CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CA0085359
ORDER R5-2022-XXXX

WASTE DISCHARGE REQUIREMENTS FOR THE CITY OF LATHROP, CONSOLIDATED TREATMENT FACILITY, SAN JOAQUIN COUNTY

THE FOLLOWING DISCHARGER IS SUBJECT TO WASTE DISCHARGE REQUIREMENTS (WDR'S) SET FORTH IN THIS ORDER:

Table 1. Discharger Information

Discharger:	City of Lathrop
Name of Facility:	Consolidated Treatment Facility
Facility Street Address:	18800 Christopher Way
Facility City, State, Zip:	Lathrop, CA 95330
Facility County:	San Joaquin

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Treated Municipal and Industrial Wastewater	37°47'42.0" N	121°18'25.0" W	San Joaquin River

Table 3. Administrative Information

This Order was Adopted on:	**17/18 February 2022**
This Order shall become effective on:	**1 April 2022**
This Order shall expire on:	**31 March 2027**
The Discharger shall file a Report of Waste Discharge (ROWD) as an application for reissuance of WDRs in accordance with title 23, California Code of Regulations, and an application for reissuance of a NPDES permit no later than:	**31 March 2026**
The United States Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, Central Valley Region have classified this discharge as follows:	**Major discharge**

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 **17/18 February 2022**.

_____
PATRICK PULUPA, Executive Officer

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I. FACILITY INFORMATION

Information describing the Consolidated 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. Separate permits have been issued for the surface water and land discharges. This Order only regulates the discharges to the San Joaquin River. WDR Order R5-2016-0028-01 regulates the wastewater treatment facility, including reclamation specifications for the production of recycled water and discharges to land (i.e., waters of the State).

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 Public Resources Code.

C. 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 H are also incorporated into this Order.

D. Provisions and Requirements Implementing State Law. The provisions/requirements in subsections VI.C.4.a and VI.C.6 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.

E. 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.

F. 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.

G. 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 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.

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**. The Average Dry Weather flow shall not exceed 2.5 Million Gallons per Day (MGD).

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001

1. Final Effluent Limitations – Discharge Point 001

When discharging to the San Joaquin River, the Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001. Unless otherwise specified compliance shall be measured at Monitoring Location EFF-001 and/or EFF-002, as described in the Monitoring and Reporting Program, Attachment E:

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

Table 4. Effluent Limitations

Parameters	Units	Average Monthly	Average Weekly	Maximum Daily
Biochemical Oxygen Demand (BOD), 5-day @ 20°Celcius	milligrams per liter (mg/L)	10	15	--
Total Suspended Solids (TSS)	mg/L	10	15	--
Ammonia (Total as Nitrogen)	mg/L	1.1	2.5	--
Nitrate plus Nitrite (Total as Nitrogen)	mg/L	10	22	--
Dibromochloromethane (DBCM)	micrograms per liter (µg/L)	15	--	27
Dichlorobromomethane (DCBM)	µg/L	36	--	71
Bromoform	µg/L	17	--	34
Chloroform	µg/L	130	--	260
Barium	µg/L	280	330	--
Lead, Total	µg/L	2.3	--	5.0

b. **pH**:
   i. 6.5 Standard Units (SU) as an instantaneous minimum.
   ii. 8.5 SU as an instantaneous maximum.

c. **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.

d. **Temperature.** The maximum temperature of the discharge shall not exceed the natural receiving water temperature by more than 20° Fahrenheit (°F).

e. **Total Residual Chlorine.** Effluent total residual chlorine shall not exceed:
   i. 0.011 mg/L, as a 4-day average; and
   ii. 0.019 mg/L, as a 1-hour average.

f. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed the following with compliance measured immediately after disinfection:
   i. 2.2 most probable number per 100 milliliters (MPN/100 mL), as a 7-day median
   ii. 23 MPN/100 mL, more than once in any 30-day period; and
   iii. 240 MPN/100 mL, at any time.

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 (AMEL)***

   $S_{AMEL} = C_{D\ M\text{-}avg}/0.079 + CC\ M\text{-}avg/0.012 \leq 1.0$

   $C_{D\ M\text{-}AVG}$ = 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 (AWEL)***

   $S_{AWEL} = CD\ W\text{-}avg/0.14 + CC\ W\text{-}avg/0.021 \leq 1.0$

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

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

h. **Electrical Conductivity @ 25°Celsius.** For a calendar year, the calendar average annual electrical conductivity concentration shall not exceed 1,600 µmhos/cm.

i. **Methylmercury.** Effective 31 December 2030. The effluent calendar year annual methylmercury load shall not exceed 0.18 grams, in accordance with the Delta Mercury Control Program.

j. **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.

2. Interim Effluent Limitations

When discharging to the San Joaquin River, the Discharger shall maintain compliance with the following interim effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001 as described in the Monitoring and Reporting Program, Attachment E:

a. **Total Mercury.** Effective immediately and until 30 December 2030. The calendar year annual total mercury load shall not exceed 12 grams/year. This interim effluent limitation shall apply in lieu of the final effluent limitation for methylmercury (Section IV.A.1.i).

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

The discharge shall not cause the following in the San Joaquin River**:**

1. **Biostimulatory Substances**. Water to contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.
2. **Chemical Constituents**. Chemical constituents to be present in concentrations that adversely affect beneficial uses.
3. **Color**. Discoloration that causes nuisance or adversely affects beneficial uses.
4. **Dissolved Oxygen**:
    a. The dissolved oxygen concentration to be reduced below 5.0 mg/L at any time.
5. **Floating Material**. Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.
6. **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.
7. **pH**. The pH to be depressed below 6.5 nor raised above 8.5.
8. **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 CFR section 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.

9. **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.
10. **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.
11. **Settleable Substances**. Substances to be present in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.
12. **Suspended Material**. Suspended material to be present in concentrations that cause nuisance or adversely affect beneficial uses.
13. **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**.**
14. **Temperature**. The discharge shall not cause the following in the San Joaquin River:
    a. The creation of a zone, defined by water temperatures of more than 1°F above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of the river channel at any point.
    b. A surface water temperature increase greater than 4°F above the natural temperature of the receiving water at any time or place.
15. **Toxicity**. Toxic substances to be present, individually or in combination, in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.
16. **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.

B. Groundwater Limitations – Not Applicable

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 the 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 CFR 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.

o. 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.

p. If the Discharger submits a timely and complete Report of Waste Discharge for permit reissuance, this permit shall continue in force and effect until the permit is reissued or the Regional Water Board rescinds the permit.

q. 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.

r. 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 five days, unless the Central Valley Water Board waives confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal monitoring report.

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 CFR 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.** The Basin Plan's Delta Mercury Control Program was designed to proceed in two phases. After Phase 1, the Central Valley Water Board will conduct a Phase 1 Delta Mercury Control Program Review that considers modification to the Delta Mercury Control Program. This Order may be reopened to address changes to the Delta Mercury Control Program.

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

e. **Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS).** On 17 January 2020, certain Basin Plan Amendments to incorporate new strategies for addressing ongoing salt and nitrate accumulation in the Central Valley became effective. Other provisions subject to U.S. EPA approval became effective on 2 November 2020, when approved by U.S. EPA. As the Central Valley Water Board moves forward to implement those provisions that are now in effect, this Order may be amended or modified to incorporate new or modified requirements necessary for implementation of the Basin Plan Amendments. More information regarding these Amendments can be found on the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) web page: (https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/)

f. **Bay-Delta Plan.** On 25 February 2019, the California Office of Administrative Law approved the 2018 Bay-Delta Plan amendments, which include a numeric water quality objective (WQO) for the San Joaquin River at Vernalis of 1,000 µmhos/cm maximum, year-round, applied as a 30-day running average of mean daily electrical conductivity. Once approved by the United States Environmental Protection Agency (U.S. EPA), the revised WQO will be applicable to the San Joaquin River at Vernalis and this Order may be amended or modified to implement the Bay-Delta Plan WQO's.

g. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a 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 revises the SIP's toxicity control provisions, this Order may be reopened to implement the new provisions.

h. **Rescission of Land Discharge WDRs.** The Discharger anticipates transitioning WDR coverage from its current land-discharge WDRs (Order R5-2016-0028-02) to coverage under the State Water Resources Control Board Recycled Water General Order (WQO 2016-0068-DDW). The Discharger would seek to terminate Order R5-2016-0028-02. This Order may be reopened to incorporate various storage pond operating, biosolids, and other specifications that are not addressed with the Discharger's coverage under the Recycled Water General Order.

i. **Delta Regional Monitoring Program.** If the Discharger demonstrates adequate participation in the Delta Regional Monitoring Program and after adequate receiving water monitoring is conducted for the new discharge to the Delta, this Order may be reopened to reduce receiving water monitoring consistent with other Delta dischargers participating in the Delta Regional Monitoring Program.

j. **Disinfection By-products Evaluation and Minimization Plan.** This Order requires the Discharger to develop and implement a Disinfection By-products Evaluation and Minimization Plan to optimize the chlorine disinfection system to minimize the formation of disinfection by-products, such as bromoform, chloroform, DCBM, and DBCM. This Order may be reopened to modify the water quality-based effluent limitations for bromoform, chloroform, DCBM, and DBCM based on the results of the plan.

2. Special Studies, Technical Reports and Additional Monitoring

a. The Discharger shall develop and submit an Industrial Pretreatment Program as specified in 40 C.F.R. 403 to the Central Valley Water Board for approval as directed in the Technical Reports Table of the MRP (Attachment E).

b. **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. Alternatively, under certain conditions as described in this provision below, the Discharger may participate in an approved Toxicity Evaluation Study (TES) in lieu of conducting a site-specific TRE.

i. **TRE Work Plan.** The Discharger shall submit to the Central Valley Water Board a TRE Work Plan for approval by the Executive Officer by the due date in the Technical Reports Table. The TRE Work Plan shall outline the procedures for identifying the source(s) of and reducing or eliminating effluent toxicity. The TRE Work Plan must be developed in accordance with U.S. EPA guidance as discussed in the Fact Sheet (Attachment F, Section VI.B.2.b and be of adequate detail to allow the Discharger to immediately initiate a TRE as required in this Provision.

ii. **Numeric Toxicity Monitoring Trigger**. The numeric Toxicity Unit (TUc) monitoring trigger is 1 TUc (where TUc = 100/NOEC). The

monitoring trigger is not an effluent limitation; it is the toxicity threshold above which the Discharger is required to initiate additional actions to evaluate effluent toxicity as specified in subsection iii, below.

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

(a) **Initial Toxicity Check**. If the result is less than or equal to 1.3 TUc (as $100/EC_{25}$) OR the percent effect is less than 25 percent at 100 percent effluent, 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 numeric trigger to evaluate the 6-week median. If the 6-week median is greater than 1.3 TUc (as $100/EC_{25}$) and the percent effect is greater than 25 percent at 100 percent effluent, proceed with subsection (c). Otherwise, the Discharger shall check for any operation or sample collection issues and return to routine chronic toxicity monitoring. See Compliance Determination Section VII.L for procedures for calculating 6-week median.

(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 or participate in an approved TES as described in the following subsections.

(d) **Toxicity Evaluation Study.** If the percent effect is ≤ 50 percent at 100 percent effluent, as the median of up to three consecutive chronic toxicity tests within a 6-week period, the Discharger may participate in an approved TES in lieu of a site-specific TRE. The TES may be conducted individually or as part of a coordinated group effort with other similar dischargers. If the Discharger chooses not to participate in an approved TES, a site-specific TRE shall be initiated in accordance with subsection (e)(i), below. Nevertheless, the Discharger may participate in an approved TES instead of a TRE if the Discharger has conducted a site-specific TRE within the past 12 months and has been unsuccessful in identifying the toxicant.

(e) **Toxicity Reduction Evaluation.** If the percent effect is > 50 percent at 100 percent effluent, as the median of three consecutive chronic toxicity tests within a 6-week period, the Discharger shall initiate a site-specific TRE as follows:

(i) **Within thirty (30) days** of exceeding the chronic toxicity numeric 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.

3. Best Management Practices and Pollution Prevention

a. **Pollution Prevention Plan for Mercury**. The Discharger shall prepare and implement a pollution prevention plan for mercury in accordance with Water Code section 13263.3(d)(3). The minimum requirements for the pollution prevention plan are outlined in the Fact Sheet (Attachment F section VI.B.3.a). The pollution prevention plan shall be completed and submitted to the Central Valley Water Board by the due date in the Technical Reports Table. Annual progress reports shall be submitted to assess the effectiveness of the Pollution Prevention Plan.

b. **Salinity Best Management Practices (BMP) Plan.** The Discharger shall submit and implement a BMP plan for salinity in accordance with Chapter IV Section B.1.vii of the Bay-Delta Plan. The BMP plan shall be submitted to the Central Valley Water Board by the due date in the Technical Reports Table and shall include the following to reduce salinity to the maximum extent practicable:

i. An industrial pretreatment program, implemented through local ordinances, that minimizes salinity inputs from all industrial sources of salinity within the POTW's collection system;

ii. Source control measures, such as reducing salinity concentrations in source water supplies;

iii. Actions to limit or ban the use of residential self-generating water softeners or imposing salt efficiency standards on such water softeners;

iv. A salinity education and outreach program; and

v. Ongoing participation in the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS).

The Discharger shall provide annual progress reports according to the schedule in the Technical Reports Table. The progress reports shall discuss the effectiveness of the BMP plan in the reduction of salinity in the

discharge, include a summary of monitoring results, discuss any updates to the BMP plan, and confirm continued participation in the P&O Study.

c. **Disinfection By-Products Evaluation and Minimization Plan.** The Discharger shall develop and implement a Disinfection By-Products Evaluation and Minimization Plan to optimize the chlorine disinfection system to minimize the formation of disinfection by-products, specifically bromoform, chloroform, DCBM, and DBCM, while maintaining compliance with the total coliform organisms effluent limitations specified in Section IV.A.1.f and the Title 22, or equivalent, disinfection requirements per Provision VI.C.6.a. The Disinfection By-Products Evaluation and Minimization Plan and a follow up progress report to provide an update on the effectiveness of the plan shall be submitted by the due dates in the Technical Reports.

4. Construction, Operation and Maintenance Specifications

a. **Filtration System Operating Specifications.** When discharging to the San Joaquin River, to ensure the filtration system is operating properly to provide adequate disinfection of the wastewater, the turbidity of the filter effluent measured at Monitoring Location FIL-001 shall not exceed:

i. 0.2 NTU more than 5 percent of the time within a 24-hour period;

ii. 0.5 NTU at any time.

b. **Treatment Pond Operating Requirements**. **– Not Applicable**

c. **Land Application Area Requirements – Not Applicable**

d. **Water Recycling Requirements – Not Applicable**

5. Special Provisions for Publicly-Owned Treatment Works (POTWs)

a. **Pretreatment Requirements**

The items listed below in Sections VI.C.5.a.i through VI.C.5.a.iii become applicable upon Central Valley Water Board approval of the Industrial Pretreatment Program submitted pursuant to Section VI.C.2.a.

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 CFR Part 403 revisions, whichever comes later. For violations of pretreatment requirements, the Discharger shall be subject to enforcement actions, penalties, fines, and other remedies by 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 CFR Part 403.8(f)(1);

(b) Enforce the pretreatment requirements under 40 C.F.R. sections 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.4 of Attachment E.

v. **Local Limits Evaluation.** In accordance with 40 C.F.R. section 122.44(j)(2)(ii) the Discharger shall provide a written technical evaluation of the need to revise the local limits under 40 C.F.R. section 403.5(c)(1), by the due date in the Technical Reports Table of this Order.

6. Other Special Provisions

a. **Title 22, or Equivalent, Disinfection Requirements.** When discharging to the San Joaquin River, wastewater shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to the State Water Board, Division of Drinking Water (DDW) reclamation criteria, CCR, Title 22, division 4, chapter 3, (Title 22), or equivalent.

7. Compliance Schedules

a. **Compliance Schedule for Final Effluent Limitations for Methylmercury.** This Order requires compliance with the final effluent limitations for methylmercury by 31 December 2030. The Discharger shall comply with the time schedule shown in the Technical Reports Table to ensure compliance with the final effluent limitations.

VII. COMPLIANCE DETERMINATION

A. BOD_5 and TSS Effluent Limitations (Section IV.A.1.a and Section IV.A.1.c). 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.c for percent removal shall be calculated using monthly averages (by calendar month unless otherwise specified) of pollutant concentration of influent and effluent samples collected at about the same time and using the following equation (or its equivalent):

Removal Efficiency (%) =
100 x [1 - (Monthly Average Effluent Concentration / Monthly Average Influent Concentration)]

Compliance with BOD and TSS effluent limitations shall be measured at EFF-001 regardless if using the cooling ponds.

B. Methyl Mercury and Total Mercury Mass Loading Effluent Limitations (Section IV.A.1.i and Section IV.A.2.a).

1. The total calendar pollutant mass load shall be determined by the sum of all effluent constituent monitoring results measured during a calendar year divided by the total number of samples collected during the year multiplied the total annual discharge flow. All effluent monitoring data collected under the monitoring and reporting program, pretreatment program, and any special studies shall be used for these calculations.
2. In calculating compliance, the Discharger shall count all non-detect measures at one-half of the detection level. If compliance with the effluent limitation is not attained due to the non-detect contribution, the Discharger shall improve and implement available analytical capabilities and compliance shall be evaluated with consideration of the detection limits.

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.f). For each day that an effluent sample is collected and analyzed for total coliform organisms, the 7-day median shall be determined by calculating the median concentration of total coliform bacteria in the effluent utilizing the bacteriological results of the last 7 days.

For example, if a sample is collected on a Wednesday, the result from that sampling event and all results from the previous 6 days (i.e., Tuesday, Monday, Sunday, Saturday, Friday, and Thursday) are used to calculate the 7-day median. If the 7-day median of total coliform organisms exceeds a most probable number (MPN) of 2.2 per 100 milliliters, the Discharger will be considered out of compliance. Compliance with total coliform to be measured at EFF-001 regardless if using the cooling ponds.

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

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

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

1. 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. sample result is reported as detected, but not quantified (DNQ) and the effluent limitation is less than the RL; or
    b. 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.

G. Temperature Effluent Limitation (Section IV.A.1.d). Compliance with the effluent limitation for temperature shall be ascertained using the daily average effluent temperature at Monitoring Location EFF-001 and the temperature of the "upstream" receiving water measured on the same day by grab sample at either Monitoring Location RSW-002 or Monitoring Location RSW-003, depending on the direction of the San Joaquin River flow at the time of sampling. Due to the tidal nature of the receiving water, the direction of the San Joaquin River flow at the time of sampling will dictate which monitoring location is representative of the "upstream" receiving water. For periods in which the Facility conveys effluent through the cooling ponds prior to discharge to the San Joaquin River, measurements at EFF-002 shall be used for compliance determination in lieu of measurements at EFF-001.

H. Temperature Receiving Water Limitations (Section V.A.14.b). Compliance with the surface water temperature limitation maintaining the receiving water equal or less than 4°F above the natural temperature of the receiving water will be determined based on the difference in the temperature measured at Monitoring Location RSW-002 compared to the temperature measured at Monitoring Location RSW-003. Due to the tidal nature of the receiving water, the direction of the San Joaquin River flow at the time of sampling will dictate which monitoring location is representative of the "upstream" receiving water and which monitoring location is representative of the "downstream" receiving water.

I. Dissolved Oxygen Receiving Water Limitation (Section V.A.4). The Facility provides a high level of treatment including tertiary filtration and nitrification, which results in minimal dissolved oxygen impacts in the receiving water. Monthly 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. Monthly receiving water monitoring data, measured at monitoring locations RSW-002 and RSW-003, will be used to determine compliance with the dissolved oxygen receiving water limitation to ensure the discharge does

not cause the dissolved oxygen concentrations in the San Joaquin River to be reduced below 5.0 mg/L at any time.

J. 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.

K. Electrical Conductivity Calendar Year Annual Average Effluent Limitation (Section IV.A.1.h). Compliance shall be determined by calculating the sum of all effluent EC monitoring results measured during a calendar year divided by the total number of effluent EC samples collected during that year.

L. Chronic Whole Effluent Toxicity Effluent Trigger. To determine an exceedance of the chronic whole effluent toxicity effluent trigger, the median chronic toxicity units (TUc) shall be the median of up to three consecutive chronic toxicity bioassays during a six-week period. This includes a routine chronic toxicity monitoring event and two subsequent optional monitoring events. If additional monitoring events are not conducted, the median is equal to the result for the routine chronic toxicity monitoring event. If only one additional monitoring event is conducted, the median will be established as the arithmetic mean of the routine monitoring event and compliance monitoring event.

Where the median chronic toxicity units exceed 1 TUc (as 100/NOEC) for any end point, the Discharger will be deemed to have exceeded the chronic toxicity effluent trigger if the median chronic toxicity units for any endpoint also exceeds a reporting level of 1.3 TUc (as 100/EC25) AND the percent effect at 100 percent effluent exceeds 25 percent. The percent effect used to evaluate the exceedance of the chronic toxicity effluent trigger shall be based on the chronic toxicity bioassay result(s) from the sample(s) used to establish the median TUc result. If the median TUc is based on two equal chronic toxicity bioassay results, the percent effect of the sample with the greatest percent effect shall be used to evaluate the exceedance of the chronic toxicity effluent trigger.

M. Turbidity Receiving Water Limitations (Section V.A.16.a-e). Compliance with the turbidity receiving water limitations will be determined based on the difference in turbidity measured at Monitoring Locations RSW-002 and RSW-003. Due to the tidal nature of the receiving water, the direction of the San Joaquin River flow at the time of sampling will dictate which monitoring location is representative of the “upstream” receiving water and which monitoring location is representative of the “downstream” receiving water.

N. Use of Delta Regional Monitoring Program and Other Receiving Water Data to Determine Compliance with Receiving Water Limitations. Delta Regional Monitoring Program data and other receiving water monitoring data that is not specifically required to be conducted by the Discharger under this Order will not be used directly to determine that the discharge is in violation of this Order. The Discharger may, however, conduct any site-specific receiving water monitoring deemed appropriate by the Discharger that is not conducted by the Delta Regional Monitoring Program and submit that monitoring data.

O. Cooling Pond Operations, Temperature Effluent Limitations (Section IV.A.1.d) and pH Effluent Limitations (Section IV.A.1.b). When utilizing the Cooling Ponds to provide effluent cooling, compliance with the temperature effluent limitations (Section IV.A.1.d) and pH effluent limitations (Section IV.A.1.b) shall be evaluated using effluent monitoring conducted at Monitoring Location EFF-002. Compliance with all other effluent limitations shall be evaluated based on effluent monitoring conducted at Monitoring Location EFF-001.

ATTACHMENT A – DEFINITIONS

1Q10
The lowest one-day flow with an average reoccurrence frequency of once in ten years.

7Q10
The lowest average seven consecutive day flow with an average reoccurrence frequency of once in ten years

Acute Aquatic Toxicity Test
A test to determine an adverse effect (usually lethality) on a group of aquatic test organisms during a short-term exposure (e.g., 24, 48, or 96 hours).

Alternative Hypothesis
A statement used to propose a statistically significant relationship in a set of given observations. Under the TST approach, when the Null Hypothesis is rejected, the Alternative Hypothesis is accepted in its place, indicating a relationship between variables and an acceptable level of toxicity.

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.

Calendar Quarter
A period of time defined as three consecutive calendar months.

Calendar Year
A period of time defined as twelve consecutive calendar months between 1 January to 31 December.

Chronic Aquatic Toxicity Test
A test to determine an adverse effect (sub-lethal or lethal) on a group of aquatic test organisms during an exposure of duration long enough to assess sub-lethal effects.

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.

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. A measured response of a receptor to a stressor. An endpoint can be measured in a toxicity test or field survey.

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).

Instream Waste Concentration (IWC)
The concentration of effluent in the receiving water after mixing.

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 be 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.

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

Null Hypothesis
A statement used in statistical testing that has been put forward either because it is believed to be true or because it is to be used as a basis for argument, but has not been proved.

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:

$$\text{Percent Effect of the Sample} = \frac{\text{Mean Control Response} - \text{Mean Sample Response}}{\text{Mean Control Response}} \cdot 100$$

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.

Regulatory Management Decision (RMD)
The decision that represents the maximum allowable error rates and thresholds for toxicity and non-toxicity that would result in an acceptable risk to aquatic life.

Response

A measured biological effect (e.g., survival, reproduction, growth) as a result of exposure to a stimulus.

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.

Species Sensitivity Screening
An analysis to determine the single most sensitive species from an array of test species to be used in a single species laboratory test series.

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:

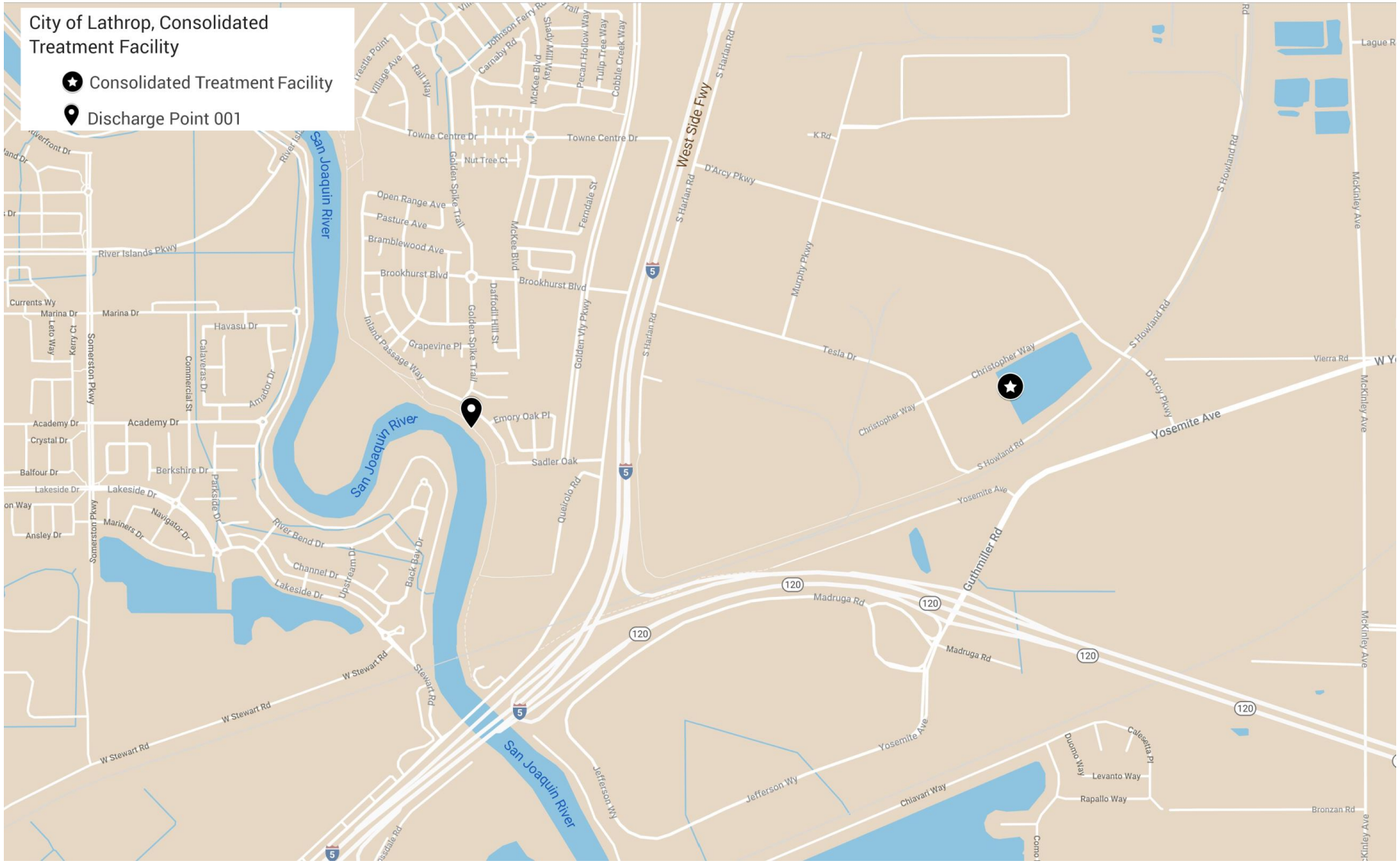
x is the observed value;
μ is the arithmetic mean of the observed values; and
n is the number of samples.

