CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CA0079219
ORDER R5-2026-0005

WASTE DISCHARGE REQUIREMENTS
FOR THE CITY OF MERCED,
MERCED WASTEWATER TREATMENT FACILITY, MERCED COUNTY

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

Table 1. Discharger Information

Discharger:	City of Merced
Name of Facility:	Merced Wastewater Treatment Facility
Facility Street Address:	10260 Gove Road
Facility City, State, Zip:	Merced, CA 95341
Facility County:	Merced County

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
002	Disinfected Tertiary Municipal Wastewater	37.25349°	-120.5315°	Hartley Slough
003	Disinfected Tertiary Municipal Wastewater	37.23424°	-120.5287°	Merced Wildlife Management Area
004	Disinfected Tertiary Municipal Wastewater	37.24047°	-120.5261°	Land Application Area

Table 3. Administrative Information

This Order was Adopted on:	**27 February 2026**
This Order shall become effective on:	**1 April 2026**
This Order shall expire on:	**31 March 2031**
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 (CCR), and an application for reissuance of a NPDES permit no later than:	**31 March 2030**
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 **27 February 2026**.

Patrick Pulupa Date: 2026.03.13 10:14:39 -07'00'
Water Boards

PATRICK PULUPA, Executive Officer

WASTE DISCHARGE REQUIREMENTS
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ATTACHMENTS

I. FACILITY INFORMATION

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

II. FINDINGS

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

A. Legal Authorities. This Order serves as waste discharge requirements (WDRs) 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 WDRs in this Order.

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. Additionally, the adoption of land discharge requirements for the Facility constitutes permitting of an existing facility that is categorically exempt from the provisions of CEQA pursuant to CCR, title 14, section 15301. CEQA compliance for the two phased expansions that may be completed under the term of this permit have been addressed by the City of Merced's environmental impact report that was certified on 18 December 2006 and explained in WDRs Order R5-2008-0027.

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 E and G through I are also incorporated into this Order.

D. Provisions and Requirements Implementing State Law. The provisions/requirements in subsections **IV.B, IV.C, V.B, VI.C.4, and VI.C.6.b** are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

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 establish monitoring, inspection, entry, reporting, and recordkeeping requirements.

This Order and the Monitoring and Reporting Program, provided in Attachment E, establish monitoring and reporting requirements to implement federal and State requirements. The burden, including costs, of these monitoring and reporting requirements bears a reasonable relationship to the need for these reports and the benefits to be obtained therefrom. The Discharger, as owner and operator of the Facility, is responsible for these requirements, which are necessary to determine compliance with this Order. The need for these requirements is further discussed in the Fact Sheet, Attachment F.

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

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 this order supersedes Order R5-2020-0014, except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Central Valley Water Board from taking enforcement action for violations of the previous Order.

III. DISCHARGE PROHIBITIONS

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

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

C. The treatment shall not create a nuisance as defined in section 13050 of the California Water Code.

D. Discharge of waste classified as ‘hazardous’, as defined in the CCR, title 22, section 66261.1 et seq., is prohibited.

E. **Average Dry Weather Flow.** Discharges exceeding an average dry weather flow of 12.0 million gallons per day (MGD), 16.0 MGD, or 20.0 MGD, depending on design flow certification (see Provision VI.C.6.a, are prohibited. Compliance with the average dry weather flow prohibition is to be determined based on monitoring from Monitoring Location M-001.

F. During Phase I of the Salt Control Program, the Discharger is prohibited from discharging salts at concentrations exceeding the salinity numeric value of 700 µmhos/cm (as a monthly average) unless the Discharger is implementing the Phase I requirements of the Salt Control Program (i.e., fully participating in the P&O Study).

G. Discharges of pyrethroid pesticides at concentrations that exceed any pyrethroid numeric trigger in Table 4-2 of the Basin Plan to water bodies with designated or existing WARM and/or COLD beneficial uses are prohibited unless the Discharger is implementing a Pyrethroid Management Plan, as detailed in Section VI.C.3.b, to reduce pyrethroid levels in its discharges.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Hartley Slough (Discharge Point 002)

1. Final Effluent Limitations – Discharge Point 002

The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 002. Unless otherwise specified, compliance shall be measured at Monitoring Location M-001, as described in the Monitoring and Reporting Program, Attachment E:

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

Table 4. Effluent Limitations

Parameters	Units	Average Monthly	Average Weekly	Maximum Daily
Biochemical Oxygen Demand, 5-day @ 20° Celsius (BOD_5)	milligrams per liter (mg/L)	10	15	
Total Suspended Solids (TSS)	mg/L	10	15	
Ammonia Nitrogen, Total (as N)	mg/L	2.0	4.4	
Nitrate plus Nitrite (as N)	mg/L	10	15	
Copper, Total Recoverable	micrograms per liter (µg/L)	7.5		12

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 BOD_5 and TSS shall not be less than 90 percent.

d. **Chronic Whole Effluent Toxicity MDEL.** No *Ceriodaphnia dubia* chronic aquatic toxicity test shall result in a "Fail" at the Instream Waste Concentration (IWC) for the sub-lethal endpoint measured in the test AND a percent effect for the survival endpoint greater than or equal to 50 percent.

e. **Chronic Whole Effluent Toxicity MMEL.** No more than one *Ceriodaphnia dubia* chronic aquatic toxicity test initiated in a toxicity calendar month shall result in a "Fail" at the IWC for any endpoint.

f. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed the following with compliance measured at Monitoring Location UVS-001 as described in the MRP, Attachment E:

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.

iii. 240 MPN/100 mL, at any time.

2. Interim Effluent Limitations – Not Applicable

B. Land Discharge Specifications – Wildlife Management Area (WMA)

1. The Discharger shall maintain compliance with the following limitations at Discharge Point 003, with compliance measured at Monitoring Location M-001 as described in the attached MRP.

a. The discharge specifications specified in Table 5:

Table 5. Land Discharge Specifications – Discharge Point 003

Parameter	Units	Average Monthly	Maximum Daily	Average Weekly
Biochemical Oxygen Demand (BOD), 5-day @ 20° Celsius	mg/L	10		15
Total Suspended Solids (TSS)	mg/L	10		15
Nitrate plus Nitrite (as N)	mg/L	10		15

b. **pH**:

i. 6.5 SU as an instantaneous minimum.

ii. 8.5 SU as an instantaneous maximum.

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

d. **Total Coliform Organisms.** Effluent shall be disinfected such that the total coliform organisms in the disinfected effluent shall not exceed:

   i. 2.2 MPN/100 mL, as a 7-day median; nor

   ii. 23 MPN/100 mL, more than once in any 30-day period.

e. The effluent shall be contained in the WMA.

f. Notwithstanding the requirements herein, the production, distribution, and use of recycled water shall conform to an Engineering Report prepared pursuant to Title 22 section 60323 and approved by the Division of Drinking Water.

g. Recycled water shall be at least disinfected secondary-2.2 recycled water as defined in Title 22 section 60301.

h. Objectionable odors related to the discharge shall not be perceived beyond the limits of the WMA.

i. Public contact with recycled water shall be controlled through such means as fences or signs, or other acceptable alternative. All areas where recycled water is used that are accessible to the public shall be posted with signs that are visible to the public, in a size no less than 4-inches high by 8-inches wide, that include the following wording:

   "RECYCLED WATER – DO NOT DRINK
   AQUA DE DESPERDICIO RECLAMADA – NO TOME"

   Each sign shall display an international symbol similar to that show in **Attachment I**.

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

   i. Ditches not serving as wildlife habitat shall be maintained free of emergent, marginal, or floating vegetation.

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

k. There shall be no cross-connections between potable water supply piping and piping connecting recycled water. Supplementing recycled water with potable water shall not occur except through air-gap separation or, if approved by the State Water Resources Control Board, Division of Drinking Water (DDW), a reduced pressure principle backflow device.

l. Ponds within the WMA shall be managed to maintain the integrity of the pond embankments.

m. Effluent shall not be discharged to the WMA and LAA simultaneously, unless the flow to each of these locations can be metered separately.

n. No impoundment of disinfected secondary-2.2 recycled water shall take place within 100 feet of any domestic water supply well.

C. Land Discharge Specifications – Land Application Area (LAA)

1. Recycled Water Discharge Specifications – Discharge Point 004

The Discharger shall maintain compliance with the following specifications at Discharge Point 004, with compliance measured at Monitoring Location M-001 as described in the attached MRP.

a. The discharge specifications specified in Table 6:

Table 6. Recycled Water Discharge Specifications – Discharge Point 004

Parameter	Units	Average Monthly	Average Weekly
Biochemical Oxygen Demand (BOD), 5-day @ 20° Celsius	mg/L	10	15
Total Suspended Solids (TSS)	mg/L	10	15
Nitrate plus Nitrite (as N)	mg/L	10	15

b. **pH:**

i. 6.5 SU as an instantaneous minimum.

ii. 8.5 SU as an instantaneous maximum.

