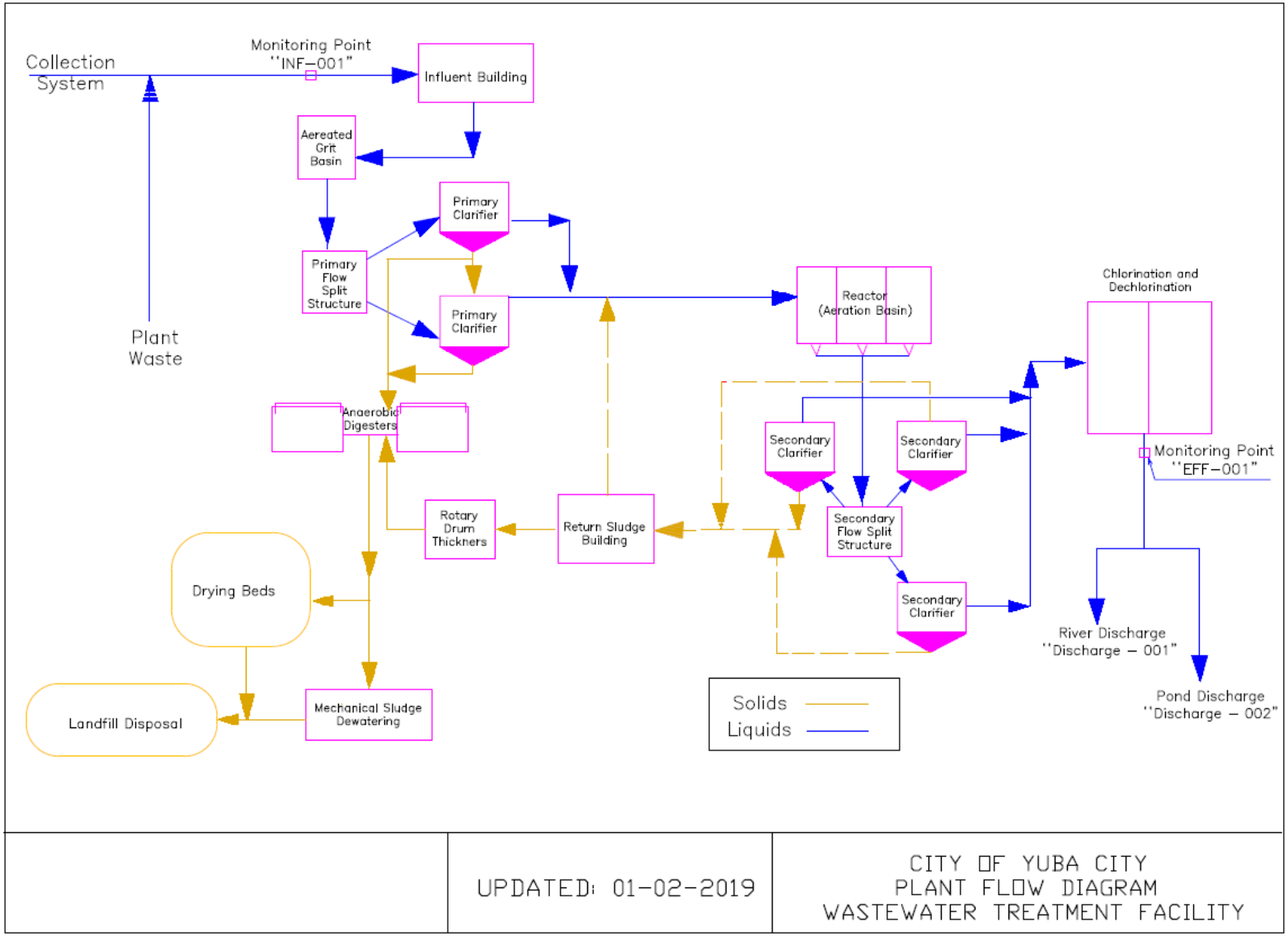
where:
x is the observed value;
μ is the arithmetic mean of the observed values; and
n is the number of samples.

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 – FLOW SCHEMATIC



ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof. (40 C.F.R. § 122.41(a); Wat. Code, §§ 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)

2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants 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 C.F.R. § 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 C.F.R. § 122.41(c).)

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. § 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 C.F.R. § 122.41(e).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 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 C.F.R. § 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the Central Valley Water Board, State Water Board, U.S. EPA, 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 (33 U.S.C. § 1318(a)(4)(B); 40 C.F.R. § 122.41(i); Wat. Code, § 13267, 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 (33 U.S.C § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(1); Wat. Code, §§ 13267, 13383);
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(2); Wat. Code, §§ 13267, 13383);
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(3); Wat. Code, § 13267, 13383); 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. (33 U.S.C § 1318(a)(4)(B); 40 C.F.R. § 122.41(i)(4); Wat. Code, §§ 13267, 13383.)

G. Bypass

1. Definitions
   a. “Bypass” means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(m)(4)(i)):
   a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 prior notice, if possible at least 10 days before the date of the bypass. The notice shall be sent to the Central Valley Water Board. As of 21 December 2020, all notices shall be submitted electronically to the initial recipient (State Water Board), defined in Standard Provisions – Reporting V.J below. Notices shall comply with 40 C.F.R. part 3, section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(m)(3)(i).)

   b. Unanticipated bypass. The Discharger shall submit a notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). The notice shall be sent to the Central Valley Water Board. As of 21 December 2020, all notices shall be submitted electronically to the initial recipient (State Water Board), defined in Standard Provisions – Reporting V.J below. Notices shall comply with 40 C.F.R. part 3, section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(n)(3)):

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

   b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 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 C.F.R. § 122.41(n)(3)(iii)); and

   d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(j)(1).)

B. Monitoring must be conducted according to test procedures approved under 40 C.F.R. part 136 for the analyses of pollutants unless another method is required under 40 C.F.R. subchapters N or O. Monitoring must be conducted according to sufficiently sensitive test methods approved under 40 C.F.R. part 136 for the analysis of pollutants or pollutant parameters or as required under 40 C.F.R. chapter 1, subchapter N or O. For the purposes of this paragraph, a method is sufficiently sensitive when the method has the lowest ML of the analytical methods approved under 40 C.F.R. part 136 or required under 40 C.F.R. chapter 1, subchapter N or O for the measured pollutant or pollutant parameter, or when:

1. The method minimum level (ML) is at or below the level of the most stringent effluent limitation established in the permit for the measured pollutant or pollutant parameter, and:
    a. The method ML is at or below the level of the most stringent applicable water quality criterion for the measured pollutant or pollutant parameter, or;
    b. The method ML is above the applicable water quality criterion but the amount of the pollutant or pollutant parameter in the facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge;

In the case of pollutants or pollutant parameters for which there are no approved methods under 40 C.F.R. part 136 or otherwise required under 40 C.F.R. chapter 1, subchapters N or O, monitoring must be conducted according to a test procedure specified in this Order for such pollutants or pollutant parameters. (40 C.F.R. § 122.21(e)(3), 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 C.F.R. 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 C.F.R. § 122.41(j)(2).)

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));
2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)

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

1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and
2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 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, or U.S. EPA within a reasonable time, any information which the Central Valley Water Board, State Water Board, or U.S. EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Central Valley Water Board, State Water Board, or U.S. EPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, §§ 13267, 13383.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Central Valley Water Board, State Water Board, and/or U.S. EPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, V.B.5, and V.B.6 below. (40 C.F.R. § 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 U.S. EPA). (40 C.F.R. § 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 U.S. EPA 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 C.F.R. § 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 C.F.R. § 122.22(b)(2)); and

c. The written authorization is submitted to the Central Valley Water Board and State Water Board. (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.22(d).)

6. Any person providing the electronic signature for such documents described in Standard Provision – V.B.1, V.B.2, or V.B.3 that are submitted electronically shall meet all relevant requirements of Standard Provisions – Reporting V.B, and shall ensure that all of the relevant requirements of 40 C.F.R. part 3 (Cross-Media Electronic Reporting) and 40 C.F.R. part 127 (NPDES Electronic Reporting Requirements) are met for that submission. (40 C.F.R § 122.22(e).)

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 C.F.R. § 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 the results of monitoring, sludge use, or disposal practices. As of 21 December 2016 all reports and forms must be submitted electronically to the initial recipient, defined in Standard Provisions – Reporting V.J, and comply with 40 C.F.R. part 3, section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 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 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. 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 C.F.R. § 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 C.F.R. § 122.41(l)(4)(iii).)

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance which 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 report shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The report 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.

   For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather.

   As of 21 December 2020 all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events must be submitted electronically to the initial recipient (State Water Board) defined in Standard Provisions – Reporting V.J. The reports shall comply with 40 C.F.R. part 3. They may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 122.41(l)(6)(i).)

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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(l)(1)(ii).)

   The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under section

122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (40 C.F.R. § 122.41(l)(1)(ii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Central Valley Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order's requirements. (40 C.F.R. § 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. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in Standard Provision – Reporting V.E and the applicable required data in appendix A to 40 C.F.R. part 127. The Central Valley Water Board may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 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 U.S. EPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)

J. Initial Recipient for Electronic Reporting Data

The owner, operator, or the duly authorized representative is required to electronically submit NPDES information specified in appendix A to 40 C.F.R. part 127 to the appropriate initial recipient, as determined by U.S. EPA, and as defined in 40 C.F.R. section 127.2(b). U.S. EPA will identify and publish the list of initial recipients on its website and in the Federal Register, by state and by NPDES data group [see 40 C.F.R. section 127.2(c)]. U.S. EPA will update and maintain this listing. (40 C.F.R. § 122.41(l)(9).)

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 13350, 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTW's)

All POTW's shall provide adequate notice to the Central Valley Water Board of the following (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.42(b)(3).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Contents

Tables

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (40 C.F.R. § 122.48) requires that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the 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. Final 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 accredited for such analyses by the State Water Resources Control Board (State Water Board), Division of Drinking Water (DDW; formerly the Department of Public Health). Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Central Valley Water Board. In the event an accredited 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 non-accredited 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. 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 U.S. EPA 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 DDW, 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 ensure that the results of the Discharge Monitoring Report-Quality Assurance (DMR-QA) Study or the most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Resources Control Board at the following address:

State Water Resources Control Board
Quality Assurance Program Officer
Office of Information Management and Analysis
1001 I Street, Sacramento, CA 95814

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

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	A location where a representative sample of the influent into the Facility can be collected prior to entering the treatment process (location on east side of influent building as shown in Attachment C)
001 and 002	EFF-001 and EFF-002 (EFF-001/EFF-002)	Downstream from the last connection through which wastes can be admitted to the outfall before being discharged to the Feather River (EFF-001) at Discharge Point 001 or the disposal ponds (EFF-002) at Discharge Point 002. Discharge Point 001: Latitude: 39° 05’ 29" N Longitude: 121° 35’ 53” W Discharge Point 002: Latitude: 39° 04’ 53" N Longitude: 121° 35’ 56” W
--	LND-001	Monitoring within Disposal Pond 1
--	LND-002	Monitoring within Disposal Pond 2
--	LND-003	Monitoring within Disposal Pond 3
--	LND-004	Monitoring within Disposal Pond 4
--	LND-005	Monitoring within Disposal Pond 5
--	LND-006	Monitoring within Disposal Pond 6
--	RSW-001	Approximately 500 feet upstream of the diffuser outfall, in the middle of the Feather River by boat, upstream of the disposal ponds.
--	RSW-002	Approximately 1,200 feet downstream of the diffuser outfall, in the middle of the Feather River by boat.
--	SPL-001	Location where a representative sample of the municipal supply water can be obtained. If this is impractical, water quality data provided by the water supplier(s) may be used.
--	GW-001	Groundwater monitoring well (identified as MW-01 in the Discharger’s Hydrogeologic Assessment Workplan).
--	GW-002	Groundwater monitoring well (identified as MW-02 in the Discharger’s Hydrogeologic Assessment Workplan).
--	GW-003	Groundwater monitoring well (identified as MW-03 in the Discharger’s Hydrogeologic Assessment Workplan).

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	GW-004	Groundwater monitoring well (identified as MW-04 in the Discharger's Hydrogeologic Assessment Workplan).
--	GW-007	Groundwater monitoring well (identified as MW-07 in the Discharger's Hydrogeologic Assessment Workplan).
--	GW-008	Groundwater monitoring well (identified as MW-08 in the Discharger's Hydrogeologic Assessment Workplan).
--	BIO-001	A location where a representative sample of the residual sludge or biosolids can be obtained.

The North latitude and West longitude information in Table E-1 are approximate for administrative purposes.

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	24-hr Composite[1,2]	3/Week	[3]
pH	standard units	Grab	1/Day	[3]
Total Suspended Solids	mg/L	24-hr Composite[1,2]	3/Week	[3]
Non-Conventional Pollutants				
Ammonia Nitrogen, Total (as N)	mg/L	24-hr Composite[1]	1/Week	[3]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Quarter	[3,4]
Phosphorus, Total (as P)	mg/L	24-hr Composite[1]	1/Month	[3]

[1] 24-hour flow proportional composite.

[2] BOD_5 and TSS samples shall be collected on the same day as the effluent samples.

[3] Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136; or by methods approved by the Central Valley Water Board or the State Water Board.

[4] A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-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.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001/EFF-002

1. When discharging at Discharge Points 001 and 002, the Discharger shall monitor treated wastewater at Monitoring Location EFF-001/EFF-002, as follows. EFF-001 and EFF-002 are located at the same monitoring location. For reporting purposes, the Discharger shall use EFF-001 as the monitoring location when discharging to Discharge Point 001 and shall use EFF-002 as the monitoring location when discharging to Discharge Point 002. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level:

Table E-3. Effluent Monitoring – Monitoring Location EFF-001/EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Discharge Location	Date and Time	--	When switching discharge points	--
Feather River Flow	CFS	Flow Gage[1]	1/Day	--
Average Depth of Water Over Diffuser	Feet	Measure[2]	1/Week	--
Flow	MGD	Meter	Continuous	--
Conventional Pollutants				
Biochemical Oxygen Demand (5-day @ 20° C)	mg/L	24-hr Composite[3]	3/Week	[4]
	% removal	Calculate	1/Month	[--]
pH	standard units	Grab	1/Day[5,6]	[4]
Total Suspended Solids	mg/L	24-hr Composite[3]	3/Week	[4]
	% removal	Calculate	1/Month	[--]
Priority Pollutants				
Copper, Total Recoverable	µg/L	24-hr Composite[3]	1/Month	[4,7]
Dichlorobromomethane	µg/L	Grab	1/Month	[4,7]
Mercury, Total Recoverable	µg/L	Grab	1/Month	[4,7,8]
Non-Conventional Pollutants				
Ammonia Nitrogen, Total (as N)	mg/L	24-hr Composite[3]	2/Week[5,9]	[4]
	lbs/day	Calculate	2/Week	--
Chlorine, Total Residual	mg/L	Meter	Continuous[10]	[4,11]
Chlorpyrifos	µg/L	24-hr Composite[3]	1/Year	[4,12]
Diazinon	µg/L	24-hr Composite[3]	1/Year	[4,12]
Dissolved Oxygen	mg/L	Grab	3/Week[6]	[4]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Month	[4,6]
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Month[13]	[4]
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/Month[14]	[4]
Nitrite Nitrogen, Total (as N)	mg/L	Grab	1/Month[14]	[4]
Nitrate Plus Nitrite (as N)	mg/L	Calculate	1/Month	--

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Phosphorus, Total (as P)	mg/L	24-hr Composite[3]	1/Month	[4]
Settleable Solids	ml/L	Grab	5/Week[10]	[4]
Sodium Bisulfate	mg/L	Meter	Continuous[10]	[4]
Temperature	°F	Grab	2/Week[5,6]	[4]
Total Coliform Organisms	MPN/100 mL	Grab	3/Week[15,16]	[4]
Total Dissolved Solids	mg/L	Grab	1/Month	[4]

1 When discharging to the Feather River through the diffuser at Discharge Point 001, daily average river flow shall be reported using California Data Exchange Center (CDEC) data from the Feather River at Gridley (GRL) and/or Yuba River at Marysville (MRY) or flow and stage at Feather River at Boyd's Landing (FBL) or Feather River at Star Bend (FSB).

2 When discharging to the Feather River through the diffuser at Discharge Point 001 AND daily average river flows are less than 10,000 cfs, the average depth above the diffuser shall be reported to evaluate compliance with Discharge Prohibition III.F.

3 24-hour flow proportional composite.

4 Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods requested by the Discharger that have been approved by the Central Valley Water Board or the State Water Board.

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

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

7 For priority pollutant constituents the reporting level shall be consistent with Sections 2.4.2 and 2.4.3 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (See Attachment E, Table E-8).

8 Unfiltered methyl mercury and total mercury samples shall be taken using clean hands/dirty hands procedures, as described in U.S. EPA method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels, for collection of equipment blanks (section 9.4.4.2). The analysis of methyl mercury and total mercury shall be by U.S. EPA method 1630 and1631 (Revision E), respectively, with a reporting limit of 0.05 ng/L for methyl mercury and 0.5 ng/L for total mercury.

9 Concurrent with whole effluent toxicity monitoring.

10 Monitoring only required during effluent discharge to Discharge Point 001.

11 Total residual chlorine must be monitored using an analytical method that is sufficiently sensitive to measure at the permitted level of 0.01 mg/L.

12 Chlorpyrifos and diazinon shall be sampled using U.S. EPA Method 625M, Method 8141, or equivalent gas chromatography/mass spectrometry (GC/MS) method with a lower Reporting Limit than the Basin Plan Water Quality Objectives of 0.015 µg/L and 0.1 µg/L for chlorpyrifos and diazinon, respectively.

13 Hardness samples shall be collected concurrently with metals samples.

14 Monitoring for nitrite and nitrate shall be conducted concurrently.

15 Samples for total coliform organisms may be collected at any point following disinfection, provided that samples are dechlorinated at the time of collection. The Discharger shall report the sampling location(s) in the monthly self-monitoring report (SMR).

16 The monitoring frequency shall be 1/week during effluent discharge to Discharge Point 002.

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 monthly acute toxicity testing when discharging at Discharge Point 001, concurrent with effluent ammonia sampling. Because the chronic toxicity test provides both acute and chronic toxicity information concurrently, acute toxicity testing is not necessary when chronic toxicity testing is being conducted in the same period.
2. *Sample Types* – The Discharger may use flow-through or static renewal testing. For static renewal testing, the samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001 when discharging at Discharge Point 001 or the same sample location as chronic toxicity testing as indicated in MRP, Section V.B.2 during concurrent analysis when discharging at Discharge Point 001.
3. *Test Species* – Test species shall be fathead minnows (*Pimephales promelas*).
4. *Methods* – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. The Discharger is authorized to adjust the effluent pH to suppress the level of unionized (free) ammonia. This adjustment shall be achieved through the addition of MOPS (3-N morpholino propane sulfonic acid) buffer. If other specific identifiable substances in the discharge can be demonstrated by the Discharger as being rapidly rendered harmless upon discharge to the receiving water, compliance with acute toxicity limit may be determined after the test samples are adjusted to remove the influence of those substances. Written approval from the Executive Officer must be obtained to authorize such an adjustment.
5. *Test Failure* – If an acute toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger must re-sample and re-test as soon as possible, not to exceed 7 days following receipt of the final test report indicating test failure.

B. Chronic Toxicity Testing. The Discharger shall meet the following chronic toxicity testing requirements:

1. *Monitoring Frequency* – The Discharger shall perform routine quarterly chronic toxicity testing when discharging at Discharge Point 001. If the result of the routine chronic toxicity testing event exhibits toxicity, demonstrated by a result greater than 12 TUc (as 100/NOEC) AND a percent effect greater than 25 percent at 8.3 percent effluent, the Discharger has the option of conducting two additional compliance monitoring events and perform chronic toxicity testing using the species that exhibited toxicity in order to calculate a median. The optional compliance monitoring events shall occur at least one week apart, and the final monitoring event shall be initiated no later than 6 weeks from the routine monitoring event that exhibited toxicity.
2. *Sample Types* – Effluent samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001 or at the farthest end of the dechlorination channel, approximately three feet prior to Monitoring Location EFF-001, when discharging at Discharge Point 001. The receiving water control 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* – The testing shall be conducted using the most sensitive species. The Discharger shall conduct chronic toxicity tests with the water flea (*Ceriodaphnia dubia*), unless otherwise specified in writing by the Executive Officer.

5. *Methods* – The presence of chronic toxicity shall be estimated as specified in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA/821-R-02-013, October 2002 (Short-term Methods for Estimating Chronic Toxicity). The test method may be modified to reduce suspected pathogen interference. Modifications may include freeze treating or other future identified modification method specified in section 11.3.4.4 of Short-term Methods for Estimating Chronic Toxicity to reduce or remove suspected pathogen interference.

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 compliance chronic toxicity monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-4 when discharging at Discharge Point 001. For TRE monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-4 when discharging at Discharge Point 001, unless an alternative dilution series is detailed in the submitted TRE Action Plan. A receiving water control or laboratory water control may be used as the diluent.

Table E-4. Chronic Toxicity Testing Dilution Series – Discharge Point 001

Sample	Dilutions[a] (%)					Control
	33.2	16.6	8.3	4.2	2.1	
% Effluent	33.2	16.6	8.3	4.2	2.1	0
% Control Water	66.8	83.4	91.7	95.8	97.9	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 the final test report indicating 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 the Method Manual.

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

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

1. **Chronic WET Reporting.** Routine and compliance chronic toxicity monitoring results shall be reported to the Central Valley Water Board with the quarterly SMR, and shall contain, at minimum:

   a. The results expressed in TUc, measured as 100/NOEC, and also measured as 100/LC50, 100/EC25, 100/IC25, and 100/IC50, as appropriate.

   b. The statistical methods used to calculate endpoints;

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

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

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

   Additionally, the quarterly SMR's 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 type, i.e., routine, compliance, TES, or TRE monitoring.

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

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

E. Most Sensitive Species Screening. The Discharger shall perform rescreening to re-evaluate the most sensitive species if there is a significant change in the nature of the discharge. If there are no significant changes during the permit term, a rescreening must be performed prior to permit reissuance and results submitted with the Report of Waste Discharge.

1. **Frequency of Testing for Species Sensitivity Screening.** Species sensitivity screening for chronic toxicity shall include, at a minimum, chronic WET testing four consecutive calendar quarters using the water flea (*Ceriodaphnia dubia*), fathead minnow (*Pimephales promelas*), and green alga (*Pseudokirchneriella subcapitata*). The tests shall be performed using 8.3 percent effluent and one control. If the first two species sensitivity re-screening events result in no change in the most sensitive species, the Discharger may cease the species sensitive re-screening testing and the most sensitive species will remain unchanged.

2. **Determination of Most Sensitive Species.** If a single test in the species sensitivity screening testing exceeds 12 TUc (as 100/NOEC), then the species used in that test shall be established as the most sensitive species. If there is more than a single test that exceeds 12 TUc (as 100/NOEC), then the species exceeding 12 TUc (as 100/NOEC) that exhibits the highest percent effect shall be established as the most sensitive

species. If none of the tests in the species sensitivity screening exceeds 12 TUc (as 100/NOEC), but at least one of the species exhibits a percent effect greater than 10 percent at 8.3% effluent, then the single species that exhibits the highest percent effect at 8.3% effluent shall be established as the most sensitive species. In all other circumstances, the Executive Officer shall have discretion to determine which single species is the most sensitive considering the test results from the species sensitivity screening.

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 the Feather River at Monitoring Locations RSW-001 and RSW-002 when the Feather River is flowing within its normal channel at a flow less than approximately 25,000 cfs during the weekly monitoring period Sunday through Saturday. Receiving water monitoring is not required when discharging at Discharge Point 002.

Table E-5. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Conventional Pollutants				
Fecal Coliform Organisms	MPN/100 mL	Grab	1/Quarter	[1]
pH	standard units	Grab	1/Week	[1,2]
Non-Conventional Pollutants				
Dissolved Oxygen	mg/L	Grab	1/Week	[1,2]
	% Saturation	Calculate	1/Week	[3]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Week	[1,2]
Hardness	mg/L	Grab	1/Month	[1,2]
Temperature	°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 C.F.R. 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 U.S. EPA-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] Temperature shall be determined at the time of sample collection for use in determining saturation concentration. Any additional factors or parameters used in determining saturation concentration shall also be reported. Report both saturation and saturation concentration.

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

   a. Floating or suspended matter;
   b. Discoloration;
   c. Bottom deposits;

d. Aquatic life;
e. Visible films, sheens, or coatings;
f. Fungi, slimes, or objectionable growths; and
g. Potential nuisance conditions.

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

B. Monitoring Locations GW-001, GW-002, GW-003, GW-004, GW-007, and GW-008

1. Prior to construction and/or beginning a sampling program of any new groundwater monitoring wells, the Discharger shall submit plans and specifications to the Central Valley Water Board for approval. Once installed, all new wells shall be added to the monitoring network (which currently consists of Monitoring Well Nos. GW-001, GW-002, GW-003, GW-004, GW-007, and GW-008) and shall be sampled and analyzed according to the schedule below. All samples shall be collected using approved EPA methods. Water table elevations shall be calculated to determine groundwater gradient and direction of flow.

2. Prior to sampling, the groundwater elevations shall be measured and the wells shall be purged of at least three well volumes or until temperature, pH, and electrical conductivity have stabilized. Depth to groundwater shall be measured to the nearest 0.01 feet. Groundwater monitoring at GW-001, GW-002, GW-003, GW-004, GW-007, GW-008, and any new groundwater monitoring wells shall include, at a minimum, the following:

Table E-6. Groundwater Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency[1]	Required Analytical Test Method
Depth to Groundwater	±0.01 feet	Measurement	2/Year	--
Groundwater Elevation [2]	±0.01 feet	Calculate	2/Year	--
Gradient	feet/feet	Calculate	2/Year	--
Gradient Direction	degrees	Calculate	2/Year	--
Electrical Conductivity @ 25°C	µmhos/cm	Grab	2/Year	[3,4]
pH	standard units	Grab	2/Year	[3,4]
Total Coliform Organisms	MPN/100 mL	Grab	2/Year	[3]
Nitrate Nitrogen, Total (as N)	mg/L	Grab	2/Year	[3]
Ammonia Nitrogen, Total (as N)	mg/L	Grab	2/Year	[3]

1 Monitoring is required only during the calendar semi-annual period that effluent is directed to the disposal ponds for more than one day per semi-annual period. During those calendar semi-annual periods that effluent is not directed to the disposal ponds and monitoring is not performed, the Discharger shall indicate as such in the monthly SMR.

2 Groundwater elevation shall be determined based on depth-to-water measurements from a surveyed measuring point elevation on the well. The groundwater elevation shall be used to calculate the direction and gradient of groundwater flow, which must be reported.

3 Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

4 A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-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.

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids

1. Monitoring Location BIO-001

a. A grab sample of sludge shall be collected annually at Monitoring Location BIO-001 in accordance with EPA's *POTW Sludge Sampling and Analysis Guidance Document*, August 1989, and tested for priority pollutants (excluding asbestos).

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 C.F.R. section 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."

B. Municipal Water Supply

1. Monitoring Location SPL-001

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

Table E-7. Municipal Water Supply Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total Dissolved Solids[1,2]	mg/L	Grab	1/Quarter	[3]
Electrical Conductivity @ 25°C[1,2]	µmhos/cm	Grab	1/Quarter	[3,4]

[1] A group of sampling locations shall be established where a representative sample of the municipal water supply can be obtained from each of the independent water systems. Water quality shall be a flow weighted average of the sample locations. Municipal water supply samples shall be collected at approximately the same time as effluent samples.

[2] If the water supply is from more than one source, the total dissolved solids and electrical conductivity shall be reported as a weighted average and include copies of supporting calculations.

[3] Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

[4] A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-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.