Statewide Toxicity Provisions
Refers to Section III.B and Section IV.B of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California.

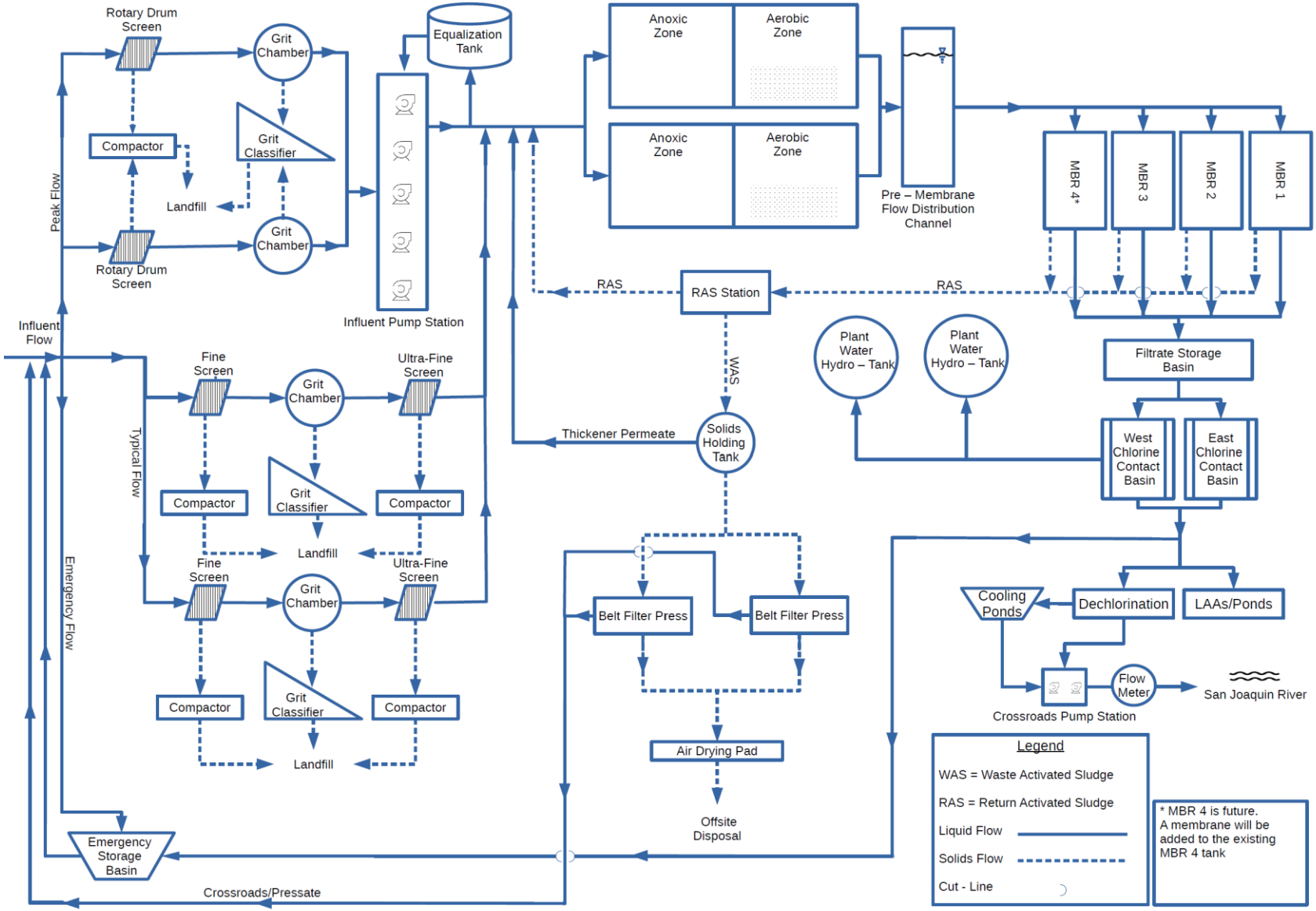
Test of Significant Toxicity (TST)
A statistical approach used to analyze aquatic toxicity test data, as described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010), Appendix A, Figure A-1 and Table A-1 (Chronic Freshwater and East Coast Methods) and Appendix B, Table B-1.

Toxicity Reduction Evaluation (TRE)
TRE is a study conducted in a stepwise 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. section 122.41(a); Wat. Code, sections 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. section 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. section 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. section 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 having 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. section 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. section 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. section 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. section 1318(a)(4)(B); 40 C.F.R. section 122.41(i); Wat. Code, section 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 section 1318(a)(4)(B)(ii); 40 C.F.R. section 122.41(i)(1); Wat. Code, sections 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. section 1318(a)(4)(B)(ii); 40 C.F.R. section 122.41(i)(2); Wat. Code, sections 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 section 1318(a)(4)(B)(ii); 40 C.F.R. section 122.41(i)(3); Wat. Code, section 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 section 1318(a)(4)(B); 40 C.F.R. section 122.41(i)(4); Wat. Code, sections 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. section 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. section 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. section 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. section 122.41(m)(4)(i)):
   a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. section 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. section 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. section 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. section 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 2023, all notices shall be submitted electronically to the initial recipient (State Water Board's California Integrated Water Quality System (CIWQS) Program website (http://www.waterboards.ca.gov/water_issues/programs/ciwqs/), 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. section 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 2023, all notices shall be submitted electronically to the initial recipient (State Water Board's California Integrated Water Quality System (CIWQS) Program website (http://www.waterboards.ca.gov/water_issues/programs/ciwqs/), 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. section 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. section 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. section 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. section 122.41(n)(3)):
   a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. section 122.41(n)(3)(i));
   b. The permitted facility was, at the time, being properly operated (40 C.F.R. section 122.41(n)(3)(ii));
   c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.1 below (24-hour notice) (40 C.F.R. section 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. section 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. section 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. section 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. section 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. section 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. section 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. sections 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. section 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. section 122.41(j)(3)(i));

2. The individual(s) who performed the sampling or measurements (40 C.F.R. section 122.41(j)(3)(ii));

3. The date(s) analyses were performed (40 C.F.R. section 122.41(j)(3)(iii));
4. The individual(s) who performed the analyses (40 C.F.R. section 122.41(j)(3)(iv));
5. The analytical techniques or methods used (40 C.F.R. section 122.41(j)(3)(v)); and
6. The results of such analyses. (40 C.F.R. section 122.41(j)(3)(vi).)

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

1. The name and address of any permit applicant or Discharger (40 C.F.R. section 122.7(b)(1)); and
2. Permit applications and attachments, permits and effluent data. (40 C.F.R. section 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. section 122.41(h); Wat. Code, sections 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. section 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. section 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. section 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. section 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. section 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. section 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. section 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 section 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. section 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. section 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. section 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. section 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. section 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. section 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. section 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. section 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. section 122.41(l)(1)(ii).)
3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 C.F.R. section 122.41(l)(1)(iii).)

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. section 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. section 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. section 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. section 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 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. section 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. section 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. section 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. section 122.42(b)(3).).

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (40 C.F.R. section 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), in accordance with the provision of Water Code section 13176. 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), electrical conductivity, 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, electrical conductivity, 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. Laboratory analytical methods shall be sufficiently sensitive in accordance with the Sufficiently Sensitive Methods Rule (SSM Rule) specified under 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv). A U.S. EPA-approved analytical method is sufficiently sensitive for a pollutant/parameter where:

1. The method minimum level (ML) is at or below the applicable water quality objective for the receiving water, or;
2. The method ML is above the applicable water quality objective for the receiving water but the amount of the pollutant/parameter in the discharge is high enough that the method detects and quantifies the level of the pollutant/parameter, or;
3. the method ML is above the applicable water quality objective for the receiving water, but the ML is the lowest of the 40 C.F.R. 136 U.S. EPA-approved analytical methods for the pollutant/parameter.

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 or electronically via email to the DMR-QA Coordinator:

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 Facility influent can be obtained, prior to any additives, treatment processes, and plant return flows.
001	EFF-001	A location where a representative sample of the Facility effluent can be obtained after dechlorination and prior to discharge to the San Joaquin River, or to the Cooling Ponds when operating to provide effluent cooling prior to discharge to the San Joaquin River..

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
001	EFF-002	A location where a representative sample of the Facility effluent can be obtained following the Cooling Ponds when operating to provide effluent cooling, prior to discharge to the San Joaquin River
--	RSW-001	In the San Joaquin River approximately 900 feet upstream (south) of Discharge Point 001.
--	RSW-002	In the San Joaquin River approximately 500 feet upstream (south) of Discharge Point 001.
--	RSW-003	In the San Joaquin River approximately 500 feet downstream (north) of Discharge Point 001.
--	FIL-001	Monitoring of the filter effluent to be measured immediately downstream of the filters prior to chlorination.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. When discharging to the San Joaquin River, the Discharger shall monitor influent to the Facility at INF-001 in accordance with Table E-2 and the testing requirements described in section III.A.2 below:

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous
Biochemical Oxygen Demand (5-day @ 20°Celcius)	mg/L	24-hour Composite	1/Week
Total Suspended Solids	mg/L	24-hour Composite	1/Week
Electrical Conductivity @ 25°Celcius	µmhos/cm	Grab	1/Week

2. **Table E-2 Testing Requirements**. The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-2:

   a. **Applicable to all parameters.** Parameters shall be analyzed using the analytical methods described in 40 CFR part 136; or by methods approved by the Central Valley Water Board or the State Water Board. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 CFR part 136 allowed sample type.

   b. **24-Hour Composite Samples.** All composite samples shall be collected from a 24-hour flow proportional composite.

   c. **Grab Sample.** A grab sample is defined as an individual discrete sample collected over a period of time not exceeding 15 minutes. It can be taken

manually, using a pump, scoop, vacuum, or other suitable device. Grab samples shall not be collected at the same time each day

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. When discharging to the San Joaquin River, the Discharger shall monitor the effluent at EFF-001 in accordance with Table E-3 and the testing requirements described in section IV.A.2 below:

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous
Biochemical Oxygen Demand (5-day @ 20°Celcius)	mg/L	24-hour Composite	3/Week
Biochemical Oxygen Demand (5-day @ 20°Celcius)	Percent removal	Calculate	1/Month
Total Suspended Solids (TSS)	mg/L	24-hour Composite	3/Week
TSS	Percent removal	Calculate	1/Month
pH	standard units	Grab	1/Day
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Week
Chlorine, Total Residual	mg/L	Meter	Continuous
Chlorpyrifos	µg/L	Grab	1/Year
Diazinon	µg/L	Grab	1/Year
Dibromochloromethane (DBCM)	µg/L	Grab	1/Month
Dichlorobromomethane (DCBM)	µg/L	Grab	1/Month
Bromoform	µg/L	Grab	1/Month
Chloroform	µg/L	Grab	1/Month
Barium	µg/L	24-hour Composite	1/Month
Dissolved Organic Carbon	mg/L	24-hour Composite	1/Quarter
Dissolved Oxygen	mg/L	Grab	2/Month
Electrical Conductivity @ 25°Celcius	µmhos/cm	Grab	1/Week
Hardness, Total (as $CaCO_3$)	mg/L	24-hour Composite	1/Quarter
Mercury (methyl)	ng/L	Grab	1/Quarter
Mercury, Total	ng/L	Grab	1/Quarter

Parameter	Units	Sample Type	Minimum Sampling Frequency
Nitrate, Total (as N)	mg/L	Grab	1/Month
Nitrite, Total (as N)	mg/L	Grab	1/Month
Nitrate plus Nitrite, Total (as N)	mg/L	Calculate	1/Month
Temperature	ºF	Grab	1/Day
Lead, Total	µg/L	24-hour Composite	1/Quarter
Total Coliform Organisms	MPN/100 mL	Grab	1/Day

2. **Table E-3 Testing Requirements**. The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-3:

   a. **Applicable to all parameters.** Parameters shall be analyzed using the analytical methods described in 40 CFR part 136 or by methods approved by the Central Valley Water Board or the State Water Board. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 CFR part 136 allowed sample type.

   b. **24-hour composite samples.** Shall be collected from a 24-hour flow proportional composite.

   c. **Grab Sample.** A grab sample is defined as an individual discrete sample collected over a period of time not exceeding 15 minutes. It can be taken manually, using a pump, scoop, vacuum, or other suitable device. Grab samples shall not be collected at the same time each day

   d. **Handheld Field Meter.** A handheld field meter may be used for dissolved oxygen, electrical conductivity, temperature and pH, 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.

   e. **Temperature and pH.** Shall be recorded at the time of ammonia sample collection.

   f. **Ammonia Nitrogen, Total.** Ammonia samples shall be collected concurrently with whole effluent toxicity monitoring per Section V of this MRP.

   g. **Total Residual Chlorine.** Shall be monitored using an analytical method that is sufficiently sensitive to measure at the permitted level of 0.01 mg/L.

   h. **Electrical Conductivity @ 25°Celcius.** Samples shall be collected concurrently with the influent EC grab sample.

   i. **Hardness.** Samples shall be collected concurrently with samples for lead.

j. **Total Mercury and Methyl Mercury.** 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.

k. **Total Coliform Organisms.** Samples for total coliform organisms may be collected at any point following disinfection.

l. **Priority Pollutants**. For all priority pollutant constituents listed in Table E-3 (DBCM, DCBM, Bromoform, Chloroform, Mercury, and Lead) the RL 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 (State Implementation Policy or SIP) and the SSM Rule specified under 40 C.F.R. sections 122.21(e)(3) and 122.44(i)(1)(iv).

m. **Chlorpyrifos and Diazinon.** Shall be sampled using U.S. EPA Method 625M, Method 8141, or equivalent 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.

n. **Dissolved Organic Carbon.** Monitoring shall be conducted concurrently with pH and hardness sampling.

o. **Flow.** Effluent flow is measured using a flow meter located downstream of monitoring locations EFF-001 and EFF-002 and captures the total flow to the San Joaquin River under all operating conditions.

p. **Dissolved Oxygen (2/month sampling).** The first sample shall be taken between the first day of calendar month through fifteenth day of calendar month and the second sample shall be taken between the sixteenth day of calendar month through last day of calendar month. A sample is not required if discharge does not occur during the respective sample period.

B. Monitoring Location EFF-002

1. When discharging to the San Joaquin River while operating the Cooling Ponds, the Discharger shall monitor the effluent at EFF-002, in addition to EFF-001, in accordance with Table E-4 and the testing requirements described in section IV.B.2 below:

Table E-4. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
pH	standard units	Grab	1/Day
Dissolved Oxygen	mg/L	Grab	2/Month
Temperature	ºF	Grab	1/Day

2. **Table E-4 Testing Requirements**. The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-4:

   a. **Applicable to all parameters.** Parameters shall be analyzed using the analytical methods described in 40 CFR part 136 or by methods approved by the Central Valley Water Board or the State Water Board. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 CFR part 136 allowed sample type.

   b. **Handheld Field Meter.** A handheld field meter may be used for dissolved oxygen, electrical conductivity, temperature and pH, 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. **Grab Sample.** A grab sample is defined as an individual discrete sample collected over a period of time not exceeding 15 minutes. It can be taken manually, using a pump, scoop, vacuum, or other suitable device. Grab samples shall not be collected at the same time each day.

   d. **Dissolved Oxygen (2/month sampling).** The first sample shall be taken between the first day of calendar month through fifteenth day of calendar month and the second sample shall be taken between the sixteenth day of calendar month through last day of calendar month. A sample is not required if discharge does not occur during the respective sample period.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Acute Toxicity Testing. When discharging to the San Joaquin River, 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 acute toxicity testing requirement:

1. **Monitoring Frequency** – The Discharger shall perform **quarterly** acute toxicity testing, concurrent with effluent ammonia sampling.
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.
3. **Test Species** – Test species shall be rainbow trout (*Oncorhynchus mykiss*).
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. No pH adjustment may be made unless approved by the Executive Officer.

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

B. Chronic Toxicity Testing. When discharging to the San Joaquin River, t he Discharger shall meet the following chronic toxicity testing requirements:

1. **Monitoring Frequency** – The Discharger shall perform routine **quarterly** chronic toxicity testing. If the result of the routine chronic toxicity testing event exhibits toxicity, demonstrated by a result greater than 1.3 TUc (as $100/EC_{25}$) AND a percent effect greater than 25 percent at 100 percent effluent, the Discharger has the option of conducting two additional compliance monitoring events and performing 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. See Compliance Determination section VII.L for procedures for calculating 6-week median.
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. The receiving water control shall be a grab sample obtained from Monitoring Location RSW-002 or RSW-003 (whichever location is upstream at the time of sampling), 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 Discharger shall determine the most sensitive species, per Section V.E of the MRP. The Discharger shall conduct 3-species chronic toxicity tests with the following:
   a. Cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test);
   b. Fathead minnow, *Pimephales promelas* (larval survival and growth test); and
   c. Green alga, *Pseudokirchnereilla subcapitata* (growth test).
5. **Methods** – The presence of chronic toxicity shall be estimated as specified in Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA/821-R-02-013, October 2002.
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-5, below. For TRE monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-5, below, 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-5. Chronic Toxicity Testing Dilution Series

Sample	Dilution	Dilution	Dilution	Dilution	Dilution	Dilution	Dilution
Effluent	100%	75%	50%	25%	12.5%	6.25%	0%
Control Water	0%	25%	50%	75%	87.5%	93.75%	100%

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

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

   b. The percent minimum significant difference (PMSD) measured for the test exceeds the upper PMSD bound variability criterion in the Method Manual.

C. WET Testing Notification Requirements. The Discharger shall notify the Central Valley Water Board of test results exceeding the chronic toxicity numeric trigger as soon as the Discharger learns of the exceedance, but no later than 24-hours after receipt of the monitoring results.

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. **Test of Significance Toxicity (TST).** For both acute and chronic toxicity testing, the toxicity monitoring results shall be reported to the Central Valley Water Board with the quarterly self-monitoring report, and shall contain, at minimum:

   a. The valid toxicity test results for the Test of Significance Toxicity (TST) statistical approach, reported as "Pass" or "Fail" and "Percent Effect" at the Instream Waste Concentration (IWC) for the discharge at 100% effluent.

   b. The statistical analysis used in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010) Appendix A, Figure A-1 and Table A-1, and Appendix B, Table B-1.

   c. Statistical program (e.g., TST calculator, CETIS, etc.) output results, including graphical plots, for each toxicity test.

2. **Chronic WET Reporting.** Routine and compliance chronic toxicity monitoring results shall be reported to the Central Valley Water Board with the quarterly self-monitoring report, 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 percent effect for each endpoint at the IWC.

c. The statistical methods used to calculate endpoints;
d. The statistical output page, which includes the calculation of the percent minimum significant difference (PMSD);
e. The dates of sample collection and initiation of each toxicity test; and
f. The results compared to the numeric toxicity monitoring trigger.
g. The progress on any ongoing TRE investigation, if applicable.

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

3. **Acute WET Reporting.** Acute toxicity test results shall be submitted with the quarterly discharger self-monitoring reports and reported as percent survival and at minimum:

a. The percent effect for each endpoint at the IWC.
b. The dates of sample collection and initiation of each toxicity test; and
c. The results compared to the numeric percent survival effluent limitation.

4. **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.

5. **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. Upon initiating discharge to the San Joaquin River, the Discharger shall perform a screening to evaluate the most sensitive species of the three species identified in MRP section V.B.4. If there are significant changes in the nature of the effluent during the permit term, a rescreening must be performed prior to permit reissuance and results submitted with the Report of Waste Discharge.

1**. Determination of Most Sensitive Species.**

The first four chronic toxicity tests upon initiating discharge (using effluent that is representative of the discharge to the San Joaquin River) shall be used for a sensitive species screening evaluation.

a. If a single test in the species sensitivity screening testing exceeds 1 TUc (as 100/NOEC), then the species used in that test shall be established as the most sensitive species, or

b. If there is more than a single test that exceeds 1 TUc (as 100/NOEC), then of the species exceeding 1 TUc (as 100/NOEC) that exhibits the highest percent effect shall be established as the most sensitive species, or

c. If the most sensitive species is not able to be determined from the species sensitivity screening discussed above, then the Discharger shall rotate the test species every calendar year as follows:

   i. *Ceriodaphnia dubia* (survival and reproduction test) for the entire calendar year of 2023;
   ii. *Pimephales promelas* (larval survival and growth test) for the entire calendar year of 2024;
   iii. *Pseudokirchnereilla subcapitata* (growth test) for the entire calendar year of 2025; and
   iv. Cycling back to *Ceriodaphnia dubia* (survival and reproduction test) after *Pseudokirchnereilla subcapitata* (growth test) for the entire calendar year of 2026 and back through the same rotation until the next permit renewal.

   If a single test exhibits toxicity, demonstrated by a result greater than 1 TUc (as 100/EC25) AND a percent effect greater than 25 percent effect at 100 percent effluent, then the species used in that test shall be established as the most sensitive species until the next permit renewal. Upon renewal, the Discharger shall conduct three-species chronic toxicity tests for four quarters to reevaluate and determine the most sensitive species.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECYCLING MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS

The Central Valley Water Board adopted Resolution R5-2021-0054 on 15 October 2021, approving the governance structure of the Delta Regional Monitoring Program (RMP), a collaboration of regulatory agencies, resource agencies, permittees, scientists, and interested parties formed to develop water quality data necessary for improving the understanding of Delta water quality issues. The goal of this effort is to better coordinate and design current and future monitoring activities in and around the Delta to create a cost-effective approach for providing critically needed water quality information to better inform policy and regulatory decisions of the Central Valley Water Board and other Federal, State and local agencies and organizations.

Delta RMP data is not intended to be used directly to represent either upstream or downstream water quality for purposes of determining compliance with this Order. Delta RMP monitoring stations are established generally as “integrator sites” to evaluate the combined impacts on water quality of multiple discharges into the Delta. Delta RMP monitoring stations would not normally be able to identify the source of any specific constituent but would be used to identify water quality issues needing further evaluation.

The Discharger is required to participate in the Delta RMP, in lieu of individual monitoring and studies. If the Discharger does not adequately participate in the Delta RMP, pursuant to Water Code sections 13267 and 13383 the Discharger will be required to conduct equivalent special studies to evaluate the impacts of the discharge that are being

conducted by the Delta RMP, such as studies for constituents of emerging concern (CECs), current use pesticides, mercury, nutrients, pathogens, etc.

A. Monitoring Location RSW-002 and RSW-003

1. When discharging to the San Joaquin River, the Discharger shall monitor the San Joaquin River at RSW-002 and RSW-003 in accordance with Table E-6 and the testing requirements described in section VIII.A.2 below:

Table E-6. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency
pH	standard units	Grab	1/Week
Dissolved Oxygen	mg/L	Grab	1/Month
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Month
Dissolved Organic Carbon	mg/l	Grab	1/Quarter
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Quarter
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Quarter
Temperature	°F	Grab	1/Week
Turbidity	NTU	Grab	2/Month

2. **Table E-6 Testing Requirements**. The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-6:

   a. **Applicable to all parameters.** Parameters shall be analyzed using the analytical methods described in 40 CFR part 136 or by methods approved by the Central Valley Water Board or the State Water Board. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 CFR part 136 allowed sample type.

   b. **Grab Sample.** A grab sample is defined as an individual discrete sample collected over a period of time not exceeding 15 minutes. It can be taken manually, using a pump, scoop, vacuum, or other suitable device. Grab samples shall not be collected at the same time each day

   c. **Handheld Field Meter.** A handheld field meter may be used for dissolved oxygen, electrical conductivity, temperature, turbidity, and pH, 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.

   d. **Temperature and pH.** Shall be recorded at the time of ammonia sample collection.

e. **Dissolved Organic Carbon.** Monitoring shall be conducted concurrently with pH and hardness sampling.

f. **Ammonia.** The method detection limit for ammonia shall be less than or equal to 0.5 mg/L (as N).

3. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by RSW-002 and RSW-003 when discharging to the San Joaquin River.

   Attention shall be given to the presence of:

   a. Floating or suspended matter;
   b. Discoloration;
   c. Bottom deposits;
   d. Aquatic life;
   e. Visible films, sheens, or coatings;
   f. Fungi, slimes, or objectionable growths; and
   g. Potential nuisance conditions.

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

IX. OTHER MONITORING REQUIREMENTS

A. Filtration System

1. **Monitoring Location FIL-001.** When discharging to the San Joaquin River, the Discharger shall monitor the filtration system at Monitoring Location FIL-001 in accordance with Table E-7 and the testing requirements described in section IX.A.2 below:

Table E-7. Filtration System Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency
Turbidity	NTU	Meter	Continuous

2. **Table E-7 Testing Requirements**. The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-7:

   a. **Applicable to all parameters**. Parameters shall be analyzed using the analytical methods described in 40 CFR part 136; or by methods approved by the Central Valley Water Board or the State Water Board. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 CFR part 136 allowed sample type.

   b. **Continuous analyzers**. The Discharger shall report documented routine meter maintenance activities including date, time of day, and duration, in which the analyzer(s) is not in operation and no continuous turbidity measurements are available to report for the duration the meter is out of service. If analyzer(s) fail to provide continuous monitoring for more than two hours and influent and/or effluent from the disinfection process is not diverted for retreatment, the Discharger shall obtain and report hourly manual and/or grab sample results.

c. **Turbidity.** Report daily average and maximum turbidity.

B. Pyrethroid Pesticides Monitoring

1. **Water Column Chemistry Monitoring Requirements**. When discharging to the San Joaquin River, the Discharger shall conduct effluent and receiving water (San Joaquin River) baseline monitoring in accordance with Table E-8. **Quarterly monitoring shall be conducted for one year** concurrent with the Effluent and Receiving Water Characterization Monitoring (see section IX.C.1 of this MRP for specific dates). The discharger shall also submit a minimum of one quality assurance/quality control (QA/QC) sample during the year to be analyzed for the constituents listed in Table E-8.

   The monitoring shall be conducted in the effluent at monitoring location EFF-001 and downstream receiving water at monitoring location RSW-003 or RSW-002 (depending on the flow direction) and the results of such monitoring be submitted to the Central Valley Water Board with the quarterly self-monitoring reports. The Discharger shall use Environmental Laboratory Accreditation Program (ELAP)-accredited laboratories and methods for pyrethroid pesticides water column chemistry monitoring. ELAP-accredited methods are acceptable for pyrethroid chemical analysis provided that the method meets the analytical capability described in Table E-8. A current list of ELAP approved laboratories and points of contact can be found on the Central Valley Water Board's Pyrethroid Pesticides TMDL and Basin Plan Amendment Webpage, https://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/central_valley_projects/central_valley_pesticides/pyrethroid_tmdl_bpa/index.html.

   Monitoring can either be conducted by the Discharger or can be done as part of a group monitoring effort. If the Discharger chooses to participate in a group monitoring effort, the timing and the other study requirements of the monitoring can be modified by the Executive Officer.

Table E-8. Pyrethroid Pesticides Monitoring

Parameter	CAS Number	Sample Units	Sample Type	Analytical Method	Reporting Level
Total Bifenthrin	82657-04-3	ng/L	Grab	To be determined	1.3
Total Cyfluthrin	68359-37-5	ng/L	Grab	To be determined	1.3
Total Cypermethrin	52315-07-8	ng/L	Grab	To be determined	1.7
Total Esfenvalerate	51630-58-1	ng/L	Grab	To be determined	3.3
Total Lambda-cyhalothrin	91465-08-6	ng/L	Grab	To be determined	1.2
Total Permethrin	52645-53-1	ng/L	Grab	To be determined	10
Freely Dissolved Bifenthrin	82657-04-3	ng/L	Calculated	Calculated from total concentration	--

Parameter	CAS Number	Sample Units	Sample Type	Analytical Method	Reporting Level
Freely Dissolved Cyfluthrin	68359-37-5	ng/L	Calculated	Calculated from total concentration	--
Freely Dissolved Cypermethrin	52315-07-8	ng/L	Calculated	Calculated from total concentration	--
Freely Dissolved Esfenvalerate	51630-58-1	ng/L	Calculated	Calculated from total concentration	--
Freely Dissolved Lambda-cyhalothrin	91465-08-6	ng/L	Calculated	Calculated from total concentration	--
Freely Dissolved Permethrin	52645-53-1	ng/L	Calculated	Calculated from total concentration	--
Dissolved Organic Carbon (DOC)	--	mg/L	Grab	--	--
Total Organic Carbon (TOC)	--	mg/L	Grab	--	--

The freely dissolved concentration of each quantified pyrethroid pesticide in a sample may be directly measured or estimated using partition coefficients. Methods for direct measurement must be approved by the Executive Officer before they are used to determine the freely dissolved pyrethroid concentrations that are used for determining exceedances of the pyrethroid pesticides numeric triggers.