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

d. **Total Coliform Organisms.** Effluent shall be disinfected such that the total coliform organisms in the disinfected effluent shall not exceed:

i. 23 MPN/100 mL, as a 7-day median; nor

ii. 240 MPN/100 mL, more than once in any 30-day period.

e. Recycled water shall be contained within the Land Application Area (LAA) at all times.

f. Notwithstanding the requirements herein, the production, distribution, and use of recycled water shall conform to an Engineering Report prepared pursuant to Title 22, section 60323 and approved by the Division of Drinking Water.

g. Recycled water shall be at least disinfected secondary-23 recycled water as defined in Title 22, section 60301.

h. Objectional odors related to the discharge shall not be perceivable beyond the limits of the LAA at any time.

i. Public contact with the recycled water shall be controlled through such means as fences or signs, or other acceptable alternatives. All areas where recycled water is used that are accessible to the public shall be posted with signs that are visible to the public, in a size no less than 4 inches high by 8 inches wide that include the following wording:

"RECYCLED WATER – DO NOT DRINK
AGUA DE DESPERDICIO RECLAMADA – NO TOME"

Each sign shall display the international symbol similar to that shown in **Attachment I**.

j. The combined application of recycled water, biosolids, fertilizers, and other soil amendments to the LAA shall not exceed the nitrogen or hydraulic loading reasonably necessary to satisfy the nitrogen or water uptake needs of the LAA considering the plant, soil climate, and irrigation management system (i.e., generally accepted agronomic rates).

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

i. Ditches not serving as wildlife habitat shall be maintained free from emergent, marginal, and floating vegetation.

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

l. Discharges to the LAA shall be managed to minimize erosion.

m. There shall be no standing water in the LAA 24 hours after recycled water is applied.

n. The Discharger may not discharge recycled water to the LAA during periods of measurable precipitation, or when soils within the LAA are saturated.

o. No irrigation with disinfected tertiary recycled water shall take place within 50 feet of any domestic water supply well unless all the following are met:

i. A geological investigation demonstrates that an aquitard exists at the well between the uppermost aquifer being drawn from and the ground surface.

ii. The well contains an annular seal that extends from the surface into the aquitard.

iii. The well is housed to prevent any recycled water spray from coming into contact with the wellhead facilities.

iv. The ground surface immediately around the wellhead is contoured to allow surface water to drain away from the well.

v. The owner of the well approves of the elimination of the buffer zone requirement.

p. No impoundment of disinfected tertiary recycled water shall occur within 100 feet of any domestic water supply well.

q. No irrigation with, or impoundment of, disinfected secondary-2.2 or disinfected secondary-23 recycled water shall take place within 100 feet of any domestic water supply well.

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

s. There shall be no cross-connection between potable water supply piping and piping containing recycled water. Supplementing recycled water with potable water shall not occur except through an air-gap separation or, if approved by the Division of Drinking Water, a reduced pressure principle backflow device.

t. Effluent shall not be discharged to the WMA and LAA simultaneously, unless the flow to each of these locations can be metered separately.

u. Recycled water shall be used in compliance with Title 22 section 60304.

2. Biosolids Discharge Specifications

The Discharger shall maintain compliance with the following biosolids discharge specifications at the LAA:

a. The application of biosolids shall be confined to the LAA, excluding abandoned ponds 5 and 6.

b. The discharge shall not cause or threaten to cause pollution, as defined in Water Code section 13050.

c. The application of any material that results in a violation of the Safe Drinking Water and Toxic Enforcement Act (Health and Safety Code section 25249.5) is prohibited.

d. The storage, transport, or application of biosolids shall not cause a nuisance, as defined in Water Code section 13050.

e. There shall be no discharge of biosolids from the storage or application areas to surface waters or to surface water drainage courses.

f. Application of biosolids at rates in excess of the nitrogen requirements of the vegetation or at rates that would degrade groundwater is prohibited.

g. The discharge of biosolids except as allowed for authorized storage, processing, and application sites is prohibited.

h. Discharge of biosolids to the Land Application Area that do not meet Class A or Class B criteria as defined in 40 CFR 503 is prohibited.

i. The Application of biosolids to water-saturated or frozen ground or during periods of precipitation that induces runoff from the Land Application Area is prohibited.

j. The application of Class B biosolids containing a moisture content of less than 50 percent is prohibited.

k. The application of biosolids in areas where biosolids are subject to gully erosion or washout off site is prohibited.

l. Discharge of biosolids with pollutant concentrations greater than those shown below in Table 7 is prohibited.

Table 7. Biosolids Application Ceiling Concentrations

Constituent	Ceiling Concentration (mg/kg dry weight)
Arsenic	75
Cadmium	85
Copper	4,300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7,500

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations – None

B. Groundwater Limitations

Release of waste constituents from any treatment, reclamation, or storage component associated with the Facility shall not cause or contribute to groundwater containing constituent concentrations in excess of the concentrations specified below or in excess of natural background quality, whichever is greater:

1. Total coliform organism level of 2.2 MPN/100 mL over any seven-day period.

2. Constituents in concentrations that exceed either the Primary or Secondary MCLs established in Title 22 of the California Code of Regulations, excluding salinity provided the Discharger complies with the provision in section VI.C.3.a of this Order.

3. Contain taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.

VI. PROVISIONS

A. Standard Provisions

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

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

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

      Additional causes for modification include:

      (a). 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.

(b). 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.

(c). 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 or prevent any discharge or sludge use or disposal in violation of this Order which has a reasonable likelihood of adversely affecting human health or the environment.

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 three 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 four 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 Business and Professions Code sections 6735, 7835, and 7835.1. To demonstrate compliance with CCR, title 16, 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. This Order may be reopened to transfer ownership of control of this Order. The succeeding owner or operator must apply in writing 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.

p. If the Discharger submits a timely and complete ROWD 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 or effluent limitation of this Order, the Discharger shall notify the Central Valley Water Board by telephone (559) 445-5116 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Central Valley Water Board waives confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal monitoring report.

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

d. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include an acute toxicity effluent limitation, a revised chronic toxicity effluent limitation, and/or an effluent limitation for a specific toxicant identified in a TRE.

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

f. **Ultraviolet (UV) Disinfection Operating Specifications.** The UV operating specifications in this Order are based on the UV guidelines developed by the National Water Research Institute and American Water Works Association Research Foundation titled, “Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse.” If the Discharger

conducts a site-specific UV engineering study that identifies site-specific UV operating specifications that will achieve the virus inactivation equivalent to Title 22 disinfected tertiary recycled water, this Order may be reopened to modify the UV operating specifications.

g. **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/)

h. **Updated Title 22 Engineering Report.** The Discharger is currently authorized to send disinfected tertiary-treated wastewater to the Land Application Area (LAA) and the Wildlife Management Area (WMA). Discharge specifications for the LAA include meeting “disinfected secondary-23 recycled water” requirements, as defined in article 1, chapter 3, title 22 of the California Code of Regulations (Title 22), section 60301.225. Discharge specifications for the WMA include meeting “disinfected secondary-2.2 recycled water” requirements, as defined in Title 22, section 60301.220. The Discharger has expressed intent to develop an updated Title 22 Engineering Report to justify less stringent recycled water treatment at the LAA and/or WMA. If the Discharger develops an updated Title 22 Engineering Report and the Division of Drinking Water approves the updated report, this Order may be reopened to modify the discharge specifications and monitoring requirements for the LAA and the WMA as appropriately justified in the updated report.

i. **Whole Effluent Toxicity – Toxicity Provisions.** This Order may be reopened for modification to revise the aquatic toxicity provisions if the Supreme Court determines that the test of significant toxicity cannot be used in NPDES permits or the State Water Board suspends or revises the aquatic toxicity water quality standards.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. **Toxicity Reduction Evaluation (TRE) Requirements.**

i. **Chronic Toxicity Targets – Wildlife Management Area**

The Discharger shall maintain compliance with the following chronic toxicity targets at Discharge Point 003, with compliance measured at Monitoring Location M-001, as described in the attached Monitoring and Reporting Program (MRP).

(a) **Chronic Whole Effluent Toxicity Median Monthly Effluent Target (MMET).** No more than one *Ceriodaphnia dubia* chronic aquatic toxicity test initiated in a toxicity calendar month, analyzed using the TST approach, shall result in a "Fail" at the IWC for any endpoint

(b) **Chronic Whole Effluent Toxicity Maximum Daily Effluent Target (MDET).** No *Ceriodaphnia dubia* chronic aquatic toxicity test shall result in a "Fail" at the IWC for the sub-lethal endpoint measured in the test and a percent effect for the survival endpoint greater than or equal to 50 percent.

ii. **TRE:** The Discharger is required to conduct a TRE, as detailed in the MRP (Attachment E, section V.G), when any combination of two or more MDEL or MMEL violations at Discharge Point 002 or any combination of two or more MDET or MMET exceedances at Discharge Point 003 occur within a single toxicity calendar month or within two successive toxicity calendar months. In addition, if other information indicates toxicity (e.g., results of additional monitoring, fish kills, intermittent recurring toxicity) or if there is no effluent available to complete a routine monitoring test or MMET test or MMEL compliance test, the Executive Officer may require a TRE.

b. **Former Sludge Drying Beds Closure.** By **1 April 2027**, the Discharger shall submit for review, a Former Sludge Drying Beds Closure Work Plan, proposing actions to permanently decommission the former sludge drying beds. The work plan shall provide a timeline for a proper identification of constituents of concern and characterization of the nitrogen compounds, arsenic, manganese, and the identified constituents of concern in soils beneath the former sludge drying beds compared to background concentrations, an evaluation of potential risks to groundwater quality from residual nitrate, total Kjeldahl nitrogen, arsenic, manganese, and other constituents of concern in soils, a plan for closure, potential repurposing, and long-term maintenance and use of the site, and a Final Technical Report containing an evaluation that demonstrates that the former sludge drying beds do not pose a threat to groundwater quality. Additionally, the Final Technical Report shall analyze the Effluent Channel's impact on potentially mobilizing constituents of concern associated with the former sludge drying beds. The timeline for implementation of the work plan shall not exceed seven years from the effective date of this Order.