C. Effluent and Receiving Water Characterization

1. **2020 Quarterly Monitoring.** Quarterly samples shall be collected from the effluent (Monitoring Location EFF-001/EFF-002 for discharges at Discharge Point 001 and 002 and upstream receiving water (RSW-001) and analyzed for the constituents listed in Table E-8, below. Quarterly monitoring shall be conducted for one year beginning in the first quarter 2020 (four consecutive samples, evenly distributed throughout the year) at EFF-001/EFF-002, RSW-001. The results of such monitoring be submitted to the Central Valley Water Board with the quarterly self-monitoring reports. Each individual monitoring event shall provide representative sample results for the effluent and upstream receiving water.

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

3. **Sample Type.** All receiving water samples shall be taken as grab samples. Effluent samples shall be taken as described in Table E-8, below.

4. **Analytical Methods Report.** The Discharger shall submit a report electronically via CIWQS submittal outlining reporting levels (RL's), method detection limits (MDL's), and analytical methods for all constituents to be monitored in the influent, effluent, receiving water, and characterization monitoring by the due date shown in the Technical Reports Table. 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 (ML's) 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 shall include as RL's, in the permit, all ML values, and their associated analytical methods, listed in Appendix 4 that are below the calculated effluent limitation. The Discharger may select any one of those cited analytical methods for compliance determination. If no ML value is below the effluent limitation, then the Central Valley Water Board shall select as the RL, the lowest ML value, and its associated analytical method, listed in Appendix 4 for inclusion in the permit. Table E-8 below provides required maximum reporting levels in accordance with the SIP.

Table E-8. Effluent and Receiving Water Characterization Monitoring

Parameter	Units	Effluent Sample Type	Maximum Reporting Level[1]
2-Chloroethyl vinyl ether	µg/L	Grab	1
Acrolein	µg/L	Grab	2
Acrylonitrile	µg/L	Grab	2
Benzene	µg/L	Grab	0.5
Bromoform	µg/L	Grab	0.5
Carbon Tetrachloride	µg/L	Grab	0.5
Chlorobenzene	µg/L	Grab	0.5
Chloroethane	µg/L	Grab	0.5
Chloroform	µg/L	Grab	2
Chloromethane	µg/L	Grab	2
Dibromochloromethane	µg/L	Grab	0.5
Dichlorobromomethane[2]	µg/L	Grab	0.5
Dichloromethane	µg/L	Grab	2
Ethylbenzene	µg/L	Grab	2
Hexachlorobenzene	µg/L	Grab	1
Hexachlorobutadiene	µg/L	Grab	1
Hexachloroethane	µg/L	Grab	1
Methyl bromide (Bromomethane)	µg/L	Grab	1
Naphthalene	µg/L	Grab	10
3-Methyl-4-Chlorophenol	µg/L	Grab	
Tetrachloroethene	µg/L	Grab	0.5
Toluene	µg/L	Grab	2
trans-1,2-Dichloroethylene	µg/L	Grab	1
Trichloroethene	µg/L	Grab	2
Vinyl chloride	µg/L	Grab	0.5
Methyl-tert-butyl ether (MTBE)	µg/L	Grab	
Trichlorofluoromethane	µg/L	Grab	
1,1,1-Trichloroethane	µg/L	Grab	0.5
1,1,2- Trichloroethane	µg/L	Grab	0.5

Parameter	Units	Effluent Sample Type	Maximum Reporting Level[1]
1,1-dichloroethane	µg/L	Grab	0.5
1,1-dichloroethylene	µg/L	Grab	0.5
1,2-dichloropropane	µg/L	Grab	0.5
1,3-dichloropropylene	µg/L	Grab	0.5
1,1,2,2-tetrachloroethane	µg/L	Grab	0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	Grab	0.5
1,2,4-trichlorobenzene	µg/L	Grab	1
1,2-dichloroethane	µg/L	Grab	0.5
1,2-dichlorobenzene	µg/L	Grab	0.5
1,3-dichlorobenzene	µg/L	Grab	0.5
1,4-dichlorobenzene	µg/L	Grab	0.5
Styrene	µg/L	Grab	
Xylenes	µg/L	Grab	
1,2-Benzanthracene	µg/L	Grab	5
1,2-Diphenylhydrazine	µg/L	Grab	1
2-Chlorophenol	µg/L	Grab	5
2,4-Dichlorophenol	µg/L	Grab	5
2,4-Dimethylphenol	µg/L	Grab	2
2,4-Dinitrophenol	µg/L	Grab	5
2,4-Dinitrotoluene	µg/L	Grab	5
2,4,6-Trichlorophenol	µg/L	Grab	10
2,6-Dinitrotoluene	µg/L	Grab	5
2-Nitrophenol	µg/L	Grab	10
2-Chloronaphthalene	µg/L	Grab	10
3,3'-Dichlorobenzidine	µg/L	Grab	5
3,4-Benzofluoranthene	µg/L	Grab	10
4,6-Dinitro-2-methylphenol	µg/L	Grab	10
4-Nitrophenol	µg/L	Grab	10
4-Bromophenyl phenyl ether	µg/L	Grab	10
4-Chlorophenyl phenyl ether	µg/L	Grab	5
Acenaphthene	µg/L	Grab	1
Acenaphthylene	µg/L	Grab	10
Anthracene	µg/L	Grab	10
Benzidine	µg/L	Grab	5
Benzo(a)pyrene (3,4-Benzopyrene)	µg/L	Grab	2
Benzo(g,h,i)perylene	µg/L	Grab	5
Benzo(k)fluoranthene	µg/L	Grab	2
Bis(2-chloroethoxy) methane	µg/L	Grab	5
Bis(2-chloroethyl) ether	µg/L	Grab	1
Bis(2-chloroisopropyl) ether	µg/L	Grab	10
Bis(2-ethylhexyl) phthalate[3]	µg/L	Grab	5
Butyl benzyl phthalate	µg/L	Grab	10
Chrysene	µg/L	Grab	5
Di-n-butylphthalate	µg/L	Grab	10
Di-n-octylphthalate	µg/L	Grab	10
Dibenzo(a,h)-anthracene	µg/L	Grab	0.1
Diethyl phthalate	µg/L	Grab	10
Dimethyl phthalate	µg/L	Grab	10
Fluoranthene	µg/L	Grab	10
Fluorene	µg/L	Grab	10

Parameter	Units	Effluent Sample Type	Maximum Reporting Level[1]
Hexachlorocyclopentadiene	µg/L	Grab	5
Indeno(1,2,3-c,d)pyrene	µg/L	Grab	0.05
Isophorone	µg/L	Grab	1
N-Nitrosodiphenylamine	µg/L	Grab	1
N-Nitrosodimethylamine	µg/L	Grab	5
N-Nitrosodi-n-propylamine	µg/L	Grab	5
Nitrobenzene	µg/L	Grab	10
Pentachlorophenol	µg/L	Grab	1
Phenanthrene	µg/L	Grab	5
Phenol	µg/L	Grab	1
Pyrene	µg/L	Grab	10
Aluminum	µg/L	24-hr Composite[4]	
Antimony	µg/L	24-hr Composite[4]	5
Arsenic	µg/L	24-hr Composite[4]	10
Asbestos	MFL	24-hr Composite[4]	
Barium	µg/L	24-hr Composite[4]	
Beryllium	µg/L	24-hr Composite[4]	2
Cadmium	µg/L	24-hr Composite[4]	0.5
Chromium (Total)	µg/L	24-hr Composite[4]	50
Chromium (VI)	µg/L	Grab	10
Copper[2]	µg/L	24-hr Composite[4]	5
Cyanide	µg/L	Grab	5
Fluoride	µg/L	24-hr Composite[4]	
Iron	µg/L	24-hr Composite[4]	
Lead	µg/L	24-hr Composite[4]	0.5
Mercury[2]	µg/L	Grab	0.5
Manganese	µg/L	24-hr Composite[4]	
Molybdenum	µg/L	24-hr Composite[4]	
Nickel	µg/L	24-hr Composite[4]	20
Selenium	µg/L	24-hr Composite[4]	5
Silver	µg/L	24-hr Composite[4]	1
Thallium	µg/L	24-hr Composite[4]	1
Tributyltin	µg/L	24-hr Composite[4]	
Zinc	µg/L	24-hr Composite[4]	20
4,4'-DDD	µg/L	24-hr Composite[4]	0.05
4,4'-DDE	µg/L	24-hr Composite[4]	0.05
4,4'-DDT	µg/L	24-hr Composite[4]	0.01
alpha-Endosulfan	µg/L	24-hr Composite[4]	0.02
alpha-Hexachlorocyclohexane (BHC)	µg/L	24-hr Composite[4]	0.01
Alachlor	µg/L	24-hr Composite[4]	
Aldrin	µg/L	24-hr Composite[4]	0.005
beta-Endosulfan	µg/L	24-hr Composite[4]	0.01
beta-Hexachlorocyclohexane	µg/L	24-hr Composite[4]	0.005
Chlordane	µg/L	24-hr Composite[4]	0.1
delta-Hexachlorocyclohexane	µg/L	24-hr Composite[4]	0.005
Dieldrin	µg/L	24-hr Composite[4]	0.01
Endosulfan sulfate	µg/L	24-hr Composite[4]	0.01
Endrin	µg/L	24-hr Composite[4]	0.01
Endrin Aldehyde	µg/L	24-hr Composite[4]	0.01
Heptachlor	µg/L	24-hr Composite[4]	0.01

Parameter	Units	Effluent Sample Type	Maximum Reporting Level[1]
Heptachlor Epoxide	µg/L	24-hr Composite[4]	0.02
Lindane (gamma-Hexachlorocyclohexane)	µg/L	24-hr Composite[4]	0.5
PCB-1016	µg/L	24-hr Composite[4]	0.5
PCB-1221	µg/L	24-hr Composite[4]	0.5
PCB-1232	µg/L	24-hr Composite[4]	0.5
PCB-1242	µg/L	24-hr Composite[4]	0.5
PCB-1248	µg/L	24-hr Composite[4]	0.5
PCB-1254	µg/L	24-hr Composite[4]	0.5
PCB-1260	µg/L	24-hr Composite[4]	0.5
Toxaphene	µg/L	24-hr Composite[4]	
Atrazine	µg/L	24-hr Composite[4]	
Bentazon	µg/L	24-hr Composite[4]	
Carbofuran	µg/L	24-hr Composite[4]	
2,4-D	µg/L	24-hr Composite[4]	
Dalapon	µg/L	24-hr Composite[4]	
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	24-hr Composite[4]	
Di(2-ethylhexyl)adipate	µg/L	24-hr Composite[4]	
Dinoseb	µg/L	24-hr Composite[4]	
Diquat	µg/L	24-hr Composite[4]	
Endothal	µg/L	24-hr Composite[4]	
Ethylene Dibromide	µg/L	24-hr Composite[4]	
Methoxychlor	µg/L	24-hr Composite[4]	
Molinate (Ordram)	µg/L	24-hr Composite[4]	
Oxamyl	µg/L	24-hr Composite[4]	
Picloram	µg/L	24-hr Composite[4]	
Simazine (Princep)	µg/L	24-hr Composite[4]	
Thiobencarb	µg/L	24-hr Composite[4]	
2,3,7,8-TCDD (Dioxin)	µg/L	24-hr Composite[4]	
2,4,5-TP (Silvex)	µg/L	24-hr Composite[4]	
Diazinon[2]	µg/L	24-hr Composite[4]	
Chlorpyrifos[2]	µg/L	24-hr Composite[4]	
Ammonia (as N)[2]	mg/L	24-hr Composite[4]	
Boron	µg/L	24-hr Composite[4]	
Chloride	mg/L	24-hr Composite[4]	
Flow[2]	MGD	Meter	
Hardness (as $CaCO_3$)[2]	mg/L	Grab	
Foaming Agents (MBAS)	µg/L	Grab	
Mercury, Methyl	ng/L	Grab	
Nitrate (as N)[2]	mg/L	Grab	
Nitrite (as N)[2]	mg/L	Grab	
pH[2]	Std Units	Grab	
Phosphorus, Total (as P)[2]	mg/L	24-hr Composite[4]	
Specific conductance (EC)[2]	µmhos/cm	24-hr Composite[4]	
Sulfate	mg/L	24-hr Composite[4]	
Sulfide (as S)	mg/L	Grab	
Sulfite (as SO_3)	mg/L	Grab	
Temperature[2]	°C	Grab	
Total Dissolved Solids (TDS)[2]	mg/L	24-hr Composite[4]	

[1] The reporting levels required in this table for priority pollutant constituents are established based on Section 2.4.2 and Appendix 4 of the SIP.

Parameter	Units	Effluent Sample Type	Maximum Reporting Level[1]

[2] The Discharger is not required to conduct effluent monitoring for constituents that have already been sampled in a given month, as required in Tables E-3 or E-4, except for hardness, pH, and temperature, which shall be conducted concurrently with the effluent sampling.

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

[4] 24-hour flow proportional composite.

D. Disposal Ponds

1. Monitoring Locations LND-001, LND-002, LND-003, LND-004, LND-005, and LND-006

a. The Discharger shall monitor treated wastewater discharge to the disposal ponds at Monitoring Locations LND-001, LND-002, LND-003, LND-004, LND-005, and LND-006 as follows:

Table E-9. Disposal Pond Monitoring Requirements

Parameter[6]	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dissolved Oxygen	mg/L	Grab	1/Week	[1,2]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Week	[1,2]
Freeboard	feet[3,4]	Measure	1/Week	--
Odors[5]	--	Observation	1/Week	--

[1] Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. 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 U.S. EPA-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] To be measured vertically to the lowest non-spillway point of overflow from the perimeter berm of pond system.

[4] Include estimation of volume of wastewater in each pond.

[5] As detected of the furthest downwind pond in service.

[6] Monitoring of individual disposal ponds shall only occur when there is more than 1 foot of effluent present in the disposal pond.

2. The Discharger shall inspect the condition of the ponds once per week and record visual observations in a bound logbook. Notations shall include observations of whether weeds are developing in the water or along the bank, and their location; whether burrowing animals or insects are present; and the color of the ponds (e.g., dark sparkling green, dull green, yellow, gray, tan, brown), and if there is damage to the ponds due to the Feather River flooding (e.g., which ponds are damaged and location of the damage). A summary of the entries made in the log during each month shall be submitted along with the monthly SMR. If the Discharger finds itself in violation of the Disposal Pond Operating Specifications in Special Provision VI.C.4.c of this Order, the Discharger shall briefly explain the action taken or to be taken to correct the violation. The Discharger shall certify in each annual report that it is in compliance with the Disposal Pond Operating Specifications.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. Upon written request of the Central Valley Water Board, the Discharger shall submit a summary monitoring report. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).
3. **Compliance Time Schedules.** For compliance time schedules included in the 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 time 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 (SMR's)

1. The Discharger shall electronically submit SMR's using the State Water Board's California Integrated Water Quality System (CIWQS) Program website http://www.waterboards.ca.gov/water_issues/programs/ciwqs/. The CIWQS website will provide additional information for SMR submittal in the event there will be a planned service interruption for electronic submittal.
2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections III through IX. The Discharger shall submit monthly SMR's including the results of all required monitoring using U.S. EPA-approved test methods or other test methods specified in this Order. SMR's are to include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR. Monthly SMR's are required even if there is no discharge. If no discharge occurs during the month, the monitoring report must be submitted stating that there has been no discharge.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-10. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	Submit with monthly SMR
When switching discharge points	Permit effective date	All	Submit with monthly SMR
1/Day	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with monthly SMR

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
5/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
3/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
2/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
1/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
1/Month	Permit effective date	1st day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
1/Quarter	Permit effective date	1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	1 May 1 August 1 November 1 February of following year
2/Year	Permit effective date	1 January through 30 June 1 July through 31 December	1 August 1 February of following year
1/Year	Permit effective date	1 January through 31 December	1 February of following year

4. **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 C.F.R. 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.

5. **Multiple Sample Data.** When determining compliance with an average monthly effluent limitation (AMEL), average weekly effluent limitation (AWEL), or maximum daily effluent limitation (MDEL) and more than one sample result is available, the Discharger shall

compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

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

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

6. The Discharger shall submit SMR's 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 electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.

b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the waste discharge requirements; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

c. The Discharger shall attach final laboratory reports for all contracted, commercial laboratories, including quality assurance/quality control information, with all its SMR's for which sample analyses were performed.

7. The Discharger shall submit in the SMR's calculations and reports in accordance with the following requirements:

a. **Calendar Annual Average**. For constituents which specify "calendar annual average" (electrical conductivity), the Discharger shall report the calendar annual average in the December SMR. The annual average shall be calculated as the average of the samples gathered for the calendar year.

b. **Mass Loading Limitations**. For mercury and ammonia, the Discharger shall calculate and report the mass loading (lbs/day) in the SMR's. The mass loading shall be calculated as follows:

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

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

c. **Removal Efficiency (BOD_5 and TSS).** The Discharger shall calculate and report the percent removal of BOD_5 and TSS in the SMR's. The percent removal shall be calculated as specified in Section VII.A. of the Waste Discharge Requirements.

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

e. **Dissolved Oxygen Receiving Water Limitations**. The Discharger shall calculate and report monthly in the SMR: i) the dissolved oxygen concentration, ii) the percent saturation in the main water mass, and iii) the 95th percentile dissolved oxygen concentration.

f. **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 Waste Discharge Requirements.

g. **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 when discharging at Discharge Point 001.

h. **Total Calendar Annual Mass Loading Mercury Effluent Limitations.** The Discharger shall calculate and report the total calendar annual mercury mass loading for the effluent in the December SMR. The total calendar annual mass loading values shall be calculated as specified in section VII.B of the Waste Discharge Requirements.

i. **Chlorpyrifos and Diazinon Effluent Limitations.** The Discharger shall calculate and report the value of S_{AMEL} and S_{AWEL} for the effluent, using the equations in sections IV.A.1.h of the Order, and consistent with the Compliance Determination Language in section VII.I of the Waste Discharge Requirements.

j. **Daily Average Feather River Flow.** When discharging to Discharge Point 001, the Discharger shall calculate and report the daily average flow in the Feather River using CDEC data, as specified in Table E-3, from periods when discharge to the Feather River has occurred.

C. Discharge Monitoring Reports (DMR's)

DMR's are U.S. EPA reporting requirements. The Discharger shall electronically certify and submit DMR's together with SMR's using Electronic Self-Monitoring Reports module eSMR 2.5 or any upgraded version. Electronic DMR submittal will be in addition to electronic SMR submittal. Information about electronic DMR submittal is available at the DMR website at: (http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring/).

D. Other Reports

1. **Annual Operations Report.** The Discharger shall submit a written report to the Central Valley Water Board, electronically via CIWQS submittal, containing the following by the due date in the Technical Reports Table:

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

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

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

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

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

2. **Annual Pretreatment Reporting Requirements**. The Discharger shall submit annually a report to the Central Valley Water Board, with copies to U.S. EPA Region 9 and the State Water Board, describing the Discharger's pretreatment activities over the previous 12 months (1 January through 31 December). In the event that the Discharger is not in compliance with any conditions or requirements of this Order, including noncompliance with pretreatment audit/compliance inspection requirements, then the Discharger shall also include the reasons for noncompliance and state how and when the Discharger shall comply with such conditions and requirements.

   An annual report shall be submitted by the due date shown in the Technical Reports Table and include at least the following items:

   a. A summary of analytical results from representative, flow proportioned, 24-hour composite sampling of the POTW's influent and effluent for those pollutants U.S. EPA has identified under section 307(a) of the CWA which are known or suspected to be discharged by nondomestic users. This will consist of an annual full priority pollutant scan. The Discharger is not required to sample and analyze for asbestos. The Discharger shall submit the results of the annual priority pollutant scan electronically to the Central Valley Water Board using the State Water Board's CIWQS Program Website.

      Sludge shall be sampled at BIO-001 during the same 24-hour period and analyzed for the same pollutants as the influent and effluent sampling and analysis. The sludge analyzed shall be a grab sample. Wastewater and sludge sampling and analysis shall be performed at least annually. The Discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants which may be causing or contributing to Interference, Pass-Through or adversely impacting sludge quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 C.F.R. part 136 and amendments thereto.

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

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

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

e. The Discharger shall characterize the compliance status through the year of record of each SIU by employing the following descriptions:

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

   ii. consistently achieved compliance;

   iii. inconsistently achieved compliance;

   iv. significantly violated applicable pretreatment requirements as defined by 40 C.F.R. section 403.8(f)(2)(vii);

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

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

   vii. compliance status unknown.

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

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

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

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

   i. Name of SIU;

   ii. Category, if subject to federal categorical standards;

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

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

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

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

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

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

   ix. A summary of enforcement or other actions taken during the year to return the SIU to compliance. Describe the type of action (e.g., warning letters or notices

of violation, administrative orders, civil actions, and criminal actions), final compliance date, and the amount of fines and penalties collected, if any. Describe any proposed actions for bringing the SIU into compliance;

x. Restriction of flow to the POTW.

xi. Disconnection from discharge to the POTW.

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

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

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

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

Pretreatment Program reports shall be submitted electronically to the Central Valley Water Board via CIWQS submittal and the:

State Water Resources Control Board
NPDES Wastewater@waterboards.ca.gov
and the
U.S. EPA Region 9 Pretreatment Coordinator
R9Pretreatment@epa.gov

3. **Technical Report Submittals**. This Order includes requirements to submit a Report of Waste Discharge (ROWD), special study technical reports, progress reports, and other reports identified in the MRP (hereafter referred to collectively as "technical reports"). The Technical Reports Table below summarizes all technical reports required by this Order and the due dates for submittal. All technical reports shall be submitted electronically via CIWQS submittal. Technical reports should be uploaded as a PDF, Microsoft Word, or Microsoft Excel file attachment.

Table E-11. Technical Reports

Report #	Technical Report	Due Date	CIWQS Report Name
Standard Reporting Requirements			
1	Report of Waste Discharge	31 March 2023	ROWD
2	Analytical Methods Report	8 April 2019	MRP IX.D.4
3	Most Sensitive Species Screening	31 March 2023[1]	MRP V.E
4	Annual Operations Report	30 January 2020	MRP X.D.2
5		30 January 2021	MRP X.D.2
6		30 January 2022	MRP X.D.2
7		30 January 2023	MRP X.D.2
8		30 January 2024	MRP X.D.2

Report #	**Technical Report**	**Due Date**	**CIWQS Report Name**
Other Reports			
9	Low Dissolved Oxygen Assessment Work Plan and Time Schedule	No later than 1 year from startup of discharge at the proposed diffuser	WDR VI.C.2.b.i
10	Low Dissolved Oxygen Assessment Final Report	Within 3 years and 6 months following Work Plan approval	WDR VI.C.2.b.ii
12	Antidegradation Analysis Report	1 April 2021	WDR VI.C.2.c
13	Salinity Evaluation and Minimization Plan Summary Report	31 March 2023	WDR VI.C.3.a
14	Diffuser Maintenance Technical Report	1 July 2019[2]	WDR VI.C.4.b
15		1 July 2020[2]	WDR VI.C.4.b
16		1 July 2021[2]	WDR VI.C.4.b
17		1 July 2022[2]	WDR VI.C.4.b
18		1 July 2023[2]	WDR VI.C.4.b
19	Annual Pretreatment Reports	28 February 2020	MRP X.D.3
20		28 February 2021	MRP X.D.3
21		28 February 2022	MRP X.D.3
22		28 February 2023	MRP X.D.3
23		28 February 2024	MRP X.D.3

[1] To be submitted with the Report of Waste Discharge if no significant changes occur in the nature of the discharge during the permit term.

[2] If the Feather River flow is not lower than 1 foot above the diffuser at its deepest location in the Feather River by 1 July, the Discharger shall submit a letter to the Central Valley Water Board demonstrating that Feather River flows are unsafe for the assessment and shall submit the technical report no later than 30 days after assessment or corrective actions have taken place.

ATTACHMENT F – FACT SHEET

Contents

Tables

ATTACHMENT F – FACT SHEET

As described in section II.B of this Order, the 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 discusses 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	5A510101001
CIWQS Facility Place ID	274556
Discharger	City of Yuba City
Name of Facility	Wastewater Treatment Facility
Facility Address	302 Burns Drive
	Yuba City, CA 95991
	Sutter County
Facility Contact, Title and Phone	Michael Finnigan, Wastewater Treatment Facility Supervisor, (530) 822-7696
Authorized Person to Sign and Submit Reports	Michael Finnigan, Wastewater Treatment Facility Supervisor, (530) 822-7696
Mailing Address	Same as Facility Address
Billing Address	Same as Facility Address
Type of Facility	Publicly Owned Treatment Works (POTW)
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Yes
Recycling Requirements	Not Applicable
Facility Permitted Flow	10.5 million gallons per day (MGD), average dry weather flow
Facility Design Flow	10.5 MGD
Watershed	Lower Feather
Receiving Water	Feather River
Receiving Water Type	Inland surface water

A. The City of Yuba City (hereinafter Discharger) is the owner and operator of the City of Yuba City 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 the Feather River, a water of the United States, within the Lower Feather River watershed. The Discharger was previously regulated by Order R5-2013-0094-01 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0079260 adopted on 25 July 2013, amended on 31 May 2018, and expired on 1 July 2018. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

C. When applicable, state law requires dischargers to file a petition with the State Water Board, Division of Water Rights and receive approval for any change in the point of discharge, place of use, or purpose of use of treated wastewater that decreases the flow in any portion of a watercourse. The State Water Board retains separate jurisdictional authority to enforce any applicable requirements under Water Code section 1211. This is not an NPDES permit requirement.

D. The Discharger filed a report of waste discharge (ROWD) and submitted an application for reissuance of its waste discharge requirements (WDR's) and NPDES permit on 29 December 2017. The application was deemed complete on 4 May 2018. A site visit was conducted on 16 August 2017, to observe operations and collect additional data to develop permit limitations and requirements for waste discharge.

E. Regulations at 40 C.F.R. section 122.46 limit the duration of NPDES permits to a fixed term not to exceed five years. Accordingly, Table 3 of this Order limits the duration of the discharge authorization. Under 40 C.F.R. section 122.6(d), States authorized to administer the NPDES program may administratively continue State-issued permits beyond their expiration dates until the effective date of the new permits, if State law allows it. Pursuant to California Code of Regulations, title 23, section 2235.4, the terms and conditions of an expired permit are automatically continued pending reissuance of the permit if the Discharger complies with all federal NPDES requirements for continuation of expired permits.

II. FACILITY DESCRIPTION

The Discharger provides sewerage service for the City of Yuba City and serves a population of approximately 53,000. In addition, the Facility accepts septage from unsewered portions of Sutter and Yuba Counties. The design average dry weather flow capacity of the Facility is 10.5 MGD.

Municipal and industrial wastewater treated at the Facility is either discharged to the Feather River or to disposal ponds within the levee on the eastern side of the Feather River. The Facility also uses treated wastewater for multiple processes including the spray system on primary and secondary clarifiers and belt filter presses, makeup water for polymers, reheating oxygen, and hosing down facilities in addition to landscape irrigation of 3.5 acres at the Facility. The ROWD estimates the seasonal dependent annual average daily volume used for reuse to be 0.5 MGD.

A. Description of Wastewater and Biosolids Treatment and Controls

The treatment system at the Facility consists of bar screening; aerated grit removal, primary clarification, pure oxygen aeration, secondary clarification, and chlorine disinfection. For discharges to the Feather River at Discharge Point 001, wastewater is dechlorinated using sodium bisulfite prior to discharge. The pure oxygen aeration process at the Facility, which includes three covered high purity oxygen basins, was designed to handle high and variable biochemical oxygen demand (BOD) loadings from local food processing facilities, commercial facilities, and residential areas. Among other benefits such as reductions in odor and sludge volumes, the primary advantage of pure oxygen aeration processes is that they provide a higher efficiency in oxygen transfer compared to conventional atmospheric air. Decreases in pH are typical for pure oxygen aeration systems as wastewater becomes supersaturated with carbon dioxide, so diffused air stripping is used to remove majority of saturated carbon dioxide and sodium hydroxide is used, if needed, in the chlorine contact basins. Additionally,

approximately 50 percent of the BOD loading to the Facility is from one significant industrial user (Sunsweet Growers) that discharges a nutritionally dilute industrial discharge. Polyammonium phosphate is added at the inlet box to aeration basins, as needed, to ensure adequate food-to-microorganisms ratio in the activated sludge (pure oxygen) process.