To estimate the freely dissolved concentration of a pyrethroid pesticide with partition coefficients, the following equation shall be used:

$$C_{dissolved} = \frac{C_{total}}{1 + (K_{OC} \times [POC]) + (K_{DOC} \times [DOC])}$$

Where:

$C_{dissolved}$ = concentration of a an individual pyrethroid pesticide that is in the freely dissolved phase (nanograms per liter, ng/L),

C_{total} = total concentration of an individual pyrethroid pesticide in water (ng/L),

K_{OC} = organic carbon-water partition coefficient for the individual pyrethroid pesticide (Liters per kilogram, L/kg),

POC = concentration of particulate organic carbon in the water sample (kilograms per liter, kg/L), which can be calculated as [POC]=[TOC]-[DOC],

TOC = total organic carbon in the sample (kg/L)

K_{DOC} = dissolved organic carbon-water partition coefficient (L/kg),

DOC = concentration of dissolved organic carbon in the sample (kg/L).

Site-specific or alternative study-based partition coefficients approved by the Executive Officer may be used for K_{OC} and K_{DOC} in the above equation. If site-specific or alternative study-based partition coefficients are not available or have not been approved, the following partition coefficients shall be used for K_{OC} and K_{DOC} in the above equation:

Table E-9. Pyrethroid Pesticide Partition Coefficients

Pyrethroid Pesticide	Receiving water K_{OC} (L/kg)	Receiving water K_{DOC} (L/kg)	Effluent K_{OC} (L/kg)	Effluent K_{DOC} (L/kg)
Bifenthrin	4,228,000	1,737,127	15,848,932	800,000
Cyfluthrin	3,870,000	2,432,071	3,870,000	2,432,071
Cypermethrin	3,105,000	762,765	6,309,573	200,000
Esfenvalerate	7,220,000	1,733,158	7,220,000	1,733,158
Lambda-cyhalothrin	2,056,000	952,809	7,126,428	200,000
Permethrin	6,075,000	957,703	10,000,000	200,000

2. **Water Column Toxicity Monitoring Requirements**. When discharging to the San Joaquin River, the Discharger shall monitor the toxicity of the downstream receiving water using EPA method EPA-821-R-02-012 (Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, USEPA, October 2002, or most recent edition). Except as specified in this order, water column toxicity testing shall follow the measurement quality objectives provided in the Surface Water Ambient Monitoring Program (SWAMP) Quality Assurance Program Plan (SWRCB, 2018). When feasible, the Discharger shall use the Southern California Coastal Water Research Project (SCCWRP) guidance (Schiff and Greenstein, 2016) on test organism age and size for *Hyalella azteca*.

   For consistency with EPA Method EPA-821-R-02-012 and ELAP accreditation, *Hyalella Azteca* water column toxicity testing for baseline monitoring must be performed at 20 degrees Celsius.

   Quarterly monitoring shall be conducted for one year concurrent with the Pyrethroid Pesticides Water Column Chemistry Monitoring during Effluent and Receiving Water Characterization Monitoring (see section IX.D.1 of this MRP for specific dates). Downstream receiving water monitoring shall be conducted at monitoring location RSW-003 when discharging to the San Joaquin River and the results of such monitoring submitted to the Central Valley Water Board with the quarterly self-monitoring reports. Monitoring can either be conducted by the Discharger or can be done as part of a group monitoring effort. If the Discharger chooses to participate in a group monitoring effort, the timing of the monitoring can be modified by the Executive Officer.

C. Effluent and Receiving Water Characterization

1. **Monitoring Frequency**

   a. **Effluent Sampling.** Samples shall be collected from the effluent (Monitoring Location EFF-001) **quarterly** between **1 April 2023 and 31 March 2024**.

   b. **Receiving Water Sampling.** Samples shall be collected from the upstream receiving water (Monitoring Location RSW-001) **quarterly** between **1 April 2023 and 31 March 2024**.

   Constituents shall be collected and analyzed consistent with the Discharger's Analytical Methods Report (MRP, X.D.1) using sufficiently sensitive analytical methods and Reporting Levels (RLs) per the SSM Rule specified in 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv). The "Reporting Level" is synonymous with the "Method Minimum Level" described in the SSM Rule. The results of the monitoring shall 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. **Analytical Methods Report Certification.** Prior to beginning the Effluent and Receiving Water Characterization monitoring, the Discharger shall provide a certification acknowledging the scheduled start date of the Effluent and Receiving Water Characterization monitoring and confirming that samples will be collected and analyzed as described in the previously submitted Analytical Methods Report (MRP, X.D.1). If there are changes to the previously submitted Analytical Methods Report, the Discharger shall outline those changes. A one-page certification form will be provided by Central Valley Water Board staff with the permit's Notice of Adoption that the Discharger can use to satisfy this requirement. The certification form shall be submitted electronically via CIWQS submittal by the due date in the Technical Reports Table.

3. The Discharger shall conduct effluent and receiving water characterization monitoring **when discharging to the San Joaquin River** in accordance with Table E-10 and the testing requirements described in section IX.C.4 below.

Table E-10. Effluent and Receiving Water Characterization Monitoring

CTR Number	Parameter	CAS Number	Units	Effluent Sample Type	Parameter Type
41	1,1,1-Trichloroethane	71-55-6	µg/L	Grab	Volatile Organics
37	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	Grab	Volatile Organics
42	1,1,2-Trichloroethane	79-00-5	µg/L	Grab	Volatile Organics
28	1,1-Dichloroethane	75-34-3	µg/L	Grab	Volatile Organics
30	1,1-Dichloroethylene (DCE)	75-35-4	µg/L	Grab	Volatile Organics

CTR Number	Parameter	CAS Number	Units	Effluent Sample Type	Parameter Type
101	1,2,4-Trichlorobenzene	120-82-1	µg/L	Grab	Volatile Organics
75	1,2-Dichlorobenzene	95-50-1	µg/L	Grab	Volatile Organics
29	1,2-Dichloroethane	107-06-2	µg/L	Grab	Volatile Organics
31	1,2-Dichloropropane	78-87-5	µg/L	Grab	Volatile Organics
76	1,3-Dichlorobenzene	541-73-1	µg/L	Grab	Volatile Organics
32	1,3-Dichloropropylene	542-75-6	µg/L	Grab	Volatile Organics
77	1,4-Dichlorobenzene	106-46-7	µg/L	Grab	Volatile Organics
25	2-Chloroethyl vinyl Ether	110-75-8	µg/L	Grab	Volatile Organics
17	Acrolein	107-02-8	µg/L	Grab	Volatile Organics
18	Acrylonitrile	107-13-1	µg/L	Grab	Volatile Organics
19	Benzene	71-43-2	µg/L	Grab	Volatile Organics
20	Bromoform	75-25-2	µg/L	Grab	Volatile Organics
21	Carbon Tetrachloride	56-23-5	µg/L	Grab	Volatile Organics
22	Chlorobenzene	108-90-7	µg/L	Grab	Volatile Organics
24	Chloroethane	75-00-3	µg/L	Grab	Volatile Organics
26	Chloroform	67-66-3	µg/L	Grab	Volatile Organics
23	Dibromochloromethane	124-48-1	µg/L	Grab	Volatile Organics
27	Dichlorobromomethane	75-27-4	µg/L	Grab	Volatile Organics
33	Ethylbenzene	100-41-4	µg/L	Grab	Volatile Organics
89	Hexachlorobutadiene	87-68-3	µg/L	Grab	Volatile Organics
34	Methyl Bromide (Bromomethane)	74-83-9	µg/L	Grab	Volatile Organics
35	Methyl Chloride	74-87-3	µg/L	Grab	Volatile Organics

CTR Number	Parameter	CAS Number	Units	Effluent Sample Type	Parameter Type
36	Methylene Chloride	75-09-2	µg/L	Grab	Volatile Organics
--	Methyl-tert-butyl ether (MTBE)	1634-04-4	µg/L	Grab	Volatile Organics
94	Naphthalene	91-20-3	µg/L	Grab	Volatile Organics
38	Tetrachloroethylene (PCE)	127-18-4	µg/L	Grab	Volatile Organics
39	Toluene	108-88-3	µg/L	Grab	Volatile Organics
40	trans-1,2-Dichloroethylene	156-60-5	µg/L	Grab	Volatile Organics
43	Trichloroethylene (TCE)	79-01-6	µg/L	Grab	Volatile Organics
44	Vinyl Chloride	75-01-4	µg/L	Grab	Volatile Organics
85	1,2-Diphenylhydrazine	122-66-7	µg/L	Grab	Semi-Volatile Organics
55	2,4,6-Trichlorophenol	88-06-2	µg/L	Grab	Semi-Volatile Organics
46	2,4-Dichlorophenol	120-83-2	µg/L	Grab	Semi-Volatile Organics
47	2,4-Dimethylphenol	105-67-9	µg/L	Grab	Semi-Volatile Organics
49	2,4-Dinitrophenol	51-28-5	µg/L	Grab	Semi-Volatile Organics
82	2,4-Dinitrotoluene	121-14-2	µg/L	Grab	Semi-Volatile Organics
83	2,6-Dinitrotoluene	606-20-2	µg/L	Grab	Semi-Volatile Organics
71	2-Chloronaphthalene	91-58-7	µg/L	Grab	Semi-Volatile Organics
45	2-Chlorophenol	95-57-8	µg/L	Grab	Semi-Volatile Organics
48	2-Methyl-4,6-Dinitrophenol	534-52-1	µg/L	Grab	Semi-Volatile Organics
50	2-Nitrophenol	88-75-5	µg/L	Grab	Semi-Volatile Organics
78	3,3-Dichlorobenzidine	91-94-1	µg/L	Grab	Semi-Volatile Organics
69	4-Bromophenyl Phenyl Ether	101-55-3	µg/L	Grab	Semi-Volatile Organics
52	4-Chloro-3-methylphenol	59-50-7	µg/L	Grab	Semi-Volatile Organics

CTR Number	Parameter	CAS Number	Units	Effluent Sample Type	Parameter Type
72	4-Chlorophenyl Phenyl Ether	7005-72-3	µg/L	Grab	Semi-Volatile Organics
51	4-Nitrophenol	100-02-7	µg/L	Grab	Semi-Volatile Organics
56	Acenaphthene	83-32-9	µg/L	Grab	Semi-Volatile Organics
57	Acenaphthylene	208-96-8	µg/L	Grab	Semi-Volatile Organics
58	Anthracene	120-12-7	µg/L	Grab	Semi-Volatile Organics
59	Benzidine	92-87-5	µg/L	Grab	Semi-Volatile Organics
60	Benzo(a)Anthracene	56-55-3	µg/L	Grab	Semi-Volatile Organics
61	Benzo(a)Pyrene	50-32-8	µg/L	Grab	Semi-Volatile Organics
62	Benzo(b)Fluoranthene	205-99-2	µg/L	Grab	Semi-Volatile Organics
63	Benzo(ghi)Perylene	191-24-2	µg/L	Grab	Semi-Volatile Organics
64	Benzo(k)Fluoranthene	207-08-9	µg/L	Grab	Semi-Volatile Organics
65	Bis (2-Chloroethoxy) Methane	111-91-1	µg/L	Grab	Semi-Volatile Organics
66	Bis (2-Chloroethyl) Ether	111-44-4	µg/L	Grab	Semi-Volatile Organics
67	Bis (2-Chloroisopropyl) Ether	108-60-1	µg/L	Grab	Semi-Volatile Organics
68	Bis(2-Ethylhexyl) Phthalate	117-81-7	µg/L	Grab	Semi-Volatile Organics
70	Butylbenzyl Phthalate	85-68-7	µg/L	Grab	Semi-Volatile Organics
73	Chrysene	218-01-9	µg/L	Grab	Semi-Volatile Organics
74	Dibenzo(a,h)anthracene	53-70-3	µg/L	Grab	Semi-Volatile Organics
79	Diethyl Phthalate	84-66-2	µg/L	Grab	Semi-Volatile Organics
80	Dimethyl Phthalate	131-11-3	µg/L	Grab	Semi-Volatile Organics
81	Di-n-butyl Phthalate	84-74-2	µg/L	Grab	Semi-Volatile Organics
84	Di-n-Octyl Phthalate	117-84-0	µg/L	Grab	Semi-Volatile Organics

CTR Number	Parameter	CAS Number	Units	Effluent Sample Type	Parameter Type
86	Fluoranthene	206-44-0	µg/L	Grab	Semi-Volatile Organics
87	Fluorene	86-73-7	µg/L	Grab	Semi-Volatile Organics
88	Hexachlorobenzene	118-74-1	µg/L	Grab	Semi-Volatile Organics
90	Hexachlorocyclopentadiene	77-47-4	µg/L	Grab	Semi-Volatile Organics
91	Hexachloroethane	67-72-1	µg/L	Grab	Semi-Volatile Organics
92	Indeno(1,2,3-cd) Pyrene	193-39-5	µg/L	Grab	Semi-Volatile Organics
93	Isophorone	78-59-1	µg/L	Grab	Semi-Volatile Organics
95	Nitrobenzene	98-95-3	µg/L	Grab	Semi-Volatile Organics
96	N-Nitrosodimethylamine	62-75-9	µg/L	Grab	Semi-Volatile Organics
97	N-Nitrosodi-n-Propylamine	621-64-7	µg/L	Grab	Semi-Volatile Organics
98	N-Nitrosodiphenylamine	86-30-6	µg/L	Grab	Semi-Volatile Organics
53	Pentachlorophenol (PCP)	87-86-5	µg/L	Grab	Semi-Volatile Organics
99	Phenanthrene	85-01-8	µg/L	Grab	Semi-Volatile Organics
54	Phenol	108-95-2	µg/L	Grab	Semi-Volatile Organics
100	Pyrene	129-00-0	µg/L	Grab	Semi-Volatile Organics
--	Aluminum	7429-90-5	µg/L	24-hour Composite	Inorganics
1	Antimony, Total	7440-36-0	µg/L	24-hour Composite	Inorganics
2	Arsenic, Total	7440-38-2	µg/L	24-hour Composite	Inorganics
15	Asbestos	1332-21-4	µg/L	24-hour Composite	Inorganics
3	Beryllium, Total	7440-41-7	µg/L	24-hour Composite	Inorganics
4	Cadmium, Total	7440-43-9	µg/L	24-hour Composite	Inorganics
5	Chromium, Total	7440-47-3	µg/L	24-hour Composite	Inorganics

CTR Number	Parameter	CAS Number	Units	Effluent Sample Type	Parameter Type
6	Copper, Total	7440-50-8	µg/L	24-hour Composite	Inorganics
--	Iron, Total	7439-89-6	µg/L	24-hour Composite	Inorganics
7	Lead, Total	7439-92-1	µg/L	24-hour Composite	Inorganics
--	Manganese, Total	7439-96-5	µg/L	24-hour Composite	Inorganics
--	Mercury, Methyl	22967-92-6	µg/L	Grab	Inorganics
8	Mercury, Total	7439-97-6	µg/L	Grab	Inorganics
9	Nickel, Total	7440-02-0	µg/L	24-hour Composite	Inorganics
10	Selenium, Total	7782-49-2	µg/L	24-hour Composite	Inorganics
11	Silver, Total	7440-22-4	µg/L	24-hour Composite	Inorganics
12	Thallium, Total	7440-28-0	µg/L	24-hour Composite	Inorganics
13	Zinc, Total	7440-66-6	µg/L	24-hour Composite	Inorganics
--	Boron	7440-42-8	µg/L	24-hour Composite	Non-Metals/Minerals
--	Chloride	16887-00-6	mg/L	24-hour Composite	Non-Metals/Minerals
14	Cyanide, Total (as CN)	57-12-5	µg/L	Grab	Non-Metals/Minerals
--	Phosphorus, Total (as P)	7723-14-0	mg/L	24-hour Composite	Non-Metals/Minerals
--	Sulfate	14808-79-8	mg/L	24-hour Composite	Non-Metals/Minerals
--	Sulfide (as S)	5651-88-7	mg/L	24-hour Composite	Non-Metals/Minerals
16	2,3,7,8-TCDD (Dioxin)	1746-01-6	mg/L	24-hour Composite	Pesticides/PCBs /Dioxins
110	4,4-DDD	72-54-8	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins
109	4,4-DDE	72-55-9	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins
108	4,4-DDT	50-29-3	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins
102	Aldrin	309-00-2	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins

CTR Number	Parameter	CAS Number	Units	Effluent Sample Type	Parameter Type
103	alpha-BHC (Benzene hexachloride)	319-84-6	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins
112	alpha-Endosulfan	959-98-8	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins
104	beta-BHC (Benzene hexachloride)	319-85-7	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins
113	beta-Endosulfan	33213-65-9	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins
107	Chlordane	57-74-9	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins
106	delta-BHC (Benzene hexachloride)	319-86-8	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins
111	Dieldrin	60-57-1	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins
114	Endosulfan Sulfate	1031-07-8	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins
115	Endrin	72-20-8	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins
116	Endrin Aldehyde	7421-93-4	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins
105	gamma-BHC (Benzene hexachloride or Lindane)	58-89-9	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins
117	Heptachlor	76-44-8	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins
118	Heptachlor Epoxide	1024-57-3	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins
--	Polychlorinated Biphenyl (PCB) 1016	12674-11-2	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins
--	PCB 1221	11104-28-2	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins
--	PCB 1232	11141-16-5	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins
--	PCB 1242	53469-21-9	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins
--	PCB 1248	12672-29-6	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins
--	PCB 1254	11097-69-1	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins
--	PCB 1260	11096-82-5	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins
126	Toxaphene	8001-35-2	µg/L	24-hour Composite	Pesticides/PCBs /Dioxins

CTR Number	Parameter	CAS Number	Units	Effluent Sample Type	Parameter Type
--	pH	--	SU	Grab	Conventional Parameters
--	Temperature	--	ºF	Grab	Conventional Parameters
--	Specific Conductance (Electrical Conductivity or EC)	--	µmhos/cm	Grab	Non-Conventional Parameters
--	Dissolved Organic Carbon (DOC)	DOC	mg/L	24-hour Composite	Non-Conventional Parameters
--	Foaming Agents (MBAS)	MBAS	mg/L	24-hour Composite	Non-Conventional Parameters
--	Hardness (as CaCO3)	471-34-1	mg/L	24-hour Composite	Non-Conventional Parameters
--	Total Dissolved Solids (TDS)	TDS	mg/L	24-hour Composite	Non-Conventional Parameters
--	Ammonia (as N)	7664-41-7	mg/L	Grab or 24-hour Composite	Nutrients
--	Nitrate (as N)	14797-55-8	mg/L	Grab or 24-hour Composite	Nutrients
--	Nitrite (as N)	14797-65-0	mg/L	Grab or 24-hour Composite	Nutrients
--	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	µg/L	Grab	Other Constituents Of Concern (CoC)
--	1,2,3-Trichloropropane (TCP)	96-18-4	ug/L	Grab	Other CoC
--	1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	µg/L	24-hour Composite	Other CoC
--	2,4,5-TP (Silvex)	93-72-1	µg/L	24-hour Composite	Other CoC
--	2,4-D	94-75-7	µg/L	24-hour Composite	Other CoC
--	Alachlor	15972-60-8	µg/L	24-hour Composite	Other CoC
--	Atrazine	1912-24-9	µg/L	24-hour Composite	Other CoC

CTR Number	Parameter	CAS Number	Units	Effluent Sample Type	Parameter Type
--	Barium	7440-39-3	µg/L	24-hour Composite	Other CoC
--	Bentazon	25057-89-0	µg/L	24-hour Composite	Other CoC
--	Carbofuran	1563-66-2	µg/L	Grab or 24-hour Composite	Other CoC
--	Chlorpyrifos	2921-88-2	µg/L	Grab or 24-hour Composite	Other CoC
--	Dalapon	75-99-0	µg/L	24-hour Composite	Other CoC
--	Di(2-ethylhexyl)adipate	103-23-1	µg/L	24-hour Composite	Other CoC
--	Diazinon	333-41-5	µg/L	24-hour Composite	Other CoC
--	Dinoseb	88-85-7	µg/L	24-hour Composite	Other CoC
--	Diquat	85-00-7	µg/L	24-hour Composite	Other CoC
--	Endothal	145-73-3	µg/L	24-hour Composite	Other CoC
--	Ethylene Dibromide (EDB)	106-93-4	µg/L	24-hour Composite	Other CoC
--	Fluoride	16984-48-8	mg/L	24-hour Composite	Other CoC
--	Methoxychlor	72-43-5	µg/L	24-hour Composite	Other CoC
--	Molinate (Ordram)	2212-67-1	µg/L	24-hour Composite	Other CoC
--	Molybdenum	7439-98-7	µg/L	24-hour Composite	Other CoC
--	Oxamyl	23135-22-0	µg/L	24-hour Composite	Other CoC
--	Picloram	6607	µg/L	24-hour Composite	Other CoC
--	Simazine (Princep)	122-34-9	µg/L	24-hour Composite	Other CoC
--	Styrene	100-42-5	µg/L	Grab	Other CoC
--	Thiobencarb	28249-77-6	µg/L	24-hour Composite	Other CoC
--	Tributyltin	688-73-3	µg/L	24-hour Composite	Other CoC

CTR Number	Parameter	CAS Number	Units	Effluent Sample Type	Parameter Type
--	Trichlorofluoromethane	75-69-4	µg/L	Grab	Other CoC
--	Xylenes	1330-20-7	µg/L	Grab	Other CoC

4. **Table E-10 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-10:

   a. **Applicable to All Parameters.** 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.

   b. **Grab Samples.** A grab sample is defined as an individual discrete sample collected over a period of time not exceeding 15 minutes. It can be taken manually, using a pump, scoop, vacuum, or other suitable device.

   c. **24-hour Composite Samples**. All 24-hour composite samples shall be collected from a 24-hour flow proportional composite.

   d. **Redundant Sampling.** The Discharger is not required to conduct effluent monitoring for constituents that have already been sampled in a given quarter, as required in Table E-3.

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

   f. **Sample Type**. All receiving water samples shall be taken as grab samples. Effluent samples shall be taken as described in Table E-10.

   g. **Bis (2-ethylhexyl) phthalate**. 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.

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 specified the Technical Reports Table, 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 (SMRs)

1. The Discharger shall electronically submit SMRs 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, quarterly, and annual SMRs including the results of all required monitoring using U.S. EPA-approved test methods or other test methods specified in this Order. SMRs 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 SMRs. Monthly SMRs 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-11. 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
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
1/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
2/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
3/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
2/Month	Permit effective date	1st day of calendar month through 15th day of calendar month and 16th day of calendar month through last day of calendar month	Submit with monthly SMR

Sampling Frequency	Monitoring Period Begins On	Monitoring Period	SMR Due Date
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
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 AMEL, AWEL, or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not

Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

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

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

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

   a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The 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 all final laboratory reports from all contracted commercial laboratories, including quality assurance/quality control information, with all its SMRs for which sample analyses were performed. This requirement only applies to constituents monitored per Table E-10 "Effluent and Receiving Water Characterization Monitoring", and per Table E-3 "Effluent Monitoring", for barium, bromoform, DBCM, DCBM, total mercury, methylmercury, chlorpyrifos, diazinon, and total lead.

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

   a. **Calendar Annual Average Limitations**. For constituents with effluent limitations specified as "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. **Removal Efficiency (BOD_5 and TSS).** The Discharger shall calculate and report the percent removal of BOD_5 and TSS in the SMRs. The percent

removal shall be calculated as specified in section VII.A. of the Waste Discharge Requirements.

c. **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.

d. **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.16.a-e. of the Waste Discharge Requirements.

e. **Temperature Effluent and Receiving Water Limitations**. To determine compliance with Effluent Limitation IV.A.1.d, the Discharger shall calculate and report the difference in the daily average effluent temperature at Monitoring Locations EFF-001 or EFF-002 (when the Cooling Ponds are operating) and the "upstream" receiving water temperature collected at Monitoring Location RSW-002 or RSW-003, consistent with the Compliance Determination Language in Section VII.G of the Waste Discharge Requirements. To determine compliance with Receiving Water Limitation V.A.14.b, the Discharger shall calculate and report the temperature increase in the receiving water based on the difference in temperature at Monitoring Locations RSW-002 and RSW-003, consistent with the Compliance Determination Language in Section VII.H of the Waste Discharge Requirements. Due to the tidal nature of the receiving water, the direction of the San Joaquin River flow at the time of sampling will dictate which monitoring location (i.e., Monitoring Location RSW-002 or Monitoring Location RSW-003) is representative of the "upstream" receiving water and which monitoring location is representative of the "downstream" receiving water.

C. Discharge Monitoring Reports (DMR's)

1. DMRs 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 (http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring/) is available on the Internet.

D. Other Reports

1. **Analytical Methods Report**. The Discharger shall complete and submit an Analytical Methods Report, electronically via CIWQS submittal, by the due date shown in the Technical Reports Table. The Analytical Methods Report shall include the following for each constituent to be monitored in accordance with this Order: 1) applicable water quality objective, 2) reporting level (RL), 3) method detection limit (MDL), and 4) analytical method. The analytical methods shall be sufficiently sensitive with RLs consistent with the SSM Rule per 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv), and with the Minimum Levels (MLs) in the SIP, Appendix 4. The "Reporting Level or RL" is synonymous with the "Method

Minimum Level" described in the SSM Rule. If an RL is not less than or equal to the applicable water quality objective for a constituent, the Discharger shall explain how the proposed analytical method complies with the SSM Rule as outlined above in Attachment E, Section I.F. Central Valley Water Board staff will provide a tool with the permit's Notice of Adoption to assist the Discharger in completing this requirement. The tool will include the constituents and associated applicable water quality objectives to be included in the Analytical Methods Report.

2. **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.

3. **Report of Waste Discharge (ROWD).** For the 5-year permit renewal, the Discharger shall submit a written report to the Central Valley Water Board, electronically via CIWQS submittal, containing, at minimum, the following by the due date in the Technical Reports Table:

   a. Report of Waste Discharge (Form 200);
   b. NPDES Form 2A; and
   c. NPDES Form 2S;
   d. **Bay-Delta Plan Southern Delta Salinity Objectives.** To be eligible to implement the alternative effluent limitations for electrical conductivity provided in the Bay-Delta Plan, the following shall be submitted with the ROWD:
      i. An evaluation of whether technological or economic changes have made previously deemed infeasible upgrades to control salinity in the POTW's effluent feasible;

ii. A survey of industrial sources of salinity regulated by the industrial pretreatment program, along with all annual reports submitted pursuant to that program documenting the implementation of salinity management strategies at the industrial facility within the collection system area;

iii. Documentation of source control measures taken. If alternative lower-salinity source water supplies were available but not utilized, a justification for not using such supplies shall be provided; and

iv. An evaluation of the efficacy of actions taken to limit or ban the use of residential self-generating water softeners or to impose efficiency standards on water softeners within the POTW's collection system area. This evaluation shall include the effectiveness of the water softeners prohibition in the POTW's collection system area.

e. **Mixing Zone Requests.** A mixing zone analysis for constituents the Discharger is requesting the continuation of dilution credits and mixing zones in the calculation of water quality-based effluent limits (e.g., DBCM and DCBM). If the Discharger will request continued consideration of the volatilization of DBCM and DCBM for development of mixing zone, the Discharger shall submit a site-specific volatilization study.

f. **Pretreatment Program Local Limits Evaluation.** Section VI.C.5.a.v of this Order requires the Discharger to provide a written technical evaluation of the need to revise the local limits under 40 C.F.R. section 403.5(c)(1). This evaluation shall be submitted with the ROWD.