3. Best Management Practices and Pollution Prevention

a. **Salinity Evaluation and Minimization Plan (SEMP).** The Discharger shall continue to implement a SEMP to identify and address sources of salinity discharged from the Facility.

The Discharger submitted a Notice of Intent to comply with the Salt Control Program and selected the Alternative Permitting Approach. Accordingly, the Discharger shall participate in the CV-SALTS Prioritization and Optimization (P&O) Study. Furthermore, an evaluation of the effectiveness of the SEMP shall be submitted with the ROWD. The evaluation shall include, at minimum, the calendar annual average concentrations of effluent electrical conductivity during the term of the Order. If the average electrical conductivity concentration for any calendar year exceeds a performance-based **trigger of 780 µmhos/cm**, the Discharger shall evaluate possible sources of salinity contributing to the exceedance of the trigger and update the SEMP to include a plan of action to control salinity.

b. **Pyrethroid Management Plan.** If the Pyrethroid Pesticides Water Column Chemistry Monitoring results in an exceedance of any acute and/or chronic pyrethroid numeric trigger in Table 4-2 of the Basin Plan to water bodies with designated or existing WARM and/or COLD beneficial uses, the Discharger shall develop and submit a Pyrethroid Management Plan to the Central Valley Water Board, per the requirements described in section 4.2.2.4.12 of the Basin Plan, within one year from the date that an exceedance is identified by either the Discharger or Central Valley Water Board staff. The Discharger shall review monitoring results quarterly and the Discharger shall notify the Central Valley Water Board of any exceedances of the Pyrethroid numeric triggers as soon as possible. If an exceedance is identified, the Discharger shall notify the Central Valley Water Board in writing of the exceedance and the Discharger's intent to submit a Pyrethroid Management Plan.

The Pyrethroid Management Plan shall identify management practices to reduce discharges of pyrethroid pesticides, as outlined in section 4.5.5.2.2.3 of the Basin Plan, and to consider whether there are potential water quality concerns with replacement insecticide products. Dischargers shall begin implementing their pyrethroid management plans within 30 days after receipt of written approval of their management plan. The Pyrethroid Management Plan shall be deemed complete when it can be demonstrated that the acute and chronic pyrethroids triggers are not exceeded in the final effluent and the demonstration is approved by the Executive Officer.

If a Pyrethroid Management Plan is required, the Discharger shall provide mid-term and/or end-term progress reports, consistent with the table below, to document the management practices that have been implemented to track the effectiveness of the Pyrethroid Management

Plan. Reports should be submitted electronically via CIWQS submittal by the due date in the Technical Reports Table E-16.

Table 8. Pyrethroid Management Plan
Mid-Term and End-Term Progress Reporting

Pyrethroid Management Plan required and approved by date:	Mid-Term Progress Reporting Required	End-Term Progress Reporting Required
1 April 2026 through 31 March 2028 (if required)	Yes Within 18 months from Pyrethroid Management Plan submittal	Yes 31 March 2030
1 April 2028 through 31 March 2029 (if required)	No	Yes 31 March 2030
1 April 2029 through 31 March 2031 (if required)	No (see table note)	No (see table note)

Table Note:

Mid-term and end-term progress reports will be required by subsequently reissued NPDES permits until the Pyrethroid Management Plan is deemed complete.

4. Construction, Operation and Maintenance Specifications

a. The treatment facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

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

c. Objectionable odors originating at the Facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas (or property owned by the Discharger).

d. **Filtration System Operating Specifications.**

i. When coagulation is used, to ensure the filtration system is operating properly to provide adequate disinfection of the wastewater, the turbidity of the filter effluent measured at Monitoring Location FIL-002 shall not exceed:

(a) 2 NTU as a daily average;

(b) 5 NTU more than 5 percent of the time within a 24-hour period; and

(c) 10 NTU, at any time.

ii. When coagulation is not used, to ensure the filtration system is operating properly to provide adequate disinfection of the wastewater, the Discharger shall operate the system to ensure:

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

(b) The effluent turbidity measured at FIL-002 shall not exceed 2 NTU at any time.

e. **Filtration Rate.** The maximum filtration rate shall not exceed 5 gallons per minute per square foot of surface area, as measured at Monitoring Location FIL-001.

f. **UV Disinfection System Operating Specifications.** The UV disinfection system must be operated in accordance with an operations and maintenance program that assures adequate disinfection, and shall meet the following minimum specifications to provide virus inactivation equivalent to Title 22 Disinfected Tertiary Recycled Water:

i. **UV Dose.** The minimum hourly average UV dose in the UV reactor shall be 118 millijoules per square centimeter (mJ/cm^2).

ii. **UV Transmittance.** The minimum hourly average UV transmittance (at 254 nanometers) in the wastewater measured at UVS-001 shall not fall below 56 percent.

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

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

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

g. **Emergency Storage Pond Operating Requirements**

i. Ponds shall be managed to prevent breeding of mosquitoes. In particular,

(1) An erosion control program should ensure that small coves and irregularities are not created around the perimeter of the water surface;

(2) Weeds shall be minimized; and

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

ii. Freeboard shall never be less than 2 feet (measured vertically to the lowest point of overflow).

iii. The discharge of waste classified as "hazardous," as defined in CCR, Title 23, section 2521(a), or "designated," as defined in section 13173 of the Water Code, to the emergency storage pond is prohibited.

iv. The Discharger shall maintain and repair the pond as necessary to ensure the integrity of the pond. Necessary repairs shall be completed in reasonable timeframes that are consistent with the severity of the impairment and potential for impact to water quality.

h. **Equalization Basin Operating Requirements**

i. The Discharger shall regularly inspect the condition of the constructed basin surfaces as specified in the MRP to ensure the integrity of the lined structure and prevent infiltration of waste constituents into soils in a mass or concentration that may violate groundwater limitations in section V.B. of this Order. The Discharger shall maintain and repair the basin as necessary to ensure the integrity of the basin. Necessary repairs shall be completed in reasonable timeframes that are consistent with the severity of the impairment and potential for impact to water quality.

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

a. **Pretreatment Requirements**

i. The Discharger shall be responsible and liable for the performance of all Control Authority pretreatment requirements contained in 40 C.F.R. Part 403, including any subsequent regulatory revisions to 40 C.F.R.

Part 403. Where 40 C.F.R. Part 403 or subsequent revision places mandatory actions upon the Discharger as Control Authority but does not specify a timetable for completion of the actions, the Discharger shall complete the required actions within 6 months from the issuance date of this permit or the effective date of the 40 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.5 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), with the next Report of Waste Discharge.

b. **Sludge/Biosolids Treatment or Discharge Specifications.** Sludge in this document means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screening material generated during preliminary treatment. Residual sludge means sludge that will not be

subject to further treatment at the wastewater treatment plant. Biosolids refer to sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agricultural, silvicultural, horticultural, and land reclamation activities as specified under 40 C.F.R. Part 503.

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

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

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

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

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

iv. The Discharger shall implement onsite sludge/biosolids treatment, processing, and storage for the Facility as described in the Fact Sheet (Attachment F, section II.A). This Order may be reopened to address any proposed change in the onsite treatment, processing, or storage of sludge/biosolids.

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

6. Other Special Provisions

a. **Increase in Permitted Flow Rate.** For authorization to discharge equivalent tertiary effluent in excess of 12.0 mgd (but no more than 20 mgd), the Discharger must complete the following:

i. Submit certification from a California-registered civil engineer with experience in the design and operation of wastewater treatment facilities that the Facility is capable of meeting discharge limitations and has adequate capacity to treat and dispose of these flows in compliance with this Order.

ii. Provide evidence demonstrating that the California Environmental Quality Act requirements have been satisfied; and

iii. Obtain the written concurrence from the Executive Officer.

b. **Disinfection Requirements.** Wastewater shall be oxidized, coagulated, filtered, and adequately disinfected consistent with the State Water Board, Division of Drinking Water (DDW) reclamation criteria, CCR, Title 22, division 4, chapter 3, (Title 22), or equivalent for discharge to Hartley Slough.

c. Except as expressly identified and authorized in this Order, the Discharger shall not use surface water or groundwater as dilution to achieve compliance with Effluent Limitations or Discharge Specification in this order.

d. Physical facilities shall be designed and constructed according to accepted engineering practice and shall be capable of full and consistent compliance with this Order when properly operated and maintained. Proper operation and maintenance shall be described in an operation and maintenance ("O&M") manual prepared by the design engineer. The O&M manual shall be reviewed at least every time a significant change, alteration, or expansion is made to the Facility. The Discharger shall certify in every annual report whether the O&M manual is complete and reflective of the Facility and whether operation, maintenance, and staffing for the year reported was as prescribed in the O&M manual.