All storm water is directed to an on-site storm water basin where it may be directed to the headworks. The Discharger is permitted for storm water under the State Water Board's Industrial Storm Water General Order.

Biosolids are thickened using rotary drum thickeners and then anaerobically digested in two digesters. Digested biosolids are dewatered by belt filter press and disposed of off-site as landfill cover material. The facility produces approximately 1,200 dry metric tons of dried biosolids annually. Transportation and disposal/reuse of the biosolids is regulated by U.S. EPA under 40 C.F.R. part 503.

The Facility is equipped with three composite bed biofilters that are used to control odors from headworks, primary clarification, and dewatering building operations.

Secondary-level treated effluent from the Facility may be discharged to the Feather River via a multiport diffuser at Discharge Point 001 or may be directed to a series of six disposal ponds located within the Feather River levee. Each disposal pond is roughly 1 million square feet in size; the total capacity of the six disposal ponds is approximately 179 million gallons. At the ponds, the depth to groundwater is approximately 30 feet. The Facility can discharge to any pond at any time. There is no operational plan on which disposal pond to use and when. The Facility's historical goal is to have all disposal ponds dry by 1 November of each year provided an operational outfall.

The six disposal ponds are at varying elevations such that the flow will cascade from the first pond to the last pond depending on the water level of the pond (Pond 1 is the highest elevation and Pond 6 is the lowest elevation). When flooding occurs Pond 6 will receive flood waters first, then Pond 5, etc. Due to the limitations on discharges to Discharge Point 001 and, consequently, increased discharge to the ponds, the ponds may exceed their capacity during and following large storm events.

In October 2011, the Feather River at Shanghai Falls eroded to form a new path for water. Subsequently, the high water from storms in 2016 and 2017 and the Oroville Dam Incident increased the erosion significantly. In order to ensure that discharges to the Feather River via the diffuser at Discharge Point 001 receive adequate dilution, this Order prohibits discharges at Discharge Point 001 when the depth of water over the diffuser is less than an average of 0.8 feet, which corresponds to a receiving water flow of approximately 10,000 cubic feet per second (cfs). When the depth of water over the diffuser is less than an average of 0.8 feet, the Discharger must discharge to the disposal ponds at Discharge Point 002.

Due to the Oroville Dam Incident and storms in 2016 and 2017, the sediment was deposited into the disposal ponds, and the disposal pond berms were damaged. The Discharger has been granted funding from the Federal Emergency Management Agency under the Hazard Mitigation Grant to add rip rap to disposal pond berm slopes, remove disposal pond sediment, and repair the disposal ponds' bottoms for improved percolation in disposal ponds 3 through 6. In order to complete the repairs, four of the six disposal ponds will need to be adequately dry to allow heavy equipment to enter the ponds. In order to complete the work, the Discharger will need to dry the proposed disposal ponds starting in February of the year construction is to begin and has projected construction activities to take place during the summer of either 2019 or 2020 depending on timing of funding, weather, etc.

B. Discharge Points and Receiving Waters

1. The Facility is located in Section 7-010-001, T15N, R3E, MDB&M, as shown in Attachment B, a part of this Order.
2. Treated municipal and industrial wastewater is discharged at Discharge Point 001 to the Feather River, a water of the United States at a point latitude 39° 05' 29" N and longitude 121° 35' 53" W. According to the mixing zone analysis provided as part of Order R5-2007-0134, the multi-port diffuser is located above the normal bank of the Feather River. The diffuser consists of 40 ports each of 3 inches in diameter, located 4 feet on center. The total diffuser length is 156 feet.
3. The wastewater may also be discharged to one of six disposal ponds located within the floodplain of the Feather River to the Feather River at a point latitude 39º 04' 53" N and longitude 121º 35' 56" W at Discharge Point 002.

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

Effluent limitations contained in Order R5-2013-0094-01 for discharges from Discharge Points 001 and 002 and representative monitoring data for discharges from Discharge Points 001 and 002 (Monitoring Location EFF-001/EFF-002) from the term of Order R5-2013-0094-01 are summarized in the following table.

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Monitoring Data (June 2014 to May 2017)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Flow	MGD	--	--	10.5[1]	--	--	8.6[2]
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	30	45	60	13.5	20	34
	lbs/day[3]	2,627	3,941	5,254	604	841	1,451
	% Removal	85	--	--	96.9[4]	--	--
pH	standard units	--	--	6.5[5] – 8.5	--	--	6.4 – 9.6
Total Suspended Solids	mg/L	30	45	60	14.9	21.1	39
	lbs/day[3]	2,627	3,941	5,254	671	947	1,779
	% Removal	85	--	--	95.1[4]	--	--
Bis (2-ethylhexyl) Phthalate	µg/L	27	--	82	1.8	--	1.9
Copper, Total Recoverable	µg/L	50	--	85	8.3	--	8.5
Dichlorobromomethane	µg/L	10	--	30	1.4	--	1.4
Lead, Total Recoverable	µg/L	2.1	--	3.3	0.52	--	0.52
Ammonia Nitrogen, Total (as N)	mg/L	31	--	60	32.2	--	50
	lbs/day[3]	2,715	--	5,254	1,238	--	2,361
Nitrite Nitrogen, Total (as N)	mg/L	11	--	--	0.7	--	--
Settleable Solids[6]	ml/L	0.1	--	0.2	ND	--	30
Chlorine, Total Residual[6]	mg/L	--	0.011[7]	0.019[8]	--	--	ND

Parameter	Units	Effluent Limitation			Monitoring Data (June 2014 to May 2017)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Total Coliform Organisms	MPN/100 mL	--	23[9]	240[10]	--	--	170
Mercury, Total Recoverable	lbs/month	0.056[11]	--	--	0.030	--	--
Diazinon and Chlorpyrifos	µg/L	[12]	--	[13]	ND	--	ND
Manganese, Total Recoverable	µg/L	200[14]	--	--	29.4[15]	--	--
Acute Toxicity	% Survival	--	--	70[16]/90[17]	--	--	85[18]
Chronic Toxicity	TUc	--	--	[19]	--	--	>47.6[20]

ND = Non-Detect

1 Applied as an average dry weather flow effluent limitation.

2 Represents the maximum observed daily discharge flow.

3 Mass-based effluent limitations are based on a permitted average dry weather flow of 10.5 MGD.

4 Represents the minimum reported percent removal.

5 The instantaneous minimum effluent limitation for pH is limited to 6.0 standard units for discharges at Discharge Point 002.

6 Applicable at Discharge Point 001 only.

7 Applied as a 4-day average effluent limitation.

8 Applied as a 1-hour average effluent limitation.

9 Applied as a 7-day median effluent limitation.

10 Not to be exceeded more than once in any 30-day period.

11 The total monthly mass discharge of total mercury shall not exceed 0.056 lbs.

12 Average Monthly Effluent Limitation

$$S_{AMEL} = \frac{C_{D\,avg}}{0.079} + \frac{C_{C\,avg}}{0.012} \leq 1.0$$

$C_{D\text{-}avg}$ = average monthly diazinon effluent concentration in µg/L.

$C_{C\text{-}avg}$ = average monthly chlorpyrifos effluent concentration in µg/L.

13 Maximum Daily Effluent Limitation

$$S_{MDEL} = \frac{C_{D\,max}}{0.16} + \frac{C_{C\,max}}{0.025} \leq 1.0$$

$C_{D\text{-}max}$ = maximum daily diazinon effluent concentration in µg/L.

$C_{C\text{-}max}$ = maximum daily chlorpyrifos effluent concentration in µg/L.

14 Applied as an annual average effluent limitation.

15 Represents the maximum reported calendar year annual average concentration in calendar years 2014 through 2016, which occurred in calendar year 2014.

16 Minimum percent survival for any one bioassay.

17 Median percent survival of three consecutive acute bioassays.

18 Represents the minimum observed percent survival.

19 There shall be no chronic toxicity in the effluent discharge.

20 Suspected pathogen interference.

D. Compliance Summary

1. The Central Valley Water Board issued Administrative Civil Liability (ACL) Complaint No. R5-2013-0530 on 26 April 2013 which proposed to assess an administrative civil liability in the amount of $6,000 against the Discharger for two effluent limitations violation for

settleable solids and diazinon from 1 March 2011 to 31 December 2012. The Discharger paid the mandatory minimum penalty of $6,000.

2. The Central Valley Water Board issued ACL Complaint No. R5-2014-0555 on 8 September 2014 which proposed to assess an administrative civil liability in the amount of $30,000 against the Discharger for ten effluent limitations violation for settleable solids, pH, and total residual chlorine from 1 January 2013 to 31 March 2014. The Discharger paid the mandatory minimum penalty of $30,000.
3. The Central Valley Water Board issued ACL Complaint No. R5-2015-0531 on 14 September 2015 which proposed to assess an administrative civil liability in the amount of $12,000 against the Discharger for five effluent limitations violation for settleable solids, pH, and total coliform from 1 April 2014 to 30 June 2015. The Discharger paid the mandatory minimum penalty of $12,000.
4. A compliance inspection of the Facility was conducted on 30 October 2014. No major findings were reported.

E. Planned Changes

The Feather River channel has shifted in the vicinity of Discharge Point 001 such that, at normal non-storm event flows, the diffuser is no longer submerged. In order to ensure that discharges to the Feather River via the diffuser at Discharge Point 001 receive adequate dilution, this Order prohibits discharges at Discharge Point 001 when the depth of water over the diffuser is less than average of 0.8 feet, which corresponds to a receiving water flow of 10,000 cfs. To regain the ability to discharge to the river under all river flows, the Discharger is proposing to locate and install a new diffuser downstream of Shanghai Falls in the deeper, more stable stretch of the river. The proposed configuration of the piping would allow the treated effluent to be discharged to the ponds, the river, or a combination of both which would also add operational flexibility. The Discharger estimates a 5-year schedule will be necessary to locate, design, permit, fund, and construct a new diffuser. The Discharger included preliminary modeling of dilution for the proposed diffuser, *2017 CORMIX Update for Proposed Diffuser in Feather River*, dated 16 December 2017, prepared by Larry Walker Associates, but has not requested that the new discharge location be considered for inclusion in this Order. Prior to discharging at a new location, the Discharger must submit a new ROWD and antidegradation analysis. Additionally, requests for mixing zones/dilution credits and effluent limitations based on dynamic modeling must be supported by new studies specific to the new discharge location.

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 WDR's pursuant to article 4, chapter 4, division 7 of the California 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 U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an 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 an 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 Plans.

   a. **Basin Plan.** The Central Valley Water Board adopted a Water Quality Control Plan for the Water Quality Control Plan, Fifth Edition (Revised May 2018), for the Sacramento and San Joaquin River Basins (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Requirements in this Order implement the Basin Plan. In addition, the Basin Plan implements State Water Board Resolution 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to Feather River are as follows:

Table F-3. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001 and 002	Feather River	Existing: Municipal and domestic supply (MUN); agricultural supply, including irrigation (AGR); water contact recreation, including canoeing and rafting (REC 1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); warm and cold migration of aquatic organisms (MIGR); warm and cold spawning, reproduction, and/or early development (SPWN); and wildlife habitat (WILD).
002	Groundwater	Existing: Municipal and domestic supply (MUN); agricultural supply (AGR); industrial service supply (IND); and industrial process supply (PROC).

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** U.S. EPA 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, U.S. EPA 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 U.S. EPA 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 U.S. EPA through the CTR. The State Water Board adopted amendments to the SIP on 24 February 2005, that became effective on 13 July 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

4. **Antidegradation Policy.** Federal regulation 40 C.F.R. section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal

policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16 ("Statement of Policy with Respect to Maintaining High Quality of Waters in California") (State Anti-Degradation Policy). The State Anti-Degradation Policy is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. The State Anti-Degradation Policy requires that existing water quality 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 C.F.R. section 131.12 and the State Anti-Degradation Policy. The Board finds this order is consistent with the Federal and State Water Board antidegradation regulations and policy.

5. **Anti-Backsliding Requirements.** Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 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. **Domestic Water Quality.** 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 limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

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

   The most recent toxic chemical data report does not indicate any reportable off-site releases or discharges to the collection system for this Facility. Therefore, a reasonable potential analysis based on information from EPCRA cannot be conducted. Based on information from EPCRA, there is no reasonable potential to cause or contribute to an excursion above any numeric water quality objectives included within the Basin 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.** U.S. EPA promulgated federal regulations for storm water on 16 November 1990 in 40 C.F.R. parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from wastewater treatment facilities. Wastewater treatment plants are applicable industries under the storm water program and are obligated to comply with the federal regulations. The Discharger has submitted a Notice of Intent (NOI) and been approved for coverage under the State Water Resources Control Board (State Water Board) Water Quality Order 2014-0057-DWQ, General Permit for Storm Water Discharges Associated with Industrial Activities (NPDES General Permit No. CAS000001). Therefore, this Order does not regulate storm water.

10. **Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.** 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 State Water Board amended the MRP for the General Order through Order WQ 2013-0058-EXEC on 6 August 2013. The General Order requires public agencies that own or operate sanitary sewer systems with greater than 1 mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMP's) and report all sanitary sewer overflows (SSO's), among other requirements and prohibitions.

    The Discharger is subject to the requirements of, and must comply with, State Water Board Order 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, as amended by State Water Board Order WQ 2013-0058-EXEC and any subsequent order.

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

1. Under section 303(d) of the 1972 CWA, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 6 April 2016, U.S. EPA gave final approval to California's 2014 and 2016 section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (WQLSs), which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources* (40 C.F.R. part 130, et seq.)." The Basin Plan also states, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment*." The listing for the Lower Feather River (Lake Oroville Dam to the confluence with the Sacramento River) includes: chlorpyrifos, Group A pesticides, mercury, polychlorinated biphenyls (PCB's), and toxicity.

2. **Total Maximum Daily Loads (TMDL's).** Table F-4, below, identifies the 303(d) listings and any applicable TMDL's. This permit includes WQBEL's that are consistent with the assumptions and considerations of the applicable WLAs in the Basin Plan Amendment for the Control of Diazinon and Chlorpyrifos Runoff into the Sacramento and Feather Rivers (see this Fact Sheet section IV.C.3).

Table F-4. 303(d) List for the Lower Feather River

Pollutant	Potential Sources	TMDL Status
Chlorpyrifos	Source Unknown	Adopted and Effective (11 August 2008)
Group A Pesticides	Source Unknown	Planned for Completion (2011)
Mercury	Source Unknown	Planned for Completion (2027)
PCB's	Source Unknown	Planned for Completion (2021)
Toxicity	Source Unknown	Planned for Completion (2027)

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

E. Other Plans, Policies, 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.

   The Facility receives influent primarily from domestic sources and the Discharger is currently permitted to discharge up to 10.5 MGD of treated wastewater to a series of six unlined disposal ponds within the Feather River floodplain. Wastewater is left in the ponds to evaporate/percolate.

   In order to qualify for an exemption from Title 27 under section 20090(b), the Discharger must demonstrate compliance with the Basin Plan, which requires that constituent concentrations in the groundwater do not exceed either the Basin Plan's groundwater water quality objectives or background groundwater concentrations, whichever is greater. The Discharger has a groundwater monitoring network that consists of eight monitoring wells (GW-001 through GW-008). According to the Discharger's 24 October 2008 Hydrogeologic Assessment Report, Yuba City Wastewater Treatment Facility (Kennedy/Jenks Consultants), monitoring wells GW-004, GW-005, and GW-006 are up gradient of the ponds and monitoring wells GW-001, GW-002, GW-003, and GW-008 are down gradient of the ponds. Monitoring well GW-007 is located on the opposite side of the river from the disposal ponds to monitor background concentrations.

   Based on data collected between February 2004 and December 2004, the Central Valley Water Board determined in Order R5-2013-0094 that the discharges from the disposal ponds to groundwater were in compliance with the Basin Plan.

   Based on groundwater monitoring conducted during the term of Order R5-2013-0094-01, this Order reaffirms that discharges from the ponds to groundwater are in compliance with the Basin Plan. Therefore, the discharges meet the pre-conditions for an exemption to the requirements of Title 27 pursuant to Title 27 CCR section 20090(b). This Order

requires the Discharger to continue groundwater monitoring to evaluate impacts to groundwater and assure protection of beneficial uses.

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 C.F.R. § 122.44(d)(1)]. NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to federal regulations, 40 C.F.R. section 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that "*are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality."* Federal regulations, 40 C.F.R. section 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 C.F.R. section 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 C.F.R. section 122.44(d) requires that permits include WQBEL's 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 4-27, 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 C.F.R. section 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) U.S. EPA'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 C.F.R. § 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 Section 3.1.20). 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 limits more stringent than MCLs. The narrative tastes and odors objective states: "*Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.*"

A. Discharge Prohibitions

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

3. **Prohibition III.C (No controllable condition shall create a nuisance).** This prohibition is based on Water Code section 13050 that requires water quality objectives established for the prevention of nuisance within a specific area. The Basin Plan prohibits conditions that create a nuisance.

4. **Prohibition III.D (No discharge of hazardous waste).** This prohibition is based on California Code of Regulations, title 22, section 66261.1 et seq, that prohibits discharge of hazardous waste.

5. **Prohibition III.E (Average dry weather flow).** This prohibition is based on the design average dry weather flow treatment capacity rating for the Facility and ensures the Facility is operated within its treatment capacity. Previous Order R5-2013-0094-01 included flow as an effluent limit based on the facility design flow. Flow is not a pollutant and therefore has been changed from an effluent limit to a discharge prohibition in this Order, which is an equivalent level of regulation. This Order is not less stringent because compliance with flow as a discharge prohibition will be calculated the same way as the previous Order.

6. **Prohibition III.F (No discharge to the Feather River at Discharge Point 001 when depth of water over the diffuser is below an average of 0.8 feet).** The Feather River has at Shanghai Falls eroded to form a new path for water as a result of storm events in 2011, 2016/2017, and the Oroville Dam Incident. At normal non-storm event flows, the diffuser is not submerged. In order to ensure that discharges to the Feather River via the diffuser at Discharge Point 001 receive adequate dilution, this Order prohibits discharges at Discharge Point 001 when the depth of water over the diffuser is less than an average of 0.8 feet, which corresponds to a receiving water flow of approximately 10,000 cfs based on data collected since the Oroville Dam Incident in February 2017. A flow of 10,000 cfs in the Feather River is considered a conservative value that allows for the diffuser to be submerged an average of 0.8 feet; therefore, when discharging to

Discharge Point 001 and daily average flows in the Feather River are greater than or equal to 10,000 cfs, the Discharger will be considered in compliance with this discharge prohibition. For daily average Feather River flows less than 10,000 cfs while discharge to Discharge Point 001, compliance shall be determined by the average measurement of depth over the diffuser. Due to changing channel morphology, this minimum flow compliance threshold will be re-evaluated at the next permit renewal.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing U.S. EPA permit regulations at 40 C.F.R. section 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 C.F.R. part 133.

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

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTW's [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 U.S. EPA Administrator.

Based on this statutory requirement, U.S. EPA developed secondary treatment regulations, which are specified in 40 C.F.R. 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, total suspended solids (TSS), and pH.

2. Applicable Technology-Based Effluent Limitations

a. **BOD_5 and TSS.** Federal regulations at 40 C.F.R. 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 C.F.R. section 133.102, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal shall not be less than 85 percent. This Order contains a limitation requiring an average of 85 percent removal of BOD_5 and TSS over each calendar month.

b. **pH.** The secondary treatment regulations at 40 C.F.R. part 133 also require that pH be maintained between 6.0 and 9.0 standard units. This Order, however, requires more stringent WQBEL's for pH to comply with the Basin Plan's water quality objectives for pH.

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

Table F-5. Summary of Technology-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	30	45	--	--	--
	% Removal	85	--	--	--	--
pH[1]	standard units	--	--	--	6.0	9.0
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	30	45	--	--	--
	% Removal	85	--	--	--	--

[1] Note that more stringent WQBEL's for pH are applicable and are established as final effluent limitations in this Order (see section IV.C.3 of this Fact Sheet).

C. Water Quality-Based Effluent Limitations (WQBEL's)

1. Scope and Authority

CWA Section 301(b) and 40 C.F.R. section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

Section 122.44(d)(1)(i) of 40 C.F.R. 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, WQBEL's must be established using: (1) U.S. EPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBEL's 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.

Finally, 40 C.F.R. section 122.44(d)(1)(vii) requires effluent limits to be developed consistent with any available wasteload allocations developed and approved for the discharge.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Board Resolution No. 88-63, which established state policy that all waters, with certain

exceptions, should be considered suitable or potentially suitable for municipal or domestic supply.

The Basin Plan on page 2-1 states: "*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning…*" and with respect to disposal of wastewaters states that "...*disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses.*"

The federal CWA section 101(a)(2), states: "*it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983.*" Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal Regulations, 40 C.F.R. 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 C.F.R. section 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 C.F.R. section 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

a. **Receiving Water and Beneficial Uses.** The Discharger discharges to the Feather River a Discharge Points 001 via an in-stream diffuser and 002 the disposal ponds. The discharge to the Feather River is approximately 20 miles above the confluence with the Sacramento River and 25 miles north of Sacramento. Both the Feather and Yuba Rivers have major dams and are used to convey water. Low flow periods typically occur in the non-storm periods of winter due to the low demand for water. The Feather River is controlled by the Oroville Dam and Thermalito Afterbay and operated to maintain minimum flowrates per agreement between the California Department of Water Resources and Department of Fish and Wildlife. The Yuba River flowrates are controlled by New Bullards Bar and Englebright dams operated to meet the 2007 Lower Yuba River Accord (LYRA).

   In October 2011, river flows eroded Shanghai Falls to form a new path for water, routing the water through a narrow center section of the falls. Shanghai Falls also moved upstream of the current diffuser location. Prior to October 2011, Shanghai Falls were over 200 feet downstream of the diffuser. The channel has continued to change and divert water away from the existing diffuser location. Significant channel erosion took place in 2017 during releases from the Oroville Dam spillway when flows were as high as 150,000 cfs (Oroville Dam Incident).

   Refer to III.C.1. above for a complete description of the receiving water and beneficial uses.

b. **Effluent and Ambient Background Data.** The reasonable potential analysis (RPA), as described in section IV.C.3 of this Fact Sheet, was based on data collected at Monitoring Location EFF-001/EFF-002 prior to discharges at Discharge Point 001 and 002 from June 2013 through May 2017 which includes effluent and ambient background data submitted in SMR's.

c. **Assimilative Capacity/Mixing Zone**

i. **Regulatory Guidance for Dilution Credits and Mixing Zones.** The CWA directs the states to adopt water quality standards to protect the quality of its waters. U.S. EPA's current water quality standards regulation authorizes states to adopt general policies, such as mixing zones, to implement state water quality standards (40 C.F.R. § 122.44 and 122.45). The U.S. EPA allows states to have broad flexibility in designing its mixing zone policies. Primary policy and guidance on determining mixing zone and dilution credits is provided by the SIP and the Basin Plan. If no procedure applies in the SIP or the Basin Plan, then the Central Valley Water Board may use the U.S. EPA *Technical Support Document for Water Quality-Based Toxics Control* (EPA/505/2-90-001) (TSD).

For non-priority pollutant constituents the allowance of mixing zones by the Central Valley Water Board is discussed in the Basin Plan, *Policy for Application of Water Quality Objectives*, which states in part, "*In conjunction with the issuance of NPDES and storm water permits, the Regional Board may designate mixing zones within which water quality objectives will not apply provided the discharger has demonstrated to the satisfaction of the Regional Board that the mixing zone will not adversely impact beneficial uses. If allowed, different mixing zones may be designated for different types of objectives, including, but not limited to, acute aquatic life objectives, chronic aquatic life objectives, human health objectives, and acute and chronic whole effluent toxicity objectives, depending in part on the averaging period over which the objectives apply. In determining the size of such mixing zones, the Regional Board will consider the applicable procedures and guidelines in the EPA's Water Quality Standards Handbook and the* [TSD]*. Pursuant to EPA guidelines, mixing zones designated for acute aquatic life objectives will generally be limited to a small zone of initial dilution in the immediate vicinity of the discharge.*"

For priority pollutants, the SIP supersedes the Basin Plan mixing zone provisions. Section 1.4.2 of the SIP states, in part, "…*with the exception of effluent limitations derived from TMDL's, in establishing and determining compliance with effluent limitations for applicable human health, acute aquatic life, or chronic aquatic life priority pollutant criteria/objectives or the toxicity objective for aquatic life protection in a basin plan, the Regional Board may grant mixing zones and dilution credits to dischargers…The applicable priority pollutant criteria and objectives are to be met through a water body except within any mixing zone granted by the Regional Board.* ***The allowance of mixing zones is discretionary and shall be determined on a discharge-by-discharge basis.*** *The Regional Board may consider allowing mixing zones and dilution credits only for discharges with a physically identifiable point of discharge that is regulated through an NPDES permit issued by the Regional Board*." [emphasis added]

For incompletely-mixed discharges, the Discharger must complete an independent mixing zone study to demonstrate to the Central Valley Water Board that a dilution credit is appropriate. In granting a mixing zone, Section 1.4.2.2 of the SIP requires the following to be met:

"***A mixing zone shall be as small as practicable****. The following conditions must be met in allowing a mixing zone:* [emphasis added]

A: A mixing zone shall not:

1. compromise the integrity of the entire water body;

2. cause acutely toxic conditions to aquatic life passing through the mixing zone;

3. restrict the passage of aquatic life;

4. adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws;

5. produce undesirable or nuisance aquatic life;

6. result in floating debris, oil, or scum;

7. produce objectionable color, odor, taste, or turbidity;

8. cause objectionable bottom deposits;

9. cause nuisance;

10. dominate the receiving water body or overlap a mixing zone from different outfalls; or

11. be allowed at or near any drinking water intake. A mixing zone is not a source of drinking water. To the extent of any conflict between this determination and the Sources of Drinking Water Policy (Resolution No. 88-63), this SIP supersedes the provisions of that policy."

Section 1.4.2.1 of the SIP establishes the authority for the Central Valley Water Board to consider dilution credits based on the mixing zone conditions in a receiving water. Section 1.4.2.1 in part states:

"*The dilution credit, D, is a numerical value associated with the mixing zone that accounts for the receiving water entrained into the discharge. The dilution credit is a value used in the calculation of effluent limitations (described in Section 1.4).* ***Dilution credits may be limited or denied on a pollutant-by-pollutant basis, which may result in a dilution credit for all, some, or no priority pollutants in the discharge.***" [emphasis added]

The mixing zone is thus an administrative construct defined as an area around the outfall that may exceed water quality objectives but is otherwise protective of the beneficial uses. Dilution is defined as the amount of mixing that has occurred at the edge of this mixing zone under critical conditions, thus protecting the beneficial uses at the concentration and for the duration and frequency required.

ii. **2007 Mixing Zone and Dilution Credits.** Flows in the Feather River originate in the Sierras and converge in the Lake Oroville Reservoir, located 5 miles northeast of Oroville. From the reservoir, the Feather River flows south across the Sacramento Valley, east of Sutter Buttes past Oroville and Yuba City and Marysville and joins the Sacramento River from the north. The Yuba River and Bear River are tributary to the Feather River east and south of Yuba City, respectively. Flow in the Feather River at the point of discharge from the Facility is affected by upstream flow in the Feather River, as well as flow in the Yuba River. Due to concerns over low flow conditions that could occur below historical levels in the Feather River at the point of discharge from the Facility, the Discharger completed a technical report assessing the impact of full

utilization of water right withdrawals on critical low flows on 5 December 2003. According to the report, the Feather and Yuba Rivers are operated to maintain minimum flow rates regardless of flow diversions. The flow of the Feather River is operated in accordance with a 26 August 1983 agreement between the Department of Water Resources (DWR) and the California Department of Fish and Wildlife (DFW) entitled "*Concerning the Operation of the Oroville Division of the State Water Project for Management of Fish and Wildlife.*" This agreement states that a minimum flow of 1,000 cfs must be maintained by releases from the Oroville Reservoir (Thermolito Diversion Dam) along all stretches of the Feather River from the Thermolito Afterbay to the mouth of the Feather River at Verona. Releases from the reservoir are limited to prevent water elevations in the reservoir to fall below 733 feet. When releases are limited, the Feather River flow could be as low as 750 cfs. The flow in the Yuba River is controlled under the 1 March 2001 State Water Board Decision 1644. Under this decision, flows in the Yuba River are to be maintained at 250 cfs except under hydrologic critical years, where the flow at Marysville will be 100 cfs.