4. **Annual Pretreatment Reporting Requirements**. By the due dates identified in the Technical Reports Table, 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 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 sample types for each priority pollutant constituent shall be consistent with the sample types specified in Table E-10 (Effluent and Receiving Water Characterization Monitoring). 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 during the same 24-hour period and analyzed for the same pollutants as the influent and effluent sampling and analysis. The sludge analyzed shall be a **composite sample of a minimum of 12 discrete samples taken at equal time intervals over the 24-hour period**. Wastewater and sludge sampling and analysis shall be performed at least annually. The Discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants which 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 a 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

5. **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 and subsequent table notes below summarize 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-12. Technical Reports

Report Number	Technical Report	Due Date	CIWQS Report Name
Intentionally left blank	Standard Reporting Requirements	Intentionally left blank	Intentionally left blank
1	Report of Waste Discharge	31 March 2026	ROWD
2	Analytical Methods Report	1 July 2022	MRP X.D.1
3	Analytical Methods Report Certification	1 January 2023	MRP IX.C.2.
4	Annual Operations Report	1 February 2023	MRP X.D.2
5	Annual Operations Report	1 February 2024	MRP X.D.2
6	Annual Operations Report	1 February 2025	MRP X.D.2
7	Annual Operations Report	1 February 2026	MRP X.D.2
8	Annual Operations Report	1 February 2027	MRP X.D.2
Intentionally left blank	Compliance Schedule for Final Effluent Limitations for Methylmercury WDR Section VI.C.7.a	Intentionally left blank	Intentionally left blank
9	Mercury Pollution Prevention Plan	1 February 2024	WDR VI.C.3.a
10	Mercury Pollution Prevention Plan Annual Progress Report	1 February 2025	WDR VI.C.3.a

Report Number	Technical Report	Due Date	CIWQS Report Name
11	Mercury Pollution Prevention Plan Annual Progress Report	1 February 2026	WDR VI.C.3.a
12	Mercury Pollution Prevention Plan Annual Progress Report	1 February 2027	WDR VI.C.3.a
13	Notification of Full Compliance Signed by Legally Responsible Official (LRO)	31 December 2030	WDR VI.C.7.a
Intentionally left blank	Other Reports	Intentionally left blank	Intentionally left blank
14	Industrial Pretreatment Program	1 February 2024	WDR VI.C.2.a
15	Annual Pretreatment Report	1 February 2025	MRP X.D.4
16	Annual Pretreatment Report	1 February 2026	MRP X.D.4
17	Annual Pretreatment Report	1 February 2027	MRP X.D.4
18	Toxicity Reduction Evaluation (TRE) Workplan	1 August 2022	WDR VI.C.2.b.ii
Intentionally left blank	Disinfection By-Product Evaluation and Minimization Plan (DBEMP)	Intentionally left blank	Intentionally left blank
19	Develop and submit DBEMP	1 July 2022	WDR VI.C.2.b.ii.a
20	Submit progress report on implementation of the DBEMP	1 February 2024	WDR VI.C.2.b.ii.b
21	Best Management Practices (BMP) Plan for Salinity	1 February 2024	WDR VI.C.3.b
22	BMP Plan for Salinity Annual Report	1 February 2025	WDR VI.C.3.b
23	BMP Plan for Salinity Annual Report	1 February 2026	WDR VI.C.3.b
24	BMP Plan for Salinity Annual Report	1 February 2027	WDR VI.C.3.b

Table E-12 Note:

1. Beginning 1 February 2025 and annually thereafter until the Facility achieves compliance with the final effluent limitations for methylmercury, the Discharger shall submit annual progress reports on the previously submitted pollution prevention plan for mercury. This

annual report may be combined with the Annual Operations Report and submitted as one report. The progress reports shall discuss the effectiveness of the pollution prevention plan in the reduction of mercury in the discharge, include a summary of mercury and methylmercury monitoring results, and discuss updates to the pollution prevention plan.

ATTACHMENT F – FACT SHEET

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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

Waste Discharge ID (WDID):	5B39NP00085
CIWQS Facility Place ID:	271781
Discharger:	City of Lathrop
Name of Facility:	City of Lathrop Consolidated Treatment Facility
Facility Address:	18800 Christopher Way
Facility City, State Zip:	Lathrop, CA 95330
Facility County:	San Joaquin
Facility Contact, Title and Phone Number:	Paul Zolfarelli, Lead Plant Operator, (209) 406-3845
Authorized Person to Sign and Submit Reports:	Michael King, Public Works Director, (209) 941-7454
Mailing Address:	390 Towne Centre Drive Lathrop, CA 95330
Billing Address:	Same as Mailing Address
Type of Facility:	POTW
Major or Minor Facility:	Major
Threat to Water Quality:	1
Complexity:	A
Pretreatment Program:	Yes, not state or federally approved
Recycling Requirements:	Not Applicable
Facility Permitted Flow:	2.5 MGD, future expansion to 6.0 MGD
Facility Design Flow:	2.5 MGD, future expansion to 6.0 MGD
Watershed:	Sacramento-San Joaquin Delta
Receiving Water:	San Joaquin River
Receiving Water Type:	Estuary

A. The City of Lathrop is the owner of the Consolidated Treatment Facility (Facility), a Publicly-Owned Treatment Works (POTW). The City of Lathrop contracts Veolia Water North America to operate the Facility. Together, the City of Lathrop and Veolia Water North America are hereinafter referred to as the Discharger.

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 San Joaquin River, a water of the United States within the Sacramento-San Joaquin Delta. The Discharger is currently regulated by Waste Discharge Requirements (WDR) Order R5-2016-0028 (adopted 16 April 2016) and subsequent amendments to R5-2016-0028 (adopted 6 April 2018, 23 September 2019, and 3 May 2021). 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 on 21 October 2020 for waste discharge requirements (WDR's) and NPDES permit for a new surface water discharge to the San Joaquin River.

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.

F. This Order is an NPDES permit and regulates only the tertiary treated wastewater discharge to the San Joaquin River. WDR Order R5-2016-0028-01 regulates the wastewater treatment facility, including reclamation specifications for the production of recycled water and discharges to land (i.e., waters of the State). Reclamation is regulated through enrollment in State Water Board Order WQ 2016-0068-DDW Water Reclamation Requirements for Recycled Water Use.

II. FACILITY DESCRIPTION

The Discharger provides sewerage service for the communities in the western and southern portions of the City of Lathrop, the Crossroads Commercial Center area, and Lathrop Gateway Business Park and serves a population of approximately 13,200. The design daily average flow capacity of the Facility is 2.5 million gallons per day (MGD).

Industry within the service area includes manufacturing, food processing, distribution facilities, restaurants, and trucking companies. Waste streams from these industries are relatively high-strength commercial/industrial wastewater. In 2005, the Discharger adopted an Industrial Sewer Use Ordinance (Ordinance), which established pretreatment standards prior to discharging industrial wastewater to the Facility. The Ordinance includes numeric effluent limits for total dissolved solids (TDS), biochemical oxygen demand (BOD), and nitrate. The Discharger currently has industrial waste discharge permits with 3 significant industrial users to control salinity discharges to the Facility.

A. Description of Wastewater and Biosolids Treatment and Controls

The headworks and primary treatment system at the Facility consists of a three-stage screening process (fine screening, grit removal, ultra-fine screening) and a 950,000-gallon influent equalization tank used to allow a constant flow, determined by the plant operator, to the biological treatment system by storing a portion of the influent flow received during peak flow period of the day and returning the stored wastewater for treatment during low flow periods. Biological treatment consists of a two-train system with each treatment train consisting of an anoxic basin followed by an aeration basin, with the anoxic and aeration basins of each train separated by baffling. Following the biological treatment, a membrane bioreactor (MBR) system (operating in parallel), consisting of four total (three installed and one for future use) membrane tanks (each tank contains four modules) provides liquid-solid separation by a selective membrane barrier. Following filtration, the Facility injects sodium hypochlorite solution to disinfect prior to entering the chlorine contact basin and dechlorinates using sodium bisulfite prior to discharge to the San Joaquin River.

An emergency storage basin is used to temporarily hold influent flows exceeding the capacity of the headworks. It also receives water from the MBR and effluent from the chlorine contact basin that does not meet permit requirements. The Facility will also utilize cooling ponds after dechlorination as needed to cool the effluent prior to discharge to the San Joaquin River to meet temperature effluent limitations. The emergency storage basin and cooling ponds are lined with at least 40-mil high-density polyethylene liner.

The waste activated sludge (WAS) generated from the Facility is pumped to sludge handling facilities. The sludge handling facilities include a 190,000-gallon aerobic sludge storage tank, two belt filter press units housed in the dewatering building, and a concrete pad for “air drying” of the dewatered sludge. Dewatered cake from the filter press is transferred either to a sludge haul truck or to the drying bed for supplemental drying when weather conditions permit. Air-dried sludge is temporarily stored on the drying bed until a sufficient volume has accumulated to warrant transporting the material for land application. Transportation and disposal/reuse of the biosolids is regulated by U.S. EPA under 40 C.F.R. part 503.

Effluent will either be discharged to the San Joaquin River or to the recycled water distribution system. Discharge to surface water will occur when the recycled water distribution system is at capacity. As mentioned above, other WDRs regulate, discharges to land, the production of recycled water, and the recycled water distribution system.

B. Discharge Points and Receiving Waters

1. The Facility is located in section S2 T2S R6E, Mount Diablo Base and Meridian, as shown in Attachment B, a part of this Order.
2. Treated municipal wastewater is discharged at Discharge Point No. 001 to San Joaquin River, a water of the United States at a point latitude 37° 47' 42" North and latitude 121° 18' 25" West.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data – Not Applicable

D. Compliance Summary – Not Applicable

E. Planned Changes

Increase Average Dry Weather Flow to 6.0 MGD. The Facility is planning to increase the permitted Average Dry Weather Flow from 2.5 to 6.0 MGD at full buildout. The Discharger does not anticipate this increase within the 5-year permit term. The permitted increase of flow will depend on the Discharger providing the Central Valley Water Board both a certification that the Facility treatment facilities have been upgraded to accommodate the increased flows, as well as an updated mixing zone and dilution credit request to support reissuance of effluent limitations for constituents that require dilution.

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 Sacramento River and San Joaquin River Basins, Fifth Edition, May 2018 (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 the San Joaquin River are as follows:

Table F-2. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	San Joaquin River	**Existing:** Municipal and domestic water supply (MUN); agricultural supply, including stock watering (AGR); industrial process supply (PROC); industrial service supply (IND); water contact recreation (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 spawning, reproduction, and/or early development (SPWN); wildlife habitat (WILD); navigation (NAV).
--	Groundwater	**Existing:** Municipal and domestic supply (MUN); agricultural supply (AGR); industrial service supply (IND); industrial process supply (PROC).

b. **Bay-Delta Plan**. The Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan) was adopted in May 1995 by the State Water Board superseding the 1991 Bay-Delta Plan. The Bay-Delta Plan identifies the beneficial uses of the estuary and includes objectives for flow, salinity, and endangered species protection.

The State Water Board adopted Decision 1641 (D-1641) on 29 December 1999 and revised on 15 March 2000. D-1641 implements flow objectives for the Bay-Delta Estuary, approves a petition to change points of diversion of the Central Valley Project (CVP) and the State Water Project (SWP) in the Southern Delta, and approves a petition to change places of use and purposes of use of the CVP. The Bay-Delta Plan includes water quality objectives for electrical conductivity for the South Delta in the vicinity of the discharge. On 25 February 2019, the Office of Administrative Law approved the 2018 Bay-Delta Plan amendments, which include a numeric water quality objective of 1,000 µmhos/cm maximum, applied as a 30-day running average of mean daily electrical conductivity.

Section 303(c) of the Clean Water Act requires a state to submit water quality standards to U.S. EPA for review and approval. On 31 March 2019, the State

Water Board submitted revised southern Delta salinity objectives to U.S. EPA. In a response dated 11 June 2019, U.S. EPA stated that it could not conduct a substantive review based on the information provided by the State Water Board and further requested that the State Water Board submit the minimum required information specified by 40 CFR section 131.6 within 90 days. The State Water Board subsequently resubmitted the revised southern Delta salinity objectives on 26 August 2019 in compliance with 40 C.F.R. section 131.6. At this time, U.S. EPA has not acted to approve or deny the revised southern Delta salinity objectives.

Pursuant to 40 C.F.R. section 131.21(a), the Regional Administrator shall either notify the State within 60 days that the revisions are approved, or notify the State within 90 days that the revisions are disapproved. In addition, 40 C.F.R. section 131.21(e) states that a State or authorized Tribe's applicable water quality standard for purposes of the Clean Water Act remains the applicable standard until U.S. EPA approves a change, deletion, or addition to that water quality standard, or until U.S. EPA promulgates a more stringent water quality standard. As a result, the applicable water quality standard for electrical conductivity pursuant to the Clean Water Act remains 700 µmhos/cm from April to August and 1000 µmhos/cm from September to March as noted in Table 2, Water Quality Objectives for Agricultural Beneficial Uses, in the Bay-Delta Plan. (see Table F-8 below). However, see section IV.C.3.b.iii of this Fact Sheet for discussion of the applicability of these objectives to the Discharger.

c. **Thermal Plan.** The State Water Board adopted the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan) on 7 January 1971 and amended this plan on 18 September 1975. This plan contains temperature objectives for surface waters.

The Thermal Plan is applicable to the discharge from the Facility. For the purposes of the Thermal Plan, the Discharger is considered to be a new discharger of elevated temperature waste to an estuary, as defined in the Thermal Plan. Section 5.B.(1) in the Thermal Plan requires new dischargers to comply with section 5.A. The Thermal Plan in section 5.A contains the following temperature objectives for surface waters that are applicable to this discharge:

5. Estuaries

A. Existing discharges

(1) Elevated temperature waste discharges shall comply with the following:

a. The maximum temperature shall not exceed the natural receiving water temperature by more than 20°F.

b. Elevated temperature waste discharges either individually or combined with other discharges shall not create a zone, defined by water temperatures of more

than 1°F above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of a main river channel at any point.

c. No discharge shall cause a surface water temperature rise greater than 4°F above the natural temperature of the receiving waters at any time or place.

d. Additional limitations shall be imposed when necessary to assure protection of beneficial uses.

(2) Thermal waste discharges shall comply with the provisions of 5A (1) above and, in addition, the maximum temperature of thermal waste discharges shall not exceed 86°F.

d**. Sediment Quality.** The State Water Board adopted the Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1, Sediment Quality on 16 September 2008, and it became effective on 25 August 2009. This plan supersedes other narrative sediment quality objectives and establishes new sediment quality objectives and related implementation provisions for specifically defined sediments in most bays and estuaries. Requirements of this Order implement sediment quality objectives of this Plan.

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, sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

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 State Water Resources Control Board Water Quality Order 2014-0057-DWQ, General Permit for Storm Water Discharges Associated with Industrial Activities (NPDES General Permit No. CAS000001), does not require facilities to obtain coverage if discharges of storm water are regulated under another individual or general NPDES permit adopted by the State Water Board or Regional Water Board (Finding I.B.20). All storm water at the Facility is captured and directed to the Facility headworks for treatment and disposal under this Order. Therefore, coverage under the General Storm Water Permit is not required.

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.

11. **Sewage Sludge and Biosolids**. This Order does not authorize any act that results in violation of requirements administered by U.S. EPA to implement 40 C.F.R. Part 503, Standards for the Use or Disposal of Sewage Sludge. These standards regulate the final use or disposal of sewage sludge that is generated during the treatment of domestic sewage in a municipal wastewater treatment facility. The Discharger is responsible for meeting all applicable requirements of 40 C.F.R. Part 503 that are under U.S. EPA's enforcement authority.

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 2018 U.S. EPA gave final approval to California's 2014 – 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 San Joaquin River includes: chlorpyrifos, diazinon, dichlorodiphenyltrichloroethane (DDT), electrical conductivity, group A pesticides, invasive species, mercury, and unknown toxicity.
2. Total Maximum Daily Loads (TMDL's). Table F-3, below, identifies the 303(d) listings and any applicable TMDLs. This permit includes WQBELs that are consistent with the assumptions and considerations of the applicable WLAs in the 2007 TMDL for diazinon and chlorpyrifos and the 2011 TMDL for methylmercury.

Table F-3. 303 (d) List for the San Joaquin River

Pollutant	Potential Sources	TMDL Status
Chlorpyrifos	Source Unknown	Adopted and Effective (10 October 2007)
Diazinon	Source Unknown	Adopted and Effective (10 October 2007)
DDT	Source Unknown	Not Completed
Salinity	Source Unknown	Not Completed
Group A Pesticides	Source Unknown	Not Completed
Invasive Species	Source Unknown	Not Completed
Mercury	Agricultural Return Flows, Atmospheric Deposition, Highway/Road/Bridge Runoff, Industrial Point Sources, Municipal Point Sources, Natural Sources, Resource Extraction, Urban Runoff/Storm Sewers	Adopted and Effective (20 October 2011)
Toxicity	Source Unknown	Not Completed

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 IV.C.3 of this Fact Sheet.

E. Other Plans, Polices and Regulations

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

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

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

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

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

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

The CWA mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law [33 U.S.C., section 1311(b)(1)(C); 40 C.F.R. section 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. section 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 CFR section122.41(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.

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.

The CWA requires that technology-based effluent limitations be established based on several levels of controls:

a. Best practicable treatment control technology (BPT) represents the average of the best existing performance by well-operated facilities within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.

b. Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.

c. Best conventional pollutant control technology (BCT) represents the control from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering a two-part reasonableness test. The first test compares the relationship between the costs of attaining a reduction in effluent discharge and the resulting benefits. The second test examines the cost and level of reduction of pollutants from the discharge from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources. Effluent limitations must be reasonable under both tests.

d. New source performance standards (NSPS) represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires U.S. EPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BAT, BCT, and NSPS. Section 402(a)(1) of the CWA and 40 C.F.R. section 125.3 authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern. Where BPJ is used, the Central Valley Water Board must consider specific factors outlined in 40 C.F.R. section 125.3.

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 biochemical oxygen demand (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. A daily maximum effluent limitation for BOD_5 and TSS is also included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities. 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 This Order requires Water Quality Based Effluent Limitations (WQBEL's) that are equal to or more stringent than the secondary technology-based treatment described in 40 CFR part 133 (See section IV.C.3.c of the Fact Sheet for a discussion on Pathogens which includes WQBEL's for BOD_5 and TSS.)

b. **Flow.** The Facility was designed to provide a tertiary level of treatment for up to a design flow of 2.5 MGD. Therefore, this Order contains an average dry weather discharge flow prohibition of 2.5 MGD.

c. **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 Point 001

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

Parameter	Units	Effluent Limitations
Biochemical Oxygen Demand (5-day @ 20°Celcius)	mg/L	AMEL 30 AWEL 45
Biochemical Oxygen Demand (5-day @ 20°Celcius)	Percent Removal	AMEL 85
Total Suspended Solids	mg/L	AMEL 30 AWEL45
Total Suspended Solids	Percent Removal	AMEL 85
pH	Standard Units	Instantaneous Max 6.0 Instantaneous Min 9.0

Table F-4 Notes:

1. Note that more stringent WQBEL's for BOD_5, pH, and TSS are applicable and are established as final effluent limitations in this Order (see section IV.C.3.c 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. This Order contains requirements, expressed as a technology equivalence requirement, more stringent than secondary treatment requirements that are necessary to meet applicable water quality standards. The rationale for these requirements, which consist of tertiary treatment or equivalent requirements, is discussed in section IV.C.3 of this Fact Sheet.

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(d)(1)(vii) requires effluent limits to be developed consistent with any available waste load 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 CFR sections 131.2 and 131.10, require that all waters of the State regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shellfish 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.** 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 from February 2017 through March 2018, with an additional sample taken in April 2020, and includes effluent and ambient background data submitted in the Report of Waste Discharge (ROWD). The January 2017 sample was found non representative for metals such as copper and lead due to the occurrence of significant storm events with 2.81 inches of rain between 7 January 2017 and 11 January 2017 which resulted in twice the amount of average flow and turbidity.

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 CFR parts 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:*

A mixing zone shall not:

1. *compromise the integrity of the entire water body;*
2. *cause acutely toxic conditions to aquatic life passing thorough 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.****"*

ii **San Joaquin River Characteristics.** The Facility discharges to the San Joaquin River within the legal boundary of Sacramento-San Joaquin Delta. The outfall consists of a 20-inch diameter pipe submerged side-bank outfall. The wetted river width at the outfall location is approximately 260 feet, and the San Joaquin River depth is approximately 14 feet at mean low tidal condition. There is a tidal flow measurement station, installed and maintained by the California Department of Water Resources (DWR), in the San Joaquin River approximately 0.7 miles upstream of the Facility's outfall.

iii **Dilution/Mixing Zone Study Results.** To support a mixing zone request for CTR human health criteria and the Delta barium site-specific water quality objective, the Discharger submitted the October 2020 mixing zone study prepared by Robertson-Bryan Inc., *Dilution Credit and Mixing Zone Evaluation for The City of Lathrop Consolidated Treatment Facility* (2020 Mixing Zone Study). In August 2021, the Discharger provided a Technical Memorandum (August 2021 TM) identifying the concentrations for DBCM and DCBM in the downstream receiving waters needed to maintain adequate assimilative capacity for the Tracy Wastewater Treatment Plant and the Stockton Regional Water Control Facility which have been granted mixing zones for these volatile organic compounds. The August 2021 TM also provided dilution credits and mixing zone sizes associated with the calculated AMELs. In October 2021, the Discharger provided a Technical Memorandum summarizing results of a limited disinfection by-product study conducted to evaluate the Facility's discharge performance for DBCM and DCBM expected under a surface water discharge situation (October 2021 TM). In November 2021, the Discharger provided an update to the October 2021 TM (November 2021 TM) after the limited disinfection by-product study was extended to better define the Facility's discharge performance.

The San Joaquin River is tidal and the flow of dilution water varies with the tidal cycle. Tidal action impacts the receiving water with multiple doses of the effluent as the San Joaquin River flows downstream past the discharge, reverses moving upstream past the discharge a second time, then again reverses direction and passes the discharge point a third time as the net flow conveys the effluent down the river. Because of the flow complexities at the discharge site, it is necessary to determine effluent dilution using numerical models of the San Joaquin River system. In the study described below, the DWR's Delta Simulation Model II (DSM2) was used.

DSM2 is a one-dimensional computer model developed by the Delta Modeling Section of DWR for simulation of hydrodynamics, water quality, and particle transport in the Sacramento-San Joaquin Delta. A model grid representing the network of Delta channels was developed by DWR to cover major Delta channels, the Sacramento River upstream to the City of Sacramento, and the San Joaquin River upstream to Vernalis. DSM2 was calibrated and validated in 1997 by DWR and in 2000 by a group of agencies, water users, and stakeholders. In 2009, DSM2 was calibrated and validated again to account for morphological changes, such as the flooded Liberty Island, and bathymetry, hydrodynamic and water quality data collected after the 2000 calibration.

The 2020 Mixing Zone study provided DSM2 modeling results that assessed the maximum potential effect of the Facility discharge to the San Joaquin River under a discharge rate of 2.5 MGD under critical receiving water flows, using the period from 1 January 2008 through 31 December 2016, which includes the extended drought of 2012-2015.

The Discharger requested dilution credits for bromoform, DCBM, and DBCM, for compliance with CTR human carcinogen criteria, and for compliance with the Basin Plan site-specific objective for barium. Central Valley Water Board, after discussions with the Discharger, calculated a dilution credit for chloroform for compliance with the 2015 U.S. EPA National Recommended Water Quality Criteria for Chloroform. The CTR human carcinogen criteria and NAWQC for chloroform are based on long-term exposures (i.e., 70 years), so it is appropriate to evaluate compliance based on the long-term dilution in the San Joaquin River.

The barium Basin Plan site-specific objective is expressed as a maximum concentration, however, the objective is not for the protection of short-term exposures (e.g., acute aquatic life criteria). Rather, the objective for barium was developed based on existing water quality to ensure compliance with the antidegradation policy to maintain the high-quality waters. Therefore, it is appropriate to evaluate compliance based on the long-term dilution in the San Joaquin River for mixing zone purposes. The 2020 Mixing Zone Study developed the mixing zone for barium using a critical short-term dilution used for acute aquatic life criteria. However, the approved mixing zone granted in this Order uses the long-term dilution for the reasons discussed above.

At the 2.5 MGD discharge rate the DSM2 modeling estimated a critical long-term effluent fraction of 0.006, which corresponds to a 166:1 dilution and an estimated long-term flow of 641 cfs. To estimate the size of the mixing zone, the October 2020 Mixing Zone Study used the Cornell Mixing Zone Expert System (CORMIX) model. Output from the CORMIX modeling consists of plume mixing predictions at defined

distances downstream of the discharge. The size of the mixing zones (i.e., distance downstream) were determined at the point where the necessary dilution was met. Based on a maximum dilution credit of 166:1 the long-term human health mixing zone would extend 2,616 feet downstream of the outfall. The dilutions and associated mixing zone sizes for the final effluent limitations are shown on Table F-5.

iv. **Evaluation of Available Dilution for Long-Term and Human Health Criteria (Bromoform, Chloroform, DCBM, DBCM, and Barium).** The SIP requires a mixing zone must be as small as practicable and comply with eleven (11) prohibitions under section 1.4.2.2.A. Based on Central Valley Water Board staff evaluation, the mixing zone extends up to 2,616 feet downstream of the Facility's outfall and a maximum available dilution credit of 166:1 meets the eleven prohibitions of the SIP as follows:

(1) *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."* The mixing zone is not applicable to aquatic life criteria. The mixing zone does not compromise the integrity of the entire water body.

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

(3) *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.

(4) *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 mixing zone is not applicable to aquatic life criteria. The mixing zone will not impact biologically sensitive or critical habitats.

(5-9) *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 the 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. This Order requires the discharge to meet Title 22 (or equivalent) tertiary filtration, which will ensure continued compliance with these mixing zone requirements. Therefore, the allowance of the 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.

(10) *Shall not dominate the receiving water body or overlap a mixing zone from different outfalls* – The 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. There are no outfalls or mixing zones in the vicinity of the discharge.

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

A pollutant-by-pollutant evaluation is provided in subsection v. below to evaluate whether the mixing zones for each pollutant are as small as practicable and comply with the State and federal antidegradation requirements.

v. **Evaluation of Available Dilution for Specific Constituents (Pollutant-by-Pollutant Evaluation)**

(a) **Barium**. The receiving water contains assimilative capacity for barium and the long-term and human health criteria mixing zone meets the mixing zone prohibitions of the SIP section 1.4.2.2.A. Section 1.4.2.2 of the SIP requires 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.” Considering existing Facility performance and the factors in section 1.4.2.2.A of the SIP, a dilution credit of 8:1 and a mixing zone extending 16.7 feet downstream has been granted for barium. This represents a mixing zone that is as small as practicable for this Facility and that fully complies with the SIP.

The allowance of a mixing zone and dilution credits are a discretionary act by the Central Valley Water Board. The mixing zone and dilution credit for barium permitted in this Order will result in a minor increase in the discharge (i.e., use 4.8 percent of the available assimilative capacity in the receiving water). According to U.S. EPA’s memorandum on Tier 2 Antidegradation Reviews and Significance Thresholds, any individual decision to lower water quality for nonbioaccumulative chemicals that is limited to 10 percent of the available assimilative capacity represents minimal risk to the receiving water and is fully consistent with the objectives and goals of the Clean Water Act. The mixing zone is as small as practicable for this Facility and the increased loading complies with the state and federal antidegradation requirements.