7. Compliance Schedules – Not Applicable

VII. COMPLIANCE DETERMINATION

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

B. Average Dry Weather Flow 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).

C. Total Coliform Organisms Effluent Limitations (sections IV.A.1.f, IV.B.1.d, and IV.C.1.d). 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 (for Discharge Points 002 and 003) or 23 (for Discharge Point 004) per 100 milliliters, the Discharger will be considered out of compliance.

D. Instantaneous Minimum and Maximum Effluent Limitation for pH (sections IV.A.1.b, IV.B.1.b, and IV.C.1.b). The Discharger shall use U.S. EPA standard analytical techniques for analyzing pH. If the analytical result of a single effluent sample is detected for pH and the result is less than 6.5 or greater than 8.5, a

violation will be flagged and the discharger will be considered out of compliance for that single sample.

E. Total Recoverable Copper Effluent Limitations. Compliance with effluent limitations for copper shall be determined in accordance with section 2.4.5 of the State Water Board's *Policy for Implementation of Toxic Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (Res. 2005-0019) (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.

F. Whole Effluent Toxicity Effluent Limitations. The discharge is subject to determination of "Pass" or "Fail" from chronic whole effluent toxicity tests using the Test of Significant Toxicity (TST) statistical t-test approach 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.

The null hypothesis (Ho) for the TST statistical approach is:

> Mean discharge Instream Waste Concentration (IWC) response ≤ Regulatory Management Decision (RMD) x Mean control response, where the chronic RMD = 0.75.
>
> A test result that rejects this null hypothesis is reported as "Pass." A test result that does not reject this null hypothesis is reported as "Fail."
>
> The relative "Percent Effect" at the discharge IWC is defined and reported as:
>
> Percent Effect = ((Mean control response – Mean discharge IWC response) / Mean control response) x 100.
>
> This is a t-test (formally Student's t-Test), a statistical analysis comparing two sets of replicate observations, i.e., a control and IWC. The purpose of this statistical test is to determine if the means of the two sets of observations are different (i.e., if the IWC differs from the control, the test result is "Fail"). The Welch's t-test employed by the TST statistical approach is an adaptation of Student's t-test and is used with two samples having unequal variances.

1. **Chronic Whole Effluent Toxicity MDEL (section IV.A.1.d).** If the result of a routine chronic whole effluent toxicity test at Discharge Point 002, using the TST statistical approach, is a "Fail" at the IWC for the survival endpoint measured in the test and the percent effect for the survival endpoint is greater than or equal to 50 percent, the Discharger will be deemed out of compliance with the MDEL.

2. **Chronic Whole Effluent Toxicity MMEL (section IV.A.1.e).** If the result of a routine chronic whole effluent toxicity test at Discharge Point 002, using the TST statistical approach, is a "Fail" at the IWC, the Discharger shall conduct a maximum of two additional MMEL compliance tests during the calendar month. If one of the additional MMEL compliance test results in a "Fail" at the IWC, the Discharger will be deemed out of compliance with the MMEL.

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 Month(s)
A period of time from of the first of a month to the last day of the month (e.g., from January 1 to January 31, from April 1 to April 30, or from December 1 to December 31).

Calendar Quarter
A period of time defined as three consecutive calendar months (e.g., from January 1 to March 31, from April 1 to June 30, or from October 1 to December 31).

Calendar Year
A period of time defined as twelve consecutive calendar months (i.e., January 1 to December 31).

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
The Statewide Toxicity Provisions became effective on 25 April 2022 and include statewide numeric water quality objectives for both acute and chronic toxicity and a program of implementation to control toxicity.

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.).

WET Maximum Daily Effluent Limitation (MDEL)
For the purposes of chronic and acute aquatic toxicity, an MDEL is an effluent limitation based on the outcome of the TST approach and the resulting percent effect at the IWC.

WET Median Monthly Effluent Limit (MMEL)
For the purposes of chronic and acute aquatic toxicity, an MMEL is an effluent limitation based on a maximum of three independent toxicity tests analyzed using the TST approach during a toxicity calendar month.

WET Maximum Daily Effluent Target (MDET)
For the purposes of chronic aquatic toxicity, an MDET is a target used to determine whether a Toxicity Reduction Evaluation (TRE) should be conducted. Not meeting the MDET is not a violation of an effluent limitation.

WET Median Monthly Effluent Target (MMET)
For the purposes of chronic aquatic toxicity, an MMET is a target based on a maximum of three independent toxicity tests used to determine whether a TRE should be conducted. Not meeting the MMET is not a violation of an effluent limitation.

WET MMEL Compliance Tests
For the purposes of chronic and acute aquatic toxicity, a maximum of two tests that are used in addition to the routine monitoring test to determine compliance with the chronic and acute aquatic toxicity MMEL.

WET MMET Tests
For the purposes of chronic aquatic toxicity, for dischargers not required to comply with numeric chronic toxicity effluent limitations, MMET Tests are a maximum of two tests that are used in addition to the routine monitoring test to determine whether a TRE should be conducted.