Concurrent with the development of Order R5-2007-0134, the Discharger requested dilution credits for a number of parameters. The Discharger supported the request with a number of technical reports related to evaluation of the mixing zone in the vicinity of the discharge to the Feather River. The Discharger used the Cornell Mixing Zone Expert System (CORMIX) to model the dilution characteristics of the Facility discharge to the Feather River through the diffuser. As a result of the review of these studies, the Central Valley Water Board granted mixing zones and dilution credits in Order R5-2007-0134 as summarized in the table below.

Table F-6. Regulatory Mixing Zone Sizes and Dilution

Regulatory Mixing Zone Sizes and Dilution	River Flowrate (cfs)	Effluent Flowrate (MGD)	Distance Downstream (feet)	Dilution (D)[1]
Acute	1,000	15.2	8[2]	11
Chronic	1,000	14.3	160[3]	12
Human Health	3,600[4]	10.5	1,200	221

1 Dilutions evaluated at receiving water and effluent flowrates specified in Table 3 of the SIP.
2 Distance to zone of initial dilution at 1Q10 flowrate of 1,000 cfs.
3 Nominal distance from diffuser to lip of Shanghai Falls (Larry Walker Associates, "CORMIX Updates for 3-Year Data Window and Future Critical Flows", Technical Memorandum to Bill Lewis, Maria Solis, and Michael Paulucci of the Yuba City WRP, dated January 29, 2007).
4 Calculated harmonic mean flowrate.

iii. **2013 Mixing Zone and Dilution Credits.** In October 2011, partial collapse of the rock shelf which comprised Shanghai Falls occurred. The rock shelf restricted the river flow at Shanghai Falls which resulted in higher upstream river surface elevations than would otherwise occur. After the collapse of Shanghai Falls, the surface elevation of the river dropped such that the diffuser was no longer submerged beneath the Feather River year-round.

To support continuation of the dilution credits granted in Order R5-2007-0134-01 in light of the 2011 changes to the Feather River in the vicinity of Discharge Point 001, the Discharger provided additional information in the 3 April 2012 ROWD and in a 11 September 2012 *2012 CORMIX Update for Current Diffuser in the Feather* River (Larry Walker Associates) (referred to as 2012 CORMIX Update Study). Previous CORMIX modeling determined flow

of an average of 0.8 feet of water over the diffuser as the level of critical low flow depth. The 2012 CORMIX Update Study maintained the critical low flow depth of an average of 0.8 feet over the diffuser but with an increase in the minimum flow required (i.e., 6,500 cfs) to match the new flow regime where an average of 0.8 feet over the diffuser was maintained. All other data was maintained from the previous CORMIX modeling with the exceptions of the following, which were updated to reflect updated information:

(a) As documented in the 3 March 2011 *Analysis of Minimum Flows Expected in the Feather River and the Yuba River in the Vicinity of Yuba City* (Larry Walker Associates), the Discharger conservatively estimated the 1Q10 and 7Q10 flow rates at 1,200 cfs and 1,236 cfs, respectively (and based on the operations agreements for Oroville Reservoir and Thermolito Afterbay on the Feather River and the New Bullard Bar Reservoir on the Yuba River).

(b) As documented in the 12 October 2012 Harmonic Mean Flowrate and Human Health Dilution Update (Larry Walker Associates), the harmonic mean flow was updated based on data from October 1968 through October 2012 using data collected by the United States Geological Survey (USGS) and DWR for the Feather River at Gridley and the Yuba River at Marysville. The harmonic mean calculated from the updated dataset is 3,612 cfs.

As shown in the table below, the 2012 CORMIX Update Study demonstrated that the resulting dilutions associated with the minimum flow required (i.e., 6,500 cfs) were greater than those used as the basis for the dilution credits provided under Order R5-2007-0134-01.

Table F-7. Comparison of Mixing Zone Dilution Ratios in the 2012 CORMIX Update Study to Order R5-2013-0094

Regulatory Mixing Zone	Dilution (D) Under Revised Feather River Flow Regime	Dilution (D) Under Order R5-2007-0134-01
Acute	51	11
Chronic	56	12
Human Health	222	221

According to the 2012 CORMIX Update Study, the diffuser was submerged when flows in Feather River exceeded 4,650 cfs and was exposed to the atmosphere when flows were less than 4,650 cfs. Based on the new flow regime, the CORMIX model was run by the Discharger for receiving water flow rates ranging from 5,500 cfs to 7,500 cfs. At a receiving water flow of 6,500 cfs (corresponding to a river depth submerging the diffuser in an average of 0.8 feet of water, that represents the water depth that used to occur at the critical river flowrate), the model estimated that the water column would be completely mixed at a distance of 4.0 feet from the diffuser (which represents a shorter distance to achieve complete mixing when compared to the acute mixing zone of 8 feet as established in Order R5-2007-0134-01).

Based on the results of the 2012 CORMIX Update Study, the Central Valley Water Board retained the dilution factors granted under Order R5-2007-0134-01 in Order R5-2013-0094-01 and prohibited discharges to the river when the depth of water over the diffuser is below an average of 0.8 feet.

iv. **Applicability of Existing Mixing Zone and Dilution Credits.** Significant channel erosion took place in during the Oroville Dam Incident where releases from the Oroville Dam spillway resulted in flows as high as 150,000 cfs in the Feather River at Discharge Point 001. Currently, the diffuser is adequately submerged (i.e., average depth of 0.8 feet over the diffuser) at flows of approximately 10,000 cfs. The flowrate required to submerge the diffuser has continued to increase as the river channel erodes and may increase further in the future.

Given the uncertainty of possible changes to the river bed configuration in the future, use of a water level trigger of an average of 0.8 feet over the diffuser will ensure that adequate river flow is available to mix with the Facility effluent and protect aquatic life and human health.

Since the proposed water level trigger requires significantly higher flow rates for discharges at Discharge Point 001 to occur (greater than 10,000 cfs as of adoption of this Order), significantly more dilution will be available when discharging than the assumptions on which the dilution credits allowed in Order R5-2007-0134-01 and the 2012 CORMIX Update Study were based. Given that no change has been requested for the existing dilution credits, the conditions stipulated in the SIP for granting dilution credits (e.g., the mixing zone will not cause acutely toxic conditions to aquatic life passing through the mixing zone) will continue to be met under the new flow regime and discharge flow (based on the water level trigger). In addition, the discharge of effluent will only be allowed during receiving water flows which substantially exceed the critical low flows.

As described previously in Section II.E of this Fact Sheet, the Discharger is proposing to locate and install a new diffuser within the next 5 years downstream of the Shanghai Falls in the deeper more stable stretch of the river to allow the Discharger to regain the ability to discharge to the river under all flow conditions. Prior to discharging at the new location, the Discharger must submit a new mixing zone study, antidegradation analysis, and ROWD.

Consistent with Orders R5-2007-0134-01 and R5-2013-0094-01, this Order applies the same dilution credits at Discharge Points 001 and 002. The Discharger submitted a 23 October 2008 Disposal Pond Study that concluded that the effluent limitations for discharges to the ponds established with the same dilution credits as Discharge Point 001 are protective of water quality objectives when the ponds are inundated. Although evaporation does increase constituent concentrations in the ponds, the significant amounts of dilution available during flood stages reduces the constituent concentrations when the ponds are inundated.

v. **Evaluation of Available Dilution for Acute and Chronic Aquatic Life Criteria.** U.S. EPA Region VIII, in its "*EPA Region VIII Mixing Zones and Dilution Policy*", recommends no dilution for acute aquatic life criteria, stating the following, "*In incomplete mix situations, discharge limitations to implement acute chemical-specific aquatic life criteria and narrative (no acute toxicity) criteria shall be based on achieving such acute criteria at the end-of-pipe (i.e., without an allowance for dilution). This approach is intended to implement the narrative requirement prohibiting acutely toxic conditions in the mixing zone*."

The Discharger has requested acute and chronic aquatic life mixing zones for compliance with acute and chronic water quality criteria for ammonia and

copper. Based on the mixing zone studies, the requested acute and chronic mixing zones are 8 feet and 160 feet downstream, respectively.

The acute and chronic aquatic life mixing zones meet the requirements of the SIP as follows:

(a) Shall not compromise the integrity of the entire water body – The TSD states that, "If the total area affected by elevated concentrations within all mixing zones combined is small compared to the total area of a water body (such as a river segment), then mixing zones are likely to have little effect on the integrity of the water body as a whole, provided that the mixing zone does not impinge on unique or critical habitats."[1] The mixing zones are small and make up less than one-half of the stream width. The aquatic life mixing zones do not compromise the integrity of the entire water body.

(b) *Shall not cause acutely toxic conditions to aquatic life passing through the mixing zone* – The SIP requires that the acute mixing zone be appropriately sized to prevent lethality to organisms passing through the mixing zone. U.S. EPA recommends that float times through a mixing zone less than 15 minutes ensure that there will not be lethality to passing organisms. The acute mixing zone extends 8 feet downstream of the diffuser. The Discharger's previous CORMIX studies calculated the time required to reach the end of the acceleration zone, and conservatively estimated travel times by directly proportioning the time required with the fraction of the total acceleration zone distance. For the case of the 1Q10 of 1,000 cfs and peak day effluent flowrate of 15.2 MGD, the acceleration zone is approximately 80 feet long and CORMIX calculates the total travel time to be 28 seconds. The conservative estimate of the time required to traverse the 4 feet from the diffuser to the 5 river depths length scale distance would be estimated as 28 seconds times (4 feet divided by 80 feet), which equals 1.4 seconds. Likewise, the distance to reach the end of the zone of initial mixing (8 feet for these conditions) would conservatively require 2.8 seconds. The estimates are conservative because the water velocity closer to the diffuser would be greater. Velocity decreases as momentum dissipates and the plume mixes. However, neglecting the acceleration provided by the momentum of the discharged effluent, the Discharger estimated that the travel time to traverse 8.5 feet is 4.5 seconds, which is still considerably smaller than U.S. EPA's recommendation of less than 15-minute exposure. Furthermore, this Order includes acute toxicity effluent limitations that require compliance to be determined based on acute bioassays using 100 percent effluent. Compliance with these requirements ensures that acute toxic conditions to aquatic life passing through the acute and chronic mixing zones do not occur.

(c) *Shall not restrict the passage of aquatic life* – The Discharger's evaluated the availability of a zone of passage around the mixing zones in Attachment C of the 18 July 2006 ROWD and in a 29 January 2007 technical memorandum *CORMIX Updates for 3-Year Data Window and Future Critical Flows*. Based on review of these reports, the Central Valley

[1] TSD, pg. 33

Water Board concludes that an adequate zone of passage for aquatic organisms exists.

(d) Shall not adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or state endangered species laws – The acute and chronic mixing zones will not cause acutely toxic conditions, allow adequate zones of passage, and are sized appropriately to ensure that there will be no adverse impacts to biologically sensitive or critical habitats.

(e) Shall not produce undesirable or nuisance aquatic life; result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable bottom deposits; cause nuisance – The current discharge has not been shown to result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable bottom deposits; or cause nuisance.

(f) Shall not dominate the receiving water body or overlap a mixing zone from different outfalls – The acute and chronic mixing zones are small relative to the water body, so they will not dominate the water body. The outfall is located approximately 3,400 feet downstream of the Linda County Water District Wastewater Treatment Plant (WWTP) outfall, for which the Central Valley Water Board has not authorized aquatic life mixing zones in Order R5-2017-0094. There are no other outfalls or mixing zones in the vicinity of the discharge.

(g) Shall not be allowed at *or near any drinking water intake* – The acute and chronic mixing zones are not near a drinking water intake.

The acute and chronic aquatic life mixing zones, therefore, comply with the SIP. The mixing zones also comply with the Basin Plan, which requires that the mixing zones not adversely impact beneficial uses. Beneficial uses will not be adversely affected for the same reasons discussed above. In determining the size of the mixing zones, the Central Valley Water Board considered the procedures and guidelines in U.S. EPA's *Water Quality Standards Handbook, 2nd Edition* (updated July 2007), section 5.1, and section 2.2.2 of the TSD. The SIP incorporates the same guidelines.

vi. **Evaluation of Available Dilution for Human Health Criteria.** Section 1.4.2.2 of the SIP provides that mixing zones should not be allowed at or near drinking water intakes. Furthermore, regarding the application of a mixing zone for the protection of human health, the TSD states that, "…*the presence of mixing zones should not result in significant health risks, when evaluated using reasonable assumptions about exposure pathways. Thus, where drinking water contaminants are a concern, mixing zones should not encroach on drinking water intakes.*" There are no drinking water intakes in the human health mixing zone.

The Discharger has requested a human health mixing zone for compliance with human health water quality criteria for dichlorobromomethane. Based on the mixing zone studies, the requested human health mixing zone is 1,200 feet downstream.

The human health mixing zone meets the requirements of the SIP as follows:

(a) Shall not compromise the integrity of the entire water body – The TSD states that, "If the total area affected by elevated concentrations within all mixing zones combined is small compared to the total area of a water body (such as a river segment), then mixing zones are likely to have little effect on the integrity of the water body as a whole, provided that the mixing zone does not impinge on unique or critical habitats."2 The human health mixing zone is not applicable to aquatic life criteria. The human health mixing zone does not compromise the integrity of the entire water body.

(b) Shall not cause acutely toxic conditions to aquatic life passing through the mixing zone – The human health mixing zone is not applicable to aquatic life criteria. Therefore, acutely toxic conditions will not occur in the mixing zone.

(c) Shall not restrict the passage of aquatic life – The human health mixing zone is not applicable to aquatic life criteria. Therefore, the mixing zone will not restrict the passage of aquatic life.

(d) Shall not adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws – The human health mixing zone is not applicable to aquatic life criteria. The mixing zone will not impact biologically sensitive or critical habitats.

(e) Shall not produce undesirable or nuisance aquatic life; result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable bottom deposits; cause nuisance – The allowance of a human health mixing zone will not produce undesirable or nuisance aquatic life, result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable bottom deposits; or cause nuisance.

(f) Shall not dominate the receiving water body or overlap a mixing zone from different outfalls – The human health mixing zone is small relative to the water body, so it will not dominate the water body. Furthermore, the mixing zone does not overlap mixing zones from other outfalls. The outfall is located approximately 3,400 feet downstream of the Linda County Water District WWTP's outfall. The proposed mixing zone does not overlap with the human health mixing zone from the upstream outfall. There are no other outfalls or mixing zones in the vicinity of the discharge.

(g) *Shall not be allowed at or near any drinking water intake* – The human health mixing zone is not near a drinking water intake.

The human health mixing zone, therefore, complies with the SIP. The mixing zone also complies with the Basin Plan, which requires that the mixing zone not adversely impact beneficial uses. Beneficial uses will not be adversely affected for the same reasons discussed above. In determining the size of the mixing zone, the Central Valley Water Board considered the procedures and guidelines in U.S. EPA's *Water Quality Standards Handbook, 2nd Edition* (updated July 2007), section 5.1, and section 2.2.2 of the TSD. The SIP incorporates the same guidelines.

[2] TSD, pg. 33

vii. **Evaluation of Available Dilution for Specific Constituents (Pollutant-by-Pollutant Evaluation).** As discussed in section IV.C.3 of this Fact Sheet, based on existing effluent data, it appears the Facility cannot meet the end-of-pipe (no dilution) WQBEL's for ammonia, copper, and dichlorobromomethane.

The allowance of a mixing zone and dilution credits is a discretionary act by the Central Valley Water Board. When determining the appropriate dilution credits for a specific pollutant, several factors must be considered, such as available assimilative capacity, Facility performance, and best practicable treatment or control (BPTC). The Central Valley Water Board has determined the allowable dilution credits on a constituent-by-constituent basis.

The receiving water contains assimilative capacity for ammonia, copper, and dichlorobromomethane. As discussed above, acute, chronic and human health mixing zones with associated dilution credits of 11, 12, and 221, respectively, meet the mixing zone conditions specified in section 1.4.2.2.A of the SIP. However, an overarching mixing zone condition is that "*A mixing zone shall be as small as practicable.*", and section 1.4.2.2.B requires, "*The RWQCB shall deny or significantly limit a mixing zone and dilution credits as necessary to protect beneficial uses, meet the conditions of this Policy, or comply with other regulatory requirements*."

The Central Valley Water Board considered Facility performance and the receiving water's assimilative capacity in determining the dilution needed. The consideration of these factors is necessary to avoid allocating an unnecessarily large portion of the receiving water's assimilative capacity and possibly violating the Antidegradation Policy. Effluent data from the current permit term indicates that effluent concentrations for dichlorobromomethane are well below the WQBEL's derived with the granted dilution credit. Based on this analysis, the full dilution credit is not necessary for dichlorobromomethane, and this Order does not grant the full extent of the requested mixing zone. Allowing dilution results in a higher concentration of dichlorobromomethane in discharges from Discharge Point 001 and a higher loading to the Feather River. Therefore, in lieu of allowing the full dilution credit for dichlorobromomethane, this Order retains the performance-based effluent limitations that were established in Order R5-2013-0094-01, with which the Discharger is able to comply, as shown in the following table (also discussed further in section IV.C.3).

Table F-8. Dilution Credits Associated with Performance-based Effluent Limitations

Pollutant	Units	ECA[1]	Criterion	Background	Dilution Credit[2]
Dichlorobromomethane	µg/L	10	0.56	<0.16	16.9

1 Equivalent to the performance-based AMEL (determined using the 99th percentile concentration).

2 The dilution credit is calculated using the steady-state mass balance equation rearranged to solve for the dilution credit, as follows:

$$D = (ECA - C) / (C - B)$$

As described further in section IV.C.2.f below, the Discharger performed dynamic modeling to serve as the basis for WQBEL's established under Order R5-2007-0134-01 for ammonia and copper. In performing the dynamic modeling, the mixing zone dimensions serve as the point of compliance with water quality criteria. The dynamic model specifically determines the long-term average constituent concentration that would comply with the applicable water quality standards at the edge of the mixing zones. As the mixing zones from

Orders R5-2007-0134-01 and R5-2013-0094-01 are conservatively being retained in this Order until the new downstream effluent diffuser is installed, this Order retains effluent limitations based on dynamic modeling results for ammonia and copper.

viii. **Regulatory Compliance for Dilution Credits and Mixing Zones.** To fully comply with all applicable laws, regulations and policies of the State, Central Valley Water Board approved a mixing zone and the associated dilution credits shown in Table F-8 based on the following:

(a) Mixing zones are allowed under the SIP provided all elements contained in Section 1.4.2.2 are met. Based on the mixing zone study conducted by the Discharger the Central Valley Water Board has determined that these factors are met.

(b) Section 1.4.2.2. of the SIP requires mixing zones to be as small as practicable. Based on the mixing zone study conducted by the Discharger the Central Valley Water Board has determined the mixing zone is as small as practicable.

(c) In accordance with Section 1.4.2.2 of the SIP, the Board has determined the mixing zone is as small as practicable, will not compromise the integrity of the entire water body, restrict the passage of aquatic life, dominate the water body or overlap existing mixing zones from different outfalls. The mixing zones are small relative to the large size of the receiving water, are not at or near a drinking water intake, and do not overlap a mixing zone from a different outfall.

(d) The Central Valley Water Board is allowing mixing zones for acute aquatic life, chronic aquatic life, and human health constituents, and has determined allowing such mixing zones will not cause acutely toxic conditions to aquatic life passing through the mixing zone.

(e) The Central Valley Water Board has determined the discharge will not adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under the federal or state endangered species laws, because the mixing zones are relatively small and acutely toxic conditions will not occur in the mixing zones. The discharge will not produce undesirable or nuisance aquatic life, result in floating debris, oil, or scum, produce objectionable odor, taste, or turbidity, cause objectionable bottom deposits, or cause nuisance, because the Order establishes end-of-pipe effluent limitations (e.g., for BOD5 and TSS) and discharge prohibitions to prevent these conditions from occurring.

(f) As required by the SIP, in determining the extent of or whether to allow a mixing zone and dilution credit, the Central Valley Water Board has considered the presence of pollutants in the discharge that are carcinogenic, mutagenic, teratogenic, persistent, bioaccumulative, or attractive to aquatic organisms, and concluded that the allowance of the mixing zone and dilution credit is adequately protective of the beneficial uses of the receiving water.

(g) The Central Valley Water Board has determined mixing zone complies with the SIP for priority pollutants.

(h) Section 1.4.2.2B of the SIP, in part states, "The RWQCB shall deny or significantly limit a mixing zone and dilution credits as necessary to protect beneficial uses, meet the conditions of this Policy, or comply with other regulatory requirements." The Central Valley Water Board has determined full allowance of dilution is not needed or necessary for the Discharger to achieve compliance with effluent limitations for all constituents in this Order.

(i) The Central Valley Water Board has determined the mixing zones comply with the Basin Plan for non-priority pollutants. The Basin Plan requires a mixing zone not adversely impact beneficial uses. Beneficial uses will not be adversely affected for the same reasons discussed above. In determining the size of the mixing zone, the Central Valley Water Board has considered the procedures and guidelines in Section 5.1 of U.S. EPA's Water Quality Standards Handbook, 2nd Edition (updated July 2007) and Section 2.2.2 of the TSD. The SIP incorporates the same guidelines.

(j) The Central Valley Water Board has determined that allowing dilution factors that exceed those proposed by this Order would not comply with the State Antidegradation Policy for receiving waters outside the allowable mixing zone for ammonia, copper, and dichlorobromomethane. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16 (State Antidegradation Policy). The State Antidegradation Policy incorporates the federal antidegradation policy and requires that existing quality of waters be maintained unless degradation is justified based on specific findings. Item 2 of the State Anti-Degradation Policy states:

"*Any activity which produces or may produce a waste or increased volume or concentration of waste and which dischargers or proposed to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained*."

The effluent limitations established in the Order for dichlorobromomethane that have been adjusted for dilution credits provided in Table F-8 were developed based on performance of the Discharger's current wastewater treatment capabilities. Therefore, the Central Valley Water Board determined the effluent limitations required by this Order will result in the Discharger implementing BPTC of the discharge necessary to assure that pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the State will be maintained. The Central Valley Water Board also determined the Discharger will be in immediate compliance with the effluent limitations,

The Central Valley Water Board also determined establishing effluent limitations for ammonia, copper, and dichlorobromomethane that have been adjusted for dilution credits provided in Table F-8 is consistent with Section 1.4.2.2B of the SIP that requires the Central Valley Water Board to shall deny or significantly limit a mixing zone and dilution credits as necessary to comply with other regulatory requirements.

Therefore, the Central Valley Water Board has determined the effluent limitations established in the Order for ammonia, copper, and dichlorobromomethane that have been adjusted for dilution credits provided in Table F-8 are appropriate and necessary to comply with the Basin Plan, SIP, federal antidegradation regulations, and the State Antidegradation Policy.

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. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. The default U.S. EPA 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 CTR and the NTR 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 hardness of the receiving water (actual ambient hardness) as required by the SIP[3] and the CTR[4]. The SIP and the CTR require the use of "receiving water" or "actual ambient" hardness, respectively, to determine effluent limitations for these metals. The CTR requires that the hardness values used shall be consistent with the design discharge conditions for design flows and mixing zones[5]. Where design flows for aquatic life criteria include the lowest one-day flow with an average reoccurrence frequency of once in ten years (1Q10) and the lowest average seven consecutive day flow with an average reoccurrence frequency of once in ten years (7Q10). [6] This section of the CTR also indicates that the design conditions should be established such that the appropriate criteria are not exceeded more than once in a three year period on average.[7] The CTR requires that when mixing zones are allowed the CTR criteria apply at the edge of the mixing zone, otherwise the criteria apply throughout the water body including at the point of discharge. [8] The CTR does not define the term "ambient," as applied in the regulations. Therefore, the Central Valley Water Board has considerable discretion to consider upstream and downstream ambient conditions when establishing the appropriate water quality criteria that fully complies with the CTR and SIP.

i. **Summary Findings**

The ambient hardness for the Feather River is represented by the data in Figure F-1, below, which shows ambient hardness ranging from 30 mg/L to 52 mg/L based on collected ambient data from June 2014 through May 2017. Given the high variability in ambient hardness values, there is no single hardness value that describes the ambient receiving water for all possible scenarios (e.g., minimum, maximum). Because of this variability, staff has

[3] 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.

[4] 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 (40 C.F.R. § 131.38(c)(4)).

[5] 40 C.F.R. §131.3(c)(4)(ii)

[6] 40 C.F.R. §131.38(c)(2)(iii) Table 4

[7] 40 C.F.R. §131.38(c)(2)(iii) Table 4, notes 1 and 2

[8] 40 C.F.R. §131.38(c)(2)(i)

determined that based on the ambient hardness concentrations measured in the receiving water, the Central Valley Water Board has discretion to select ambient hardness values within the range of 30 mg/L (minimum) up to 52 mg/L (maximum). Staff recommends that the Board use the ambient hardness values shown in Table F-9 for the following reasons.

(a) Using the ambient receiving water hardness values shown in Table F-9 will result in criteria and effluent limitations that ensure protection of beneficial uses under all ambient receiving water conditions.

(b) The Water Code mandates that the Central Valley Water Board establish permit terms that will ensure the reasonable protection of beneficial uses. In this case, using the lowest measured ambient hardness to calculate effluent limitations is not required to protect beneficial uses. Calculating effluent limitations based on the lowest measured ambient hardness is not required by the CTR or SIP, and is not reasonable as it would result in overly conservative limits that will impart substantial costs to the Discharger and ratepayers without providing any additional protection of beneficial uses. In compliance with applicable state and federal regulatory requirements, after considering the entire range of ambient hardness values, Board staff has used the ambient hardness values shown in Table F-9 to calculate the proposed effluent limitations for hardness-dependent metals. The proposed effluent limitations are protective of beneficial uses under all flow conditions.

(c) Using an ambient hardness that is higher than the minimum of 30 mg/L will result in limits that may allow increased metals to be discharged to the Feather River, but such discharge is allowed under the State Antidegradation Policy (State Water Board Resolution 68-16). The Central Valley Water Board finds that this degradation is consistent with the Antidegradation Policy (see antidegradation findings in Section IV.D.4 of the Fact Sheet). The Antidegradation Policy requires the Discharger to meet waste discharge requirements which will result in BPTC of the discharge necessary to assure that: a) a pollution or nuisance will not occur, and b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.

(d) Using the ambient hardness values shown in Table F-9 is consistent with the CTR and SIP's requirements for developing metals criteria.