(b) **Bromoform**. The receiving water contains assimilative capacity for bromoform and the long-term and human health criteria mixing zone meets the mixing zone prohibitions of the SIP section 1.4.2.2.A. Section 1.4.2.2 of the SIP requires 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.” Considering existing Facility performance and the factors in section 1.4.2.2.A of the SIP, a dilution credit of 3:1 and a mixing zone extending 4.1 feet downstream has been granted for bromoform. This represents a mixing zone that is as small as practicable for this Facility and that fully complies with the SIP.

The allowance of a mixing zone and dilution credits are a discretionary act by the Central Valley Water Board. The mixing zone and dilution credit for bromoform permitted in this Order will result in a minor increase in the discharge (i.e., use 1.8 percent of the available assimilative capacity in the receiving water). According to U.S. EPA’s memorandum on Tier 2 Antidegradation Reviews and Significance Thresholds, any individual decision to lower water quality for nonbioaccumulative chemicals that is limited to 10 percent of the available assimilative capacity represents minimal risk to the receiving water and is fully consistent with the objectives and goals of the Clean Water Act. The mixing zone is as small as practicable for this Facility and the increased loading complies with the state and federal antidegradation requirements.

(c) **Chloroform**. The receiving water contains assimilative capacity for chloroform and the long-term and human health mixing zone meets the mixing zone prohibitions of the SIP section 1.4.2.2.A. Section 1.4.2.2 of the SIP requires 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.” Considering existing Facility performance and the factors in section 1.4.2.2.A of the SIP, a dilution credit of 1.2:1 results in mixing zone under 1 foot for chloroform. This represents a mixing zone that is as small as practicable for this Facility and that fully complies with the SIP.

The allowance of a mixing zone and dilution credits are a discretionary act by the Central Valley Water Board. The mixing zone and dilution credit for chloroform permitted in this Order will result in a minor increase in the discharge (i.e., use 0.7 percent of the available assimilative capacity in the receiving water). According to U.S. EPA’s memorandum on Tier 2 Antidegradation Reviews and Significance Thresholds, any individual decision to lower water quality for nonbioaccumulative chemicals that is limited

to 10 percent of the available assimilative capacity represents minimal risk to the receiving water and is fully consistent with the objectives and goals of the Clean Water Act. The mixing zone is as small as practicable for this Facility and the increased loading complies with the state and federal antidegradation requirements.

(d) **DCBM and DBCM**. The receiving water contains assimilative capacity for DCBM and DBCM and the long-term and human health criteria mixing zone meets the mixing zone prohibitions of the SIP section 1.4.2.2.A. Section 1.4.2.2 of the SIP requires 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 2020 Mixing Zone Study requested effluent limitations for DBCM and DCBM using the full assimilative capacity (166:1) in the San Joaquin River. However, the Central Valley Water Board finds a mixing zone utilizing the full dilution credit of 166:1 would not comply with the State and federal antidegradation requirements. The City of Tracy Wastewater Treatment Plant and the City of Stockton Regional Wastewater Control Facility are located downstream of the Facility discharge. These facilities discharge to the Delta and have been granted mixing zones for DCBM and DBCM based on available assimilative capacity.

The August 2021 TM used DSM2 modeling outputs near the upstream edge of the mixing zones for the Tracy and Stockton mixing zones and considered the degradation of the volatile organic compounds estimated in the City of Stockton's 2015 mixing zone study, *Revised Dilution Credit for Trihalomethane Compounds, Stockton Regional Wastewater Control Facility*, to estimate the volatilization rates for DBCM and DCBM to calculate the maximum average monthly effluent limitations for DBCM and DCBM for the City of Lathrop that would preserve the assimilative capacity for the Tracy and Stockton mixing zones. The August 2021 TM estimated average monthly effluent limitations of 52 µg/L and 71 µg/L for DBCM and DCBM, respectively, that would preserve the assimilative capacity for the Stockton and Tracy facilities. Reducing the dilution credits for DBCM and DCBM to 132:1 and 128:1, respectively, would ensure adequate assimilative capacity is maintained for Tracy and Stockton.

The effluent water quality data for DCBM and DBCM provided by the Discharger in the ROWD is not representative of a discharge to surface water and, therefore, cannot be used to evaluate whether the mixing zones for DCBM and DBCM are as small as practicable. The effluent data was collected while discharging to land and the

constituent concentrations are significantly greater than performance by similarly situated NPDES facilities. The Discharger was aware of this issue and conducted a brief study to evaluate the effects of the chlorine residual maintained in the chlorine contact basin on the formation of DCBM and DBCM and submitted the results in the October 2021 TM. The Discharger extended the study into November to expand the dataset and further refine the requested effluent limitations that were provided in the October 2021 TM. Based on the results in the November 2021 TM, the Facility can meet more stringent effluent limitations for DCBM and DBCM than those proposed in the August 2021 TM.

The Central Valley Water Board finds that dilution credits of 37.3:1 and 64.4:1 for DBCM and DCBM, respectively, will ensure the mixing zones are as small as practicable and that the assimilative capacity for these parameters will be maintained such that the ambient background water quality for the Cities of Tracy and Stockton will be unaffected. The WQBEL's in this Order for DBCM and DCBM will result in the best practicable treatment or control of the discharge necessary to assure that a pollution or nuisance will not occur and the highest water quality consistent with the maximum benefit of the people of the State will be maintained.

Based on the findings above, this Order grants mixing zones and dilution credits that have been used for the calculation of WQBEL's for DBCM, DCBM, bromoform, chloroform, and barium. The dimensions of the mixing zones and allowable dilution credits are shown in Table F-5, below.

Table F-5. Mixing Zones and Dilution Credits

Parameter	Critical Receiving Water Flow (cfs)	Allowed Dilution Credit	Mixing Zone Size (feet)	% Assimilative Capacity Used
DBCM	641	37.4	790	22.6
DCBM	641	64.4	1,180	38.9
Chloroform	641	1.2	<1	0.7
Bromoform	641	3	4.1	1.8
Barium	641	8	16.7	4.8

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-5 based on the following:

i. 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.

ii. In accordance with section 1.4.2.2 of the SIP, the Board has determined the mixing zones are 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, is not at or near a drinking water intake, and does not overlap a mixing zone from a different outfall.

iii. The Central Valley Water Board is allowing mixing zones for long-term and human health criteria only and has determined allowing such mixing zones will not cause acutely toxic conditions to aquatic life passing through the mixing zone.

iv. 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 for long-term and human health criteria only, are relatively small, and acutely toxic conditions will not occur in the mixing zone. 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 proposed Order establishes end-of-pipe effluent limitations (e.g., for BOD_5 and TSS) and discharge prohibitions to prevent these conditions from occurring.

v. 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.

vi. The Central Valley Water Board has determined the mixing zones comply with the SIP for priority pollutants.

vii. 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 the dilution factors allowed in this Order are as small as practicable and comply with State and federal antidegradation requirements.

viii. 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 zones, 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.

ix. The Central Valley Water Board has determined that allowing dilution factors that exceed those proposed by this Order would not comply with the State Anti-degradation Policy for receiving waters outside the allowable mixing zones for DBCM, DCBM, chloroform, bromoform, and barium. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16 (State Anti-Degradation Policy). The State Anti-Degradation 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 Central Valley Water Board determined the effluent limitations required by this Order will result in the Discharger implementing best practicable treatment or control 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. At the time of the issuance of this Order, the Discharger is optimizing its current treatment process to comply with the effluent limitations.

The Central Valley Water Board also determined establishing effluent limitations for DBCM, DCBM, chloroform, bromoform, and barium that have been adjusted for dilution credits provided in Table F-5 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.

x. Therefore, the Central Valley Water Board has determined the effluent limitations established in the Order for DBCM, DCBM, chloroform, bromoform, and barium that have been adjusted for dilution credits provided in Table F-5 are appropriate and necessary to comply with the Basin Plan, SIP, Federal anti-degradation regulations and the State Anti-Degradation 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 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 and the CTR. 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. 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. section 131.38(c)(4)). The CTR requires that the hardness values used shall be consistent with the design discharge conditions for design flows and mixing zones (40 C.F.R. section 131.3(c)(4)(ii)). 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) (40 C.F.R. section 131.38(c)(2)(iii) Table 4). 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 (40 C.F.R. section 131.38(c)(2)(iii) Table 4, notes 1 and 2). 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 (40 C.F.R. section 131.38(c)(2)(i)). 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.

Summary findings

The ambient hardness for the San Joaquin River is represented by the data in Figure F-1, below, which shows ambient hardness ranging from 26 mg/L to 170 mg/L based on collected ambient data from January 2017 through December 2019. 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 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 26 mg/L (minimum) up to 170 mg/L (maximum). Staff recommends that the Board use the ambient hardness values shown in Table F-6 for the following reasons.

i. Using the ambient receiving water hardness values shown in Table F-6 will result in criteria and effluent limitations that ensure protection of beneficial uses under all ambient receiving water conditions.

ii. 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-6 to calculate the proposed effluent limitations for hardness-dependent metals. The proposed effluent limitations are protective of beneficial uses under all flow conditions.

iii. Using an ambient hardness that is higher than the minimum of 26 mg/L will result in limits that may allow increased metals to be discharged to the 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 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.

iv. Using the ambient hardness values shown in Table F-6 is consistent with the CTR and SIP’s requirements for developing metals criteria.

Table F-6. Summary of CTR Criteria for Hardness-dependent Metals

CTR Metals	Ambient Hardness (mg/L)	CTR Criteria (µg/L, total) (Acute)	CTR Criteria (µg/L, total) (Chronic)
Copper	105	15	9.7
Chromium III	105	1,800	220
Cadmium	90 (acute) 105 (chronic)	2.5	2.6
Lead	90	42	1.6
Nickel	105	490	54
Silver	90	1,600	--
Zinc	105	130	130

Table F-6 Notes:

1. **CTR Criteria (ug/L total)**. Acute and chronic numbers were rounded to two significant figures in accordance with the CTR (40 C.F.R. section 131.38(b)(2)).
2. **Ambient hardness (mg/L).** Values in Table F-6 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.

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)

For this discussion, all hardness values are expressed in mg/L as $CaCO_3$. The equation describing the total regulatory criterion, as established in the CTR, is as follows:

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

Where:

H = ambient hardness (as $CaCO_3$)

WER = water-effect ratio

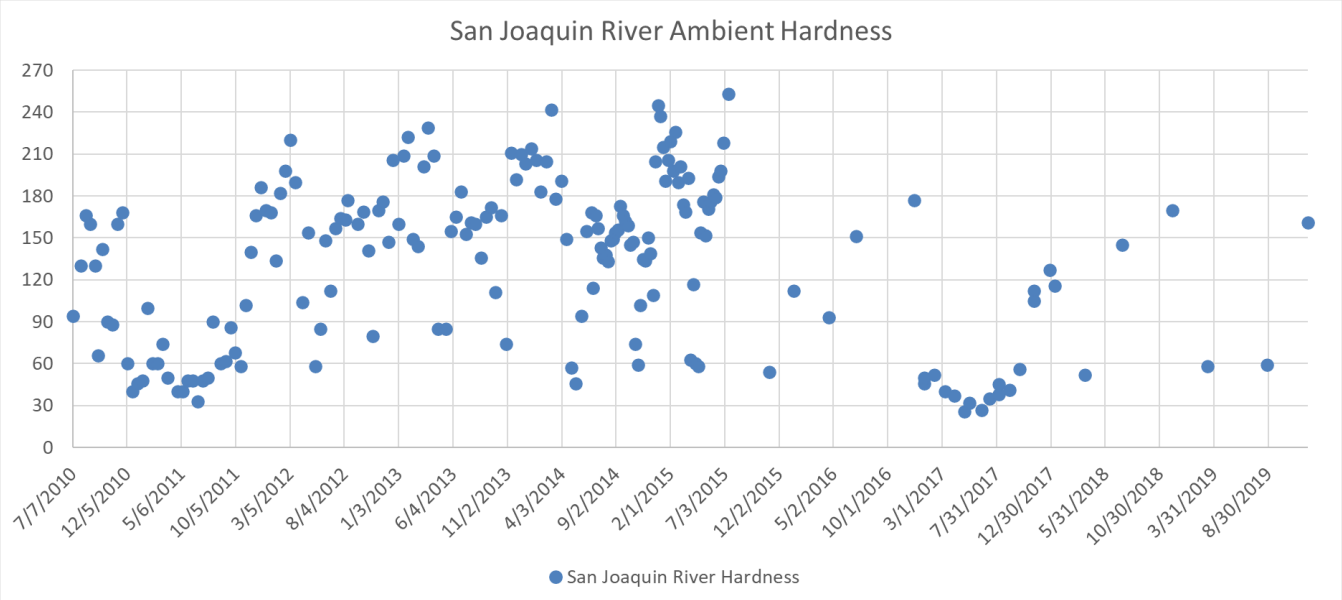
m, b = metal- and criterion-specific constants

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 three year period (40 C.F.R. section 131.38(c)(2)(iii) Table 4, notes 1 and 2). 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). The 1Q10 and 7Q10 San Joaquin River flows are 550 cfs and 600 cfs, respectively.

Ambient conditions

The ambient receiving water hardness varied from 26 mg/L to 253 mg/L, based on 184 samples from July 2010 through January 2020 (Figure F-1).

Figure F-1. Observed Ambient Hardness Concentrations January 2017-December 2019



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.

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.

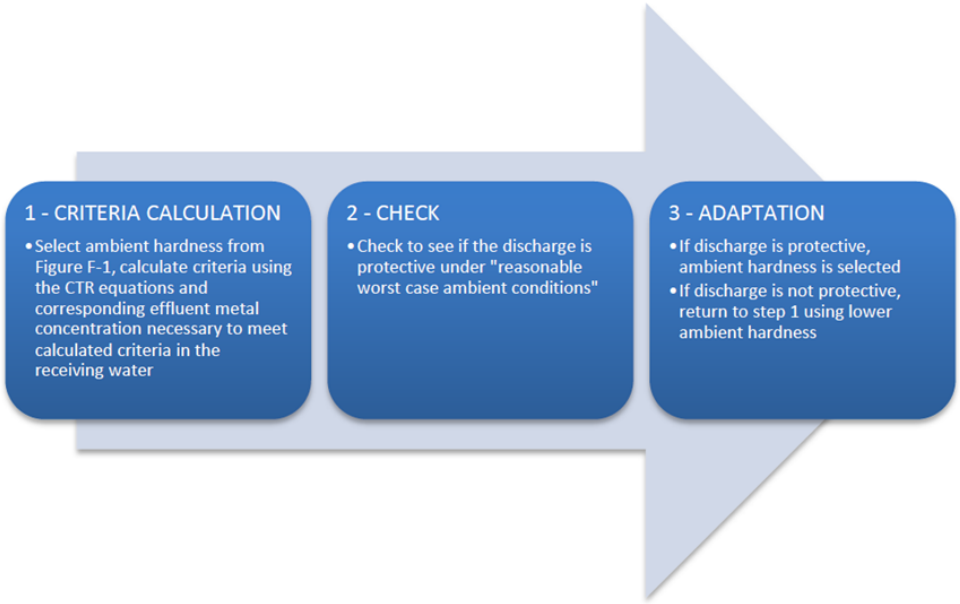
Reasonable worst-case ambient conditions:

- **"Low receiving water flow."** CTR design discharge conditions (1Q10 and 7Q10) have been selected to represent reasonable worst-case receiving water flow conditions.
- **"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.
- **"Low receiving water hardness."** The minimum receiving water hardness condition of 27 mg/L was selected to represent the reasonable worst-case receiving water hardness.
- **"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 does not regularly occur 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.

Figure F-2. Criteria Calculation CTR



1. **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 170 mg/L. Effluent metal concentrations necessary to meet the above calculated CTR criteria in the receiving water are calculated in accordance with section 1.4.B, Step 2, of the SIP, which provides direction for calculating the Effluent Concentration Allowance. 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 on page 96 of the TSD as "a definition of effluent water quality that is necessary to meet the water quality standards in the receiving water." 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.

2. **Check.** U.S. EPA's simple mass balance equation, as found in the "U.S. EPA NPDES Permit Writers' Handbook" (EPA 833-K-10-001 September 2010, pg. 6-24), 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.

3. **Adapt.** If step 2 results in:

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

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

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 above 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.

Results of iterative analysis

The iterative analysis for each CTR hardness-dependent metal results in the selected ambient hardness values are shown in Table F-7, above. Using these actual receiving water sample hardness values to calculate criteria will result in effluent limitations that are protective under all ambient flow conditions. Ambient hardness values are used in the CTR equations to derive criteria and effluent limitations. As an example of the three-step iterative process, Table F-7 below summarizes the numeric results for lead based on an ambient hardness of 90 mg/L and a calculated ECA of 1.6 µg/L. The analysis evaluated all flow conditions, and the numeric values for the critical flow conditions are summarized in Tables F-8, below. Ambient concentrations for lead are calculated using the worst-case downstream ambient conditions, which allows for a conservative assumption that will ensure the receiving water complies with CTR criteria. Under the "check" step, worst-case ambient receiving water conditions are used to test whether the effluent discharge results in compliance with CTR criteria and protection of beneficial uses.

The results of the iterative analyses 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. Table F-7 summarize the critical flow conditions. There is no effluent limitation for lead as it demonstrates no reasonable potential.

Table F-7. Verification of CTR Compliance for Lead

Downstream Worst-Case Ambient Receiving Water Conditions

Critical Flow Conditions	Hardness (mg/L)	CTR Criteria (µg/L)	Ambient Concentration (µg/L)	Complies with CTR?
1Q10	27	0.6	0.6	Yes
7Q10	27	0.6	0.6	Yes
Max receiving water flow	26	0.6	0.6	Yes

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 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(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 Total Maximum Daily Load (TMDL).**
40 C.F.R. section 122.44(d)(1)(vii) provides: "When developing water quality-based effluent limits under [section 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 (June 2, 1989).

The San Joaquin River is subject to TMDL's for dissolved oxygen, and TMDL's for diazinon and chlorpyrifos and methylmercury, and WLA's 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 - San Joaquin Delta Waterways and amended the Basin Plan to include diazinon and chlorpyrifos waste load allocations and water quality objectives. The Basin Plan Amendment for the Control of Diazinon and Chlorpyrifos Runoff into the Sacramento - San Joaquin Delta was adopted by the Central Valley Water Board on 23 June 2006 and became effective on 10 October 2007.

The amendment modified Basin Plan Chapter III (Water Quality Objectives) to establish site-specific numeric objectives for diazinon and chlorpyrifos in the Delta waterways 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 amendment states that "The waste load allocations for all NPDES-permitted dischargers…shall not exceed the sum (S) of one (1) as defined below.

$$S = C_d/WQO_d + Cc/WQO_c \leq 1.0$$

Where:

C_d = diazinon concentration in µg/L of point source discharge

C_c = chlorpyrifos concentration in µg/L of point source discharge

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. For purposes of calculating the sum (S) above, analytical results that are reported as 'non-detectable' concentrations are considered to be zero."

Appendix A of the Diazinon and Chlorpyrifos TMDL lists waterways subject to the TMDL and includes the San Joaquin River.

(b) **RPA Results.** Chlorpyrifos and diazinon were not detected in the effluent during 4 sampling events conducted between February 2017 and December 2017. However, since these pesticides have been banned for public use, they are not expected to be present in the effluent. The discharge does not have reasonable potential, but due to the TMDL for diazinon and chlorpyrifos in the Sacramento - San Joaquin Delta, WQBELs for these constituents are required. The TMDL waste load allocation applies to all NPDES dischargers

to Delta waterways and will serve as the basis for WQBELs at Discharge Point 001.

(c) **WQBELs.** WQBELs for diazinon and chlorpyrifos are required based on the TMDL for diazinon and chlorpyrifos in the San Joaquin River. Therefore, this Order includes effluent limits calculated based on the waste load allocations contained in the TMDL, as follows:

(1). **Average Monthly Effluent Limitation (AMEL)**

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

$C_{D\ M\text{-}AVG}$ = 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)**

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

$C_{D\ W\text{-}AVG}$ = 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.** Chlorpyrifos and diazinon were not detected in the 4 effluent sampling events conducted between February 2017 and December 2017. Furthermore, since these pesticides have been banned for public use, they are not expected to be present in the influent to the Facility. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

ii. **Mercury**

(a) **WQO.** The Basin Plan contains fish tissue objectives for all Sacramento-San Joaquin Delta waterways listed in Appendix 43 of the Basin Plan, which states, *"…the average methylmercury concentrations shall not exceed 0.08 and 0.24 mg methylmercury/kg, wet weight, in muscle tissue of trophic level 3 and 4 fish, respectively (150-500 mm total length). The average methylmercury concentrations shall not exceed 0.03 mg methylmercury/kg, wet weight, in whole fish less than 50 mm in length."* The Delta Mercury Control Program contains aqueous methylmercury WLA's that are calculated to achieve these fish tissue objectives. Methylmercury reductions are assigned to dischargers with concentrations of methylmercury greater than 0.06 ng/L (the concentration of methylmercury in water to meet the fish tissue objective). Staff has calculated that the Facility is allocated 0.18 grams/year of methylmercury by 31 December 2030, as part

of the unassigned load allocation listed in Table IV-7B of the Basin Plan.

The CTR contains a human health criterion of 50 ng/L for total mercury for waters from which both water and aquatic organisms are consumed. However, 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 the 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-2, the beneficial uses of the San Joaquin River within the Sacramento-San Joaquin Delta include COMM and WILD; therefore, the Sport Fish Water Quality Objective is applicable. However, the mercury water quality objectives established in the Statewide Mercury Provisions do not supersede the site-specific numeric mercury water quality objectives established in the Basin Plan, and section IV.D.1 of the Statewide Mercury Provisions specifies that the implementation provisions do not apply to dischargers that discharge to receiving waters for which a mercury or methylmercury TMDL is established pertaining to the same beneficial use or uses. Consequently, this Order continues to implement the Basin Plan's Delta Mercury Control Program for the control of methylmercury in the receiving water.

(b) **RPA Results.** Section 1.3 of the SIP states, "The RWQCB shall conduct the analysis in this section of each priority pollutant with an applicable criterion or objective, excluding priority pollutants for which a TMDL has been developed, to determine if a water quality-based effluent limitation is required in the Discharger's permit."

The maximum effluent concentration (MEC) for mercury was 3.6 ng/L based on 14 samples collected between February 2017 and April 2020. The maximum observed upstream receiving water

mercury concentration was 18 ng/L based on 12 samples collected between January 2017 and December 2017.

From 14 samples taken from February 2017 to April 2020, methylmercury in the effluent was either not detected or detected but not quantifiable (method detection limit of 0.02 ng/L). The maximum observed upstream receiving water methylmercury concentration was 0.46 ng/L based on twelve samples collected between January 2017 and December 2017.

(c) **WQBEL's.** The Basin Plan's Delta Mercury Control Program includes WLA's for POTW's in the Delta and unused allocation for *"existing facilities that previously discharged to land and then began to discharge to surface water"*. This Order contains a final WQBEL for methylmercury based on the allocation needed for final buildout (6.0 MGD) of 0.18 grams per year. Effective 31 December 2030, the total calendar annual methylmercury load shall not exceed 0.18 grams.

(d) **Plant Performance and Attainability.** A compliance schedule in accordance with the State Water Board's Compliance Schedule Policy and the Delta Mercury Control Program has been established in section VI.C.7.a of this Order. The final WQBEL's for methylmercury are effective 31 December 2030.

b. **Constituents with No Reasonable Potential or with No Data or Insufficient Data.** Central Valley Water Board staff conducted reasonable potential analyses for nearly 200 constituents, including the 126 U.S. EPA priority toxic pollutants. All reasonable potential analyses 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 reasonable potential analyses for aluminum and molybdenum, constituents of concern that were found to have no reasonable potential after assessment of the data.

Reasonable potential cannot be determined for salinity. The Discharger is required to continue to monitor for salinity constituents in the effluent using analytical methods that provide the best feasible detection limits. When additional data/information become available, further analysis will be conducted to determine whether to add numeric effluent limitations or to continue monitoring.

i. **Aluminum**

(a) **WQO.** The State Water Board Division of Drinking Water (DDW) has established Secondary Maximum Contaminant Levels (MCLs) to assist public drinking water systems in managing their drinking water for public welfare considerations, such as taste, color, and odor. The Secondary MCL for aluminum is 200 µg/L for protection of the MUN beneficial use. Title 22 requires compliance with Secondary MCLs on an annual average basis. Aluminum is the third most abundant element in the earth's crust and is ubiquitous in both soils and aquatic sediments. When mobilized in surface waters, aluminum has been shown to be toxic to various fish species. However, the potential for aluminum toxicity in surface waters is directly related to the chemical form of aluminum present, and the chemical form is highly dependent on water quality characteristics that ultimately determine the mechanism of aluminum toxicity. Surface water characteristics, including pH, temperature, colloidal material, fluoride and sulfate concentrations, and dissolved organic carbon, all influence aluminum speciation and its subsequent bioavailability to aquatic life. The 2018 U.S. EPA NAWQC for protection of freshwater aquatic life for aluminum recommends acute (1-hour average; criteria maximum concentration or CMC) and chronic (4-day average; criteria continuous concentration or CCC) standards based upon Multiple Linear Regression (MLR) models for vertebrate and invertebrate species that use pH, dissolved organic carbon (DOC), and total hardness to quantify the effects of these water chemistry parameters on the bioavailability and resultant toxicity of aluminum to aquatic organisms. The 2018 Aluminum NAWQC document provides look up tables or a Microsoft Excel spreadsheet to calculate the criteria based on pH, DOC, and total hardness. The U.S. EPA aluminum criteria have been used to implement the Basin Plan's narrative toxicity objective.

A site-specific CMC of 1,300 µg/L and CCC of 300 µg/L were calculated considering the reasonable worst-case pH, hardness, and DOC of the receiving water and effluent. Lower values for pH, hardness, and DOC result in more stringent criteria. Therefore, in this case, considering sampling results from February 2017 and April 2020, the lowest measured pH and hardness for the effluent and receiving water were used to calculate criteria. In the absence of DOC data, the criteria were calculated considering a conservative assumption of DOC for the receiving water and effluent of 1 mg/L and 5 mg/L, respectively.

(b) **RPA Results.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Aluminum is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific

conditions of the discharge, the Central Valley Water Board used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent. The Secondary MCL 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 and 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, for the Secondary MCL the RPA was conducted based on the calendar annual average effluent aluminum concentrations. Calculating a maximum annual average concentration considers variability in the data, per 40 C.F.R. § 122.44(d)(1)(ii).

The maximum annual average effluent concentration for aluminum was 28 µg/L based on 12 samples collected between February 2017 and December 2017. Effluent aluminum is consistently less than the concentrations in the receiving water and below the Secondary MCL. Therefore, the Central Valley Water Board finds the discharge does not have reasonable potential to cause or contribute to an exceedance in the receiving water and the Facility is adequately controlling the discharge of aluminum.

For the NAWQC the RPA was conducted considering the maximum effluent concentration (MEC) for aluminum, which was 186 µg/L based on 14 samples collected between February 2017 and April 2020. Effluent aluminum is consistently less than the concentrations in the receiving water and below the NAWQC. Therefore, the Central Valley Water Board finds the discharge does not have reasonable potential to cause or contribute to an exceedance of the narrative toxicity objective in the receiving water and the Facility is adequately controlling the discharge of aluminum.

ii. **Molybdenum**

(a) **WQO**. An Agricultural Water Quality Goal for molybdenum of 10 µg/L may be used as a threshold to interpret the narrative chemical constituents Basin Plan objective and ensure protection of the agricultural beneficial use, which is applicable to the San Joaquin River.

(b) **RPA Results.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Molybdenum 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 nonpriority

pollutant. For conducting the RPA, the U.S. EPA recommends using a mass-balance approach to determine the expected critical downstream receiving water concentration using a steady-state approach. 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. The critical downstream receiving water concentration is calculated using Equation 2 below:

$C_r = (Q_sC_s + Q_cC_d) / (Q_s + Q_d)$ (Equation 2)

Where:

Q_s = Critical stream flow

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

The molybdenum water quality objective is an Agricultural Water Quality Goal. A critical stream flow (Q_s) of 54 MGD (1Q10 critical receiving water flow) was used to conduct the RPA for molybdenum. The critical effluent flow (Q_d) is 2.5 MGD, which is the maximum permitted effluent flow permitted in this Order. The critical effluent pollutant concentration (C_d) of 145 µg/L was determined using statistics recommended in the TSD for statistically calculating the projected maximum concentration in the effluent (i.e., Table 3-1 of the TSD using the 99 percent probability basis and 99 percent confidence level).