ATTACHMENT B – MAP

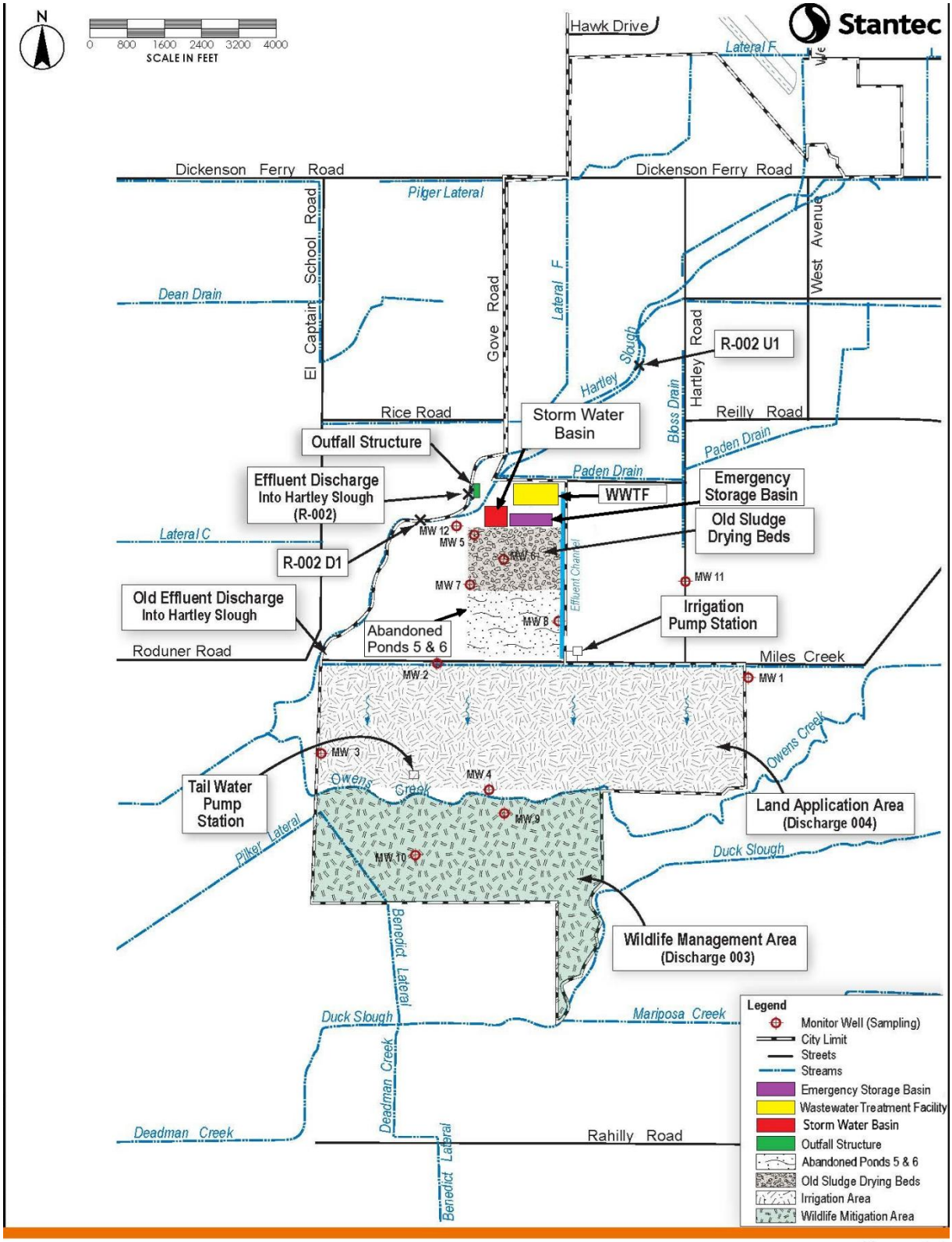

Figure B-1
Effluent Disposal Facilities Map

ATTACHMENT C – FLOW SCHEMATIC

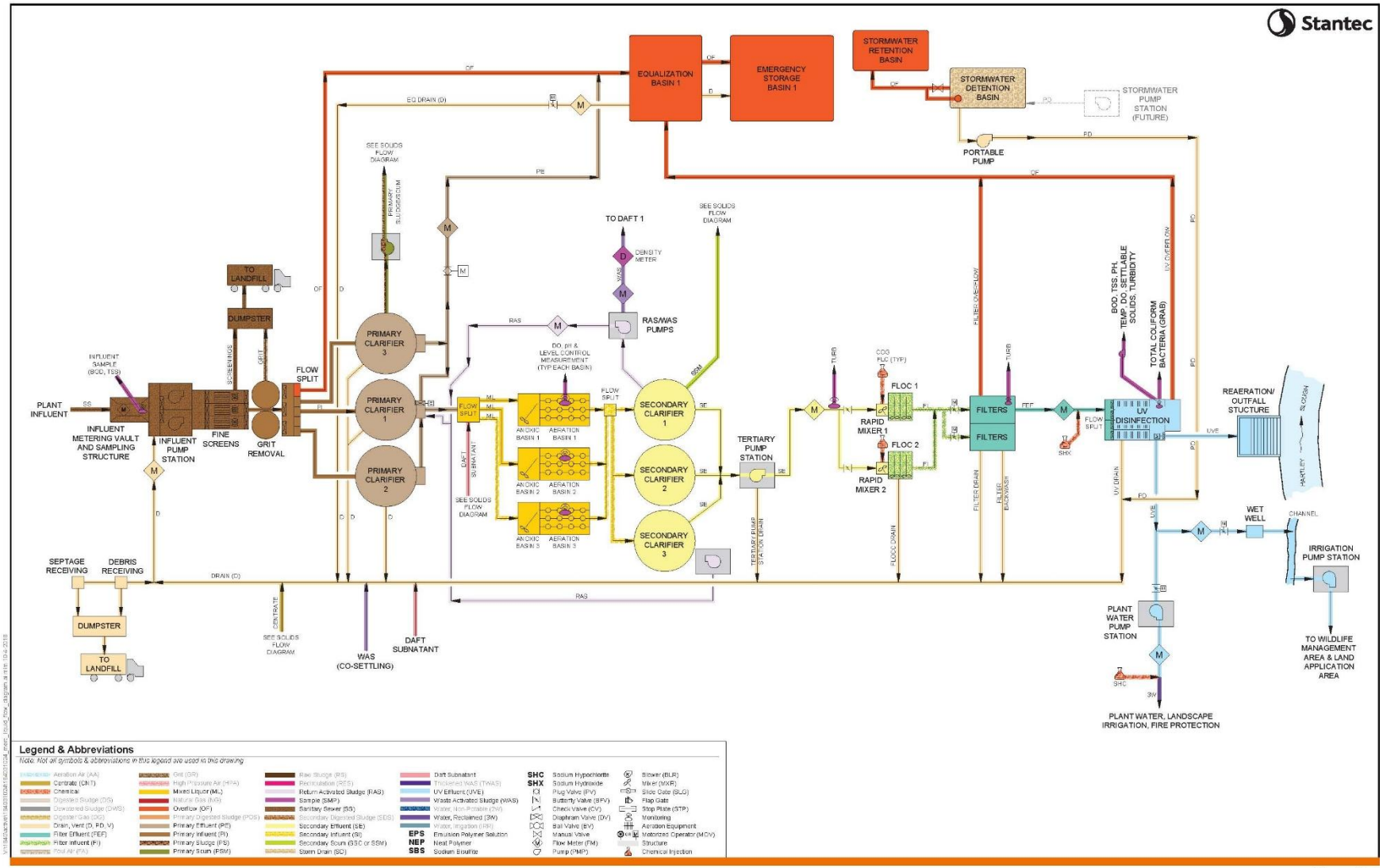

Figure C-1
Liquid Flow Diagram

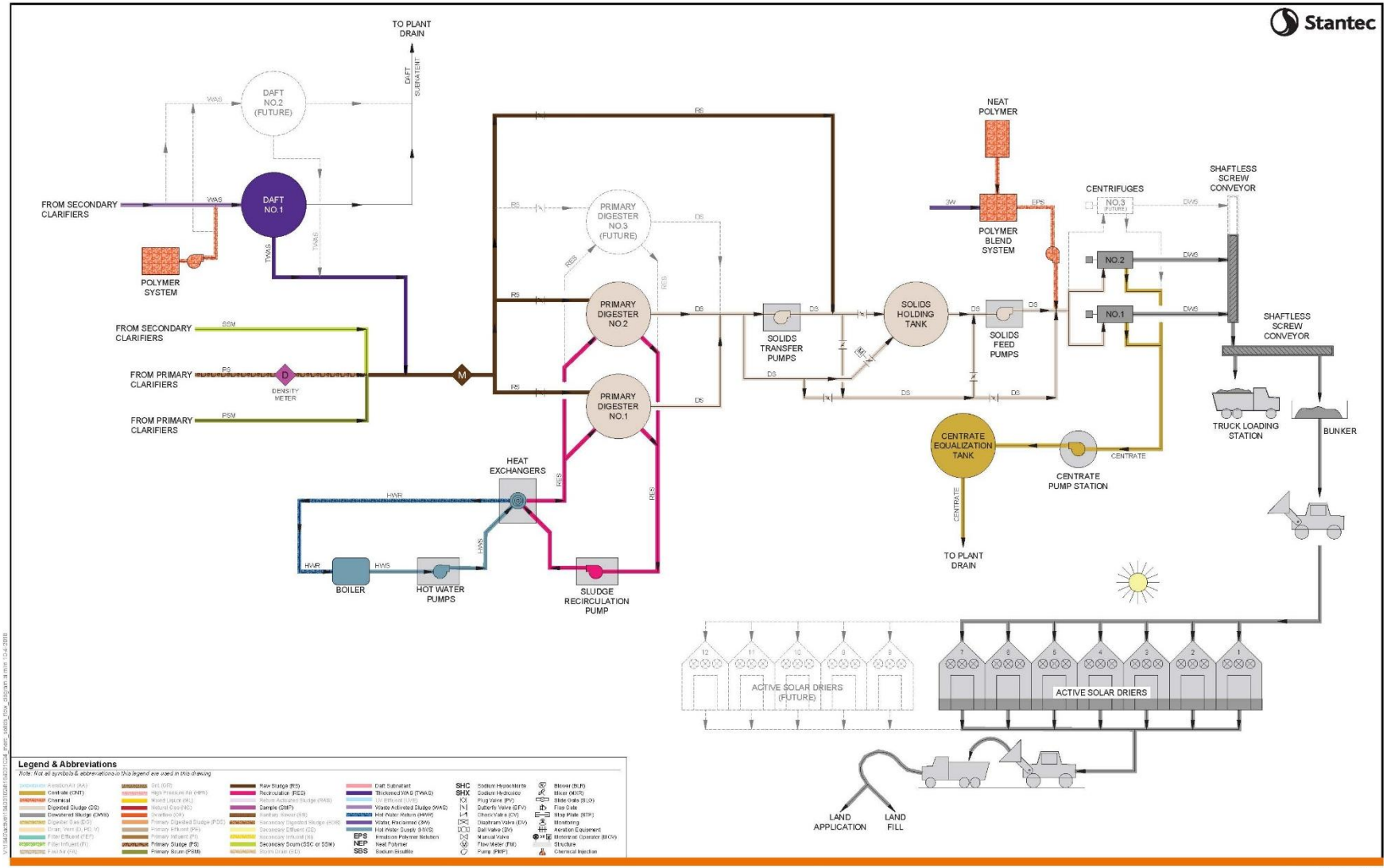

Figure C-2
Solids Flow Diagram

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.2.b 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 13350, 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Central Valley Water Board of the following (40 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)(

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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Tables

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 authorize the Central Valley Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. This MRP establishes monitoring and reporting requirements that implement federal and California requirements.

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), turbidity, temperature, and residual chlorine, such analyses performed by a non-accredited laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program for any onsite field measurements such as pH, DO, turbidity, temperature, and residual chlorine must be kept onsite in the treatment facility laboratory and shall be available for inspection by Central Valley Water Board staff. The Discharger must demonstrate sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform these field measurements. The Quality Assurance-Quality Control Program must conform to U.S. EPA guidelines or to procedures approved by the Central Valley Water Board.

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

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

F. 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.

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
	M-INF	Influent stream prior to any treatment or return flows.
002, 003, 004	M-001	Disinfected tertiary effluent after the last addition of wastes.
	R-002U1	Surface water location on Hartley Slough not to exceed 3/4 mile upstream of Discharge Point 002.