Table F-9. Summary of CTR Criteria for Hardness-dependent Metals

CTR Metals	Ambient Hardness (mg/L)[2,3]	CTR Criteria (µg/L, total recoverable)[1]	
		Acute	Chronic
Copper	52	7.6	5.3
Chromium III	52	1,000	120
Cadmium	52	2.2	1.5
Lead	52	36	1.4
Nickel	52	270	30
Silver	52	1.3	--
Zinc	52	69	69

CTR Metals	Ambient Hardness (mg/L)[2,3]	CTR Criteria (µg/L, total recoverable)[1]	
		Acute	Chronic

[1] Metal criteria rounded to two significant figures in accordance with the CTR (40 C.F.R. §131.38(b)(2)).
[2] The ambient hardness values in this table represent actual observed receiving water hardness measurements from the dataset shown in Figure F-1.
[3] The CTR's hardness dependent metals criteria equations vary differently depending on the metal, which results in differences in the range of ambient hardness values that may be used to develop effluent limitations that are protective of beneficial uses and comply with CTR criteria for all ambient flow conditions.

ii. **Background**

The State Water Board provided direction regarding the selection of hardness in two precedential water quality orders; WQO 2008-0008 for the City of Davis Wastewater Treatment Plant (Davis Order) and WQO 2004-0013 for the Yuba City Wastewater Treatment Plant (Yuba City Order). The State Water Board recognized that the SIP and the CTR do not discuss the manner in which hardness is to be ascertained, thus regional water boards have considerable discretion in determining ambient hardness so long as the selected value is protective of water quality criteria under the given flow conditions. (Davis Order, p.10). The State Water Board explained that it is necessary that, "*The* [hardness] *value selected should provide protection for all times of discharge under varying hardness conditions*." (Yuba City Order, p. 8). The Davis Order also provides that, "*Regardless of the hardness used, the resulting limits must always be protective of water quality criteria under all flow conditions*." (Davis Order, p. 11)

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

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

Where:

H = ambient hardness (as $CaCO_3$) [9]

WER = water-effect ratio

m, b = metal- and criterion-specific constants

The direction in the CTR regarding hardness selection is that it must be based on ambient hardness and consistent with design discharge conditions for design flows and mixing zones. Consistent with design discharge conditions and design flows means that the selected "design" hardness must result in effluent limitations under design discharge conditions that do not result in more than one exceedance of the applicable criteria in a 3 year period.[10] Where design flows for aquatic life criteria include the lowest one-day flow with an average reoccurrence frequency of once in 10 years (1Q10) and the lowest average 7 consecutive day flow with an average reoccurrence frequency of

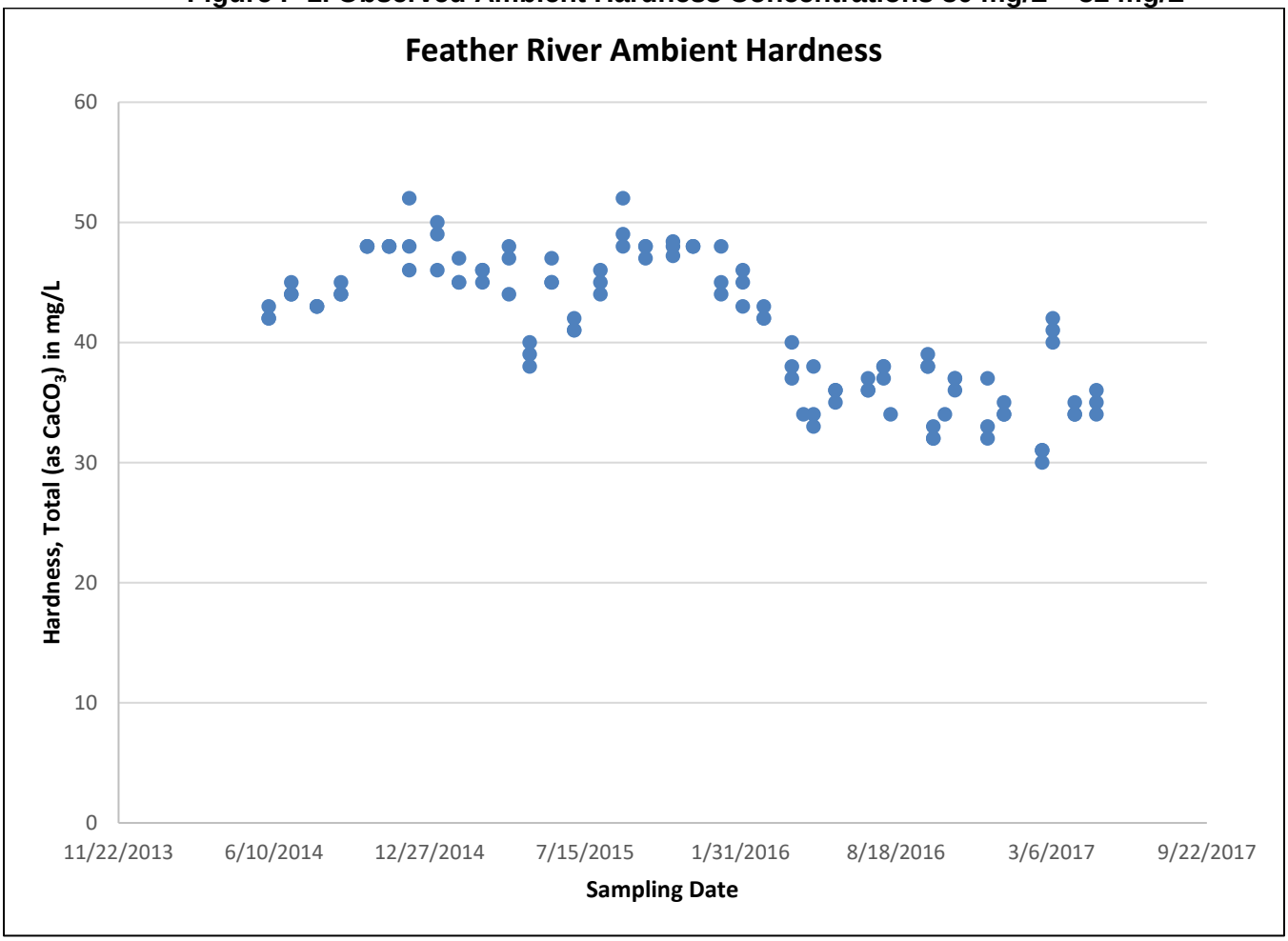
[9] For this discussion, all hardness values are expressed in mg/L as $CaCO_3$.
[10] 40 C.F.R. §131.38(c)(2)(iii) Table 4, notes 1 and 2

once in 10 years (7Q10). The 1Q10 and 7Q10 Feather River flows are 1,200 cfs and 1,236 cfs, respectively.

iii. **Ambient Conditions**

The ambient receiving water hardness varied from 30 mg/L to 52 mg/L, based on 111 samples from June 2014 through May 2017 (see Figure F-1).

Figure F-1. Observed Ambient Hardness Concentrations 30 mg/L – 52 mg/L



In this analysis, the entire range of ambient hardness concentrations shown in Figure F-1 were considered to determine the appropriate ambient hardness to calculate the CTR criteria and effluent limitations that are protective under all discharge conditions.

iv. **Approach to Derivation of Criteria**

As shown above, ambient hardness varies substantially. Because of the variation, there is no single hardness value that describes the ambient receiving water for all possible scenarios (e.g., minimum, maximum, mid-point). While the hardness selected must be hardness of the ambient receiving water, selection of an ambient receiving water hardness that is too high would result in effluent limitations that do not protect beneficial uses. Also, the use of minimum ambient hardness would result in criteria that are protective of beneficial uses,

but such criteria may not be representative considering the wide range of ambient conditions.

Reasonable worst-case ambient conditions. To determine whether a selected ambient hardness value results in effluent limitations that are fully protective while complying with federal regulations and state policy, staff have conducted an analysis considering varying ambient hardness and flow conditions. To do this, the Central Valley Water Board has ensured that the receiving water hardness and criteria selected for effluent limitations are protective under "reasonable-worst case ambient conditions." These conditions represent the receiving water conditions under which derived effluent limitations would ensure protection of beneficial uses under all ambient flow and hardness conditions.

Reasonable worst-case ambient conditions:

(a) "Low receiving water flow." CTR design discharge conditions (1Q10 and 7Q10) have been selected to represent reasonable worst case receiving water flow conditions.

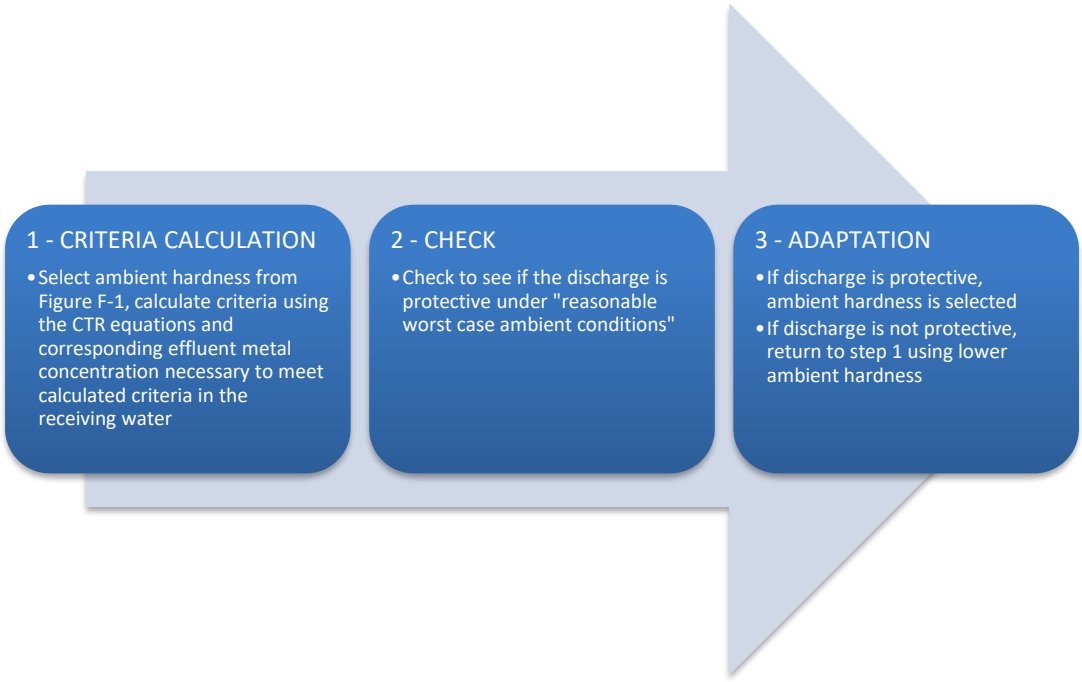
(b) "High receiving water flow (maximum receiving water flow)." This additional flow condition has been selected consistent with the Davis Order, which required that the hardness selected be protective of water quality criteria under all flow conditions.

(c) "Low receiving water hardness." The minimum receiving water hardness condition of 30 mg/L was selected to represent the reasonable worst case receiving water hardness.

(d) "Background ambient metal concentration at criteria." This condition assumes that the metal concentration in the background receiving water is equal to CTR criteria (upstream of the Facility's discharge). Based on data in the record, this is a design condition that has not occurred in the receiving water and is used in this analysis to ensure that limits are protective of beneficial uses even in the situation where there is no assimilative capacity.

Iterative approach. An iterative analysis has been used to select the ambient hardness to calculate the criteria that will result in effluent limitations that protect beneficial uses under all flow conditions.

The iterative approach is summarized in the following algorithm and described below in more detail.



(a) CRITERIA CALCULATION. CTR criteria are calculated using the CTR equations based on actual measured ambient hardness sample results, starting with the maximum observed ambient hardness of 52 mg/L. Effluent metal concentrations necessary to meet the above calculated CTR criteria in the receiving water are calculated in accordance with the SIP.[11] This should not be confused with an effluent limit. Rather, it is the Effluent Concentration Allowance (ECA), which is synonymous with the wasteload allocation defined by U.S. EPA as "*a definition of effluent water quality that is necessary to meet the water quality standards in the receiving water*."[12] If effluent limits are found to be needed, the limits are calculated to enforce the ECA considering effluent variability and the probability basis of the limit.

(b) CHECK. U.S. EPA's simple mass balance equation[13] is used to evaluate if discharge at the computed ECA is protective. Resultant downstream metal concentrations are compared with downstream calculated CTR criteria under reasonable worst-case ambient conditions.

(c) ADAPT. If step 2 results in:

(1) Receiving water metal concentration that complies with CTR criteria under reasonable worst-case ambient conditions, then the hardness value is selected.

(2) Receiving water metal concentration greater than CTR criteria, then return to bullet 1, selecting a lower ambient hardness value.

[11] SIP Section 1.4.B, Step 2, provides direction for calculating the Effluent Concentration Allowance.
[12] U.S. EPA Technical Support Document for Water Quality-based Toxics Control (TSD), pg. 96.
[13] U.S. EPA NPDES Permit Writers' Handbook (EPA 833-K-10-001 September 2010, pg. 6-24)

The CTR's hardness dependent metals criteria equations contain metal-specific constants, so the criteria vary depending on the metal. Therefore, steps 1 through 3 must be repeated separately for each metal until ambient hardness values are determined that will result in criteria and effluent limitations that comply with the CTR and protect beneficial uses for all metals.

v. **Results of Iterative Analysis**

The above iterative analysis for each CTR hardness-dependent metal results in the selected ambient hardness values shown in Table F-9, above. Using these hardness values to calculate criteria, which are actual sample results collected in the receiving water, will result in effluent limitations that are protective under all ambient flow conditions. Zinc and silver are used as examples below to illustrate the results of the analysis. Tables F-10 and F-11 below summarize the numeric results of the three-step iterative approach for zinc and silver. As shown in the example tables, ambient hardness values of 52 mg/L are used in the CTR equations to derive criteria and effluent limitations. Then under the "check" step, worst-case ambient receiving water conditions are used to test whether discharge results in compliance with CTR criteria and protection of beneficial uses.

The results of the above analysis, summarized in the tables below, show that the ambient hardness values selected using the three-step iterative process results in protective effluent limitations that achieve CTR criteria under all flow conditions. Tables F-10 and F-11 below, summarize the critical flow conditions. However, the analysis evaluated all flow conditions to ensure compliance with the CTR criteria at all times.

Table F-10. Verification of CTR Compliance for Zinc

Receiving water hardness used to compute effluent limitations				**52 mg/L**
Effluent Concentration Allowance (ECA) for Zinc[2]				**69 µg/L**
	Downstream Ambient Concentrations Under Worst-Case Ambient Receiving Water Conditions			**Complies with CTR Criteria?**
	Hardness	**CTR Criteria (µg/L)**	**Ambient Zinc Concentration[1] (µg/L)**	
1Q10	31	45	45	**Yes**
7Q10	31	45	45	**Yes**
Max receiving water flow	31	44	44	**Yes**

[1] This concentration is derived using worst-case ambient conditions. These conservative assumptions will ensure that the receiving water always complies with CTR criteria.

[2] The ECA defines effluent quality necessary to meet the CTR criteria in the receiving water. There are no effluent limitations for zinc as it demonstrates no reasonable potential.

Table F-11. Verification of CTR Compliance for Silver

Receiving water hardness used to compute effluent limitations				52 mg/L
Effluent Concentration Allowance (ECA) for Silver[2]				1.3 µg/L
	Downstream Ambient Concentrations Under Worst-Case Ambient Receiving Water Conditions			Complies with CTR Criteria?
	Hardness	CTR Criteria (µg/L)	Ambient Silver Concentration[1] (µg/L)	
1Q10	31	0.55	0.55	**Yes**
7Q10	31	0.55	0.55	**Yes**
Max receiving water flow	31	0.54	0.54	**Yes**

[1] This concentration is derived using worst-case ambient conditions. These conservative assumptions will ensure that the receiving water always complies with CTR criteria.
[2] The ECA defines effluent quality necessary to meet the CTR criteria in the receiving water. There are no effluent limitations for silver as it demonstrates no reasonable potential.

f. **Dynamic Modeling Results.** As allowed for under Section 1.4 of the SIP, the Discharger performed dynamic modeling to calculate WQBEL's under Order R5-2007-0134-01 for ammonia and copper. The Discharger used a dynamic modeling approach to directly derive appropriate long-term average wasteload allocations (LTA's) and associated average monthly effluent limitations (AMEL's) and maximum daily effluent limitation (MDEL's) for the discharge to the Feather River, using the approach described in the TSD. Orders R5-2007-0134-01 and R5-2013-0094-01 contained AMEL's and MDEL's for ammonia and copper based on the dynamic model results. The Central Valley Water Board finds that the dynamic model results remain applicable to the discharge. The effluent limitations for copper have been retained in this Order based on the dynamic model results.

For ammonia, a non-priority pollutant that is not subject to the SIP, the MDEL must be replaced with an average weekly effluent limitation (AWEL) in accordance with 40 C.F.R. section 122.45(d), which requires AMEL's and AWEL's for POTW's unless impracticable. The Discharger submitted an 11 September 2017 memorandum *City of Yuba City Dynamic Model Effluent Ammonia Data* (Larry Walker Associates) that proposed an AWEL for ammonia of 51 mg/L based on the 99th percentile of the effluent ammonia data that was utilized in the original model. Therefore, this Order retains the AMEL of 31 mg/L and replaces the MDEL with an AWEL of 51 mg/L.

3. Determining the Need for WQBEL's

Clean Water Act section 301(b)(1)(C) requires effluent limitations necessary to meet water quality standards, and 40 C.F.R. section 122.44(d) requires NPDES permits to include conditions that are necessary to achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality. Federal regulations at 40 C.F.R. section 122.44(d)(1)(i) state, "*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 that 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*." Additionally, 40 C.F.R. section 122.44(d)(1)(vii) requires effluent limits to be developed consistent with any available wasteload allocations developed and approved for the

discharge. The process to determine whether a WQBEL is required as described in 40 C.F.R. section 122.44(d)(1)(i) is referred to as a *reasonable potential analysis or RPA*. Central Valley Water Board staff conducted RPA's for nearly 200 constituents, including the 126 U.S. EPA priority toxic pollutants. This section includes details of the RPA's for constituents of concern for the Facility. The entire RPA is included in the administrative record and a summary of the constituents of concern is provided in Attachment G. For priority pollutants, the SIP dictates the procedures for conducting the RPA. For non-priority pollutants the Central Valley Water Board is not restricted to one particular RPA method, therefore, the RPA's have been conducted based on EPA guidance considering multiple lines of evidence and the site-specific conditions of the discharge.

a. **Constituents with a Total Maximum Daily Load (TMDL).** 40 C.F.R. section 122.44(d)(1)(vii) provides: *"When developing water quality-based effluent limits under* [§ 122.44(d)(1)]*, the permitting authority shall ensure that: (A) The level of water quality to be achieved by limits on point sources established under this paragraph is derived from, and complies with all applicable water quality standards; and (B) Effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to* [Total Maximum Daily Loads regulations]." U.S. EPA construes 40 C.F.R. section 122.44(d)(1)(vii)(B) to mean that "*when WLAs are available, they must be used to translate water quality standards into NPDES permit limits*." 54 Fed. Reg. 23868, 23879 (2 June 1989).

The Feather River is subject to TMDL's for diazinon and chlorpyrifos and wasteload allocations under those TMDL's are available The Central Valley Water Board developed WQBEL's for these pollutants pursuant to 40 C.F.R. section 122.44(d)(1)(vii), which does not require or contemplate an RPA.

i. **Diazinon and Chlorpyrifos**

(a) **WQO.** The Central Valley Water Board completed a TMDL for diazinon and chlorpyrifos in the Sacramento and Feather Rivers and amended the Basin Plan to include diazinon and chlorpyrifos WLA's and water quality objectives. The Basin Plan Amendment for the Control of Diazinon and Chlorpyrifos Runoff into the Sacramento and Feather Rivers was adopted by the Central Valley Water Board on 3 May 2007 and became effective on 11 August 2008.

The amendment modified Basin Plan Chapter III (Water Quality Objectives) to establish site-specific numeric objectives for diazinon and chlorpyrifos in the Sacramento and Feather Rivers and identified the requirements to meet the additive formula already in Basin Plan Chapter IV (Implementation) for the additive toxicity of diazinon and chlorpyrifos.

The Basin Plan states at section 4.5.5.1(6) that "*The Waste Load Allocations (WLA) for all NPDES-permitted dischargers…shall not exceed the sum (S) of one (1) as defined below.*

$$S = \frac{C_d}{WQO_d} + \frac{C_c}{WQO_c} \leq 1.0$$

Where:

C_D = diazinon concentration in µg/L of point source discharge for WLA…
C_C = chlorpyrifos concentration in µg/L of point source discharge for the WLA…
WQO_d = acute or chronic diazinon water quality objective in µg/L.
WQO_c = acute or chronic chlorpyrifos water quality objective in µg/L.

Available samples collected within the applicable averaging period for the water quality objective will be used to determine compliance with the allocations and loading capacity. Prior to performing any averaging calculations, only chlorpyrifos and diazinon results from the same sample will be used in calculating the sum (S). For purposes of calculating the sum (S) above, analytical results that are reported as 'nondetectable' concentrations are considered to be zero."

The Discharger is an NPDES-permitted discharger to the Feather River subject to the WLA's in the TMDL.

(b) **RPA Results.** Diazinon was not detected in the effluent based on 17 samples collected between June 2014 and May 2017. Diazinon was not detected in the upstream receiving water based on four samples collected between June 2014 and May 2017.

Chlorpyrifos was not detected in the effluent based on 17 samples collected between June 2014 and May 2017. Chlorpyrifos was not detected in the upstream receiving water based on four samples collected between June 2014 and May 2017.

Although diazinon and chlorpyrifos were not detected in the effluent or receiving water, because WLA's in the TMDL for diazinon and chlorpyrifos in the Sacramento and Feather Rivers are applicable, WQBEL's for these constituents are required. The TMDL WLA's apply to all NPDES dischargers to the Sacramento and Feather Rivers and serves as the basis for WQBEL's for this Facility.

(c) **WQBEL's.** WQBEL's for diazinon and chlorpyrifos are required based on the TMDL for diazinon and chlorpyrifos for the Sacramento and Feather Rivers. Therefore, this Order includes effluent limits applicable at Discharge Points 001 and 002 calculated based on the WLA's contained in the TMDL, as follows:

(1) Average Monthly Effluent Limitation (AMEL)

$$S_{AMEL} = \frac{C_{D\ M-avg}}{0.079} + \frac{C_{C\ M-avg}}{0.012} \leq 1.0$$

$C_{D\ M\text{-}avg}$ = average monthly diazinon effluent concentration in µg/L

$C_{C\ M\text{-}avg}$ = average monthly chlorpyrifos effluent concentration in µg/L

(2) Average Weekly Effluent Limitation (AWEL)

$$S_{AWEL} = \frac{C_{D\ W-avg}}{0.14} + \frac{C_{C\ W-avg}}{0.021} \leq 1.0$$

$C_{D\ W\text{-}avg}$ = average weekly diazinon effluent concentration in µg/L

$C_{C\ W\text{-}avg}$ = average weekly chlorpyrifos effluent concentration in µg/L

(d) **Plant Performance and Attainability.** Diazinon and chlorpyrifos were not detected in the effluent. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

b. **Constituents with No Reasonable Potential.** Central Valley Water Board staff conducted RPA's for nearly 200 constituents, including the 126 U.S. EPA priority toxic pollutants. All RPA's are included in the administrative record and a summary of the constituents of concern is provided in Attachment G. WQBEL's are not included in this Order for constituents that do not demonstrate reasonable potential to cause or contribute to an instream excursion of an applicable water quality objective; 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. This section only provides the rationale for the RPA's for the following constituents of concern that were found to have no reasonable potential after assessment of the data:

i. **Bis (2-ethylhexyl) Phthalate**

(a) **WQO.** The CTR includes a criterion of 1.8 µg/L for bis (2-ethylhexyl) phthalate for the protection of human health for waters from which both water and organisms are consumed. Order R5-2013-0094-01 included effluent limitations for bis (2-ethylhexyl) phthalate based on the CTR human health criterion.

(b) **RPA Results.** Bis (2-ethylhexyl) phthalate was detected but not quantified in the effluent at estimated concentrations ranging from 0.9 µg/L to 1.9 µg/L in four of 40 samples collected between June 2014 and May 2017. Bis (2-ethylhexyl) phthalate was not detected in the effluent in the remaining 36 samples. Bis (2-ethylhexyl) phthalate was not detected in the upstream receiving water based on four samples collected between June 2014 and May 2017.

As shown in the table below, the MEC for bis (2-ethylhexyl) phthalate exceeds the applicable CTR criterion.

Table F-12. Summary of Effluent Data for Bis (2-Ethylhexyl) Phthalate

Effluent				Background (µg/L)	Lowest MDL (µg/L)	Lowest RL (µg/L)	SIP ML (µg/L)
MEC (µg/L)	No. of Samples	No. of ND	No. of DNQ				
1.9 (DNQ)	40	36	4	<0.5	0.50	3	5

SIP Section 2.4.2 states that the Minimum Level (ML) is the lowest quantifiable concentration in a sample based on the proper application of all method-based analytical procedures and the absence of any matrix interferences.

(1) Required ML's are listed in Appendix 4 of the SIP. Where more than one ML is listed in Appendix 4, the Discharger may select any one of the cited analytical methods for compliance determination. The

selected ML used for compliance determination is referred to as the Reporting Level (RL).

(2) An RL can be lower than the ML in Appendix 4 only when the Discharger agrees to use a RL that is lower than the ML listed in Appendix 4. The Central Valley Water Board and the Discharger have no agreement to use a RL lower than the listed ML.

(3) SIP Section 1.2 requires that the Regional Board use all available, valid, relevant, representative data and information, as determined by the Regional Board, to implement the SIP. SIP Section 1.2 further states that the Regional Board has the discretion to consider if any data are inappropriate or insufficient for use in implementing the SIP.

(4) Data reported below the ML indicates the data may not be valid due to possible matrix interferences during the analytical procedure.

(5) Further, SIP Section 2.4.5 (Compliance Determination) supports the insufficiency of data reported below the ML or RL. In part it states, "*Dischargers shall be deemed out of compliance with an effluent limitation, for reporting and administrative enforcement purposes, if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the RL.*" Thus, if submitted data is below the RL, that data cannot be used to determine compliance with effluent limitations.

(6) Data reported below the ML is not considered valid data for use in determining reasonable potential. Therefore, in accordance with Section 1.2 of the SIP, the Central Valley Water Board has determined that data reported below the ML is inappropriate and insufficient to be used to determine reasonable potential.

SIP Appendix 4 cites two ML's for bis (2-ethylhexyl) phthalate. The lowest applicable ML cited for bis (2-ethylhexyl) phthalate is 5 µg/L. The Discharger used an analytical method that was more sensitive than the ML required by the SIP. The maximum effluent result was an estimated value (i.e., DNQ). Therefore, the submitted effluent bis (2-ethylhexyl) phthalate estimated data is inappropriate and insufficient to determine reasonable potential under the SIP.

Because bis (2-ethylhexyl) phthalate was not detected above the criterion in the remaining effluent samples, the Central Valley Water Board concludes that bis (2-ethylhexyl) phthalate in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the CTR human health criterion of 1.8 µg/L, and the effluent limitations for bis (2-ethylhexyl) phthalate have not been retained in this Order. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

ii. **Lead**

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

used for the effluent and receiving water. As described in section IV.C.2.e of this Fact Sheet, the applicable acute and chronic criteria for lead are 33 µg/L and 1.3 µg/L, respectively, as total recoverable. Order R5-2013-0094-01 included effluent limitations for lead based on the CTR aquatic life criteria.

(b) **RPA Results.** The MEC for lead in the effluent was 0.52 µg/L based on 40 samples collected between June 2014 and May 2017. The maximum observed upstream receiving water lead concentration was 0.71 µg/L based on four samples collected between June 2014 and May 2017. Therefore, lead in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the CTR chronic aquatic life criterion of 1.3 µg/L, and the effluent limitations for lead have not been retained in this Order. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

iii. **Manganese**

(a) **WQO.** The Secondary MCL – Consumer Acceptance Limit for manganese is 50 µg/L. The State Water Board Division of Drinking Water (DDW) has established Secondary Maximum Contaminant Levels (MCL's) to assist public drinking water systems in managing their drinking water for public welfare considerations, such as taste, color, and odor. The Secondary MCL is used to implement the Basin Plan's chemical constituent objective for the protection of municipal and domestic supply. Order R5-2013-0094-01 included an effluent limitation for manganese based on the Secondary MCL.