A Critical downstream receiving water pollutant concentration (C_r) of 8 µg/L was calculated based on 14 effluent samples collected between February 2017 and April 2020. Therefore, the Central Valley Water Board finds the discharge does not have reasonable potential to cause or contribute to an exceedance of the Agricultural Water Quality Goal in the receiving water.

iii. **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. The Bay-Delta Plan includes numeric water quality criteria for the protection of agricultural and MUN beneficial uses. Table F-8, below, contains various recommended levels for EC or TDS, sulfate, and chloride.

Table F-8 Salinity Water Quality Criteria/Objectives

Parameter	Bay-Delta Plan WQO	Secondary MCL Recommended Level.	U.S. EPA NAWQC
EC (µmhos/cm) or TDS (mg/L)	EC 700 April - August EC 1,000 September - March	EC 900, 1,600, 2,200 TDS 500, 1,000, 1,500	N/A
Sulfate (mg/L)	N/A	250, 500, 600	N/A
Chloride (mg/L)	N/A	250, 500, 600	860 1-hour / 230 4-day

Table F-8 Notes:

1. Secondary MCLs. Secondary MCLs are for protection of public welfare and are stated as a recommended level, upper level, and a short-term maximum level.

2. Bay-Delta Plan WQO. Currently effective electrical conductivity water quality objective is 700 µmhos/cm (April – August) and 1,000 µmhos/cm (September – March), applied as a 30-day running average of mean daily electrical conductivity. Pending revised electrical conductivity water quality objective is 1,000 µmhos/cm (year-round), applied as a 30-day running average of mean daily electrical conductivity.

(1) Chloride. The National Ambient Water Quality Criteria for chloride is 230 mg/L. 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, 1,600 µmhos/cm as an upper level, and 2,200 µmhos/cm as a short-term maximum, or when expressed as TDS is 500 mg/L as a recommended level, 1,000 mg/L as an upper level, and 1,500 mg/L as a short-term maximum.

The Bay-Delta Plan includes water quality objectives for electrical conductivity for the South Delta in the vicinity of the discharge. On 1 June 2011, the Superior Court for Sacramento County entered a judgment and peremptory writ of mandate in the matter of City of Tracy v. State Water Resources Control Board (Case No. 34-2009-8000-

392-CU-WM-GDS), ruling that the South Delta salinity objectives shall not apply to the City of Tracy and other municipal dischargers pending reconsideration of the South Delta salinity objectives and adoption of a proper program of implementation that includes municipal dischargers.

As discussed in Section III.C.1.b of the Fact Sheet, the State Water Board adopted revised salinity water quality objectives for the South Delta of 1,000 µmhos/cm maximum, applied as a 30-day running average of mean daily electrical conductivity (year-round) and program of implementation for municipal dischargers. However, the updated water quality objectives have not been approved by U.S. EPA so they are not in effect. Therefore, at the time this Order was adopted the South Delta salinity objectives were not applicable to the Discharger.

(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 142 mg/L to 249 mg/L, with an average of 211 mg/L. These levels do not exceed the Secondary MCL but do exceed the U.S. EPA NAWQC. However, since chloride is not a CTR constituent, reasonable potential was determined using U.S. EPA TSD method by calculating a projected maximum effluent concentration and the downstream concentration using mass balance. Using the U.S. EPA approach, a maximum concentration of 79 mg/L was calculated, which is below the NAWQC. Background concentrations in the San Joaquin River ranged from 5.5 mg/L to 78 mg/L, with an average of 23 mg/L, for 12 samples collected by the City of Manteca from January 2017 through December 2017.

(2) **Electrical Conductivity or Total Dissolved Solids.** A review of the Discharger's monitoring reports shows an average effluent EC of 1,100 µmhos/cm, with a range from 670 µmhos/cm to 1,400 µmhos/cm. The maximum annual average was 1,300 µmhos/cm in 2017. The background receiving water EC averaged 410 µmhos/cm. The annual average concentrations do not exceed the Secondary MCL upper level.

The average TDS effluent concentration was 700 mg/L with concentrations ranging from 440 mg/L to 910 mg/L.

These levels do not exceed the Secondary MCL. The background receiving water TDS ranged from 36 mg/L to 350 mg/L, with an average of 130 mg/L. The annual average concentrations do not exceed the Secondary MCL upper level.

The Bay-Delta Plan South Delta salinity objectives are the applicable objectives but currently do not apply to POTWs as per the Tracy litigation. Due to uncertainty with the Bay-Delta Plan South Delta salinity objectives it is infeasible to conduct the RPA for salinity at this time.

(3) **Sulfate.** Sulfate concentrations in the effluent ranged from 41 mg/L to 110 mg/L, with an average of 80 mg/L. These levels do not exceed the Secondary MCL. Background concentrations in the San Joaquin River ranged from 5.8 mg/L to 70 mg/L, with an average of 22 mg/L.

(c) **WQBEL's.**

As discussed above, the RPA for salinity cannot be conducted at this time. The Discharger submitted an NOI for the Salt Control Program and selected the alternative permitting approach. Therefore, this Order includes a performance-based effluent limitation of 1,600 µmhos/cm for EC to be applied as a calendar annual average effluent limitation (AAEL) to limit the discharge to current levels. This Order also requires the Discharger develop and implement a Salinity Best Management Practices Plan and continue participating in the CV-SALTS Prioritization and Optimization Study.

This performance based AAEL is based on the maximum annual average effluent EC concentration for a calendar year using data from January 2016 through March 2021, adjusted to account for possible drought, water conservation, and water recycling efforts. A longer date range was used because the Facility is a new discharger to surface water and has varying concentrations of EC, dependent on the municipal water source.

(d) **Plant Performance and Attainability.** Analysis of effluent EC data shows that immediate compliance with the performance-based AAEL for EC is feasible.

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, bromoform, barium, chlorine, chloroform, DBCM, DCBM, lead, and nitrate plus nitrite. 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 2013 U.S. EPA National Ambient Water Quality Criteria (NAWQC) for the protection of freshwater aquatic life for total ammonia (2013 Criteria), recommends acute (1-hour average; criteria maximum concentration or CMC) 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 2013 Criteria reflects the latest scientific knowledge on the toxicity of ammonia to certain freshwater aquatic life, including toxicity data on sensitive freshwater unionid mussels, non-pulmonary snails, and other freshwater organisms. The inclusion of new toxicity data for unionid mussels resulted in substantially more stringent criteria. In many cases, current wastewater treatment technologies are not capable of complying with effluent limitations based on the more stringent criteria.

The Central Valley Clean Water Association (CVCWA) organized a coordinated effort for POTWs within the Central Valley Region, the Freshwater Mussel Collaborative Study for Wastewater Treatment Plants, to determine how the latest scientific knowledge on the toxicity of ammonia reflected in the 2013 Criteria could be implemented in the Central Valley Region. Phase I, completed in June 2015, included a State of Knowledge Report developed by a consultant team consisting of Robertson-Bryan, Inc., Larry Walker Associates, and Pacific EcoRisk. The collaborative study involved policy and permitting discussions among representatives from the Central Valley Water Board, U.S. EPA, United States Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and regional mussel experts regarding the implementation of the 2013 Criteria in POTW NPDES permits. The discussions evaluated permitting approaches that provide reasonable protection of aquatic life beneficial uses, including protection of freshwater mussels.

The State of Knowledge Report explained that the species of freshwater mussels in waters within the Central Valley Region are different than what U.S. EPA used in the toxicity dataset for development of the 2013 Criteria. The State of Knowledge Report indicated that one resident freshwater mussel species was shown to not be as sensitive as the eastern mussel species used to derive the 2013 Criteria. However, the sensitivity of the other Central Valley Region mussel species was unknown.

Initial work under this project indicated the need to understand whether freshwater mussels are present or absent in POTW

receiving waters in order to properly permit the discharge of ammonia in NPDES permits. Hence, a Phase II of the CVCWA study was conducted that developed and validated an effective environmental DNA (eDNA) method for determining the presence/absence of the three freshwater mussel genera in water bodies of the Central Valley. A Phase IIb of the study involved further study and application of the eDNA methodology.

CVCWA submitted the Phase IIc Freshwater Mussel Collaborative Study for Wastewater Treatment Plants: Ammonia Criteria Recalculation Final Report, dated January 2020 (Criteria Recalculation Report) developed by the same consultant team. The Criteria Recalculation Report provides toxicity studies demonstrating all freshwater mussel species present in Central Valley Region waters are less sensitive than the eastern species used to develop the 2013 Criteria.

U.S. EPA developed the Guidelines for Deriving Numerical Aquatic Site-Specific Water Quality Criteria by Modifying National Criteria (EPA-600/S3-84-099 December 1984) that provides a Recalculation Procedure. U.S. EPA also developed the Revised Deletion Process for the Site-Specific Recalculation Procedure for Aquatic Life Criteria (EPA-823-R-13-001, April 2013) to guide the development of a site-specific toxicity dataset that is appropriate for deriving a site-specific aquatic life criterion, by modifying the national toxicity dataset for the pollutant of concern through correcting, adding, and/or deleting test results.

The Criteria Recalculation Report implemented U.S. EPA's Recalculation Procedure utilizing toxicity bioassays conducted on resident mussel species to replace the toxicity data for the eastern mussel species in the national dataset to develop site-specific ammonia criteria for waters within the Central Valley Region, including all surface waters in the Sacramento River, San Joaquin River, and Tulare Lake Basin Plans.

A draft Criteria Recalculation Report was provided to the Central Valley Water Board, U.S. EPA Region 9, U.S. EPA Office of Science and Technology, USFWS, and the Nature Conservancy. Comments were provided by Central Valley Water Board staff and U.S. EPA Office of Science and Technology. U.S. EPA agreed with the recalculation procedure for developing site-specific acute criterion. However, U.S. EPA recommended a more conservative approach for utilizing the acute-to-chronic ratio procedure for developing the site-specific chronic criterion. The final Criteria Recalculation Report addressed the comments and provided revised equations for the chronic criterion in Appendix D.

The Basin Plans' Policy for Application of Water Quality Objectives requires the Central Valley Water Board to consider, "…on a case-by-case basis, direct evidence of beneficial use impacts, all material and relevant information submitted by the discharger and other interested parties, and relevant numerical criteria and guidelines developed and/or published by other agencies and organizations…In considering such criteria, the Board evaluates whether the specific numerical criteria which are available through these sources and through other information supplied to the Board, are relevant and appropriate to the situation at hand and, therefore, should be used in determining compliance with the narrative objective."

The Central Valley Water Board finds that the site-specific ammonia criteria provided in the January 2020 Criteria Recalculation Report implement the Basin Plan's narrative toxicity objective to protect aquatic life beneficial uses of the receiving water. This Order implements the site-specific acute and chronic criteria for ammonia provided by the January 2020 Criteria Recalculation Report, with the adjustments to the chronic criteria recommended by U.S. EPA.

Site-specific Criteria for the San Joaquin River. Similar to the U.S. EPA 2013 Criteria, the recalculated site-specific criteria developed in the Criteria Recalculation Report for the acute and chronic criteria are presented based on equations that vary according to pH and temperature. The pH and temperature speciation relationships developed by U.S. EPA were utilized without modification. Equations were developed for situations where freshwater mussels are present and where they are absent. In this case, for the San Joaquin River freshwater mussels have been assumed to be present. In addition, the recalculated criteria include equations that provide enhanced protection for important salmonid species in the genus *Oncorhynchus*, that can be implemented for receiving waters where salmonid species are present. Because the San Joaquin River has a beneficial use of cold freshwater habitat and the presence of salmonids in the San Joaquin River is well-documented, the criteria equations for waters where salmonids are present were used.

The acute (1-hour average) criterion or CMC was calculated using paired effluent pH and temperature data, collected during the period from February 2017 and April 2020. The most stringent CMC of 0.32 mg/L (ammonia as N) calculated using the paired effluent pH and temperature data has been implemented in this Order.

The chronic (30-day average) criterion or CCC was calculated using paired effluent pH and temperature data, collected during

the period from February 2017 and April 2020. The most stringent 30-day rolling average CCC of 0.79 mg/L (ammonia as N) has been implemented in this Order.

The chronic (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 0.79 mg/L (ammonia as N), the 4-day average concentration that should not be exceeded is 1.97 mg/L (ammonia 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. section122.44(d)(1)(i) requires that, "Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." For priority pollutants, the SIP dictates the procedures for conducting the RPA. Ammonia is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

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 currently uses 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. Although the Discharger nitrifies the discharge, 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 site-specific acute and chronic criteria for ammonia provided by the January 2020 Criteria Recalculation Report. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for ammonia and WQBEL's are required.

(c) **WQBEL's.** The Central Valley Water Board calculates WQBEL's in accordance with SIP procedures for non-CTR constituents, and ammonia is a non-CTR constituent. The SIP procedure assumes a 4-day averaging period for calculating the long-term average discharge condition (LTA). However, U.S. EPA recommends modifying the procedure for calculating permit limits for ammonia using a 30-day averaging period for the calculation of the LTA corresponding to the 30-day CCC. Therefore, while the LTAs corresponding to the acute and 4-day chronic criteria were calculated according to SIP procedures, the LTA corresponding to the 30-day CCC was calculated assuming a 30-day averaging period. The lowest LTA representing the acute, 4-day CCC, and 30-day CCC is then selected for deriving the average monthly effluent limitation (AMEL) and the average weekly effluent limitation (AWEL). The remainder of the WQBEL calculation for ammonia was performed according to the SIP procedures. This Order contains a final AMEL and AWEL of 1.1 mg/L and 2.5 mg/L.

(d) **Plant Performance and Attainability.** The Facility is designed to provide tertiary treatment and fully nitrify the wastewater. Therefore, the Central Valley Water Board finds that immediate compliance with the ammonia limits are feasible.

ii. **Barium**

(a) **WQO**. The Basin Plan includes a criterion of 100 µg/L for barium for the protection of Beneficial Uses in the Sacramento-San Joaquin Delta.

(b) **RPA Results.** The MEC for barium was 192 µg/L based on 14 samples collected from February 2017 through April 2020. Out of 12 samples from January 2017 through December 2017 collected at the upstream receiving water, barium had a maximum value of 77 µg/L. Therefore, barium in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan criterion for the protection of Beneficial Uses in the Sacramento-San Joaquin Delta.

(c) **WQBEL's**. The receiving water contains assimilative capacity for barium; therefore, as discussed in section IV.C.2.c of the Fact Sheet, a dilution credit of 8:1 was allowed in the development of WQBEL's for barium. Based on the allowable dilution credit, this Order contains an AMEL of 280 µg/L and an AWEL of 330 µg/L for barium based on the Basin Plan criterion for the protection of Beneficial Uses in the Sacramento-San Joaquin Delta.

(d) **Plant Performance and Attainability.** Analysis of the effluent barium data shows that the MEC of 192 µg/L is less than the applicable WQBEL's with dilution. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

iii. **Bromoform**

(a) **WQO**. The CTR includes a criterion of 4.2 µg/L for bromoform for the protection of human health for waters from which both water and organisms are consumed.

(b) **RPA Results.** The MEC for bromoform was 10 µg/L based on 7 samples collected from February 2017 through March 2018. Bromoform was not detected in the upstream receiving water based on 12 samples collected from January 2017 through December 2017. Therefore, bromoform 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 bromoform; therefore, as discussed in section IV.C.2.c of this Fact Sheet, a human health dilution credit of 3:1 was allowed in the development of WQBEL's for bromoform. Based on the allowable dilution credit, this Order contains an AMEL of 17 µg/L

and an MDEL of 34 µg/L for bromoform based on the CTR criterion for the protection of human health.

(d) **Plant Performance and Attainability.** Analysis of the effluent bromoform data shows that the MEC of 10 µg/L is less than the applicable WQBEL's with dilution. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

iv. **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) requires that, "Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." For priority pollutants, the SIP dictates the procedures for conducting the RPA. 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 sulfur dioxide process to dechlorinate the effluent prior to discharge to the San Joaquin River, the existing chlorine use and the potential for chlorine to be discharged provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the NAWQC.

(c) **WQBEL's.** The U.S. EPA's TSD 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, 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.** The Discharger uses sodium bisulfite to dechlorinate the effluent prior to discharge to the San Joaquin River. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

v. **Chloroform**

(a) **WQO**. Chloroform is a priority pollutant, however the CTR reserved the human health criteria. The U.S. EPA developed the 2015 recommended National Ambient Water Quality Criteria for Chloroform that includes a criterion of 60 µg/L for the protection of human health for waters from which both water and organisms are consumed, which implements the Basin Plan's narrative toxicity and chemical constituents objectives.

(b) **RPA Results.** The MEC for chloroform was 98.1 µg/L based on 8 samples collected from February 2017 through March 2018. In 12 samples collected from January 2017 through December 2017, chloroform was detected once and non-detect for the remaining samples, in the upstream receiving water with an upstream mean concentration of 0.08 µg/L. Therefore, chloroform in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the U.S. EPA recommended National Ambient Water Quality Criteria for the protection of human health.

(c) **WQBEL's**. The receiving water contains assimilative capacity for chloroform; therefore, as discussed in section IV.C.2.c of the Fact Sheet, a human health dilution credit of 1.2:1 was allowed in the development of WQBEL's for chloroform. Based on the allowable dilution credit, this Order contains an AMEL of 130 µg/L and an MDEL of 260 µg/L for chloroform based on the 2015 recommended U.S. EPA National Ambient Water Quality Criteria for the protection of human health.

(d) **Plant Performance and Attainability.** Analysis of the effluent chloroform data shows that the MEC of 98.1 µg/L is under the applicable WQBEL's with dilution. This data was collected while discharging to land and may not be representative of the discharge to the San Joaquin River. At this time the Central Valley Water Board cannot conclude whether the Facility can immediately comply with these effluent limitations. The effluent limitations for chloroform are a new regulatory requirement within this permit, which becomes applicable to the waste discharge with the adoption of this Order, which was adopted after 1 July 2000. Therefore, if upon completion of the Disinfection By-Products Evaluation and Minimization Plan it is determined that new or modified control measures are necessary in order to comply with the effluent limitations, the Discharger may request a Time Schedule Order in accordance with Water Code section 13300, that requires preparation and implementation of a pollution prevention plan in compliance with Water Code section 13263.3.

vi. **Dibromochloromethane (DBCM)**

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

(b) **RPA Results.** The MEC for DBCM was 43 µg/L based on 8 samples collected from February 2017 through March 2018. Thirty additional effluent samples from 24 August 2021 through 4 November 2021 were submitted with the October 2021 TM and November 2021 TM. The concentrations in these additional effluent samples ranged from non-detect (Method detection

limitation = 0.086 µg/L and 0.34 µg/L) to 12.7 µg/L. DBCM was not detected in the upstream receiving water based on 12 samples collected from January 2017 through December 2017. Therefore, DBCM 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 DBCM; therefore, as discussed in section IV.C.2.c of the Fact Sheet, a human health dilution credit of 37.4:1 was allowed in the development of WQBEL's for DBCM. Based on the allowable dilution credit, this Order contains an AMEL of 15 µg/L and an MDEL of 27 µg/L for DBCM based on the CTR criterion for the protection of human health.

(d) **Plant Performance and Attainability.** Analysis of the effluent DBCM data shows that the MEC of 43 µg/L is over the applicable WQBEL's with dilution and volatilization. The data that was collected while discharging to land and may not be representative of the discharge to the San Joaquin River. However, data submitted with the October 2021 and November 2021 TM showed a maximum concentration of 12.7 µg/L which is lower than the applicable WQBEL's with dilution. At this time the Central Valley Water Board cannot conclude whether the Facility can immediately comply with these effluent limitations. The effluent limitations for DBCM are a new regulatory requirement within this permit, which becomes applicable to the waste discharge with the adoption of this Order, which was adopted after 1 July 2000. Therefore, if upon completion of the Disinfection By-Products Evaluation and Minimization Plan it is determined that new or modified control measures are necessary in order to comply with the effluent limitations, the Discharger may request a Time Schedule Order in accordance with Water Code section 13300, that requires preparation and implementation of a pollution prevention plan in compliance with Water Code section 13263.3.

vii. **Dichlorobromomethane (DCBM)**

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

(b) **RPA Results.** The MEC for DCBM was 79 µg/L based on 8 samples collected from February 2017 through March 2018. Thirty additional effluent samples from 24 August 2021 through 4 November 2021 were submitted with the October 2021 TM and November 2021 TM. The concentrations in these additional effluent samples ranged from 4.1 µg/L to 37.5 µg/L. DCBM was not detected in the upstream receiving water based on 12 samples collected from January 2017 through December 2017.

Therefore, DCBM 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 DCBM; therefore, as discussed in section IV.C.2.c of the Fact Sheet, a human health dilution credit of 64.4:1 was allowed in the development of WQBEL's for DCBM. Based on the allowable dilution credit, this Order contains an AMEL of 36 µg/L and an MDEL of 71 µg/L for DCBM based on the CTR criterion for the protection of human health.

(d) **Plant Performance and Attainability.** Analysis of the effluent DCBM data shows that the MEC of 79 µg/L is over the applicable WQBEL's with dilution and volatilization. The data that was collected while discharging to land and may not be representative of the discharge to the San Joaquin River. However, data submitted with the October 2021 TM and November 2021 TM showed a maximum concentration of 26.3 µg/L when the Facility disinfection system is operated with a chlorine contact time less than 450 milligrams minutes per milliliter as allowed for the Facility by the Division of Drinking Water and is more representative of Facility performance for the surface water discharge. A concentration of 26.3 is lower than the applicable WQBEL's with dilution. At this time the Central Valley Water Board cannot conclude whether the Facility can immediately comply with these effluent limitations. The effluent limitations for DCBM are a new regulatory requirement within this permit, which becomes applicable to the waste discharge with the adoption of this Order, which was adopted after 1 July 2000. Therefore, if upon completion of the Disinfection By-Products Evaluation and Minimization Plan it is determined that new or modified control measures are necessary in order to comply with the effluent limitations, the Discharger may request a Time Schedule Order in accordance with Water Code section 13300, that requires preparation and implementation of a pollution prevention plan in compliance with Water Code section 13263.3.

viii. **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. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. Default USEPA translators were used for the receiving water and effluent.

(b) **RPA Results.** Section IV.C.2 of this Fact Sheet includes procedures for conducting the RPA for hardness-dependent

CTR metals, such as lead. The CTR includes hardness-dependent criteria for lead for the receiving water. The receiving water exceeded the CTR chronic criteria on one occasion. Paired hardness data when receiving water samples were taken, lead exceeded the CTR chronic criteria on 21 June 2017. A receiving water hardness of 27 mg/L as $CaCO_3$ yielded a chronic criterion of 0.6 µg/L. On that same day, a lead sample of 0.7 µg/L was collected at the receiving water. Lead was detected in the effluent. Therefore, lead 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) **WQBEL's**. Due to no assimilative capacity, dilution credits are not allowed for development of the WQBEL's for lead. This Order contains a final AMEL and MDEL for lead of 2.3 µg/L and 5.0 µg/L, respectively.

(d) **Plant Performance and Attainability.** The AMEL of 2.3 µg/L is greater than the MEC of 1.2 µg/L; therefore, the Central Valley Water Board finds that immediate compliance with the lead effluent limitations are feasible.

ix. **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. This Order, therefore, requires removal of ammonia (i.e., nitrification). Nitrification is a biological process that converts ammonia to nitrate and nitrite, and will result in effluent nitrate concentrations above the Primary MCL for nitrate plus nitrite. Nitrate concentrations in a drinking water supply above the Primary MCL threatens the health of human fetuses and newborn babies by reducing the oxygen-carrying capacity of the blood (methemoglobinemia).

Federal regulations at 40 C.F.R. section 122.44(d)(1)(i) requires that, "Limitations must control all pollutants or pollutant

parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." For priority pollutants, the SIP dictates the procedures for conducting the RPA. 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 threat to exceed the Primary MCL for nitrate plus nitrite unless the wastewater is treated for nitrogen removal, and therefore an effluent limitation for nitrate plus nitrite is required. Denitrification is a process that converts nitrate to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas, which is then released to the atmosphere. The Discharger currently uses nitrification/denitrification to remove ammonia, nitrite, and nitrate from the waste stream. 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. Although the Discharger denitrifies the discharge, 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 22 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.** The Facility is designed to provide tertiary treatment and fully nitrify and denitrify the wastewater. Therefore, the Central Valley Water Board finds that immediate compliance with the nitrate plus nitrite limitations are feasible.

x. **Pathogens**

(a) **WQO.** DDW has developed reclamation criteria, CCR, Division 4, Chapter 3 (Title 22), for the reuse of wastewater. Title 22 requires that for spray irrigation of food crops, parks, playgrounds, schoolyards, and other areas of similar public access, wastewater be adequately disinfected, oxidized, coagulated, clarified, and filtered, and that the effluent total coliform levels not exceed 2.2 MPN/100 mL as a 7-day median; 23 MPN/100 mL, not to be exceeded more than once in a 30-day period; and 240 MPN/100 mL, at any time.

Title 22 also requires that recycled water used as a source of water supply for non-restricted recreational impoundments be disinfected tertiary recycled water that has been subjected to conventional treatment. A non-restricted recreational impoundment is defined as "…an impoundment of recycled water, in which no limitations are imposed on body-contact water recreational activities." Title 22 is not directly applicable to surface waters; however, the Central Valley Water Board finds that it is appropriate to apply an equivalent level of treatment to that required by the DDW's reclamation criteria because the receiving water is used for irrigation of agricultural land and for contact recreation purposes. The stringent

disinfection criteria of Title 22 are appropriate since the undiluted effluent may be used for the irrigation of food crops and/or for body-contact water recreation. Coliform organisms are intended as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing other pathogens.

(b) **RPA Results.** Raw domestic wastewater inherently contains human pathogens that threaten human health and life, and constitute a threatened pollution and nuisance under 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) requires that, "Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." For priority pollutants, the SIP dictates the procedures for conducting the RPA. Pathogens are not priority pollutants. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

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 beneficial uses of the San Joaquin River include municipal and domestic supply, water contact recreation, and agricultural irrigation supply, and there is, at times, less than 20:1 dilution. To protect these beneficial uses, the Central Valley Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease. Although the Discharger provides disinfection, inadequate or incomplete disinfection creates the potential for pathogens to be discharged. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for pathogens and WQBEL's are required.

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

The membrane filtration process utilized at this Facility is capable of reliably meeting a turbidity of 0.2 nephelometric turbidity units (NTU) at least 95 percent of the time. Failure of the filtration system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance. Coliform testing, by comparison, is not conducted continuously and requires several hours, to days, to identify high coliform concentrations. Therefore, to ensure compliance with the DDW recommended Title 22 disinfection criteria, weekly average specifications are impracticable for turbidity. This Order includes operational specifications for turbidity of 0.5 NTU at any time and 0.2 NTU not to be exceeded more than 5 percent of the time within a 24-hour period.

This Order contains effluent limitations for BOD_5, total coliform organisms, and TSS and requires a tertiary level of treatment, or equivalent, necessary to protect the beneficial uses of the receiving water. The Central Valley Water Board has previously considered the factors in Water Code section 13241 in establishing these requirements.

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

the corresponding removal rate of the system. The application of tertiary treatment processes results in the ability to achieve lower levels for BOD_5 and TSS than the secondary standards currently prescribed. Therefore, this Order requires AMEL's for BOD_5 and TSS of 10 mg/L, which is technically based on the capability of a tertiary system. In addition to the average weekly and average monthly effluent limitations, a daily maximum effluent limitation for BOD_5 and TSS is included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities.