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
	R-002D1	Surface water location on Hartley Slough not to exceed 3/4 mile downstream of Discharge Point 002. Monitoring location must also be upstream of any surface water body confluence with Hartley Slough.
	UVS-001	A location where a representative sample of wastewater can be collected immediately downstream of the ultraviolet light (UV) disinfection system.
	FIL-001	Monitoring of the filter influent to be measured immediately upstream of the filter system.
	FIL-002	Monitoring of the filter effluent to be measured immediately downstream of the filters prior to the UV disinfection system.
003	WMA-003	Discharge to the Merced Wildlife Area. Latitude: 37.233535, Longitude: -120.528369
004	LAA-004	Discharge to the Land Application Area (including abandoned ponds 5&6 area). Latitude: 37.240748, Longitude: -120.524263
	MW-1 through MW-12	Underlying groundwater
	BIO-001	Biosolids at the active solar dryers, before removal for storage, re-use, or disposal
	S-001	Public water supply for the area served by the Facility
	PND-001	A location where a representative sample from the unlined emergency storage basin can be collected
	PND-002	A location where a representative sample from the lined equalization basin can be collected

Table E-1 Note:

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

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location M-INF

1. The Discharger shall monitor influent to the Facility at Monitoring Location M-INF 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
pH	standard units	Grab	1/Day

Parameter	Units	Sample Type	Minimum Sampling Frequency
Biochemical Oxygen Demand, 5-day @ 20° Celsius (BOD_5)	mg/L	24-hour Composite	3/Week
Total Suspended Solids (TSS)	mg/L	24-hour Composite	3/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. **Grab Samples.** All grab samples shall not be collected at the same time each day to get a complete representation of variations in the influent.

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

    d. **Handheld Field Meter.** A handheld field meter may be used for 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.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location M-001

1. The Discharger shall monitor disinfected tertiary-treated wastewater at Discharge Points 002, 003, and 004 at Monitoring Location M-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
pH	standard units	Grab	1/Day
Temperature	Degrees Celsius	24-hour Composite	1/Day
Biochemical Oxygen Demand, 5-day @ 20° Celsius (BOD_5)	mg/L	24-hour Composite	3/Week
BOD_5	% removal	Calculate	3/Week
Total Suspended Solids (TSS)	mg/L	24-hour Composite	3/Week
TSS	% removal	Calculate	3/Week
Electrical Conductivity @ 25° Celsius	µmhos/cm	24-hour Composite	3/Week
Dissolved Oxygen	mg/L	Grab	1/Week
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Week
Nitrate plus Nitrite, Total (as N)	mg/L	Grab	1/Week
Total Nitrogen	mg/L	Grab	1/Week
Dissolved Organic Carbon	mg/L	Grab	1/Quarter
Copper, Total Recoverable	µg/L	24-hour Composite	1/Quarter
Hardness, Total (as CaCO3)	mg/L	Grab	1/Quarter
Standard Minerals	mg/L	Grab	2/Year
Priority Pollutants and Other Constituents of Concern	(see section IX.F)	(see section IX.F)	(see section IX.F)
Whole Effluent Toxicity	(see section V)	(see section V)	(see section V)

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. **Handheld Field Meter.** A handheld field meter may be used for **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.

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

e. **Ammonia.** Ammonia samples shall be collected concurrently with whole effluent toxicity monitoring.

f. **Standard Minerals** shall include: boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus, total alkalinity (including alkalinity series: bicarbonate, carbonate and hydroxide), and hardness, and include verification that the analysis is complete (i.e., cation/anion balance).

g. **Hardness** samples shall be collected concurrently with metals samples.

h. **Nitrate and Nitrite** monitoring shall be conducted concurrently with total nitrogen sampling.

i. **Priority Pollutants.** For all priority pollutant constituents listed in Table E-3 (Bis (2-ethylhexyl) phthalate, Persistent Chlorinated Hydrocarbon Pesticides and Priority Pollutants and Other Constituents of Concern) 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).

j. **Dissolved Organic Carbon monitoring** shall be conducted concurrently with pH and hardness sampling.

k. **Whole Effluent Toxicity monitoring** shall be in accordance with section V of this MRP.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Toxicity Calendar Month, Quarter, and Year.

1. **Toxicity Calendar Month.** The toxicity calendar month is defined as the period of time beginning on the day of the initiation of the routine toxicity monitoring to the day before the corresponding day of the next month if the corresponding day exists, or if not to the last day of the next month.

2. **Toxicity Calendar Quarter.** A toxicity calendar quarter is defined as **three consecutive toxicity calendar months.** For purposes of this Order, the toxicity calendar quarters **begin on 1 January, 1 April, 1 July, and 1 October** (i.e., from 1 January to 31 March, from 1 April to 30 June, from 1 July to 30 September, and from 1 October to 31 December).

3. **Toxicity Calendar Year.** A toxicity calendar year is defined as **twelve consecutive toxicity calendar months**. For purposes of this Order, the toxicity calendar year **begins on 1 January** (i.e., 1 January to 31 December), in years in which there are at least 15 days of discharge in at least one toxicity calendar quarter.

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

1. **Instream Waste Concentration (IWC) for Chronic Toxicity.** The chronic toxicity IWC is 100 percent effluent.

2. **Routine Monitoring Frequency.** The Discharger shall perform routine chronic toxicity testing once per calendar quarter in quarters in which there are at least 15 days of discharge, concurrent with effluent ammonia sampling. While the Discharger is conducting a toxicity reduction evaluation, the routine monitoring may be reduced to two (2) tests per calendar year. When there is no effluent available to complete a routine monitoring test, MMET test, or MMEL compliance test, the test shall not be required, and subsequent routine monitoring continues at the frequency specified in the permit.

3. **Chronic Toxicity MMEL Compliance Testing (Discharge Point 002).** If a routine chronic toxicity monitoring test results in a “fail” at the IWC, then the Discharger shall complete a chronic toxicity MMEL compliance test. If the first MMEL compliance test results is a “pass”, the Discharger shall complete a second chronic toxicity MMEL compliance test. All required chronic toxicity MMEL compliance tests shall be initiated within the same toxicity calendar month as the initiation of the routine monitoring chronic toxicity test. If the first chronic toxicity MMEL compliance test results in a “fail” at the IWC, then the second chronic toxicity MMEL compliance test is unnecessary and is waived.

4. **Chronic Toxicity MMET Testing (Discharge Point 003).** If a routine chronic toxicity monitoring test results in a “fail” at the IWC, then the Discharger shall complete a chronic toxicity MMET test. If the first MMET test results in a “pass”, the Discharger shall complete a second chronic toxicity MMET test. All required chronic toxicity MMET tests shall be initiated within the same toxicity calendar month as the initiation of the routine chronic toxicity monitoring test. If the first chronic toxicity MMET test results in a “fail” at the IWC, then the second chronic toxicity MMET test is unnecessary and is waived.

5. **Additional Routine Monitoring Tests for TRE Determination.** A TRE is required when there is any combination of two or more MDEL or MMEL violations

or any combination of two or more MDET or MMET exceedances within a single toxicity calendar month or within two successive toxicity calendar months. In order to determine if a TRE is necessary when there is only one MDEL/MMEL violation or one MDET/MMET exceedance in a single toxicity calendar month, an additional routine monitoring test is required in the successive toxicity calendar month. This additional routine monitoring test is not required if the Discharger is already conducting a TRE. This additional routine monitoring test could result in a violation of the MDEL/MDET, and/or need to conduct additional MMEL compliance tests or MMET tests per section V.B.3 or V.B.4 above.

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

7. **Test Species.** The testing shall be conducted using the most sensitive species, which is *Ceriodaphnia dubia*. The Discharger shall conduct chronic toxicity tests with *Ceriodaphnia dubia*, unless otherwise specified in writing by the Executive Officer (see Section V.F.2 for more information on the determination of the most sensitive species).

8. **Test Methods.** Discharger shall conduct the chronic toxicity tests on effluent samples at the instream waste concentration for the discharge in accordance with species and test methods in Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA/821/R02/013, 2002; Table IA, 40 C.F.R. part 136).

9. **Dilution and Control Water.** Dilution water and control water shall be prepared and used as specified in the test methods manual. If dilution water and control water is different from test organism culture water, then a second control using culture water shall also be used.

10. **Test Failure.** If the effluent chronic toxicity test does not meet all test acceptability criteria (TAC) specified in the referenced test method in EPA/821-R-02-013, the Discharger must conduct a Replacement Test as soon as possible, as specified in subsection B.11, below.

11. **Replacement Test.** When a required toxicity test for routine monitoring, MMET test, or MMEL compliance test is not completed, a new toxicity test to replace the toxicity test that was not completed shall be initiated as soon as possible. The new toxicity test shall replace the routine monitoring, MMET test, or MMEL compliance tests, as applicable, for the toxicity calendar month in which the toxicity test that was not completed was required to be initiated, even if the new toxicity test is initiated in a subsequent month. The new toxicity test for routine monitoring, MMET test, or MMEL compliance test, as applicable, and any MMET test or MMEL compliance tests required to be conducted due to the results of the new toxicity test shall be used to determine compliance with the effluent limitations or to determine if the MMET and the MDET are met for the toxicity calendar month in which the toxicity test that was not completed was required to be initiated. The new toxicity test and any MMET tests or MMEL compliance tests

required to be conducted due to the results of the new toxicity test shall not be used to substitute for any other required toxicity tests.