(b) **RPA Results.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Manganese 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. The most stringent objective is the Secondary MCL, which is derived from human welfare considerations (e.g., taste, odor, laundry staining), not for toxicity. Secondary MCL's are drinking water standards contained in Title 22 of the California Code of Regulations. Title 22 requires compliance with these standards on an annual average basis, when sampling at least quarterly. To be consistent with how compliance with the standards is determined, the Central Valley Water Board conducts the RPA for manganese based on the calendar year annual average effluent manganese concentrations.

The maximum calendar annual average concentration for manganese in the effluent was 29 µg/L (in calendar year 2014). Therefore, manganese in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL of 50 µg/L, and the effluent limitation for manganese has not been retained in this Order. Removal of this effluent limitation is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

iv. **Nitrite**

(a) **WQO.** DDW has adopted a Primary MCL for nitrite of 1 mg/L, which is protective of the Basin Plan's chemical constituent objective. Order R5-2013-0094-01 included effluent limitations for nitrite based on the Primary MCL.

(b) **RPA Results.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Nitrite 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. For conducting the RPA, U.S. EPA recommends using a mass-balance approach to determine the expected critical downstream receiving water concentration using a steady-state approach[14]. This downstream receiving water concentration is then compared to the applicable water quality objectives to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion. This approach allows assimilative capacity and dilution to be factored into the RPA. This U.S. EPA recommended approach has been used for nitrite. The critical downstream receiving water concentration is calculated using the following equation:

$$C_r = \frac{Q_s C_s + Q_d C_d}{Q_s + Q_d}$$

Where:

Q_s = Critical stream flow (1Q10) for acute criteria, (7Q10) for chronic criteria, and harmonic mean flow for human health criteria

Q_d = Critical effluent flow from discharge flow data (maximum permitted discharge)

C_s = Critical upstream pollutant concentration

C_d = Critical effluent pollutant concentration

C_r = Critical downstream receiving water pollutant concentration

Although the Primary MCL for nitrite is a human health-based criterion, it is designed to be protective of human health for short-term exposure. Therefore, a critical stream flow (Qs) of 1,236 MGD (7Q10) was used for the RPA for nitrite. The critical effluent flow, Qd, is 10.5 MGD, which is the maximum permitted flow allowed in this Order. The critical effluent pollutant concentration, Cd, was determined using statistics recommended in the TSD for statistically calculating the projected maximum effluent concentration (i.e., Table 3-2 of the TSD using the 95% probability basis and 95% confidence level).

The maximum observed effluent nitrite concentration was 1.35 mg/L based on 161 samples collected between June 2014 and May 2017. Nitrite was not detected in the upstream receiving water based on four samples collected by the Discharger between June 2014 and May 2017,

[14] U.S. EPA NPDES Permit Writers' Course (EPA 833-B-97-001 rev. October 2009)

using a method detection limit (MDL) of 0.05 mg/L. For the purposes of the RPA calculations below, a value of 0.05 mg/L was used to represent the critical upstream pollutant concentration, Cs. Using the procedures described above, the critical downstream nitrite concentration is calculated as follows:

Q_s = 798 MGD

Q_d = 10.5 MGD

C_s = 0.05 mg/L

C_d = 0.88 mg/L

$$C_r = \frac{(798\ MGD \times 0.05\ mg/L\ ) + (10.5\ MGD \times 0.88\ mg/L)}{(798\ MGD + 10.5\ MGD)} = 0.061\ mg/L$$

The critical downstream receiving water nitrite concentration, C_r, is 0.061 mg/L, which does not exceed the Primary MCL. Therefore, the discharge does not have reasonable potential for nitrite and the WQBEL for nitrite has not been retained in this Order. Removal of this effluent limitation is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

v. **Salinity**

(a) **WQO.** The Basin Plan contains a chemical constituent objective that incorporates state MCLs, contains a narrative objective, and contains numeric water quality objectives for certain specified water bodies for electrical conductivity, total dissolved solids, sulfate, and chloride. The U.S. EPA Ambient Water Quality Criteria for Chloride recommends acute and chronic criteria for the protection of aquatic life. There are no U.S. EPA water quality criteria for the protection of aquatic life for electrical conductivity, total dissolved solids, and sulfate.

Table F-13. Salinity Water Quality Criteria/Objectives

Parameter	Basin Plan Objective	Agricultural WQ Objective[1]	Secondary MCL[2]	U.S. EPA NAWQC	Effluent	
					Average[3]	Maximum
EC (µmhos/cm) or TDS (mg/L)	150[4]	Varies	EC: 900, 1600, 2200 or TDS: 500, 1000, 1500	N/A	673 or 328	960 or 400
Sulfate (mg/L)	N/A	Varies	250, 500, 600	N/A	35	53
Chloride (mg/L)	N/A	Varies	250, 500, 600	860 1-hr 230 4-day	64	99

Parameter	Basin Plan Objective	Agricultural WQ Objective[1]	Secondary MCL[2]	U.S. EPA NAWQC	Effluent	
					Average[3]	Maximum

1 Narrative chemical constituent objective of the Basin Plan. Procedures for establishing the applicable numeric limitation to implement the narrative objective can be found in the Policy for Application of Water Quality Objectives, Section 4.2.2.1.9 of the Basin Plan. However, the Basin Plan does not require improvement over naturally occurring background concentrations. In cases where the natural background concentration of a particular constituent exceeds an applicable water quality objective, the natural background concentration will be considered to comply with the objective.

2 The Secondary MCL's are for protection of public welfare and are stated as a recommended level, upper level, and a short-term maximum level.

3 Maximum calendar annual average.

4 Only applies to electrical conductivity. Electrical conductivity shall not exceed 150 micromhos/cm (90 percentile) in well-mixed waters of the Feather River based on a 10-year rolling average.

(1) **Chloride.** The Secondary MCL for chloride is 250 mg/L, as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum.

(2) **Electrical Conductivity or Total Dissolved Solids.** The Secondary MCL for EC is 900 µmhos/cm as a recommended level, 1600 µmhos/cm as an upper level, and 2200 µmhos/cm as a short-term maximum, or when expressed as TDS is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum. The Basin Plan includes a water quality objective that electrical conductivity (at 25°C) "[s]*hall not exceed 150 micromhos/cm (90 percentile) in well-mixed waters of the Feather River*." The Basin Plan objective for electrical conductivity is applied as a 10-year rolling average.

(3) **Sulfate.** The Secondary MCL for sulfate is 250 mg/L as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum.

(b) **RPA Results**

(1) **Chloride.** Chloride concentrations in the effluent ranged from 51.8 mg/L to 98.9 mg/L, with maximum observed calendar year annual average concentration of 64 mg/L based on 151 samples collected in calendar years 2014 through 2016. These levels do not exceed the Secondary MCL. Background concentrations in the Feather River ranged from 1.25 mg/L to 1.83 mg/L based on four samples collected by the Discharger from June 2014 to May 2017.

(2) **Electrical Conductivity or Total Dissolved Solids.** A review of the Discharger's monitoring reports shows a maximum observed calendar year annual average effluent electrical conductivity of 673 µmhos/cm, with a range from 500 µmhos/cm to 960 µmhos/cm based on 1,089 samples collected in calendar years 2014 through 2016. The maximum observed annual average background electrical conductivity was 108 µmhos/cm based on 161 samples collected in calendar years 2014 through 2016. These data show that some limited assimilative capacity exists in the Feather River for electrical conductivity. Based on the maximum annual average electrical conductivity of the effluent, the table below summarizes the projected downstream Feather River electrical conductivity concentrations

using a mass-balance equation and electrical conductivity and flow data for the Facility, the Linda County Water District WWTP, and the Feather River, which indicates that compliance with the Basin Plan electrical conductivity objective will be achieved.

Table F-14. Feather River Electrical Conductivity Concentrations

EC_{YC} (µmhos/cm)	673
Q_{YC} (MGD)	10.5
EC_{LC} (µmhos/cm)	608
Q_{LC} (MGD)	6.7
$EC_{FR\ Upstream}$ (µmhos/cm)	108
$Q_{FR\ Upstream}$ (MGD)	2,327
$EC_{FR\ Downstream}$[1] (µmhos/cm)	112

[1] $EC_{FR\ Downstream}=((EC_{YC}Q_{YC})+(EC_{LC}Q_{LC})+(EC_{FR}Q_{FR}))/(Q_{YC}+Q_{LC}+Q_{FR})$, where:
EC_{YC} = Maximum observed calendar year annual average effluent concentration
Q_{YC} = Flow limitation for the Facility
EC_{LC} = Annual average effluent concentration from the Linda County Water District WWTP, as reported in Order R5-2017-0094
Q_{LC} = Flow limitation for the Linda County Water District WWTP in Order R5-2017-0094
$EC_{FR\ Upstream}$ = Maximum observed calendar year annual average upstream receiving water concentration
Q_{FR} = Harmonic mean flow of the Feather River

The projected downstream electrical conductivity concentration, which combines the Facility and Linda County Water District WWTP discharges, of 112 µmhos/cm is less than the Basin Plan objective of 150 µmhos/cm (90 percentile) in well-mixed waters of the Feather River. Therefore, electrical conductivity in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan objective.

The maximum observed calendar year annual average total dissolved solids effluent concentration was 328 mg/L with concentrations ranging from 220 mg/L to 400 mg/L, based on 157 samples collected between in calendar years 2014 through 2016. These levels do not exceed the Secondary MCL. The background receiving water total dissolved solids ranged from 20 mg/L to 55 mg/L based on four samples collected between June 2014 and May 2017.

(3) **Sulfate.** Sulfate concentrations in the effluent ranged from 14.5 mg/L to 52.9 mg/L, with a maximum observed calendar year annual average of 35 mg/L. These levels do not exceed the Secondary MCL. Background concentrations in the Feather River ranged from 2.07 mg/L to 3.05 mg/L based on four samples collected between June 2014 and May 2017.

Based on the relatively low reported salinity, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity, and this Order does not contain effluent limitations for salinity. However, since the Discharger discharges to Feather River, a tributary of the Sacramento River and eventually the Sacramento-San Joaquin Delta, of additional concern is the salt contribution to Delta waters. Allowing the Discharger to increase its current salt loading may be contrary to the Region-wide effort to address

salinity in the Central Valley. Therefore, this Order contains a provision that the salinity evaluation and minimization plan shall be reviewed and updated if the annual calendar year average for effluent electrical conductivity is greater than 800 µmhos/cm. If the plan is updated, it shall be submitted by 1 April following the calendar year in which the annual calendar year average for effluent electrical conductivity was exceeded.

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

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, chlorine residual (Discharge Point 001 only), copper, dichlorobromomethane, mercury, nitrate plus nitrite, pH, settleable solids (Discharge Point 001 only), and total coliform organisms. WQBEL's 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 1999 U.S. EPA National Ambient Water Quality Criteria (NAWQC) for the protection of freshwater aquatic life for total ammonia (the "1999 Criteria"), 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. U.S. EPA also recommends that no 4-day average concentration should exceed 2.5 times the 30-day CCC.

The U.S. EPA has published national recommended water quality criteria for the protection of aquatic life from the toxic effects of ammonia in freshwater (the "2013 Criteria")[15]. The 2013 Criteria is an update to U.S. EPA's 1999 Criteria and varies based on pH and temperature. Although the 2013 Criteria reflects the latest scientific knowledge on the toxicity of ammonia to certain freshwater aquatic life, including new toxicity data on sensitive freshwater mussels in the Family Unionidae, the species tested for development of the 2013 Criteria may not be present in some Central Valley waterways. The 2013 Criteria document therefore states that, "*unionid mussel species are not prevalent in some waters, such as the arid west …*" and provides that, "*In the case of ammonia, where a state demonstrates that mussels are not present on a site-specific basis, the recalculation procedure may be used to remove the mussel species from the national criteria dataset to better represent the species present at the site.*"

The Central Valley Water Board issued a 3 April 2014 California Water Code Section 13267 Order for Information: 2013 Final Ammonia Criteria for Protection of Freshwater Aquatic Life (13267 Order) requiring the Discharger to either participate in an individual or group study to determine

[15] Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater, published August 2013 [EPA 822-R-13-001]

the presence of mussels or submit a method of compliance for complying with effluent limitations calculated assuming mussels present using the 2013 Criteria. The Discharger submitted a letter to the Central Valley Water Board indicating their participation in the Central Valley Clean Water Association Freshwater Collaborative Mussel Study. Studies are currently underway to determine how the latest scientific knowledge on the toxicity of ammonia reflected in the 2013 Criteria can be implemented in the Central Valley Region as part of a Basin Planning effort to adopt nutrient and ammonia objectives. Until the Basin Planning process is completed, the Central Valley Water Board will continue to implement the 1999 Criteria to interpret the Basin Plan's narrative toxicity objective. The 1999 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. U.S. EPA also recommends that no 4-day average concentration should exceed 2.5 times the 30-day CCC. U.S. EPA found that as pH increased, both the acute and chronic toxicity of ammonia increased. Salmonids were more sensitive to acute toxicity effects than other species. However, while the acute toxicity of ammonia was not influenced by temperature, it was found that invertebrates and young fish experienced increasing chronic toxicity effects with increasing temperature. Because the Feather River has a beneficial use of cold freshwater habitat and the presence of salmonids and early fish life stages in the Feather River is well-documented, the recommended criteria for waters where salmonids and early life stages are present were used.

The maximum permitted effluent pH is 8.5, 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.

A chronic criterion was calculated for each day when paired pH and temperature data were measured using downstream receiving water data for pH and temperature. Rolling 30-day average criteria were calculated from downstream receiving water 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 most stringent 30-day CCC was 1.81 mg/L (as N) based on downstream receiving water pH and temperature data collected from June 2014 through May 2017. The 4-day average concentration is derived in accordance with the U.S. EPA criterion as 2.5 times the 30-day CCC. Based on the 30-day CCC of 1.81 mg/L (as N), the 4-day average concentration that should not be exceeded is 4.52 mg/L (as N).

(b) **RPA Results.** The Facility is a POTW that treats domestic wastewater. Untreated domestic wastewater contains ammonia in concentrations that is harmful to aquatic life and exceed the Basin Plan narrative toxicity objective. Federal regulations at 40 C.F.R. section 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.

U.S. EPA'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 WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters).*" U.S. EPA'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 POTW's, U.S. EPA recommends that, "*POTW's should also be characterized for the possibility of chlorine and ammonia problems*." (TSD, p. 50)

Nitrification is a biological process that converts ammonia to nitrite and nitrite to nitrate. Denitrification is a process that converts nitrate to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas, which is then released to the atmosphere. The Discharger does not use use nitrification to remove ammonia from the waste stream. Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving stream. Ammonia is known to cause toxicity to aquatic organisms in surface waters. Discharges of ammonia in concentrations that produce detrimental physiological responses to human, plant, animal, or aquatic life would violate the Basin Plan's 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 WQBEL's are required.

(c) **WQBEL's.** As discussed in section IV.C.2.f of this Fact Sheet, the Discharger previously conducted dynamic modeling for ammonia, which was reviewed and approved by the Central Valley Water Board, and the results of which were included in Orders R5-2007-0134-01 and R5-2013-0094-01. In addition, as described in section IV.C.2.c of this Fact Sheet, since this Order will require significantly higher flows for discharges to occur at Discharge Point 001, the existing dynamic modeling results are

expected to be conservative and protective of the receiving water. This Order retains the AMEL of 31 mg/L from Orders R5-2007-0134-01 and R5-2013-0094-01. Since ammonia is a non-priority pollutant that is not subject to the SIP, the MDEL established in Orders R5-2007-0134-01 and R5-2013-0094-01 must be replaced with an AWEL in accordance with 40 C.F.R. section 122.45(d), which requires AMEL's and AWEL's for POTW's unless impracticable. Therefore, this Order replaces the MDEL with an AWEL of 51 mg/L based on the Discharger's 11 September 2017 memorandum *City of Yuba City Dynamic Model Effluent Ammonia Data* (Larry Walker Associates).

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that, except for the monthly average in December 2015, the Discharger has been able to comply with the AMEL and effluent concentrations were below the AWEL. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

ii. **Chlorine Residual**

(a) **WQO.** U.S. EPA 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 limits are required.

Federal regulations at 40 C.F.R. section 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.

U.S. EPA'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 WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters)*." U.S. EPA'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 POTW's, U.S. EPA recommends that, "*POTW's 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 sodium bisulfite process to dechlorinate the effluent prior to discharge to the Feather River at Discharge Point 001, 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.

Chlorine residual in the ponds is expected to dissipate prior to any direct discharge to the Feather River at Discharge Point 002 when the ponds are inundated. Therefore, discharge at Discharge Point 002 does not exhibit reasonable potential to cause or contribute to an in-stream excursion above the NAWQC.

(c) **WQBEL's (Discharge Point 001 only).** The U.S. EPA *Technical Support Document for Water Quality-Based Toxics Control* [EPA/505/2-90-001] contains statistical methods for converting chronic (4-day) and acute (1-hour) aquatic life criteria to average monthly and maximum daily effluent limitations based on the variability of the existing data and the expected frequency of monitoring. However, because chlorine is an acutely toxic constituent that can and will be monitored continuously, an average 1-hour limitation is considered more appropriate than an average daily limitation. This Order contains a 4-day average effluent limitation and 1-hour average effluent limitation for chlorine residual of 0.011 mg/L and 0.019 mg/L, respectively, at Discharge Point 001 based on U.S. EPA's NAWQC, which implements the Basin Plan's narrative toxicity objective for protection of aquatic life.

(d) **Plant Performance and Attainability (Discharge Point 001 only).** The Discharger uses a sodium bisulfite process to dechlorinate the effluent prior to discharge to the Feather River at Discharge Point 001. Thus, the Central Valley Water Board concludes that immediate compliance with these effluent limitations is feasible.

iii. **Copper**

(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. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. Default U.S. EPA translators were used for the effluent and receiving water. As described in section IV.C.2.e of this Fact Sheet, the applicable acute and chronic criteria for copper in the effluent are 7.6 µg/L and 5.3 µg/L, respectively, as total recoverable.

(b) **RPA Results.** The MEC for copper in the effluent was 8.5 µg/L based on 40 samples collected between June 2014 and May 2017. The maximum

observed upstream receiving water copper concentration was 2.3 µg/L based on three samples collected between June 2014 and May 2017. Therefore, 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) W**QBEL's.** As discussed in section IV.C.2.f of this Fact Sheet, the Discharger previously conducted dynamic modeling for copper, which was reviewed and approved by the Central Valley Water Board, and the results of which were included in Orders R5-2007-0134-01 and R5-2013-0094-01. In addition, as described in section IV.C.2.c of this Fact Sheet, since this Order will require significantly higher flows for discharges to occur at Discharge Point 001, the existing dynamic modeling results are expected to be conservative and protective of the receiving water. Therefore, this Order retains the AMEL and MDEL of 50 µg/L and 85 µg/L, respectively, from Orders R5-2007-0134-01 and R5-2013-0094-01.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 8.5 µg/L is less than the applicable WQBEL's. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

iv. **Dichlorobromomethane**

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

(b) **RPA Results.** The MEC for dichlorobromomethane was 1.4 µg/L based on 40 samples collected between June 2014 and May 2017. Dichlorobromomethane was not detected in the upstream receiving water based on three samples collected between June 2014 and May 2017. Therefore, dichlorobromomethane in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of human health.

(c) **WQBEL's.** The receiving water contains assimilative capacity for dichlorobromomethane; therefore, as discussed in section IV.C.2.c, a dilution credit of 221:1 may be allowed in the development of the WQBEL's for dichlorobromomethane. However, the Central Valley Water Board finds that granting of this dilution credit would allocate an unnecessarily large portion of the receiving water's assimilative capacity for dichlorobromomethane and could violate the Antidegradation Policy. Therefore, this Order retains the performance-based AMEL of 10 µg/L and MDEL of 30 µg/L from Order R5-2013-0094-01.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 1.4 µg/L is less than the applicable WQBEL's. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

v. **Mercury**

(a) **WQO.** The current NAWQC for protection of freshwater aquatic life, continuous concentration, for mercury is 0.77 µg/L (30-day average, chronic criteria). The CTR contains a human health criterion (based on a

threshold dose level causing neurological effects in infants) of 0.050 µg/L for waters from which both water and aquatic organisms are consumed. Both values are controversial and subject to change. In 40 C.F.R. part 131, U.S. EPA acknowledges that the human health criteria may not be protective of some aquatic or endangered species and that "…*more stringent mercury limits may be determined and implemented through use of the State's narrative criterion.*" In the CTR, U.S. EPA reserved the mercury criteria for freshwater and aquatic life and may adopt new criteria at a later date.

The State Water Board adopted Resolution 2017-0027 on 2 May 2017, which approved *Part 2 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California—Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions* (Statewide Mercury Provisions). The Statewide Mercury Provisions establish a Sport Fish Water Quality Objective of an average 0.2 mg/kg methylmercury fish tissue concentration within a calendar year for waters with the beneficial uses of commercial and sport fishing (COMM), tribal tradition and culture (CUL), wildlife habitat (WILD), and marine habitat (MAR). This fish tissue objective corresponds to a water column concentration of 12 ng/L of total mercury for flowing water bodies (e.g., rivers, creeks, streams, and waters with tidal mixing). As shown in Table F-3, the beneficial uses of the Feather River include WILD; therefore, the Sport Fish Water Quality Objective is applicable.

(b) **RPA Results.** The Statewide Mercury Provisions specify that the RPA shall be conducted using the maximum annual average effluent and background mercury concentrations for comparison with the Sport Fish Water Quality Objective. The MEC for mercury was 21 ng/L, with a maximum annual average of 7.8 ng/L, based on 39 samples collected in calendar years 2014 through 2016. The maximum annual average background concentration for mercury was 1.7 ng/L based on three samples collected in calendar year 2016. Therefore, the discharge does not exhibit reasonable potential to exceed the Sport Fish Water Quality Objective.

Mercury bioaccumulates in fish tissue and, therefore, the discharge of mercury to the receiving water may contribute to exceedances of the narrative toxicity objective and impact beneficial uses. The Feather River has been listed as an impaired water body pursuant to CWA section 303(d) because of mercury and the discharge must not cause or contribute to increased mercury levels.

(c) **WQBEL's.** Order R5-2013-0094-01 included a performance-based mass effluent limitation for mercury of 0.056 lbs/month. For this Order, the averaging period for the mass-based effluent limitation has been revised to be consistent with performance-based mass limitations assigned to other recently adopted permits in the region. Therefore, this Order contains a performance-based mass effluent limitation of 0.67 lbs/year for mercury, based on the monthly mass limitation included in Order R5-2013-0094-01. This limitation is based on maintaining the mercury loading until a TMDL is established or U.S. EPA develops mercury standards that are protective of human health. If U.S. EPA develops new

water quality standards for mercury, this Order may be reopened and the effluent limitations adjusted.

(d) **Plant Performance and Attainability.** The mass effluent limitation for mercury is based on Facility performance. The Central Valley Water Board concludes, therefore, that immediate compliance with this effluent limitation is feasible.

vi. **Nitrate and Nitrite**

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

U.S. EPA has developed a primary MCL and an MCL goal of 1 mg/L for nitrite (as nitrogen). For nitrate, U.S. EPA 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 is harmful to aquatic life and exceed the Basin Plan's narrative toxicity objective. 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).

Federal regulations at 40 C.F.R. section 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.

U.S. EPA'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 WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters)*." U.S. EPA'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 POTW'S, U.S. EPA recommends that, "*POTW's 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 limit 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's 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 WQBEL's are required.

(c) **WQBEL's.** This Order contains an AMEL and AWEL for nitrate plus nitrite of 10 mg/L and 21 mg/L, respectively, based on the Basin Plan's narrative chemical constituents objective for protection of the MUN beneficial use. These effluent limitations are included in this Order to assure 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 4.85 mg/L is less than the applicable WQBEL's. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

vii. **Pathogens**

(a) **WQO.** In a letter to the Central Valley Water Board dated 8 April 1999, DDW indicated it would consider wastewater discharged to water bodies with identified beneficial uses of irrigation or contact recreation and where the wastewater receives dilution of more than 20:1 to be adequately disinfected if the effluent coliform concentration does not exceed 23 MPN/100 mL as a 7-day median and if the effluent coliform concentration does not exceed 240 MPN/100 mL more than once in any 30-day period.

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

Federal regulations at 40 C.F.R. section 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.

U.S. EPA'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 WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters)*." U.S. EPA'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)

Municipal and domestic supply, agricultural irrigation, and body contact water recreation are beneficial uses of the Feather River. The critical low flow for the Feather River is 1,000 cfs and the design effluent flow for the Facility is 16 cfs (10.5 MGD, average dry weather flow). 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 and provides the basis for the discharge to have a reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for pathogens and WQBEL's are required.

(c) **WQBEL's.** Pursuant to guidance from DDW, this Order includes effluent limitations for total coliform organisms of 23 MPN/100 mL as a 7-day median and 240 MPN/100 mL, not to be exceeded more than once in a 30-day period. These coliform limits are imposed to protect the beneficial uses of the receiving water, including public health through contact recreation and drinking water pathways.

(d) **Plant Performance and Attainability.** The Facility is designed to provide chlorine disinfection to achieve compliance with the effluent

limitations for pathogens. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

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 WQBEL's are required.

Federal regulations at 40 C.F.R. section 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.

U.S. EPA'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 WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters).*" U.S. EPA'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 continuous sampling from June 2014 through May 2017, the maximum pH reported was 9.6 and the minimum was 6.4. 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, WQBEL's for pH are required in this Order.

(c) **WQBEL's**

(1) **Discharge Points 001.** 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.

(2) **Discharge Point 002.** Effluent limitations for pH of 6.0 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. The soil beneath the disposal ponds is expected to buffer the lower pH prior to discharge to the Feather River. The reduction in pH will also be minimized by the retention time in the ponds, which can increase the pH by the change in temperature.

(d) **Plant Performance and Attainability.** Effluent pH ranged from 6.4 to 9.6; however, the minimum pH was observed below the instantaneous minimum limitation of 6.5 for Discharge Point 001 only once and the maximum pH was observed above the instantaneous maximum limitation of 8.5 only twice. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible. Compliance with the instantaneous minimum and maximum effluent limitations is determined by monitoring indicated in the Monitoring and Reporting Program, Table E-3.

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." Order R5-2013-0094-01 included an AMEL and MDEL of 0.1 ml/L and 0.2 ml/L, respectively, for settleable solids to implement the narrative settleable solids objective.

(b) **RPA Results.** Settleable solids were detected in the effluent in 109 samples, with a maximum effluent concentration of 39 ml/L, and exceeded the MDEL of 0.2 ml/L on seven occasions. Therefore, settleable solids in the discharge at Discharge Point 001 has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative settleable solids objective.

Settleable solids discharged to the ponds is expected to settle prior to discharge at Discharge Points 002. Therefore, settleable solids in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative settleable solids objective.

(c) **WQBEL's (Discharge Point 001 only).** 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. A daily maximum effluent limitation for settleable solids is included in the Order, in lieu of a weekly average, to ensure that the treatment works operate in accordance with design capabilities.

(d) **Plant Performance and Attainability (Discharge Point 001 only).** As discussed in section II.D of this Fact Sheet, the Discharger has received effluent limitation violations for settleable solids during the term of Order R5-2013-0094-01. The effluent limitations for settleable solids in this Order are the same as those in previous Orders R5-2007-0134-01 and R5-2013-0094-01; therefore, a compliance schedule cannot be issued because the limits are not new and/or more stringent. The discharge only exceeded the MDEL of 0.2 ml/L in seven out of 1,116 samples (i.e., less than 1%).