(d) **Plant Performance and Attainability.** The Facility provides tertiary treatment and utilizes a chlorine disinfection system that is designed to achieve Title 22 criteria. Therefore, the Central Valley Water Board concludes that immediate compliance with these effluent limitations is feasible for tertiary treated discharges from the Facility.

xi. **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) requires that, "Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." For priority pollutants, the SIP dictates the procedures for conducting the RPA. pH is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

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 43 samples taken from February 2017 through April 2020, the maximum pH reported was 8.2 and the minimum was 7.2. 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.** Effluent limitations for pH of 6.5 as an instantaneous minimum and 8.5 as an instantaneous maximum are included in this Order based on protection of the Basin Plan objectives for pH.

(d) **Plant Performance and Attainability.** Analysis of effluent pH data shows that immediate compliance with the WQBEL's is feasible.

xii. **Temperature**

(a) **WQO.** The Thermal Plan requires that, "The maximum temperature shall not exceed the natural receiving water temperature by more than 20°F."

(b) **RPA Results.** Treated domestic wastewater is an elevated temperature waste, which could cause or threaten to cause the receiving water temperature to exceed temperature objectives established in the Thermal Plan. Therefore, reasonable potential exists for temperature and WQBEL's are required.

Federal regulations at 40 C.F.R. section 122.44(d)(1)(i) requires that, *"Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic*

pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." For priority pollutants, the SIP dictates the procedures for conducting the RPA. Temperature 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, which is an elevated temperature waste. This provides the basis for the discharge to have a reasonable potential to cause or contribute to an excursion above the requirements of the Thermal Plan.

(c) **WQBEL's.** To ensure compliance with the Thermal Plan, an effluent limitation for temperature is included in this Order.

(d) **Plant Performance and Attainability.** Monitoring data indicates that consistent compliance with the requirements of the Thermal Plan is feasible from February through October. The use of the Cooling Ponds will ensure compliance during the months of November through January.

4. WQBEL Calculations

a. This Order includes WQBEL's for ammonia, barium, bromoform, DBCM, chloroform, chlorine residual, chlorpyrifos, DCBM, diazinon, electrical conductivity @ 25°C, methyl mercury, total mercury, nitrate plus nitrite, pH, temperature, and total lead. The general methodology for calculating WQBEL's based on the different criteria/objectives is described in subsections IV.C.4.b through e, below. See Attachment H for the WQBEL calculations.

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

ECA = C + D(C – B) where C>B, and
ECA = C where C≤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 MCLs.** 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 ECAs are converted to equivalent long-term averages (i.e. LTA_{acute} and $LTA_{chronic}$) using statistical multipliers and the lowest LTA is used to calculate the AMEL and MDEL using additional statistical multipliers. 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.

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

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

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

where:

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

Summary of Water Quality-Based Effluent Limitations
Discharge Point No. 001

Table F-9. Summary of Water Quality-Based Effluent Limitations

Parameter	Units	Average Monthly	Average Weekly	Maximum Daily
Ammonia (Total as Nitrogen)	mg/L	1.1	2.5	--
Barium	µg/L	280	330	--
Bromoform	µg/L	17	--	34
Chlorpyrifos	µg/L	--	See table note 1	See table note 1
Diazinon	µg/L	--	See table note 1	See table note 1
Chloroform	µg/L	130	--	260
Dibromochloromethane (DBCM)	µg/L	15	--	27
Dichlorobromomethane (DCBM)	µg/L	36	--	71
Electrical Conductivity @ 25°C	µmhos/cm	1,600 as an annual average	--	--

Parameter	Units	Average Monthly	Average Weekly	Maximum Daily
Lead	µg/L	2.3	--	5.0
Methylmercury	ng/L	See table note 2	--	--
Nitrate plus Nitrite (Total as Nitrogen)	mg/L	10	22	--
pH	Standard Units	--	--	Minimum 6.5 Maximum 8.5
Temperature	°F	--	--	See table note 3
Total Chlorine Residual	mg/L	--	0.011 mg/L, as a 4-day average	0.019 mg/L, as a 1-hour average
Total Coliform Organisms	MPN/100 mL	--	2.2, See table note 4	MDEL 23, see table note 5 Instantaneous Max 240

Table F-9 Notes:

1. **Diazinon and Chlorpyrifos.** Effluent diazinon and chlorpyrifos concentrations shall not exceed the sum of one (1.0) as identified below:
   a. ***Average Monthly Effluent Limitation (AMEL)***
      $S_{AMEL} = C_{D\ M\text{-}avg}/0.079 + CC\ M\text{-}avg/0.012 \leq 1.0$
      $C_{D\ M\text{-}AVG}$ = average monthly diazinon effluent concentration in µg/L.
      $C_{C\ M\text{-}AVG}$ = average monthly chlorpyrifos effluent concentration in µg/L
   b. ***Average Weekly Effluent Limitation (AWEL)***
      $S_{AWEL} = CD\ W\text{-}avg/0.14 + CC\ W\text{-}avg/0.021 \leq 1.0$
      $C_{D\ W\text{-}AVG}$ = average weekly diazinon effluent concentration in µg/L.
      $C_{C\ W\text{-}AVG}$ = average weekly chlorpyrifos effluent concentration in µg/L.
2. The effluent calendar year annual methylmercury load shall not exceed 0.18 grams, in accordance with the Delta Mercury Control Program, effective 31 December 2030.
3. The maximum temperature of the discharge shall not exceed the natural receiving water temperature by more than 20°F.
4. Applied as a 7-day median effluent limitation.
5. Not to be exceeded more than once in any 30-day period.

5. Whole Effluent Toxicity (WET)

For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct whole effluent toxicity testing for acute and chronic toxicity, as specified in the Monitoring and Reporting Program

(Attachment E section V.). This Order also contains effluent limitations for acute 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. Acute whole effluent toxicity is not a priority pollutant. Therefore, due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA. 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)." 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." Accordingly, effluent limitations for acute toxicity have been included in this Order as follows:

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

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

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 Discharger did not conduct chronic toxicity testing when applying for the Order.

i. **RPA.** No dilution has been granted for chronic whole effluent toxicity. The Discharger has not conducted chronic whole effluent toxicity testing because a dechlorination system must be installed to provide representative effluent for testing. Therefore, at this time there is insufficient information to conduct a Reasonable Potential Analysis. A numeric monitoring trigger of 1 chronic toxicity units (as 100/NOEC), toxicity reduction evaluation requirements, and routine monitoring have been required. A reopener provision is included to implement WQBEL’s for chronic toxicity testing if new information becomes available showing the discharge has reasonable potential to cause or contribute to an 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 were calculated based upon the design flow (Average Dry Weather Flow) permitted in section IV.A.1.i of this Order.

2. Averaging Periods for Effluent Limitations

40 C.F.R. section 122.45 (d) requires average weekly and average monthly discharge limitations for POTW’s unless impracticable. For bromoform, chloroform, DBCM, DCBM, and lead average weekly effluent limitations have been replaced with maximum daily effluent limitations in accordance with section 1.4 of the SIP.

3. Satisfaction of Anti-Backsliding Requirements – Not Applicable

4. Antidegradation Policies

The permitted discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Anti-Degradation Policy. This Order provides for an increase in the volume and mass of pollutants discharged. The increase will not cause a violation of water quality objectives and will not unreasonably affect present and anticipated beneficial uses. Furthermore, compliance with these requirements in this order will result in the use of best practicable treatment or control of the discharge to assure that a pollution or nuisance will not occur and result in water quality consistent with the maximum benefit to the people of the State will be maintained.

This Order grants mixing zones for development of the water quality-based effluent limitations for barium, bromoform, chloroform, DBCM, and DCBM in accordance with the Basin Plan, the SIP, U.S. EPA's Water Quality Standards Handbook, 2nd Edition (updated July 2007), and the TSD. As discussed in section IV.C.2.c of this Fact Sheet, the mixing zones comply with applicable provisions of both the state and federal antidegradation policies.

The Discharger developed a report titled *Antidegradation Analysis for the Proposed Consolidated Treatment Facility Discharge to the San Joaquin River (October 2020)*, that provides an antidegradation analysis following the guidance provided by State Water Board APU 90-004. Pursuant to the guidelines, the Antidegradation Analysis evaluated whether changes in water quality resulting from the proposed new discharge to the San Joaquin River of up to 6.0 MGD of tertiary treated wastewater are consistent with the maximum benefit to the people of the State, will not unreasonably affect beneficial uses, will not cause water quality to be less than water quality objectives, and that the discharge provides protection for existing in-stream uses and water quality necessary to protect those uses. Findings from the Antidegradation Analysis are summarized below.

a. **Water Quality Parameters And Beneficial Uses Which Will Be Affected By The Proposed New Discharge And The Extent Of The Impact.**

Compliance with this Order will not adversely impact beneficial uses of the receiving water or downstream receiving waters. All beneficial uses will be maintained and protected. Federal antidegradation requirements at 40 C.F.R. section 131.12 defines the following tier designations to describe water quality in the receiving water body.

Tier 1 Designation*: Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.* (40 C.F.R. §131.12)

Tier 2 Designation*: Where the quality of waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and*

public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully. Further, the State shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control. (40 C.F.R. §131.12)

The tier designation is assigned on a pollutant-by-pollutant basis. The Sacramento-San Joaquin Delta (Southern Portion) is impaired for chlorpyrifos, diazinon, DDT, EC, Group A pesticides, invasive species, mercury, and toxicity. Due to the CWA 303(d) listings, the waterbody has a Tier 1 designation per 40 C.F.R. §131.12 for these parameters. The Antidegradation Analysis conducted an analysis of the potential impact of each constituent and their use of assimilative capacity at the current ADWF of 2.5 MGD and full buildout ADWF of 6.0 MGD.

Based on the analysis, the proposed new discharge would result in only a minor increase in concentration (i.e., using less than 10% of remaining assimilative capacity), compared with the current condition (i.e., no discharge), for antimony, arsenic, barium, bromoform, chloride, fluoride, MBAS, nitrate plus nitrite (as N), Sulfate, TDS, cadmium, chromium III, selenium, silver, and zinc. For DBCM and DCBM, for which mixing zones were requested, the November 2021 TM provided results which corresponded to a use of 22.6% (DBCM) and 38.9% (DCBM) of the remaining assimilative capacity. As discussed below and in section IV.C.2.c of this Fact Sheet, the mixing zones for DBCM and DCBM have been sized to limit the use of assimilative capacity for DBCM and DCBM to comply with State and federal antidegradation requirements. This Order will result in best practicable treatment or control of the discharge necessary to assure a pollution of nuisance will not occur and highest water quality consistent with the maximum benefit to the people of the State will be maintained.

b. **Scientific Rationale for Determining Potential Lowering of Water Quality**

The rationale used in the Antidegradation Analysis is based on Code of Federal Regulation, Section 131.12 (40 CFR 131.12), USEPA memorandum Regarding Tier 2 Antidegradation Reviews and Significance Thresholds (USEPA 2005) USEPA Region 9 Guidance on Implementing the Antidegradation Provisions of 40 CFR 131.12 (USEPA 1987), State Water Board Resolution No. 68-16, a State Water Board 1987 policy memorandum to the Regional Water Quality Control Boards, and an Administrative Procedures Update (APU 90-004) issued by the State Water Board to the Regional Water Quality Control Boards.

The scientific rationale used in the Antidegradation Analysis to determine if the Order allows a lowering of water quality is to determine the reduction

of assimilative capacity. Assimilative capacity was calculated on a mass-balanced, concentration basis and, for bioaccumulative constituents, calculated on a mass loading basis. This approach is consistent with recent U.S. EPA guidance and addresses a key objective of the Antidegradation Analysis to "[c]ompare receiving water quality to the water quality objectives established to protect designated beneficial uses" (APU 90-004). U.S. EPA has recommended ten (10) percent as a measure of significance for identifying those substantial lowerings of water quality that should receive a full tier 2 antidegradation review. APU 90-004 requires the consideration of "feasible alternative control measures" as part of the procedures for a complete antidegradation analysis.

The Antidegradation Analysis analyzed each pollutant detected in the effluent and receiving water to determine if the proposed discharge of 2.5 MGD (and future discharge of 6.0 MGD) authorized by this Order potentially allows significant increase of the amount of pollutants present in the upstream and downstream receiving water influenced by the proposed discharge. Pollutants that significantly increased concentration or mass downstream would have required an alternatives analysis to determine whether implementation of alternatives to the proposed action would be in the best socioeconomic interest of the people of the region, and be to the maximum benefit of the people of the State. Details on the scientific rationale are discussed in detail in the Antidegradation Analysis. This includes a detailed discussion on calculating acute, chronic, and long-term water quality effects associated with a continuous discharge to a tidal estuary where the outfall and tidal flows provide the critical mixing and dilution.

The Central Valley Water Board concurs with this scientific approach.

c. **Alternative Control Measures Considered**

The Discharger considered several alternatives that would reduce or eliminate the lowering of water quality resulting from the proposed 2.5 MGD discharge (and future discharge of 6.0 MGD). A number of effluent disposal alternatives were assessed to determine if any alternative would substantially reduce or eliminate the lowering of water quality as a result of the proposed 2.5 MGD discharge (and future discharge of 6.0 MGD). These plant expansion alternatives are summarized below:

1. Zero discharge (100%), recycling of effluent;
2. Regionalization with the City of Manteca Water Quality Control Facility; and
3. Different/higher levels of treatment to address constituent-specific issues (i.e., Ultraviolet Disinfection and Reverse Osmosis);

None of the alternatives evaluated would substantially reduce or eliminate significant water quality impacts of the proposed action, because the proposed action would not significantly degrade water quality. Some of the alternatives may result in water quality effects elsewhere, or other

environmental impacts, that are worse than those identified for the proposed action.

d. **Socioeconomic Evaluation**

The objective of the socioeconomic analysis was to determine if the lowering of San Joaquin River water quality is in the maximum interest of the people of the state. The socioeconomic evaluation considered the social benefits and costs based on the ability to accommodate socioeconomic development in the City of Lathrop. The primary benefits of this action will be realized through achieving the following objectives (City of Lathrop 2020):

1. Provide for planned City buildout and development based on the City's General Plan by providing effluent discharge to the San Joaquin River.
2. Provide efficient and cost-effective wastewater services through buildout of the City.
3. Maximize use of recycled water in the City presently and in the future.

Future development in the City of Lathrop, would rely on the Discharger and its Facility for wastewater collection, treatment, and recycled water services which would free land that would otherwise be used for land discharge. The Facility's future expansion and new 2.5 MGD surface water discharge would accommodate planned and approved growth in the City of Lathrop. Should the incremental changes in San Joaquin River water quality characterized herein be disallowed, such action would: (1) force the Discharger to continue to discharge to land that would otherwise be used for development; (2) require adding a reverse-osmosis treatment processes, UV disinfection, and possibly other plant upgrades, to eliminate the small water quality changes; or (3) prohibit planned and approved development within and adjacent to the Discharger's service area. On balance, allowing the minor degradation of water quality is in the best interest of the people of the area and the state, compared to these other options; and is necessary to accommodate important economic or social development in the area.

e. **Justification for Allowing Degradation**

Potential degradation identified in the Antidegradation Analysis and due to this Order is justified by the following considerations:

1. The mixing zones for DBCM and DCBM have been reduced to minimize use of assimilative capacity and degradation consistent with the implementation of best practicable treatment or control of the discharge. Based on performance of similarly situated facilities, the Discharger can optimize the chlorine disinfection system to minimize the formation of disinfection byproducts to comply with this Order.
2. Implementation of alternatives does not provide important socioeconomic benefit to the people of the region, nor do they provide maximum benefit to the people of the State. The alternatives to the

proposed project would inhibit socioeconomic growth making it economically infeasible for any new development to occur.

3. The Discharger's planned wastewater treatment facility will produce Title 22 tertiary treated effluent that will result in minimal water quality degradation. The Discharger's planned wastewater treatment process will meet or exceed the highest statutory and regulatory requirements which meets or exceeds best practical, treatment or control (BPTC);
4. The Order is fully protective of the beneficial uses of the San Joaquin River. The anticipated water quality changes in the San Joaquin River will not reduce or impair its designated beneficial uses and is consistent with State and federal antidegradation policies;
5. No feasible alternatives currently exist to reduce the impacts; and
6. The Discharger has fully satisfied the requirements of the intergovernmental coordination and public participation provisions of the State's continuing planning process concurrent with the public participation period of this Order.

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 constituents are discussed in section IV.B.2 of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-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 Point 001

Table F-10. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations	Basis
Biochemical Oxygen Demand (BOD), 5-day @ 20°Celsius	mg/L	**AMEL** 10 **AWEL** 15	TTC

Parameter	Units	Effluent Limitations	Basis
Biochemical Oxygen Demand (BOD), 5-day @ 20°Celsius	Percent Removal	**AMEL** 85	CFR
Total Suspended Solids	mg/L	**AMEL** 10 **AWEL** 15	TTC
Total Suspended Solids	Percent Removal	AMEL 85	CFR
pH	Standard Units	**Instantaneous Max** 8.5 **Instantaneous Min** 6.5	BP
Ammonia Nitrogen, Total	mg/L	**AMEL** 1.1 **AWEL** 2.5	NAWQC
Chlorpyrifos	µg/L	see table note 2	TMDL
Diazinon	µg/L	see table note 2	TMDL
Electrical Conductivity @ 25°C	µmhos/cm	**AAEL** 1,600	PB
Methyl Mercury	Grams per year	**Annual Loading** 0.18, note 3	TMDL
Nitrate plus Nitrite	mg/L	**AMEL** 10 **AWEL** 22	MCL
Barium	µg/L	**AMEL** 280 **AWEL** 330	BP
Bromoform	µg/L	**AMEL** 17 **MDEL** 34	CTR
Chloroform	µg/L	**AMEL** 130 **MDEL** 260	CTR, NAWQC
DBCM	µg/L	**AMEL** 15 **MDEL** 27	CTR
DCBM	µg/L	**AMEL** 36 **MDEL** 71	CTR
Temperature	°F	See table note 4	TP
Lead	µg/L	**AMEL** 1.1 **MDEL** 5.0	CTR
Total Coliform Organisms	MPN/100mL	**AWEL** 2.2 (see table note 5. below) **MDEL** 23 (see table note 6. below) **Instantaneous Max** 240	Title 22
Acute Toxicity	% Survival	**MDEL** 70/90 (see table notes 7 and 8 below)	BP

Table F-10 Notes:

1. **Acronyms**
   - **DC –** Based on the design capacity of the Facility.
   - **TTC –** Based on tertiary treatment capability. These effluent limitations reflect the capability of a properly operated tertiary treatment plant.

- **CFR –** Based on secondary treatment standards contained in 40 CFR part 133.
- **BP –** Based on water quality objectives contained in the Basin Plan.
- **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.
- **SEC MCL –** Based on the Secondary Maximum Contaminant Level.
- **TMDL –** Based on the TMDL for salinity and boron in the lower San Joaquin River.
- **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).
- **PB –** Performance-based.

2. **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 (AMEL)***

   $S_{AMEL} = C_{D\ M\text{-}avg}/0.079 + CC\ M\text{-}avg/0.012 \leq 1.0$

   $C_{D\ M\text{-}AVG}$ = 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 (AWEL)***

   S_{AWEL} = CD W-avg/0.14 + CC W-avg/0.021 ≤ 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.

3. The effluent calendar year annual methylmercury load shall not exceed 0.18 grams, in accordance with the Delta Mercury Control Program, effective 31 December 2030.

4. The maximum temperature of the discharge shall not exceed the natural receiving water temperature by more than 20°F.

5. Applied as a 7-day median effluent limitation.

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

7. 70 percent minimum of any one bioassay.

8. 90 percent median for any three consecutive bioassays.

E. Interim Effluent Limitations

1. **Interim Limits for Total Mercury.** The Compliance Schedule Policy requires the Central Valley Water Board to establish interim requirements and dates for their achievement in the NPDES permit. Interim numeric effluent limitations are required for compliance schedules longer than one year. Interim effluent

limitations must be based on current treatment plant performance or previous final permit limitations, whichever is more stringent.

The interim limitations for total mercury in this Order are based on the current treatment plant performance. In developing the interim limitation, where there are 10 sampling data points or more, sampling and laboratory variability is accounted for by establishing interim limits that are based on normally distributed data where 99.9% of the data points will lie within 3.3 standard deviations of the mean (Basic Statistical Methods for Engineers and Scientists, Kennedy and Neville, Harper and Row). Therefore, the interim limitations in this Order are established as the mean plus 3.3 standard deviations of the available data.

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

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

The following table summarizes the calculations of the interim effluent limitations for total mercury:

Table F-11. Interim Effluent Limitation Calculation Summary

Parameter	Units	Maximum Effluent Concentration	Mean	Standard Deviation	Number of Samples	Interim Limitation
Total Mercury	Grams per year	3.6	2.1	1.5	2	12

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 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, thiobencarb, toxicity, and turbidity.

   a. **Temperature.** The Thermal Plan is applicable to the discharge from the Facility. For the purposes of the Thermal Plan, the discharge is considered to be an Existing Discharge of Elevated Temperature Waste to an Estuary, as defined in the Thermal Plan. Therefore, the Discharger must meet the water quality objective at section 5.A.(1) of the Thermal Plan, which requires compliance with the following:

      i. The maximum temperature shall not exceed the natural receiving water temperature by more than 20°F.

      ii. Elevated temperature waste discharges either individually or combined with other discharges shall not create a zone, defined by water temperatures of more than 1°F above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of a main river channel at any point.

      iii. No discharge shall cause a surface water temperature rise greater than 4°F above the natural temperature of the receiving waters at any time or place.

      iv. Additional limitations shall be imposed when necessary to assure protection of beneficial uses.

      This Order contains receiving water limitations for temperature based on the Thermal Plan. Based on modeling provided by the Discharger the discharge can immediately comply with the receiving water limitations based on the Thermal Plan.

B. Groundwater – Not Applicable

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 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. **Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS).** On 17 January 2020, certain Basin Plan Amendments to incorporate new strategies for addressing ongoing salt and nitrate accumulation in the Central Valley became effective. Other provisions subject to U.S. EPA approval became effective on 2 November 2020, when approved by U.S. EPA. As the Central Valley Water Board moves forward to implement those provisions that are now in effect, this Order may be amended or modified to incorporate new or modified requirements necessary for implementation of the Basin Plan Amendments. More information regarding these Amendments can be found on the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) web page: (https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/)

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 when

developing effluent limitations for hardness-dependent metals. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this provision allows the Central Valley Water Board to reopen this Order to modify the effluent limitations for the applicable inorganic constituents.

d. **Bay-Delta Plan.** On 25 February 2019, the California Office of Administrative Law approved the 2018 Bay-Delta Plan amendments, which include a numeric water quality objective (WQO) for the San Joaquin River at Vernalis of 1,000 µmhos/cm maximum, year-round, applied as a 30-day running average of mean daily electrical conductivity. Once approved by the United States Environmental Protection Agency (U.S. EPA), the revised WQO will be applicable to the San Joaquin River at Vernalis and this provision allows the Central Valley Water Board to reopen this Order to be amended or modified to implement the Bay-Delta Plan WQO's.

e. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a 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 revises the SIP's toxicity control provisions, this provision allows the Central Valley Water Board to reopen this Order to implement the new provisions.

f. **Recission of Land Discharge WDRs.** The Discharger anticipates transitioning WDR coverage from its current land-discharge WDRs (Order R5-2016- 0028-02) to coverage under the State Water Resources Control Board Recycled Water General Order (WQO 2016-0068-DDW). The Discharger would then seek to terminate Order R5-2016-0028-02. This provision allows the Central Valley Water Board to reopen this Order to incorporate various storage pond operating, biosolids, and other specifications that would not be addressed with the Dischargers coverage under the Recycled Water General Order.

g. **Delta Regional Monitoring Program.** With no or minimal monitoring at the receiving water monitoring locations for this new discharge to the Delta, this Order requires a full suite of monitoring and characterization to build a robust dataset to evaluate the impacts of the discharge on beneficial uses and to be used for future permit renewals. This reopener provision allows the Central Valley Water Board to reopen this Order to reduce receiving water monitoring requirements after an adequate dataset is built and with the Discharger's proper participation in the Delta RMP, consistent with other Delta dischargers participating in the Delta RMP.

h. **Disinfection By-products Evaluation and Minimization Plan.** This Order requires the Discharger to develop and implement a Disinfection By-products Evaluation and Minimization Plan to optimize the chlorine disinfection system to minimize the formation of disinfection by-products, such as bromoform, chloroform, DCBM, and DBCM. This reopener provision allows the Central Valley Water Board to reopen the Order to

modify the water quality-based effluent limitations and mixing zones for bromoform, chloroform, DCBM, and DBCM based on the results of the Disinfection By-products Evaluation and Minimization Plan.

2. Special Studies and Additional Monitoring Requirements

a. **Pretreatment Program Development Requirements.** The Discharger is required to develop an Industrial Pretreatment Program as specified in 40 C.F.R. 403 to the Central Valley Water Board for approval, as specified in section VI.C.2.a. Consistent with 40 C.F.R. 403.8 (a), a POTW with a design flow of 5 MGD or less may be required to develop a pretreatment program if the nature or volume of the industrial influent, treatment process upsets, violations of POTW effluent limitations, contamination of municipal sludge, or other circumstances warrant an order to prevent POTW interference or pass-through.

Industry within the Facility's service area includes manufacturing, food processing, distribution facilities, restaurants, and trucking companies. Waste streams from these industries are relatively high-strength commercial/industrial wastewater. In 2005, the Discharger adopted an Industrial Sewer Use Ordinance (Ordinance), which established pretreatment standards prior to discharging industrial wastewater to the Facility. The Ordinance includes numeric effluent limits for total dissolved solids (TDS), biochemical oxygen demand (BOD), and nitrate. The Discharger currently has industrial waste discharge permits with three significant industrial users to control salinity discharges to the Facility. The Discharger's industrial pretreatment program was developed to ensure the best practicable treatment or control of the discharge for salinity discharges to groundwater.

For the new discharge to the San Joaquin River the Discharger needs to continue to control the discharge of salinity to protect the beneficial uses of the San Joaquin River within the Southern Delta. The Bay-Delta Plan includes water quality objectives for electrical conductivity for the South Delta in the vicinity of the discharge. On 1 June 2011, the Superior Court for Sacramento County entered a judgment and peremptory writ of mandate in the matter of City of Tracy v. State Water Resources Control Board (Case No. 34-2009-8000-392-CU-WM-GDS), ruling that the South Delta salinity objectives shall not apply to the City of Tracy and other municipal dischargers pending reconsideration of the South Delta salinity objectives and adoption of a proper program of implementation that includes municipal dischargers.

As discuss in Section III.C.1.c of the Fact Sheet the State Water Board adopted and the Office of Administrative Law approved an updated to the Bay-Delta Plan with revised salinity water quality objectives for the South Delta of 1,000 µmhos/cm maximum, applied as a 30-day running average of mean daily electrical conductivity (year-round) and program of implementation for municipal dischargers. However, the updated water quality objectives have not been approved by U.S. EPA so they are not in effect. Although at the time this Order was adopted the South Delta

salinity objectives were not applicable to the Discharger, the update to the Bay-Delta Plan in response to litigation by the City of Tracy provides a program of implementation for municipal dischargers to meet the South Delta Salinity Objectives.

The program of implementation allows implementation of a Salinity Best Management Practices Plan in lieu of meeting the South Delta salinity objectives where it is infeasible for a POTW to comply with traditional water quality-based effluent limitations for salinity (Chapter VI Section B.1.vii of the Bay-Delta Plan). A component of the Salinity BMP plan is implementation of an industrial pretreatment program to control sources of salinity from industrial users contributing the Facility. Based on effluent EC data provided in the ROWD it appears the Discharger would be unable to comply with traditional water quality-based effluent limitations for salinity.

Based on the rationale provided above, this Order requires the development of an industrial pretreatment program for approval by the Central Valley Water Board.

b. **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.) Per section IV.C.5.b.i of this Fact Sheet, there is insufficient information to conduct a Reasonable Potential Analysis, therefore a numeric monitoring trigger of 1 chronic toxicity units (as 100/NOEC), toxicity reduction evaluation requirements, and routine monitoring have been required.