Scenarios could occur in which a test is not initiated by a Discharger within the required time period. When this is caused by circumstances outside of the Discharger's control, that were not preventable with the reasonable exercise of care, the Central Valley Water Board will not require the test to be initiated within the originally required time period, provided that the Discharger promptly initiates, and ultimately completes, a replacement test. In such cases, the Central Valley Water Board must determine that the circumstances were not preventable with the reasonable exercise of care.

C. Quality Assurance and Additional Requirements. Quality assurance measures, instructions, and other recommendations and requirements are found in the test methods manual previously referenced. Additional requirements are below.

1. The discharge is subject to determination of "Pass" or "Fail" from a chronic toxicity test using the Test of Significant Toxicity (TST) statistical t-test approach 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.

2. The null hypothesis (Ho) for the TST statistical approach is:

   Mean discharge IWC response ≤ RMD x Mean control response, where the chronic RMD = 0.75.

   A test result that rejects this null hypothesis is reported as "Pass." A test result that does not reject this null hypothesis is reported as "Fail."

3. The relative "Percent Effect" at the discharge IWC is defined and reported as:

   Percent Effect = ((Mean control response – Mean discharge IWC response) / Mean control response) x 100.

   This is a t-test (formally Student's t-Test), a statistical analysis comparing two sets of replicate observations, i.e., a control and IWC. The purpose of this statistical test is to determine if the means of the two sets of observations are different (i.e., if the IWC differs from the control, the test result is "Fail"). The Welch's t-test employed by the TST statistical approach is an adaptation of Student's t-test and is used with two samples having unequal variances.

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

E. WET Testing Reporting Requirements. The Discharger shall submit the full laboratory report for all toxicity testing as an attachment to CIWQS for the reporting period (e.g., monthly, quarterly, semi-annually or annually) and provide the data (i.e., Pass/Fail) in the PET tool for uploading into CIWQS. The laboratory report shall include:

1. The valid toxicity test results for the TST statistical approach, reported as "Pass" or "Fail" and "Percent Effect" at the IWC for the discharge, the dates of sample collection and initiation of each toxicity test, all results for effluent parameters monitored concurrently by the lab conducting the toxicity test(s).

2. 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.

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

F. Most Sensitive Species Screening. The Discharger shall perform its initial species sensitivity screening to evaluate the most sensitive species as follows **and the results submitted with the Report of Waste Discharge**.

1. **Frequency of Testing for Species Sensitivity Screening.** Species sensitivity screening for chronic toxicity shall include, at a minimum, chronic WET testing four consecutive calendar quarters using the water flea (*Ceriodaphnia dubia*), fathead minnow (*Pimephales promelas*), and green algae (*Pseudokirchneriella subcapitata, also known as Selenastrum capricornutum*). The tests shall be performed at an IWC of no less than 100 percent effluent.

2. **Determination of Most Sensitive Species.** If a single test in the species sensitivity screening testing results in a "Fail" using the TST statistical approach, then the species used in that test shall be established as the most sensitive species. If there is more than a single test that results in a "Fail", then of the species with results of a "Fail", the species that exhibits the highest percent effect shall be established as the most sensitive species. If none of the tests in the species sensitivity screening results in a "Fail", but at least one of the species exhibits a percent effect greater than **10** percent, then the single species that exhibits the highest percent effect shall be established as the most sensitive species. In all other circumstances, the Executive Officer shall have discretion to determine which single species is the most sensitive considering the test results from the species sensitivity screening.

   The Executive Officer shall have discretion to allow the temporary use of the next appropriate species as the most sensitive species when the Discharger submits documentation and the Executive Officer determines that the Discharger has encountered unresolvable test interference or cannot secure a reliable supply of test organisms. The "next appropriate species" is a species in Table 1 of the Statewide Toxicity Provisions in the same test method classification (e.g., chronic

aquatic toxicity test methods, acute aquatic toxicity test method), in the same salinity classification (e.g., freshwater or marine), and in the same taxon as the most sensitive species. When there are no other species in Table 1 in the same taxon as the most sensitive species (e.g., freshwater chronic toxicity tests), the "next appropriate species" is the species exhibiting the highest percent effect at the IWC tested in the species sensitivity screening other than the most sensitive species.

The most sensitive species shall be used for chronic toxicity testing for the remainder of the permit term. If the most sensitive species cannot be determined from the species sensitivity screening discussed above, the Discharger shall rotate the test species as the most sensitive species every toxicity calendar year as follows:

a. *Ceriodaphnia dubia* (survival and reproduction test) for the remainder of the toxicity calendar year this Order is effective;

b. *Pimephales promelas* (larval survival and growth test) for the entire toxicity calendar year following the toxicity calendar year this Order is effective;

c. *Pseudokirchneriella subcapitata* (growth test) for the entire toxicity calendar year of the second year following the toxicity calendar year this Order is effective; and

d. Cycling back to *Ceriodaphnia dubia* (survival and reproduction test) after *Pseudokirchneriella subcapitata* (growth test) and through the same rotation.

If a single test exhibits toxicity, demonstrated by a test that results in a "Fail" using the TST statistical approach, then the species used in that test shall be established as the most sensitive species until a subsequent Order rescinding this Order becomes effective.

G. Toxicity Reduction Evaluations (TRE)

1. **TRE Implementation.** The Discharger is required to conduct a TRE when there is any combination of two or more MDEL or MMEL violations or two or more MDET or MMET exceedances within a single toxicity calendar month or within two successive toxicity calendar months. In addition, if other information indicates toxicity (e.g., results of additional monitoring, fish kills, intermittent recurring toxicity), the Central Valley Water Board may require a TRE. A TRE may also be required when there is no effluent available to complete a routine monitoring test, MMET test, or MMEL compliance test.

   a. **Preparation and Implementation of Detailed TRE Action Plan.** The Discharger shall conduct TREs in accordance with an approved TRE Work Plan. Within 30 days of the test result that triggered the TRE, the Discharger shall submit to the Executive Officer a TRE Action Plan. The

TRE Action Plan shall include the following information, and comply with additional conditions set by the Executive Officer:

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

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

iii. A schedule for these actions, progress reports, and the final report.

b. The Central Valley Water Board recognizes that toxicity may be episodic and identification of causes and reduction of sources of toxicity may not be successful in all cases. The TRE may be ended at any stage if monitoring finds there is no longer toxicity.

2. **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 E-16. If the Executive Officer does not disapprove the work plan within 60 days, the work plan shall become effective. 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 of adequate detail to allow the Discharger to immediately initiate a TRE and shall be developed in accordance with U.S. EPA guidance as discussed below.

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

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

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

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

e. 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.

f. 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.

g. 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.

h. 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.

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

VI. LAND DISCHARGE MONITORING REQUIREMENTS

A. Monitoring Location Wildlife Management Area

1. The Discharger shall monitor the discharge to the Wildlife Management Area at Monitoring Location WMA-003 in accordance with Table E-4:

Table E-4 Land Discharge Monitoring Requirements – WMA-003

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous
Berm Seepage	Not applicable	Observation	1/Week
Odors	Not applicable	Observation	1/Week
Freeboard	Feet (nearest 0.1 foot)	Observation	1/Week

B. Monitoring Location Land Application Area

1. The Discharger shall monitor the Land Application Area at Monitoring Location LAA-004 in accordance with Table E-5 and the testing requirements described in section VI.B.2. below:

Table E-5. Land Discharge Monitoring Requirements – LAA-004

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous
Rainfall	Inches	Observation	1/Day
Wastewater Application Rate	gal/acre/day	Calculated	1/Day
Total Nitrogen Loading Rate (from all sources)	lbs/acre/month	Calculated	1/Month
Total Dissolved Solids Loading Rate	lbs/acre/month	Calculated	1/Month
Biosolids Applied	cubic yards/year	Calculated	1/Year

Parameter	Units	Sample Type	Minimum Sampling Frequency
	and dry tons/year		
Plant Available Nitrogen (from all sources)	lbs/acre/year	Calculated	1/Year
Residual Nitrogen (from all sources)	lbs/acre/year	Calculated	1/Year
Type of Crop	Not applicable	Not applicable	Each Harvest
Crop Yield	tons/acre	Calculated	Each Harvest
Hydraulic/Nutrient Balance	varies	Calculated	1/Year

2. **Table E-5 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-5:

   a. **Application Rate Calculations.** Nitrogen and salt loading rates from wastewater shall be calculated using the effluent application rate and the monthly average concentrations of total nitrogen and total dissolved solids. The nitrogen loading rate from fertilizer shall be calculated from any sources other than wastewater (i.e., organic matter and manure).

   b. **Hydraulic/Nutrient Balance.** The hydraulic/nutrient balance shall include the total water application to cropland (feet per year), including treated effluent and other supplemental irrigation water; the total nutrient loading from wastewater, biosolids, and chemical fertilizers; residual nitrogen; and amount of nutrients removed through harvest of the crop.