4. WQBEL Calculations

a. This Order includes WQBEL's for ammonia, chlorine residual (Discharge Point 001 only), diazinon and chlorpyrifos, copper, dichlorobromomethane, mercury, nitrate plus nitrite, pH, settleable solids (Discharge Point 001 only), and total coliform organisms. The general methodology for calculating WQBEL's based on the different criteria/objectives is described in subsections IV.C.5.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:

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

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.

c. **Primary and Secondary MCL's.** For non-priority pollutants with Primary MCL's to protect human health (e.g., nitrate plus nitrite), the AMEL is set equal to the Primary MCL and the AWEL is calculated using the AWEL/AMEL multiplier, where the AWEL multiplier is based on a 98th percentile occurrence probability and the AMEL multiplier is from Table 2 of the SIP.

For non-priority pollutants with Secondary MCL's that protect public welfare (e.g., taste, odor, and staining), WQBEL's were calculated by setting the LTA equal to the Secondary MCL and using the AMEL multiplier to set the AMEL. The AWEL was calculated using the MDEL/AMEL multiplier from Table 2 of the SIP.

d. **Aquatic Toxicity Criteria.** For priority pollutants with acute and chronic aquatic toxicity criteria, the WQBEL's are calculated in accordance with Section 1.4 of the SIP. The ECA's 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. For non-priority pollutants, WQBEL's are calculated using similar procedures, except that an AWEL is determined utilizing multipliers based on a 98th percentile occurrence probability.

e. **Human Health Criteria.** For priority pollutants with human health criteria, the WQBEL's are calculated in accordance with Section 1.4 of the SIP. The AMEL is set equal to the ECA and the MDEL is calculated using the MDEL/AMEL multiplier from Table 2 of the SIP. For non-priority pollutants with human health criteria, WQBEL's are calculated using similar procedures, except that an AWEL is established using the MDEL/AMEL multiplier from Table 2 of the SIP.

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

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

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

where:
$mult_{AMEL}$ = statistical multiplier converting minimum LTA to AMEL
$mult_{MDEL}$ = statistical multiplier converting minimum LTA to MDEL
M_A = statistical multiplier converting acute ECA to LTA_{acute}
M_C = statistical multiplier converting chronic ECA to $LTA_{chronic}$

Summary of Water Quality-Based Effluent Limitations Discharge Points 001 and 002

Table F-15. Summary of Water Quality-Based Effluent Limitations – Discharge Points 001 and 002

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
pH	standard units	--	--	--	6.5[1a,1b]	8.5[1a]
Priority Pollutants						
Copper, Total Recoverable	µg/L	50	--	85	--	--
Dichlorobromomethane	µg/L	10	--	30	--	--
Mercury, Total recoverable	lbs/year	0.67[2]	--	--	--	--
Non-Conventional Pollutants						
Ammonia Nitrogen, Total (as N)	mg/L	31	51	--	--	--
	lbs/day[3]	2,700	4,500	--	--	--

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Chlorine, Total Residual	mg/L	--	0.011[4]	0.019[5]	--	--
Diazinon and Chlorpyrifos	µg/L	[6]	[7]			
Nitrate Plus Nitrite (as N)	mg/L	10	21	--	--	--
Settleable Solids[9]	ml/L	0.1	--	0.2	--	--
Total Coliform Organisms	MPN/100 mL	--	23[10]	240[11]		

1a Compliance with the instantaneous minimum and maximum effluent limitations is determined by monitoring indicated in the Monitoring and Reporting Program, Table E-3.

1b The instantaneous minimum effluent limitation is limited to 6.0 standard units for discharges at Discharge Point 002.

2 For a calendar year, the total annual mass discharge of total mercury shall not exceed 0.67 pounds/year.

3 Based on a design flow of 10.5 MGD.

4 Applied as a 4-day average effluent limitation.

5 Applied as a 1-hour average effluent limitation.

6 Average Monthly Effluent Limitation

$$S_{AMEL} = \frac{C_{D\,M-avg}}{0.079} + \frac{C_{C\,M-avg}}{0.012} \leq 1.0$$

$C_{D\,M\text{-}avg}$ = average monthly diazinon effluent concentration in µg/L.
$C_{C\,M\text{-}avg}$ = average monthly chlorpyrifos effluent concentration in µg/L.

7 Average Weekly Effluent Limitation

$$S_{AWEL} = \frac{C_{D\,W-avg}}{0.14} + \frac{C_{C\,W-avg}}{0.021} \leq 1.0$$

$C_{D\,W\text{-}avg}$ = average weekly diazinon effluent concentration in µg/L.
$C_{C\,W\text{-}avg}$ = average weekly chlorpyrifos effluent concentration in µg/L.

8 Applied as an annual average effluent limitation.

9 Applicable at Discharge Point 001 only.

10 Applied as a 7-day median effluent limitation.

11 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 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 Section 3.1.20) 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. 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. U.S. EPA'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 WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's 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 limits are required to ensure compliance with the Basin Plan's narrative toxicity objective.

U.S. EPA 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 R5-2013-0094-01, 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 Section 3.1.20.) The table below summarizes chronic WET testing performed by the Discharger from June 2014 through August 2018. This data was used to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective. The results below represent results for tests using either the laboratory water or receiving water as the control, unless otherwise noted.

Table F-16. 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)
8 July 2014	1[2]	1.8[2]	1[1,2,6]	1.8[6]	1
7 October 2014	1[2]	1[2]	1[6]	1.8[6]	1
6 January 2015	1[2]	1.8[2]	1[6]	1.8[1,6] / 12[2,6]	1
15 June 2015	1.8[2]	1[2]	1[6]	>47.6[6]	1.8[2]

Date	Fathead Minnow *Pimephales promelas*		Water Flea *Ceriodaphnia dubia*		Green Algae *Selenastrum capricornutum*
	Survival (TUc)	Growth (TUc)	Survival (TUc)	Reproduction (TUc)	Growth (TUc)
15 September 2015	--	--	1[6]	>47.6[6]	--
22 September 2015	1.8[2]	1.8[2]	1[6]	>47.6[6]	1.8
3 November 2015	--	--	1[6]	12[6]	--
1 December 2015	1.8[2]	1.8[2]	1.8[6]	>47.6[6]	5.1[1] / 1[2]
3 March 2016	--	--	3[6]	>47.6[6]	1
15 March 2016	1[2] / 1.8[2]	1.8	3[6]	3[6]	--
29 March 2016	--	--	3[6]	>47.6[6]	--
19 April 2016	--	--	3[6]	>47.6[6]	--
17 May 2016	--	--	3[6]	>47.6[6]	--
8 June 2016	1.8[2]	1.8[2]	--	--	1.8[1] / 1[2]
2 August 2016	1	1[1] / 1.8[2]	--	--	1.8[1] / 1[2]
15 August 2016	--	--	3[6]	>47.6[6]	--
29 August 2016	--	--	3[6]	>47.6[6]	--
10 October 2016	1.8	1.8	3[6]	23.8[6]	1.8[1] / 1[2]
8 November 2016	--	--	3[6]	>47.6[6]	--
6 December 2016	--	--	3[6]	>47.6[6]	--
17 January 2017	1.8	1.8[1] / 5.1[2]	3[6]	3[6]	5.1[1] / 1.8[2]
7 March 2017	--	--	3[6]	>47.6[6]	--
16 May 2017	1.8[1] / 1[2]	1.8[1] / 1[2]	3[6]	6[6]	1
20 May 2017	--	--	3[6]	>47.6[6]	--
27 May 2017	--	--	3[6]	>47.6[6]	--
11 July 2017	1[1] / 1.8[2]	1[1] / 1.8[2]	3[6]	3[3, 6] / >47.6[4, 6]	1
10 October 2017	1.8[2]	1.8[2]	3[6]	>200[6]	1.8[1] / 1[2]
30 January 2018	1.8	1.8	3[6]	3[6]	1.8
3 April 2018	1.8[2]	1.8[2]	3[6]	>47.6[6]	1.8[1] / 1[2]
7 August 2018	1.8	1.8	3[6]	3[5]/23.8[6]	--

1 Represents results using receiving water control.
2 Represents results using laboratory water control.
3 Test performed by Pacific EcoRisk.
4 Test performed by Aquascience.
5 Freeze treated test.
6 Suspected pathogen interference.

i. **RPA.** A dilution ratio of 11:1 is available for chronic whole effluent toxicity at Discharge Point 001. Chronic toxicity testing results exceeded 12 chronic toxicity units (TUc) (as 100/NOEC) at Discharge Points 001 and 002.

The Discharger initiated a Toxicity Reduction Evaluation (TRE) after an accelerated monitoring event in December 2015 resulted in >47.6 TUc for *C. dubia* reproduction. Studies to investigate the source of toxicity determined that there is no toxicant present in the effluent, but rather a pathogen present in the dechlorination channel is interfering with the tests. The pathogen issues began during the current permit, which added new effluent limits for total residual chlorine when discharging to the ponds. The Discharger did not previously provide dechlorination when discharging to the ponds because Order R5-2007-0134-01 did not include total residual chlorine effluent limits at Discharge Point 002; therefore, chlorine in the dechlorination channel during pond discharges is

suspected of keeping the channel free of pathogens. Order R5-2013-0094-01 was amended in May 2018 to remove the total residual chlorine effluent limits for the pond discharges. By allowing chlorinated water to flow through the dechlorination channel when discharging to the ponds, the chlorine may help control the proliferation of the pathogen interfering with the chronic toxicity test, which is not designed to evaluate toxicity due to pathogens. The EPA test is designed to measure toxic effects from chemical toxicants. The Chronic Toxicity Testing Method Manual allows for modification of effluent to control pathogen interference[16]. The Discharger sampled for chronic toxicity in the chlorinated effluent in August 2018, which was the first chronic toxicity testing since the permit amendment. The August 2018 results demonstrated toxicity to *C. dubia* reproduction on chlorinated effluent that was dechlorinated in the laboratory; however, effluent samples that were freeze-treated to evaluate the use of freezing to remove microbial interferences resulted in 3 TUc.

The Central Valley Water Board suspects that the observed chronic toxicity in the effluent is the result of pathogen interference. Therefore, the discharge does not have reasonable potential to cause or contribute to an instream exceedance of the Basin Plan's narrative toxicity objective.

D. Final Effluent Limitation Considerations

1. Mass-based Effluent Limitations

40 C.F.R section 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 C.F.R. section 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 CF.R. section 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 MCL's) 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 because it is an oxygen demanding substance. In addition, mass-based limits for methylmercury have been established in this Order in accordance with the Delta Methylmercury Control Program. 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) in Prohibition III.E of this Order.

[16] "When parallel testing has confirmed pathogen interference, the regulatory authority may allow modifications of the effluent samples or receiving water diluent to remove or inactivate the pathogens (Subsection 11.3.4.6.1 - 11.3.4.6.4). Techniques that control pathogen interference without modifying the effluent sample (11.3.4.5) are recommended, but they may not always be able to minimize pathogen interference to the extent that test results are not confounded by mortality due to pathogens. Therefore, regulatory authorities may allow appropriate pathogen control techniques (including those that modify the effluent sample) on a case-by-case basis." [Section 11.3.4.6 Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to Freshwater Organisms, Fourth Edition, October 2002]

2. Averaging Periods for Effluent Limitations

40 C.F.R. section 122.45(d) requires AMEL's and AWEL's for POTW's unless impracticable. For copper and dichlorobromomethane, AWEL's have been replaced with MDEL's in accordance with Section 1.4 of the SIP. Furthermore, for pH, settleable solids, and total coliform organisms, AMEL's and AWEL's have been replaced or supplemented with effluent limitations utilizing shorter averaging periods. The rationale for using shorter averaging periods for these constituents is discussed in section IV.C.3 of this Fact Sheet.

3. Satisfaction of Anti-Backsliding Requirements

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

The effluent limitations in this Order are at least as stringent as the effluent limitations in Order R5-2013-0094-01, with the exception of effluent limitations for bis (2-ethylhexyl) phthalate, BOD_5, lead, manganese, nitrite, and TSS. The effluent limitations for these pollutants are less stringent than those in Order R5-2013-0094-01. 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) prohibits the establishment of less stringent water quality-based effluent limits "*except in compliance with Section 303(d)(4).*" CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters.

   i. For waters where standards are not attained, CWA section 303(d)(4)(A) specifies that any effluent limit based on a TMDL or other WLA may be revised only if the cumulative effect of all such revised effluent limits based on such TMDL's or WLAs will assure the attainment of such water quality standards.

   ii. 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 Feather River is considered an attainment water for bis (2-ethylhexyl) phthalate, BOD_5, lead, manganese, nitrite, and TSS because the receiving water is not listed as impaired on the 303(d) list for these constituents.[17] As discussed in section IV.D.4, below, removal of the effluent limits complies with federal and state antidegradation requirements. Thus, removal of the effluent limitations for bis (2-ethylhexyl) phthalate, BOD_5, lead, manganese, nitrite, and TSS from Order R5-2013-0094-01 meets the exception in CWA section 303(d)(4)(B).

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

[17] "The exceptions in Section 303(d)(4) address both waters in attainment with water quality standards and those not in attainment, i.e. waters on the section 303(d) impaired waters list." State Water Board Order WQ 2008-0006, Berry Petroleum Company, Poso Creek/McVan Facility.

than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.

As described further in section IV.C.3.b of this Fact Sheet, updated information that was not available at the time Order R5-2013-0094-01 was issued indicates that bis (2-ethylhexyl) phthalate, lead, manganese, and nitrite do not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. The updated information that supports the relaxation of effluent limitations for these constituents includes the following:

i. **Bis (2-ethylhexyl) Phthalate.** Effluent and receiving water monitoring data collected between June 2014 and May 2017 for bis (2-ethylhexyl) phthalate indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the CTR human health criteria.

ii. **Lead.** Effluent and receiving water monitoring data collected between June 2014 and May 2017 for lead indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the CTR aquatic life criteria.

iii. **Manganese.** Effluent monitoring data collected in calendar years 2014 through 2016 indicates that manganese in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Secondary MCL.

iv. **Nitrite.** Effluent and receiving water monitoring data collected between June 2014 and May 2017 for nitrite indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Primary MCL.

Thus, removal of the effluent limitations for bis (2-ethylhexyl) phthalate, lead, manganese, and nitrite from Order R5-2013-0094-01 is in accordance with CWA section 402(o)(2)(B)(i), which allows for the removal of effluent limitations based on information that was not available at the time of permit issuance.

c. **Chronic Whole Effluent Toxicity (WET).** Order R5-2013-0094-01 included a narrative chronic WET limit. As discussed in section IV.C.5.b of this Fact Sheet, chronic WET testing performed by the Discharger indicates that the discharge does not exhibit reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective. Therefore, the narrative chronic toxicity effluent limitation has not been retained. This Order, however, is not less stringent because the same requirements to conduct chronic WET testing, accelerated monitoring, and to evaluate instances of toxicity are continued. The removal of the narrative chronic toxicity effluent limitation does not result in a reduction in effluent quality or a reduced level of treatment. The renewed permit is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Antidegradation Policy because this Order imposes equivalent requirements to Order R5-2013-0094-01 and, therefore, does not allow degradation.

However, even if it was determined that removal of the narrative chronic toxicity effluent limit is a relaxation of permit requirements, the relaxation meets the exception to backsliding under CWA section 402(o)(2)(B)(i), which allows a renewed, re-issued, or modified permit to contain a less stringent effluent limitation for a pollutant if information is available that was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and that would have justified the application of a less-stringent effluent limitation at the time of

permit issuance. The new chronic WET data discussed above is new information that supports the removal of the narrative chronic toxicity effluent limitation.

d. **Flow.** Order R5-2013-0094-01 included flow as an effluent limit based on the Facility design flow. In accordance with Order R5-2013-0094-01, compliance with the flow limit was calculated using the average monthly flow over three consecutive dry weather months. Flow is not a pollutant and therefore has been changed from an effluent limit to a discharge prohibition in this Order, which is an equivalent level of regulation. This Order is not less stringent because compliance with flow as a discharge prohibition will be calculated the same way as the previous Order. Flow as a discharge prohibition adequately regulates the Facility, does not allow for an increase in the discharge of pollutants, and does not constitute backsliding.

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 WQBEL's where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards. The permitted discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Antidegradation Policy. 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.

This Order removes effluent limitations for bis (2-ethylhexyl) phthalate, lead, manganese, and nitrite based on updated monitoring data demonstrating that the effluent does not cause or contribute to an exceedance of the applicable water quality criteria or objectives in the receiving water. The removal of WQBEL's for these parameters will not results in an increase in pollutants concentration or loading, a decrease in the level of treatment or control, or a reduction of water quality. Therefore, the Central Valley Water Board finds that the removal of the effluent limitations does not result in an increase in pollutants or any additional degradation of the receiving water. Thus, the removal of effluent limitations is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16.

This Order also removes maximum daily and mass-based effluent limitations for BOD_5 and TSS based on 40 CFR Part 122.45 (d) and (f). The removal of maximum daily and mass-based effluent limits for BOD_5 and TSS will not result in a decrease in the level of treatment or control, or a reduction in water quality.

Furthermore, both concentration-based AMEL's and AWEL's remain for BOD_5 and TSS, as well as an average dry weather flow prohibition that limits the amount of flow that can be discharged to the receiving water during dry weather months. The combination of concentration-based effluent limits and a flow prohibition in this Order are equivalent to mass-based effluent limitations, which were redundant limits contained in previous Orders by multiplying the concentration-based effluent limits and permitted average dry weather flow by a conversion factor to determine the mass-based effluent limitations. The Central Valley Water Board finds that the removal of maximum daily and mass-based effluent limits for BOD_5 and TSS does not result in an allowed increase in pollutants or any additional degradation of the receiving water. Thus, the removal of maximum daily and mass-based effluent limits

for BOD_5 and TSS is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Antidegradation Policy.

b. **Groundwater.** The Discharger uses six unlined disposal ponds located in the Feather River floodplain for discharge of secondary-treated effluent. Domestic wastewater contains constituents such as total dissolved solids, specific conductivity, pathogens, nitrates, organics, metals, and oxygen demanding substances (BOD). Percolation from the disposal ponds may result in an increase in the concentration of these constituents in groundwater. The State Antidegradation Policy generally prohibits the Central Valley Water Board from authorizing activities that will result in the degradation of high-quality waters unless it has been shown that:

   i. The degradation will not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives;

   ii. The degradation will not unreasonably affect present and anticipated future beneficial uses;

   iii. The discharger will employ Best Practicable Treatment or Control (BPTC) to minimize degradation; and

   iv. The degradation is consistent with the maximum benefit to the people of the state.

   Some degradation of groundwater may be consistent with the State Anti-Degradation Policy provided that the Discharger is implementing best practicable treatment or control (BPTC) measures. The Facility is designed and constructed to provide secondary level treatment and disinfection to treat municipal domestic wastewater prior to discharge. This level of treatment may result in limited groundwater degradation not exceeding water quality objectives. Providing wastewater treatment to the community is in the best interest of the people of the state. The Discharger's treatment constitutes best practicable treatment or control and complies with the State Antidegradation Policy.

   As discussed in section III.E.1 of the Fact Sheet, groundwater monitoring results do not indicate degradation of groundwater quality when compared to background. Groundwater limitations have been included in this order (at or below) the water quality objective for protection of the domestic or municipal supply (MUN) beneficial use of groundwater.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBEL's for individual pollutants. The technology-based effluent limitations consist of restrictions on BOD_5, pH, and TSS. Restrictions on these pollutants 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. For pH, both technology-based effluent limitations and WQBEL's are applicable. The more stringent of these effluent limitations are implemented by this Order. These limitations are not more stringent than required by the CWA.

WQBEL's 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 WQBEL's were derived from the CTR, the CTR is the applicable standard pursuant to 40 C.F.R. section 131.38. The procedures for calculating the individual water quality-based effluent limitations for priority pollutants are based on the CTR implemented by the SIP, which was approved by U.S. EPA on 18 May 2000. Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

Summary of Final Effluent Limitations
Discharge Points 001 and 002

Table F-17. Summary of Final Effluent Limitations – Discharge Points 001 and 002

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Conventional Pollutants							
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	30	45	--	--	--	CFR
	% Removal	85	--	--	--	--	
pH	standard units	--	--	--	6.5[2a,2b]	8.5[2a]	BP
Total Suspended Solids	mg/L	30	45	--	--	--	CFR
	% Removal	85	--	--	--	--	
Priority Pollutants							
Copper, Total Recoverable	µg/L	50	--	85	--	--	CTR
Dichloro-bromomethane	µg/L	10	--	30	--	--	CTR
Mercury, Total Recoverable	lbs/year	0.67[3]	--	--	--	--	BP
Non-Conventional Pollutants							
Ammonia Nitrogen, Total (as N)	mg/L	31	51	--	--	--	NAWQC
	lbs/day[4]	2,700	4,500	--	--	--	
Chlorine, Total Residual	mg/L	--	0.011[5]	0.019[6]	--	--	NAWQC
Diazinon and Chlorpyrifos	µg/L	[7]	[8]	--	--	--	TMDL
Nitrate Plus Nitrite (as N)	mg/L	10	21	--	--	--	MCL
Settleable Solids[9]	ml/L	0.1	--	0.2	--	--	BP
Total Coliform Organisms	MPN/100 mL	--	23[10]	240[11]	--	--	Title 22

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

1 CFR – Based on secondary treatment standards contained in 40 C.F.R. part 133.
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 U.S. EPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
TMDL – Based on the TMDL for diazinon and chlorpyrifos in the Sacramento and Feather Rivers.
MCL – Based on the Primary Maximum Contaminant Level.
Title 22 – Based on State Water Board Division of Drinking Water Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22).

2a Compliance with the instantaneous minimum and maximum effluent limitations is determined by monitoring indicated in the Monitoring and Reporting Program, Table E-3.

2b The instantaneous minimum effluent limitation is limited to 6.0 standard units for discharges at Discharge Point 002.

3 For a calendar year, the total annual mass discharge of total mercury shall not exceed 0.67 pounds/year.

4 Based on a design flow of 10.5 MGD.

5 Applied as a 4-day average effluent limitation. At Discharge Point 001 only.

6 Applied as a 1-hour average effluent limitation. At Discharge Point 001 only.

7 Average Monthly Effluent Limitation

$$S_{AMEL} = \frac{C_{D\,M-avg}}{0.079} + \frac{C_{C\,M-avg}}{0.012} \leq 1.0$$

$C_{D\,M\text{-}avg}$ = average monthly diazinon effluent concentration in µg/L.
$C_{C\,M\text{-}avg}$ = average monthly chlorpyrifos effluent concentration in µg/L.

8 Average Weekly Effluent Limitation

$$S_{AWEL} = \frac{C_{D\,W-avg}}{0.14} + \frac{C_{C\,W-avg}}{0.021} \leq 1.0$$

$C_{D\,W\text{-}avg}$ = average weekly diazinon effluent concentration in µg/L.
$C_{C\,W\text{-}avg}$ = average weekly chlorpyrifos effluent concentration in µg/L.

9 Applicable at Discharge Point 001 only.

10 Applied as a 7-day median effluent limitation.

11 Not to be exceeded more than once in any 30-day period.

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications – Not Applicable

G. 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 ammonia, bacteria, biostimulatory substances, color, chemical constituents, dissolved oxygen, floating material, oil and grease, pH, pesticides,

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

B. Groundwater

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

2. Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, and toxicity of groundwater. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use. The tastes and odors objective prohibits taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan also establishes numerical water quality objectives for chemical constituents and radioactivity in groundwaters designated as municipal supply. These include, at a minimum, compliance with MCLs in Title 22 of the CCR. The bacteria objective prohibits coliform organisms at or above 2.2 MPN/100 mL. The Basin Plan requires the application of the most stringent objective necessary to ensure that waters do not contain chemical constituents, toxic substances, radionuclides, taste- or odor-producing substances, or bacteria in concentrations that adversely affect municipal or domestic supply, agricultural supply, industrial supply or some other beneficial use.

3. The Discharger currently discharges secondary treated wastewater to the disposal ponds. Groundwater limitations are required to protect the beneficial uses of the underlying groundwater. As discussed in section III.E.1 of this Fact Sheet, groundwater monitoring results do not indicate a degradation in groundwater quality when compared to applicable water quality objectives.

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 C.F.R. section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 C.F.R. section 122.42, are provided in Attachment D. The Discharger must comply with all standard provisions and with those additional conditions that are applicable under 40 C.F.R. section 122.42.

Sections 122.41(a)(1) and (b) through (n) of 40 C.F.R. establish conditions that apply to all state-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) of 40 C.F.R. allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 C.F.R. section 123.25, this Order omits federal conditions that address enforcement authority specified in 40 C.F.R. sections 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. **Mercury.** This provision allows the Central Valley Water Board to reopen this Order in the event mercury is found to be causing toxicity based on acute or chronic

toxicity test results, or if a TMDL program is adopted. In addition, this Order may be reopened if the Central Valley Water Board determines that a mercury offset program is feasible for dischargers subject to NPDES permits.

b. **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 site-specific Toxicity Reduction Evaluation (TRE). This Order may be reopened to include a new chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE and/or TES. Additionally, if the State Water Board adopts statewide toxicity provisions that establish numeric water quality objectives for acute and chronic toxicity and a program of implementation to control toxicity, this Order may be reopened to implement the new provisions

c. **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. 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.

d. **Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS).** On 31 May 2018, as part of the CV-SALTS initiative, the Central Valley Water Board approved Basin Plan Amendments to incorporate new strategies for addressing ongoing salt and nitrate accumulation in the Central Valley. If approved by the State Water Board, the Office of Administrative Law, and U.S. EPA, the Amendments would impose certain new requirements on salt and nitrate discharges. If the Amendments ultimately go into effect, this Order may be amended or modified to incorporate any newly-applicable requirements.

e. **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 approved the Drinking Water Policy on 3 December 2013. This Order may be reopened to incorporate monitoring of drinking water constituents to implement the Drinking Water Policy.