The Monitoring and Reporting Program of this Order requires chronic WET monitoring to compare with the numeric chronic toxicity trigger. In addition to WET monitoring, the Special Provision in section VI.C.2.b. of the Order requires the Discharger to submit to the Central Valley Water Board a TRE Workplan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with a TRE, in the event effluent toxicity is encountered. The provision also includes a numeric toxicity monitoring trigger, requirements for accelerated monitoring, and requirements for TRE initiation. If the discharge exceeds the chronic toxicity numeric trigger this provision requires the Discharger either participate in an approved Toxicity Evaluation Study (TES) or conduct a site-specific Toxicity Reduction Evaluation (TRE).

A TES may be conducted in lieu of a TRE if the percent effect at 100 percent effluent is less than or equal to 50 percent. Determining the cause of toxicity can be challenging when the toxicity signal is low. Several Central Valley facilities with similar treatment systems have been experiencing intermittent low-level toxicity. The dischargers have not been successful identifying the cause of the toxicity because of the low toxicity signal and the intermittent nature of the toxicity. Due to these challenges, the Central Valley Clean Water Association (CVCWA), in collaboration

with staff from the Central Valley Water Board, has initiated a Special Study to Investigate Low Level Toxicity Indications (Group Toxicity Study). This Order allows the Discharger to participate in an approved TES, which may be conducted individually or as part of a coordinated group effort with other similar dischargers that are exhibiting toxicity. Although the current CVCWA Group Toxicity Study is related to low-level toxicity, participation in an approved TES is not limited to only low-level toxicity issues.

See the WET Monitoring Flow Chart (Figure F-3), below, for further clarification of the decision points for determining the need for TES/TRE initiation.

TRE Guidance. The Discharger is required to prepare a TRE Work Plan in accordance with U.S. EPA guidance. Numerous guidance documents are available, as identified below:

i. Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants, EPA/833-B-99/002, August 1999.

ii. Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs), EPA/600/2-88/070, April 1989.

iii. Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures, Second Edition, EPA 600/6-91/003, February 1991.

iv. Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I, EPA/600/6-91/005F, May 1992.

v. Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition, EPA/600/R-92/080, September 1993.

vi. Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition, EPA 600/R-92/081, September 1993.

vii. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, EPA-821-R-02-012, October 2002.

viii. 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.

ix. Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991.

Figure F-3: WET Accelerated Monitoring Flow Chart

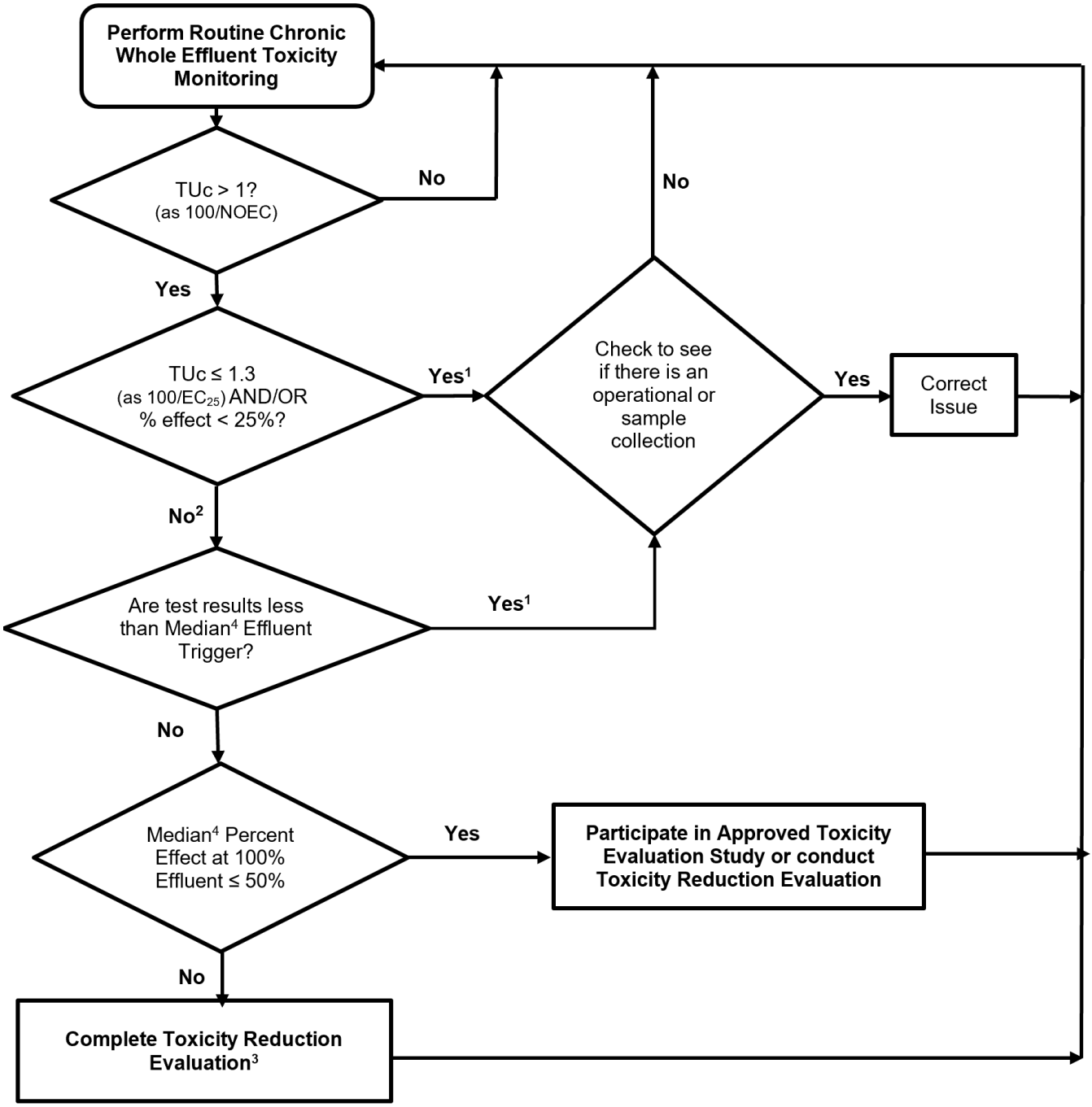


Figure F-3 Notes:

1. The Discharger may participate in an approved TES if the discharge has exceeded the chronic toxicity numeric trigger twice or more in the past 12-month period and the cause is not identified and/or addressed.
2. 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.
3. The Discharger may participate in an approved TES instead of a TRE if the Discharger has conducted a TRE within the past 12 months and has been unsuccessful in identifying the toxicant.

4. See Compliance Determination section VII.L for procedures for calculating 6-week median.

3. Best Management Practices and Pollution Prevention

a. **Water Code section 13263.3(d)(3) Pollution Prevention Plans.** Pollution prevention plans for mercury are required in this Order per Water Code section 13263.3(d)(1)(C). The pollution prevention plans required in section VI.C.3.a and in sections VI.C.7.a of this Order shall, at a minimum, meet the requirements outlined in Water Code section 13263.3(d)(3). The minimum requirements for the pollution prevention plans include the following:

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

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

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

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

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

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

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

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

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

b. **Salinity Best Management Practices Plan**. In cases where it is infeasible for a POTW to comply with traditional water quality-based effluent limitations for salinity, the Bay-Delta Plan includes an

implementation program (Chapter VI Section B.1.vii of the Bay-Delta Plan) that provides alternative effluent limits, including a performance-based effluent limit and implementation of best management practices to reduce salinity. To be eligible to implement the alternative effluent limitations for electrical conductivity provided in the Bay-Delta Plan, this Order requires the Discharger submit and implement a BMP plan for salinity in accordance with Chapter VI Section B.1.vii of the Bay-Delta Plan and annual progress reports. The BMP plan and annual progress reports shall be submitted to the Central Valley Water Board by the due date in the Technical Reports Table and shall include the following to reduce salinity to the maximum extent practicable in an effort to comply with the Southern Delta water quality objectives for electrical conductivity:

i. An industrial pretreatment program, implemented through local ordinances, that minimizes salinity inputs from all industrial sources of salinity within the POTW's collection system;

ii. Source control measures, such as reducing salinity concentrations in source water supplies;

iii. Actions to limit or ban the use of residential self-generating water softeners or imposing salt efficiency standards on such water softeners;

iv. A salinity education and outreach program; and

v. Ongoing participation in the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS).

c. **Disinfection By-Products Evaluation and Minimization Plan**. This Order requires the Discharger to develop and implement a Disinfection By-Products Evaluation and Minimization Plan to optimize the chlorine disinfection system to minimize the formation of disinfection by-products, specifically bromoform, chloroform, DCBM, and DBCM, while maintaining compliance with the total coliform organisms effluent limitations specified in Section IV.A.1.f and the Title 22, or equivalent, disinfection requirements per Provision VI.C.6.a. At the time of permit issuance, the Discharger has been optimizing the chlorine disinfection process to minimize disinfection by-product concentrations. The Facility is a new surface water discharge and has not needed to minimize disinfection by-products in any past regulatory permit. Also, the Disinfection By-Products Evaluation and Minimization Plan will determine whether the mixing zones allowed in this Order are as small as practicable. The Facility has conditional approval to meet "equivalent to" Title 22 requirements; the Disinfection By-Products Evaluation and Minimization Plan will provide a strategy to maintain the Title 22 requirements while reducing disinfection by-products. The Disinfection By-Products Evaluation and Minimization Plan and a follow up progress report to provide an update on the effectiveness of the plan shall be submitted by the due dates in the Technical Reports.

4. Construction, Operation, and Maintenance Specifications

a. **Filtration System Operating Specifications.** Turbidity is included as an operational specification as an indicator of the effectiveness of the filtration system for providing adequate disinfection. The membrane filtration process utilized at this Facility is capable of reliably meeting a turbidity of 0.2 nephelometric turbidity units (NTU) at least 95 percent of the time. Failure of the treatment system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. The operational specification requires that turbidity prior to disinfection shall not exceed; 0.2 NTU, more than 5 percent of the time within a 24-hour period, and an instantaneous maximum of 0.5 NTU.

5. Special Provisions for Publicly-Owned Treatment Works (POTWs)

a. **Pretreatment Requirements.**

i. 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.

ii. 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.

6. Compliance Schedules

a. In general, an NPDES permit must include final effluent limitations that are consistent with CWA section 301 and with 40 C.F.R. section 122.44(d). There are exceptions to this general rule. The State Water Board's Resolution 2008-0025 *"Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits"* (Compliance Schedule Policy) allows compliance schedules for new, revised, or newly interpreted water quality objectives or criteria, or in accordance with a Total Maximum Daily Load (TMDL). All compliance schedules must be as short as possible, and may not exceed ten years from the effective date of the adoption, revision, or new interpretation of the applicable water quality objective or criterion, unless a TMDL allows a longer schedule. Where a compliance schedule for a final effluent limitation exceeds one year, the Order must include interim numeric effluent limitations for that constituent or parameter, interim requirements and dates toward achieving

compliance, and compliance reporting within 14 days after each interim date. The Order may also include interim requirements to control the pollutant, such as pollutant minimization and source control measures.

b. In accordance with the Compliance Schedule Policy and 40 C.F.R. section 122.47, a discharger who seeks a compliance schedule must demonstrate additional time is necessary to implement actions to comply with a more stringent permit limitation. The Discharger must provide the following documentation as part of the application requirements:

   i. Diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream, and the results of those efforts;

   ii. Source control efforts are currently underway or completed, including compliance with any pollution prevention programs that have been established;

   iii. A proposed schedule for additional source control measures or waste treatment;

   iv. Data demonstrating current Facility performance to compare against existing permit effluent limits, as necessary to determine which is the more stringent interim, permit effluent limit to apply if a schedule of compliance is granted;

   v. The highest discharge quality that can reasonably be achieved until final compliance is attained;

   vi. The proposed compliance schedule is as short as possible, given the type of facilities being constructed or programs being implemented, and industry experience with the time typically required to construct similar facilities or implement similar programs; and

   vii. Additional information and analyses to be determined by the Regional Water Board on a case-by-case basis.

c. Based on information submitted with the ROWD, monitoring reports, and other miscellaneous submittals, it has been demonstrated to the satisfaction of the Central Valley Water Board that the Discharger needs time to implement actions to comply with the final effluent limitations for methylmercury.

   i. **Methylmercury.** The Delta Mercury Control Program is composed of two phases. Phase 1 is currently underway and continues through the Phase 1 Delta Mercury Control Program Review. Phase 1 emphasizes studies and pilot projects to develop and evaluate management practices to control methylmercury. Phase 1 includes provisions for: implementing pollution minimization programs and interim mass limits for inorganic (total) mercury point sources in the Delta and Yolo Bypass; controlling sediment-bound mercury in the Delta and Yolo Bypass that may become methylated in agricultural lands, wetlands, and open-water habitats; and reducing total mercury loading to the San Francisco Bay, as required by the Water Quality Control Plan for the San Francisco Bay. As part of Phase 1, the CVCWA Coordinated

Methylmercury Control Study Work Plan was approved by the Executive Officer on 7 November 2013. The final CVCWA Methylmercury Control Study was submitted to the Central Valley Water Board on 19 October 2018 and revised on 26 October 2018.

As part of Phase 1, the Delta Mercury Control Program also required dischargers to participate in a Mercury Exposure Reduction Program (MERP). The objective of the MERP is to reduce mercury exposure of Delta fish consumers most likely affected by mercury.

At the end of Phase 1, the Central Valley Water Board will conduct a Phase 1 Delta Mercury Control Program Review that considers: modification of methylmercury goals, objectives, allocations and/or the final compliance date; implementation of management practices and schedules for methylmercury controls; and adoption of a mercury offset program for dischargers who cannot meet their load and WLA's after implementing all reasonable load reduction strategies. The review will also consider other potential public and environmental benefits and negative impacts (e.g., habitat restoration, flood protection, water supply, and fish consumption) of attaining the allocations. The fish tissue objectives, linkage analysis between objectives and sources, and the attainability of the allocations will be re-evaluated based on the findings of Phase 1 control studies and other information. The linkage analysis, fish tissue objectives, allocations, and time schedules shall be adjusted at the end of Phase 1, or subsequent program reviews, if appropriate.

Phase 2 begins after the Phase 1 Delta Mercury Control Program Review. During Phase 2, dischargers shall implement methylmercury control programs and continue inorganic (total) mercury reduction programs. Compliance monitoring and implementation of upstream control programs also shall occur in Phase 2. Any compliance schedule contained in an NPDES permit must be "…an enforceable sequence of actions or operations leading to compliance with an effluent limitation…" per the definition of a compliance schedule in CWA section 502(17). See also 40 C.F.R. section 122.2 (definition of schedule of compliance). The compliance schedule for methylmercury meets these requirements.

Federal regulations at 40 C.F.R. section 122.47(a)(1) require that, "Any schedules of compliance under this section shall require compliance as soon as possible…" The Compliance Schedule Policy also requires that compliance schedules are as short as possible and may not exceed 10 years, except when "…a permit limitation that implements or is consistent with the waste load allocations specified in a TMDL that is established through a Basin Plan amendment, provided that the TMDL implementation plan contains a compliance schedule or implementation schedule." As discussed above, the Basin Plan's Delta Mercury Control Program includes compliance schedule provisions and allows compliance with the WLA's for methylmercury by 2030. Until the Phase 1 Control Studies are complete and the Central Valley

Water Board conducts the Phase 1 Delta Mercury Control Program Review, it is not possible to determine the appropriate compliance date for the Discharger that is as soon as possible. Therefore, this Order establishes a compliance schedule for the final WQBEL's for methylmercury with full compliance required by 31 December 2030, which is consistent with the Final Compliance Date of the TMDL. At completion of the Phase 1 Delta Mercury Control Program Review, the final compliance date for this compliance schedule will be re-evaluated to ensure compliance is required as soon as possible. Considering the available information, the compliance schedule is as short as possible in accordance with federal regulations and the Compliance Schedule Policy.

7. Other Special Provisions

a. Title 22 or Equivalent Disinfection Requirements

The Discharger is required to meet Title 22 or equivalent disinfection requirements. In 2016, the Discharger conducted a full-scale free chlorine disinfection study to determine if the Facility could achieve the Title 22 tertiary recycled water disinfection requirements using a free chlorine disinfection approach and a shorter contact time in the Facility's chlorine contact basin. The results of the study led to a recommendation to utilize a minimum free chlorine contact time of 60 mg-min/L. The most recent Title 22 Engineering Report (January 2018) submitted to the Division of Drinking Water (DDW) contains the conditional approval letter from DDW dated 13 May 2016 allowing the Facility to utilize a minimum free chlorine residual contact time of 60 mg-min/L. The May 2016 Conditional Approval also requires the discharger to always maintain a minimum free chlorine residual of 1 mg/L in the chlorine contact basin effluent and a minimum modal contact time of 32 minutes.

The Discharger's current WDRs and Master Recycling Permit (Order R5-2016-0028-01) permits the following (p. 30): "5. The free chlorine residual contact time (CT) shall not be less than 60-mg-min/L and a minimum free chlorine modal contact time of 32 minutes shall be maintained at all times. CT is the product of free chlorine residual concentration in mg/L and the free chlorine modal contact time in minutes."

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 (once per week), TSS (once per week), electrical conductivity @ 25°C (once per week) have been established for this Order.

B. Effluent Monitoring

1. 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.

2. Effluent monitoring frequencies and sample types for BOD_5 (three times per week), BOD_5 percent reduction (once per month), TSS (three times per week), TSS percent reduction (once per month), pH (once per day), ammonia nitrogen, total (as N) (once per week), chlorine, total residual (continuous), chlorpyrifos (1/year), diazinon (1/year), dibromochloromethane (DBCM) (once per month), dichlorobromomethane (DCBM) (once per month), bromoform (once per month), chloroform (once per month), barium (once per month), electrical conductivity @ 25°celcius (once per week), lead (once per month), methylmercury (once per quarter), mercury, total (once per quarter), nitrate, total (as N) (once per month), nitrite, total (as N) (once per month), nitrate plus nitrite, total (as N) (once per month), temperature (once per day), and total coliform organisms (once per day) have been established for this Order to determine compliance with effluent limitations for these parameters.

3. Effluent monitoring frequencies and sample types for dissolved oxygen (twice per month) and hardness, total as $CaCO_3$ (once per quarter) have been established for this Order.

4. 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).

5. 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 sections 13370, subd. (c), 13372, 13377.). Section 13176 is inapplicable to NPDES permits to the extent it is inconsistent with CWA requirements. (Wat. Code section 13372, subd. (a).) Lab accreditation is not required for field tests such as tests for color, odor, turbidity, pH, temperature, dissolved oxygen, electrical conductivity, and disinfectant residual. 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. section 136.3(e), Table II).

6. Effluent monitoring frequencies and sample types when the cooling ponds are in use for dissolved oxygen (twice per month), pH (once per day), and temperature (once per day) have been established for this Order.

C. Whole Effluent Toxicity Testing Requirements

To implement the future statewide toxicity provisions, the Discharger shall report the TST results of the instream waste stream at the 100% effluent for both acute and chronic toxicity tests.

1. **Acute Toxicity**. Quarterly 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.
2. **Chronic Toxicity.** Quarterly chronic whole effluent toxicity testing is required in order to demonstrate compliance with the numeric chronic toxicity effluent trigger.

D. Receiving Water Monitoring

1. Surface Water

a. **Delta Regional Monitoring Program.**

The Discharger is required to participate in the Delta RMP. Delta RMP data is not intended to be used directly to represent either upstream or downstream water quality for purposes of determining compliance with this Order. Delta RMP monitoring stations are established generally as “integrator sites” to evaluate the combined impacts on water quality of multiple discharges into the Delta; Delta RMP monitoring stations would not normally be able to identify the source of any specific constituent but would be used to identify water quality issues needing further evaluation. Delta RMP monitoring data may be used to help establish background receiving water quality for an RPA in an NPDES permit after evaluation of the applicability of the data for that purpose. In general, monitoring data from samples collected in the immediate vicinity of the discharge will be given greater weight in permitting decisions than receiving water monitoring data collected at greater distances from the discharge point. Delta RMP data, as with all environmental monitoring data, can provide an assessment of water quality at a specific place and time that can be used in conjunction with other information, such as other receiving water monitoring data, spatial and temporal distribution and trends of receiving water data, effluent data from the Discharger’s discharge and other point and non-point source discharges, receiving water flow volume, speed and direction, and other information to determine the likely source or sources of a constituent that resulted in exceedance of a receiving water quality objective.

With no or minimal monitoring at the receiving water monitoring locations, this Order requires a full suite of monitoring and characterization to build a robust dataset to evaluate the impacts of the discharge on beneficial uses and will be used for future permit renewals. At the following renewal, or sooner, the Central Valley Water Board may consider reducing receiving water monitoring requirements with the Discharger’s proper participation in

the Delta RMP, consistent with other Delta dischargers participating in the Delta RMP.

b. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream.

c. Receiving water monitoring frequencies and sample types for dissolved organic carbon (once per quarter), dissolved oxygen (once per month), electrical conductivity @ 25°C (once per quarter), hardness, total as $CaCO_3$ (once per quarter), pH (once per week), ammonia (once per month), temperature (once per week), and turbidity (twice per month) have been established for this Order to evaluate compliance with receiving water limits and to have sufficient information to calculate water quality criteria for CTR hardness-dependent metals, ammonia, and aluminum.

d. Monthly receiving water monitoring for ammonia at Monitoring Locations RSW-002 and RSW-003 has been included to evaluate compliance with the applicable water quality criteria for ammonia. This information is necessary to ensure the WQBELs for ammonia are adequately protective of aquatic life.

e. 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 receiving water monitoring for priority pollutants and other constituents of concern quarterly for one year in 2023 at Monitoring Location RSW-001, in order to collect data to conduct an RPA for the next permit renewal and to determine the available assimilative capacity for constituents with mixing zones.

2. Groundwater – Not Applicable

E. Other Monitoring Requirements

1. Discharge Monitoring Report-Quality Assurance (DMR-QA) Study Program

Under the authority of section 308 of the CWA (33 U.S.C. section 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 the Consolidated 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 on the Central Valley Water Board's website on 19 November 2021 and through posting by the Discharger at the Lathrop City Hall and the Facility entrance on 3 December 2021.

The public had access to the agenda and any changes in dates and locations through the Central Valley Water Board's website (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 20 December 2021.

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: **17/18 February 2022**
Time: **8:30 a.m.**
Location: Online
and
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

Instructions on how to file a petition for review (http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml) are available on the Internet.

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 Armando Martinez at (916) 464-4617, or email at Armando.Martinez@waterboards.ca.gov .

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	RP
Ammonia Nitrogen, Total (as N)	mg/L	0.2	0.5	1.18	1.18, Table Note 1	5.67, Note 2	--	--	--	--	Yes, Table Note 3
Barium	µg/L	192	76.5	100	--	--	--	--	--	100	Yes
Bromoform	µg/L	9.98	ND	4.3	--	--	4.3	360	--		Yes
Chloroform	µg/L	98.1	0.08	60	--	--	60	--	--		Yes
DBCM	µg/L	43.3	ND	0.41	--	--	0.41	34	--		Yes
DCBM	µg/L	79.3	ND	0.56	--	--	0.56	46	--		Yes
Electrical Conductivity @ 25°C	µmhos/cm	1,286, Table Note 3	635, Table Note 3	1600	--	--	--	--	--	1600	Table Note 3
Lead, Total	µg/L	1.18	2.1	2.8	71.4	2.8	--	--	--	--	Yes, Table Note 5
Mercury, Total	ng/L	3.6	17.9 See Table Note 4	12	--	--	--	--	--	12 Table Note 6	No, Table Note 7
Methylmercury	ng/L	ND	0.456	--	--	--	--	--	--	--	TMDL, Table Note 7
Molybdenum	µg/L	37	2.1	10	--	--	--	--	10	--	No, Table Note 3
Nitrate plus Nitrite, Total (as N)	mg/L	6.6	1.49	10	--	--	--	--	--	10	Yes, Table Note 3
Nitrite, Total (as N)	mg/L	ND	0.03	1	--	--	--	--	--	1	No

General Note: All inorganic concentrations are given as a total concentration.

Abbreviations used in this table:

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
RP= Reasonable Potential

Table Notes:

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 or Sport Fish Water Quality Objective for mercury, where applicable.
5. Reasonable potential at the receiving water, lead was also detected in the effluent.
6 State Water Board Sport Fish Water Quality Objective for mercury.
7. Constituents with a Total Maximum Daily Load (TMDL).

ATTACHMENT H – CALCULATION OF WQBELS

HUMAN HEALTH WQBEL'S CALCULATIONS

Parameter	Units	Criteria	Mean Background Concentration	Effluent CV	Dilution Factor	MDEL/AMEL Multiplier	AWEL/AMEL Multiplier	AMEL Multiplier	AMEL	MDEL	AWEL
Barium	µg/L	100	39	0.12	8	--	1.3	1.1	280	--	330
Bromoform	µg/L	4.3	ND	0.6	3	2.0	--	1.55	17	34	--
Chloroform	µg/L	60	0.08	0.6	1.2	2.0	--	1.55	130	260	--
DBCM	µg/L	0.41	ND	0.57	37.4	2.0	--	1.5	15	27	--
DCBM	µg/L	0.56	ND	0.46	64.4	2.0	--	1.5	36	71	--
Nitrate Nitrogen, Total (as N)	mg/L	10	0.57	0.33	--	1.55	--	1.29	10	--	22

Abbreviations used in this table:

CV = Coefficient of Variation
MDEL = Maximum Daily Effluent Limitation
AMEL = Average Monthly Effluent Limitation
MDEL = Maximum Daily Effluent Limitation
AWEL = Average Weekly Effluent Limitation

Table Notes:

1. CV was established in accordance with section 1.4 of the SIP.
2. Maximum background concentration used for background nitrate plus nitrite.

ATTACHMENT H – CALCULATION OF WQBELS

AQUATIC LIFE WQBEL'S CALCULATIONS

Parameter	Units	CMC Criteria	CCC Criteria	B	Effluent CV	CMC Dilution Factor	CCC Dilution Factor	ECA Multiplier$_{acute}$	LTA$_{acute}$	ECA Multiplier$_{chronic}$	LTA$_{chronic}$	AMEL Multiplier$_{95}$	AWEL Multiplier	MDEL Multiplier$_{99}$	AMEL	AWEL	MDEL
Ammonia Nitrogen, Total (as N)	mg/L	5.7	1.2	0.1	0.6	--	--	0.3	1.8	0.8	0.9	1.2	1.2	3.1	1.1	2.5	--
Chlorpyrifos	µg/L	0.03	0.02	--	--	0.32	0.01	0.53	0.01	1.55	2.7	Note 5	Note 5	--	Note 5	Note 5	--
Diazinon	µg/L	0.16	0.10	--	--	0.32	0.05	0.53	0.05	1.55	2.7	Note 5	Note 5	--	Note 5	Note 5	--
Lead, Total	µg/L	15.4	0.6	0.7	0.6	--	--	0.32	23	0.53	1.5	1.55	--	3.11	2.3	--	5.0

Abbreviations used in this table:

B = Maximum Receiving Water Concentration or lowest detection level, if non-detect
CMC = Criterion Maximum Concentration (CTR or NTR)
CCC = Criterion Continuous Concentration (CTR or NTR)
CV = Coefficient of Variation (established in accordance with section 1.4 of the SIP)
ECA Effluent Concentration Allowance
LTA Aquatic Life Calculations – Long-Term Average
MDEL = Maximum Daily Effluent Limitation
AMEL = Average Monthly Effluent Limitation
MDEL = Maximum Daily Effluent Limitation
AWEL = Average Weekly Effluent Limitation

Table Notes:

1. Coefficient of Variation (CV) was established in accordance with section 1.4 of the SIP.
2. AMELs are calculated according to section 1.4 of the SIP using a 95th percentile occurrence probability.
3. AWELs are calculated according to section 1.4 of the SIP using a 98th percentile occurrence probability.

4. MDELs are calculated according to section 1.4 of the SIP using a 99th percentile occurrence probability.
5. See Fact Sheet section IV.C.3.a.i.(c) for a discussion of the calculation of these effluent limitations.