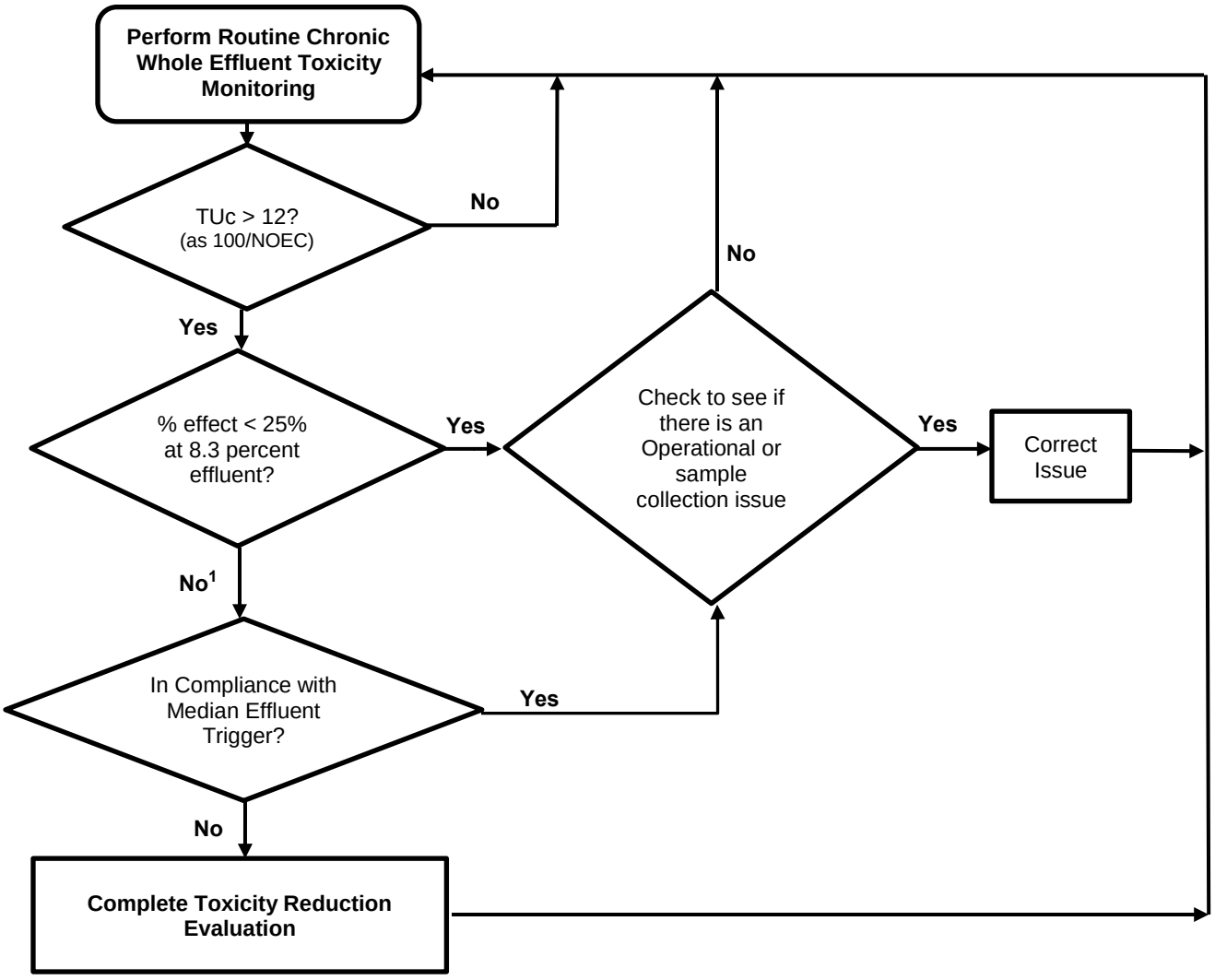
2. Special Studies and Additional Monitoring Requirements

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 Section 3.1.20.) As discussed in section IV.C.5.b of this Fact Sheet, based on whole effluent chronic toxicity testing performed by the Discharger during the term of Order R5-2013-0094-01, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

The Monitoring and Reporting Program of this Order requires chronic WET monitoring to demonstrate compliance with the Basin Plan's narrative toxicity objective. If the discharge exceeds the chronic toxicity monitoring trigger this provision requires the Discharger to conduct a site-specific TRE.

See the WET Monitoring Flow Chart (Figure F-2), below, for further clarification of the decision points for determining the need for TRE initiation.

Figure F-2
WET Accelerated Monitoring Flow Chart



[1] The Discharger may elect to take additional samples to determine the 3-sample median. The samples shall be collected at least one week apart and the final sample shall be within 6 weeks of the initial sample exhibiting toxicity.

b. **Low Dissolved Oxygen Assessment.** Oxygen demanding substances, including carbon and nitrogen compounds, present in receiving waters are oxidized by microorganisms (bacteria and algae) resulting in the consumption of oxygen from the water column. If sufficient quantities of oxygen demanding substances are present in the water column, the rate of oxygen consumption may be greater than the reaeration of oxygen from the atmosphere and the dissolved levels drop in the water column. The Facility is a POTW that treats domestic wastewater but does not currently nitrify. Untreated domestic wastewater contains ammonia and, without nitrification and denitrification, ammonia is present in the effluent discharge. Ammonia is known to cause toxicity to aquatic organisms in surface waters. To further determine the effects of the ammonia discharge and potential low dissolved

oxygen levels in the receiving water, the Central Valley Water Board is requiring a Low Dissolved Oxygen Assessment as specified in Special Provision in section VI.C.2.b of this Order. The Central Valley Water Board is aware that a Low Dissolved Oxygen Assessment is not feasible with the current diffuser location and discharge prohibition since the critical low dissolved oxygen levels would occur in the Feather River in the warm months when the discharge is routed to the ponds. Therefore, the Central Valley Water Board is postponing the Low Dissolved Oxygen Assessment until after the Discharger installs the proposed diffuser in its new location. The Low Dissolved Oxygen Assessment shall include at minimum modeling of a dissolved oxygen sag curve possibly created by the discharge and a comparison of varied ammonia concentrations effect on the dissolved oxygen sag curve.

c. **Antidegradation Analysis.** As discussed in section II.E of this Fact Sheet, the Discharger is proposing to install a new diffuser at a location downstream of the current discharge from Discharge Point 001. Due to the restrictions on effluent discharges at Discharge Point 001 in this Order (i.e., when the depth over the diffuser is greater than an average of 0.8 feet), the Discharger's primary means of disposal is currently discharge to the ponds at Discharge Point 002. Upon completion of the new outfall, the direct discharge of secondary treated wastewater to the Feather River will be the Discharger's primary method of disposal. The Discharger also plans to request new aquatic life and human health mixing zones for the new outfall location.

The State Antidegradation Policy requires that high quality waters be maintained until it has been demonstrated that any change will be consistent with the maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that prescribed in the policies. It further requires that any activity that may lower water quality meet BPTC. The proposed discharge of secondary wastewater from the new diffuser and authorization of new mixing zones and dilution credits have the potential to lower the existing high quality of the Feather River. Therefore, this Order requires the Discharger to conduct a complete antidegradation analysis in accordance with State Water Board Administrative Procedures Update (APU) No. 90-004, *Antidegradation Policy Implementation for NPDES Permitting*.

3. Best Management Practices and Pollution Prevention

a. **Salinity Evaluation and Minimization Plan.** An Evaluation and Minimization Plan for salinity is required to be maintained in this Order to ensure adequate measures are developed and implemented by the Discharger to reduce the discharge of salinity to Feather River. This Order includes a calendar annual average performance-based electrical conductivity (EC) trigger of 800 µmhos/cm to ensure salinity levels do not increase. If the calendar annual average effluent EC exceeds 800 µmhos/cm, the Discharger is required to re-evaluate the Salinity Evaluation and Minimization Plan and submit an updated plan by 1 April following the calendar year of the exceedance. The performance-based effluent EC trigger was calculated based on the maximum calendar annual average from the dataset of daily effluent samples for the calendar years 2014 through 2017, with 15 percent increase to account for water conservation.

4. Construction, Operation, and Maintenance Specifications

a. **Treatment Pond Operating Requirements.** Order R5-2003-0085 did not originally exempt the disposal ponds from the 100-year flood protection provision; however,

the State Water Board WQO 2004-0013 remanded the permit and indicated that an exception to the provision was appropriate pending completion of a disposal pond study analyzing if discharges from the pond cause exceedances of water quality objectives, effluent limitations, or receiving water limitations. The Discharger submitted a 23 October 2008 Disposal Pond Study that concluded that the effluent limitations established in Order R5-2007-0134-01 for discharges to the ponds are protective of water quality objectives when the ponds are inundated. Although evaporation does increase constituent concentrations within the ponds, the significant amounts of dilution available during flood stages reduces the constituent concentrations when the ponds are inundated. Based on the study conclusions, the Central Valley Water Board concurs that that effluent limitations established for discharges to the ponds are protective of water quality objectives when the ponds are inundated. Therefore, consistent with Orders R5-2007-0134-01 and R5-2013-0094-01, this Order requires that the treatment, storage, and disposal facilities be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency except for ponds located within the Feather River levees.

b. **Diffuser Maintenance Requirements.** As discussed under Section IV.C.2.c of this Fact Sheet, the dilution credits provided for the discharge from the Facility are based on the modeling analysis performed by the Discharger and the current conditions of the diffuser. To ensure that the assumptions under which the Central Valley Water Board has approved the dilution credits used to derive effluent limitations are representative of actual conditions, this Order requires annual reporting on the operational condition of the diffuser and the maintenance that has taken place to assure it is operating properly.

c. **Disposal Pond Operating Requirements.** The operation and maintenance specifications for the disposal ponds are necessary to protect the beneficial uses of the groundwater. In addition, reporting requirements related to use of the disposal ponds are required to monitor their use and the potential impact on groundwater.

5. Special Provisions for Publicly-Owned Treatment Works (POTW's)

a. **Pretreatment Requirements**

i. 40 C.F.R. section 403.8(a) requires POTW's with a total design flow greater than 5 MGD and receiving pollutants that pass through or interfere with the operation of the POTW to establish a POTW Pretreatment Program. The Discharger has a design flow of 10.5 MGD and receives discharges from six non-categorical significant industrial users. Therefore, the Discharger is required to implement a pretreatment program.

ii. The federal CWA section 307(b), and federal regulations, 40 C.F.R. part 403, require publicly owned treatment works to develop an acceptable industrial pretreatment program. A pretreatment program is required to prevent the introduction of pollutants, which will interfere with treatment plant operations or sludge disposal, and prevent pass through of pollutants that exceed water quality objectives, standards or permit limitations. Pretreatment requirements are imposed pursuant to 40 C.F.R. part 403.

iii. The Discharger shall implement and enforce its approved pretreatment program and is an enforceable condition of this Order. If the Discharger fails to perform the pretreatment functions, the Central Valley Water Board, the State

Water Board or U.S. EPA may take enforcement actions against the Discharger as authorized by the CWA.

b. **Sludge/Biosolids Treatment or Discharge Specifications.** Sludge in this Order means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screening material generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the wastewater treatment plant. Biosolids refer to sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agricultural, silvicultural, horticultural, and land reclamation activities as specified under 40 C.F.R. part 503. This Order does not regulate offsite use or disposal of biosolids, which are regulated instead under 40 C.F.R. part 503; administered by U.S. EPA. The Sludge/Biosolids Treatment or Discharge Specifications in this Order implement the California Water Code to ensure sludge/biosolids are properly handled onsite to prevent nuisance, protect public health, and protect groundwater quality.

c. **Resource Recovery from Anaerobically Digestible Material.** Some POTWs choose to accept organic material such as food waste, fats, oils, and grease into their anaerobic digesters for co-digestion to increase production of methane and other biogases for energy production and to prevent such materials from being discharged into the collection system, which could cause sanitary sewer overflows. The California Department of Resources Recycling and Recovery has proposed an exemption from requiring Process Facility/Transfer Station permits where this activity is regulated under waste discharge requirements or NPDES permits. The proposed exemption is restricted to anaerobically digestible material that has been prescreened, slurried, and processed/conveyed in a closed system to be co-digested with regular POTW sludge. The proposed exemption requires that a POTW develop Standard Operating Procedures for the proper handling, processing, tracking, and management of the anaerobically digestible material before it is received by the POTW.

Standard Operating Procedures are required for POTWs that accept hauled food waste, fats, oil, and grease for injection into anaerobic digesters. The development and implementation of Standard Operating Procedures for management of these materials is intended to allow the California Department of Resources Recycling and Recovery to exempt this activity from separate and redundant permitting programs. If the POTW does not accept food waste, fats, oil, or grease for resource recovery purposes, it is not required to develop and implement Standard Operating Procedures.

The Discharger currently does not accept hauled-in ADM for direct injection into its anaerobic digester for co-digestion. However, if the Discharger proposes to receive hauled-in ADM for injection into its anaerobic digester for co-digestion, this provision requires the Discharger to notify the Central Valley Water Board and develop and implement SOP's for this activity prior to initiation of the hauling. The requirements of the SOP's are discussed in Section VI.C.5.c.

6. Other Special Provisions – Not Applicable

7. Compliance Schedules – Not Applicable

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

CWA section 308 and 40 C.F.R. sections 122.41(h), (j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Central Valley Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The Monitoring and Reporting Program (MRP), Attachment E of this Order establishes monitoring, reporting, and recordkeeping 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 flow (continuous), BOD_5 (three times per week), TSS (three times per week), ammonia (weekly), electrical conductivity (quarterly), and phosphorus (monthly) have been retained from Order R5-2013-0094-01.
2. Order R5-2013-0094-01 required continuous influent pH monitoring. The monitoring frequency for pH has been reduced to daily. The Central Valley Water Board finds that this frequency is sufficient to characterize the pH of the influent.

B. Effluent Monitoring

1. Order R5-2013-0094-01 required effluent monitoring at Monitoring Location EFF-001 to determine compliance with effluent limitations at Discharge Points 001, 002, and 003 (the Pond 6 spillway). This order establishes Monitoring Location EFF-002 to differentiate between discharge to Discharge Point 001 and Discharge Point 002. EFF-001 and EFF-002 are located at the same monitoring location, which is considered representative of discharge from the Facility to the Feather River or the disposal ponds, and are referenced as EFF-001/EFF-002. Discharge Point 003 was included in Order R5-2013-0094-01 due to the erosion events at Discharge Point 001, which limited the Discharger's ability to discharge directly to the Feather River. This Order removes monitoring requirements at Discharge Point 003 because no dilution has been granted at the Pond 6 spillway, and discharge at Discharge Point 003 will not be able to meet water quality objectives without dilution.
2. Pursuant to the requirements of 40 C.F.R. section 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.
3. Effluent monitoring frequencies and sample types for discharge location (when switching between discharge points), depth of water over diffuser (weekly when discharging at Discharge Point 001), flow (continuous), BOD_5 (three times per week), pH (daily), TSS (three times per week), copper (monthly), dichlorobromomethane (monthly), mercury (monthly), ammonia (twice per week), chlorine residual (continuous when discharging at Discharge Point 001), dissolved oxygen (three times per week), electrical conductivity (monthly), hardness (monthly), phosphorus (monthly), settleable solids (five times per week when discharging at Discharge Point 001), sodium bisulfite (continuous when discharging at Discharge Point 001), temperature (three times per week), total coliform organisms (three times per week when discharging to Discharge Point 001 and weekly when discharging to Discharge Point 002), and total dissolved solids have been retained from Order R5-2013-0094-01 to determine compliance with effluent limitations, where applicable, and characterize the effluent for these parameters.

4. Order R5-2013-0094-01 required effluent monitoring for nitrate (twice per month), nitrite (twice per month), chlorpyrifos (quarterly), diazinon (quarterly), and temperature (three times per week). The monitoring frequency has been reduced for nitrate (monthly), nitrite (monthly), chlorpyrifos (annually), diazinon (annually), and temperature (twice per week). The Central Valley Water Board finds that this frequency is sufficient to characterize nitrate, nitrite, chlorpyrifos, diazinon, and temperature in the effluent. This Order also establishes requirements for the Discharger to calculate and report nitrate plus nitrite to determine compliance with the applicable effluent limitations.

5. Monitoring data collected over the previous permit term for bis (2-ethylhexyl) phthalate, lead, chloride, manganese, and sulfate did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific monitoring requirements for these parameters have not been retained from Order R5-2013-0094-01.

6. 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 and other constituents of concern quarterly beginning in the first quarter of the year 2020 at Monitoring Location EFF-001/EFF-002. See section IX.C of the MRP (Attachment E) for more detailed requirements related to performing priority pollutant monitoring.

7. Water Code section 13176, subdivision (a), states: "*The analysis of any material required by [Water Code sections 13000-16104] shall be performed by a laboratory that has accreditation or certification pursuant to Article 3 (commencing with Section 100825) of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code.*" The DDW accredits laboratories through its Environmental Laboratory Accreditation Program (ELAP).

   Section 13176 cannot be interpreted in a manner that would violate federal holding time requirements that apply to NPDES permits pursuant to the CWA. (Wat. Code §§ 13370, subd. (c), 13372, 13377.) Section 13176 is inapplicable to NPDES permits to the extent it is inconsistent with CWA requirements. (Wat. Code § 13372, subd. (a).) The holding time requirements are 15 minutes for chlorine residual, dissolved oxygen, and pH, and immediate analysis is required for temperature. (40 C.F.R. § 136.3(e), Table II) The Discharger maintains an ELAP accredited laboratory on-site and conducts analysis for chlorine residual, dissolved oxygen, and pH within the required 15 minute hold times.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Consistent with Order R5-2013-0094-01, monthly 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.

2. **Chronic Toxicity.** Consistent with Order R5-2013-0094-01, quarterly chronic whole effluent toxicity testing is required at Discharge Point 001 in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

   The most sensitive species to be used for chronic toxicity testing was determined in accordance with the process outlined in the MRP Section V.E.2. Based on the Discharger's last 3 years of chronic toxicity data, the Discharger has found that chronic toxicity testing for *Ceriodaphnia dubia* is likely affected by pathogen interference. A freeze treated test, which is meant to address the pathogen interference in effluent samples, was conducted on *Ceriodaphnia dubia* on 7 August 2018 and resulted in a percent effect of 2.31 at the in-stream waste concentration of 8.3 percent effluent for reproduction. This is the highest percent effect at 8.3 percent effluent when compared to concurrent chronic toxicity testing of *Selenastrum capricornutum* survival and

Pimephales promelas survival and growth; therefore, *Ceriodaphnia dubia* has been established as the most sensitive species for chronic WET testing.

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. Consistent with Order R5-2013-0094-01, this Order requires receiving water monitoring when the Feather River is flowing within its normal channel (approximately 25,000 cfs or less) during the weekly monitoring period Sunday through Saturday when discharging to Discharge Point 001.

c. The receiving water monitoring frequency and sample type for pH (weekly), fecal coliform organisms (quarterly), dissolved oxygen (weekly), electrical conductivity (weekly), hardness (weekly), temperature (weekly), and turbidity (weekly) at Monitoring Locations RSW-001 and RSW-002 have been retained from Order R5-2013-0094-01 to characterize the receiving water for these parameters.

d. Receiving water monitoring requirements at RSW-003, the middle of the Feather River by boat directly across from Boyd's Pump boat ramp, has not been retained from Order R5-2013-0094-01 because receiving water monitoring at RSW-003 is not representative of receiving water effects of the discharge at Discharge Point 001, and discharge to Discharge Point 003 is prohibited.

2. Groundwater

a. Water Code section 13267 states, in part, "*(a) A Regional Water Board, in establishing…waste discharge requirements… may investigate the quality of any waters of the state within its region"* and *"(b) (1) In conducting an investigation…, the Regional Water Board may require that any person who… discharges… waste…that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Regional Water Board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports.*" 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, a Regional Water Board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports. The Monitoring and Reporting Program is issued pursuant to Water Code section 13267. The groundwater monitoring and reporting program required by this Order and the Monitoring and Reporting Program are necessary to assure compliance with these waste discharge requirements. The Discharger is responsible for the discharges of waste at the facility subject to this Order.

b. Monitoring of the groundwater must be conducted to determine if the discharge has caused an increase in constituent concentrations, when compared to background. The monitoring must, at a minimum, require a complete assessment of groundwater impacts including the vertical and lateral extent of degradation, an assessment of all wastewater-related constituents which may have migrated to groundwater, an analysis of whether additional or different methods of treatment or control of the discharge are necessary to provide best practicable treatment or control to comply with the State Anti-Degradation Policy. Economic analysis is only one of many

factors considered in determining best practicable treatment or control. If monitoring indicates that the discharge has incrementally increased constituent concentrations in groundwater above background, this permit may be reopened and modified. Until groundwater monitoring is sufficient, this Order contains Groundwater Limitations that allow groundwater quality to be degraded for certain constituents when compared to background groundwater quality, but not to exceed water quality objectives. If groundwater quality has been degraded by the discharge, the incremental change in pollutant concentration (when compared with background) may not be increased. If groundwater quality has been or may be degraded by the discharge, this Order may be reopened and specific numeric limitations established consistent with the State Antidegradation Policy and the Basin Plan.

c. This Order requires the Discharger to continue groundwater monitoring and includes a regular schedule of groundwater monitoring in the attached Monitoring and Reporting Program. The groundwater monitoring reports are necessary to evaluate impacts to waters of the State to assure protection of beneficial uses and compliance with Central Valley Water Board plans and policies, including the State Anti-Degradation Policy. Evidence in the record includes effluent monitoring data that indicates the presence of constituents that may degrade groundwater and surface water.

E. Other Monitoring Requirements

1. Biosolids Monitoring

Biosolids monitoring is required to ensure compliance with the pretreatment requirements contained in 40 C.F.R. part 403 and implemented in section VI.C.5.a. of this Order. Biosolids monitoring is required per U.S. EPA guidance to evaluate the effectiveness of the pretreatment program. Biosolids monitoring for compliance with 40 C.F.R. part 503 regulations is not included in this Order since it is a program administered by U.S. EPA's part 503 biosolids program:

https://www.epa.gov/biosolids/compliance-and-annual-reporting-guidance-about-clean-water-act-laws

2. Water Supply Monitoring

Water supply monitoring is required to evaluate the source of constituents in the wastewater. Consistent with Order R5-2013-0094-01, this Order requires quarterly water supply monitoring for electrical conductivity and total dissolved solids at Monitoring Location SPL-001.

3. Disposal Pond Monitoring

Disposal pond monitoring is required to ensure proper operation of the disposal ponds. Weekly monitoring for freeboard, electrical conductivity, dissolved oxygen, and odors has been retained from Order R5-2013-0094-01.

4. Discharge Monitoring Report-Quality Assurance (DMR-QA) Study Program

Under the authority of section 308 of the CWA (33 U.S.C. § 1318), U.S. EPA requires all dischargers under the NPDES Program to participate in the annual DMR-QA Study Program. The DMR-QA Study evaluates the analytical ability of laboratories that routinely perform or support self-monitoring analyses required by NPDES permits. There are two options to satisfy the requirements of the DMR-QA Study Program: (1) The Discharger can obtain and analyze a DMR-QA sample as part of the DMR-QA Study; or

(2) Per the waiver issued by U.S. EPA to the State Water Board, the Discharger can submit the results of the most recent Water Pollution Performance Evaluation Study from their own laboratories or their contract laboratories. A Water Pollution Performance Evaluation Study is similar to the DMR-QA Study. Thus, it also evaluates a laboratory's ability to analyze wastewater samples to produce quality data that ensure the integrity of the NPDES Program. The Discharger shall submit annually the results of the DMR-QA Study or the results of the most recent Water Pollution Performance Evaluation Study to the State Water Board. The State Water Board's Quality Assurance Program Officer will send the DMR-QA Study results or the results of the most recent Water Pollution Performance Evaluation Study to U.S. EPA's DMR-QA Coordinator and Quality Assurance Manager.

VIII. PUBLIC PARTICIPATION

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

A. Notification of Interested Persons

The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through posting of a Notice of Public Hearing at the Facility and local City Hall, and publishing the Notice at the Appeal Democrat newspaper on 9 December 2018. The Notice of Public Hearing was also posted on the Central Valley Water Board's website.

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/board_info/meetings/

B. Written Comments

Interested persons were invited to submit written comments concerning tentative WDR's as provided through the notification process. Comments were due either in person or by mail to the Executive Office 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 December 2018**.

C. Public Hearing

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

Date:	**8 February 2019**
Time:	8:30 a.m.
Location:	Regional Water Quality Control Board, Central Valley Region 11020 Sun Center Dr., Suite #200 Rancho Cordova, CA 95670

Interested persons were invited to attend. At the public hearing, the Central Valley Water Board heard testimony pertinent to the discharge, WDR's, and permit. For accuracy of the record, important testimony was requested in writing.

D. Reconsideration of Waste Discharge Requirements

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., within 30 calendar days of the date of adoption of this Order at the following address, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day:

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

Or by email at waterqualitypetitions@waterboards.ca.gov

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 (916) 464-3291.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDR's 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 Michelle Snapp at (916) 464-4824.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Ammonia Nitrogen, Total (as N)	mg/L	50	0.26	1.81	2.14[1]	1.81[2]	--	--	--	--	Yes
Bis (2-ethylhexyl) Phthalate	µg/L	1.9	<0.5	1.8	--	--	1.8	5.9	--	4	No[3]
Chloride	mg/L	64[4]	1.83[4]	230	860	230	--	--	--	250	No
Copper, Total Recoverable	µg/L	8.5	2.3	5.3	7.6	5.3	1,300	--	--	1,000	Yes
Dichlorobromomethane	µg/L	1.4	<0.16	0.56	--	--	0.56	46	--	80[5]	Yes
Electrical Conductivity @ 25°C	µmhos/cm	673[4]	108[4]	900	--	--	--	--	--	900	No[3]
Lead, Total Recoverable	µg/L	0.52	0.71	1.4	36	1.4	--	--	--	15	No
Manganese, Total Recoverable	µg/L	29[4]	43[4]	50	--	--	--	--	--	50	No
Mercury, Total Recoverable	ng/L	7.8[6]	1.7[6]	12	--	--	50	51	12[7]	2,000	Yes[3]
Nitrite Nitrogen, Total (as N)	mg/L	1.35	<0.05	1	--	--	--	--	--	1	No[3]
Nitrate Plus Nitrite (as N)	mg/L	4.85	0.0968	10	--	--	--	--	--	10	Yes[3]
Sulfate	mg/L	35[4]	3.01[4]	250	--	--	--	--	--	250	No
Total Dissolved Solids	mg/L	328[4]	55[4]	500	--	--	--	--	--	500	No

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

Footnotes:
(1) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 1-hour average.
(2) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 30-day average.
(3) See section IV.C.3 of the Fact Sheet for a discussion of the RPA results.
(4) Represents the maximum observed annual average concentration for comparison with the Secondary MCL.
(5) Represents the Primary MCL for total trihalomethanes, which include bromoform, chlorodibromomethane, chloroform, and dichlorobromomethane.
(6) Represents the maximum observed annual average concentration for comparison with water column concentration corresponding to the Sport Fish Water Quality Objective in the Statewide Mercury Provisions.
(7) Represents the water column concentration corresponding to the Sport Fish Water Quality Objective in the Statewide Mercury Provisions.

ATTACHMENT H – CALCULATION OF WQBEL'S

Human Health WQBEL's Calculations										
Parameter	**Units**	**Criteria**	**Mean Background Concentration**	**CV Eff**	**Dilution Factor**	**MDEL/AMEL Multiplier**	**AMEL Multiplier**	**AMEL**	**MDEL**	**AWEL**
Dichlorobromomethane	µg/L	0.56	<0.16	0.47[1]	221	1.80	1.43	89[2]	160[2]	--
Nitrate Plus Nitrite (as N)	mg/L	10	0.049	1.1[1]	0	2.06[3]	2.07	10	--	21

1 Coefficient of Variation (CV) was established in accordance with section 1.4 of the SIP.

2 Final effluent limitations in the Order are based on Facility performance and retained from Order R5-2013-0094-01.

3 Represents the AWEL/AMEL multiplier.

Aquatic Life WQBEL's Calculations																		
Parameter	**Units**	**Criteria**		**B**	**CV Eff**	**Dilution Factors**		**Aquatic Life Calculations**							**Final Effluent Limitations**		
		CMC	**CCC**			**CMC**	**CCC**	**ECA Multiplier$_{acute}$**	**LTA$_{acute}$**	**ECA Multiplier$_{chronic}$**	**LTA$_{chronic}$**	**AMEL Multiplier$_{95}$**	**AWEL Multiplier**	**MDEL Multiplier$_{99}$**	**AMEL[1]**	**AWEL[2]**	**MDEL[3]**
Ammonia Nitrogen, Total (as N)	mg/L	2.14	1.81	0.26	0.33[4]	11	12	0.50	11	0.87	18	1.3	1.8	2.0	15[5]	21[5]	--
Copper, Total Recoverable	µg/L	7.6	5.3	3.5	0.37	11	12	0.47	25	0.67	18	1.3	1.9	2.1	50[5]	--	85[5]

1 Average Monthly Effluent Limitations are calculated according to Section 1.4 of the SIP using a 95th percentile occurrence probability.

2 Average Weekly Effluent Limitations are calculated according to Section 1.4 of the SIP using a 98th percentile occurrence probability.

3 Maximum Daily Effluent Limitations are calculated according to Section 1.4 of the SIP using a 99th percentile occurrence probability.

4 Coefficient of Variation (CV) was established in accordance with section 1.4 of the SIP.

5 Final effluent limitations in the Order are based on the Discharger's dynamic modeling results.