VII. RECYCLING WATER MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS

A. Monitoring Location Hartley Slough

1. The Discharger shall monitor Hartley Slough at Monitoring Locations R-002U1 and R-002D1 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
Dissolved Oxygen	mg/L	Grab	1/Week
Dissolved Oxygen	% Saturation	Grab	1/Week
Turbidity	NTU	Grab	1/Week
pH	standard units	Grab	1/Week

Parameter	Units	Sample Type	Minimum Sampling Frequency
Temperature	°Celsius or °Fahrenheit	Grab	1/Week
Electrical Conductivity @ 25°Celsius	µmhos/cm	Grab	1/Week
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Month
Dissolved Organic Carbon	mg/L	Grab	1/Quarter
Priority Pollutants and Other Constituents of Concern	(See Section IX.F)	(See Section IX.F)	(See Section IX.F)

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. **Handheld Field Meter.** A handheld field meter may be used for dissolved oxygen, 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. **Temperature** and **pH** shall be recorded at the time of **ammonia** sample collection.

   d. **Hardness** samples shall be collected concurrently with the M-001 metals samples.

   e. **Priority Pollutants.** For all priority pollutant constituents listed in Table E-3 (Bis (2-ethylhexyl) phthalate, Persistent Chlorinated Hydrocarbon Pesticides and Priority Pollutants and Other Constituents of Concern) 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).

   f. **Priority Pollutants.** Sampling for priority pollutants must be concurrent with sampling for priority pollutants at M-001.

g. **Dissolved Organic Carbon** monitoring shall be conducted concurrently with pH and hardness sampling.

3. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by R-002U1 and R-002D1. 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.

B. Groundwater Monitoring

1. The Discharger shall conduct groundwater monitoring at MW-1 through MW-12, and any new groundwater monitoring wells in accordance with Table E-7 and the testing requirements described in section VIII.B.2 below:

Table E-7. Groundwater Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency
Depth to Groundwater	±0.01 feet	Measurement	2/Year
Groundwater Elevation	±0.01 feet	Calculated	2/Year
Gradient	feet/feet	Calculated	1/Year
Gradient Direction	degrees	Calculated	1/Year
Arsenic	µg/L	Grab	2/Year
Electrical Conductivity @ 25°C	µmhos/cm	Grab	2/Year
Total Nitrogen	mg/L	Grab	2/Year
Nitrate plus Nitrite Nitrogen, Total (as N)	mg/L	Grab	2/Year
Ammonia Nitrogen, Total (as N)	mg/L	Grab	2/Year
Total Kjeldahl Nitrogen (as N)	mg/L	Grab	2/Year
pH	standard units	Grab	2/Year
Total Dissolved Solids	mg/L	Grab	2/Year

Parameter	Units	Sample Type	Minimum Sampling Frequency
Total Coliform Organisms	MPN/100 mL	Grab	2/Year
Total Organic Carbon	mg/L	Grab	2/Year
Standard Minerals	various	Grab	2/Year
Sulfate as SO_4	mg/L	Grab	2/Year

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. **Prior to construction and/or beginning a sampling program** of any new groundwater monitoring wells, the Discharger shall submit plans and specifications to the Central Valley Water Board for approval. Once installed, all new wells shall be added to the monitoring network (which currently consists of Monitoring Wells MW-1 through MW-12) and shall be sampled and analyzed according to the schedule below. All samples shall be collected using approved U.S. EPA methods.

   b. **Prior to purging or sampling**, the groundwater elevations shall be determined based on depth-to-water measurements from a surveyed measuring point elevation on the well. Depth to groundwater shall be measured to the nearest 0.01 feet. The groundwater elevation shall be used to calculate the direction and gradient of groundwater flow, which must be reported.

   c. **After measuring water levels and prior to collecting samples,** each monitoring well shall be adequately purged to remove water that has been standing within the well screen and casing that may not be chemically representative of formation water. Purging shall continue until pH, EC, and turbidity have stabilized. Depending on the hydraulic conductivity of the geologic setting, the volume removed during purging is typically from 3 to 5 well casing volumes.

   d. **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.

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

   f. **Sampling frequency** of 2/Year shall be spaced evenly throughout the year with approximately six months between sampling events.

g. **Filtration.** For constituents with Secondary MCLs listed in California Code of Regulations Title 22 Table 64449-A (e.g., iron and manganese), samples shall be filtered with a 1.5-micron filter prior to preservation, digestion, and analysis. For all other constituents, samples shall be filtered with a 0.45-micron filter prior to preservation, digestion, and analysis.

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids

1. Monitoring Location BIO-001

a. The Discharger shall monitor biosolids at Monitoring Location BIO-001 as specified below. Biosolids monitoring is required to meet pretreatment requirements under reporting requirement in Section X.D.6 of this MRP.

b. A composite sample of end-of-process biosolids shall be collected at Monitoring Location BIO-001 at the frequency and time specified in Section X.D.6 of this MRP and analyzed for the pollutants specified in Section X.D.6 of this MRP. Biosolids shall also be sampled in accordance with EPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989.

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

B. Pond Monitoring

1. Monitoring Location PND-001

a. The Discharger shall keep a log regarding the use of the emergency storage pond. In particular, the Discharger shall record the following when any type of wastewater is directed to the pond:

i. The date(s) when the wastewater is directed to the pond;

ii. The type(s) of wastewater (e.g., untreated due to plant upset, tertiary treated, etc.) directed to the pond;

iii. The total volume of wastewater directed to the ponds (volume may be estimated);

iv. How the wastewater was managed while in the emergency storage pond, when it was returned to the Facility’s treatment system, and the measures taken to prevent a recurrence of the issue; and,

v. The daily freeboard in the basin.

b. The Discharger shall monitoring the emergency storage pond at Monitoring Location PND-001 in accordance with Table E-8 and the testing requirements in section IX.B.2. below. When the emergency storage basin holds wastewater for less than seven consecutive days, monitoring shall not be required. **If monitoring is not required, the Discharger shall so state in the SMR.**

Table E-8. Pond Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling
Freeboard	Feet	Observation	1/Day
pH	Standard Units	Grab	1/Month
Odors		Observation	1/Month
Dissolved Oxygen	mg/L	Grab	1/Month

2. **Table E-8 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-8:

   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. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 C.F.R. 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.

   c. **Field Meter.** A hand-held field meter may be used for **dissolved oxygen 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 MRP shall be maintained at the Facility.

3. **Monitoring Location PND-002**

   a. The Discharger shall conduct regular observations and inspections of the lined equalization basin at the Facility. Inspection frequency of the lined equalization basin shall be no less than 1/Year. A summary of the inspections, including the dates, findings, and photo documentation of the inspection, including the berm condition, shall be included with the Annual Operations Report, as specified below in section X.D.2.f.

b. Pursuant to Construction, Operation and Maintenance Specifications, section VI.C.4.h, the Discharger shall regularly inspect the condition of the constructed basin surfaces to ensure the integrity of the lined structure and prevent infiltration of waste constituents into soils in a mass or concentration that may violate groundwater limitations in section V.B. of this Order. The Discharger shall maintain and repair the basin and storage facilities necessary to ensure the integrity of the pond and leakage from the units is minimized. Necessary repairs shall be completed in reasonable timeframes that are consistent with the severity of the impairment and potential for impact to water quality.

C. Municipal Water Supply

1. **Monitoring Location S-001.** The Discharger shall monitor the municipal water supply at S-001 in accordance with Table E-9 and the testing requirements described in section IX.C.2. below.

Table E-9. Municipal Water Supply Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling
Total Dissolved Solids	mg/L	Grab	1/Year
Electrical Conductivity @ 25° Celsius	µmhos/cm	Grab	1/Year
Standard Minerals	mg/L	Grab	1/Three Years

2. **Table E-9 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-9:

   a. **Applicable to all parameters.** Pollutants shall be analyzed using the analytical methods described in 40 CFR part 136; or by methods approved by the Central Valley Water Board or the State Water Board. 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. If the water supply is from more than one source, the **total dissolved solids** and **electrical conductivity** shall be reported as a weighted average and include copies of supporting calculations.

   c. **Standard minerals** shall be conducted coincident with monitoring required by the Division of Drinking Water and shall include all major cations and anions and include verification that the analysis is complete (i.e., cation/anion balance).

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

1. **Monitoring Locations FIL-001, FIL-002, and UVS-001.** The Discharger shall monitor the filtration system at Monitoring Locations FIL-001 and FIL-002 and the

UV disinfection system at Monitoring Location UVS-001 in accordance with Table E-10 and the testing requirements described in section IX.D.2 below:

Table E-10. Filtration System and UV Disinfection System Monitoring Requirements

Parameter	Units	Sample Type	Monitoring Location(s)	Minimum Sampling Frequency
Flow	MGD	Meter	UVS-001	Continuous
Turbidity	NTU	Meter	FIL-001 and FIL-002	Continuous
Number of UV banks in operation	Number	Observation	N/A	Continuous
UV Transmittance	Percent (%)	Meter	UVS-001	Continuous
UV Dose	mJ/cm^2	Calculated	N/A	Continuous
Total Coliform Organisms	MPN/100mL	Grab	UVS-001	1/Day
Filtration Rate	gpm/ft^2	Meter	FIL-001	1/Day

2. **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.** 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. 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. The Discharger shall not decrease power settings or reduce the number of UV lamp banks in operation while the continuous analyzers are out of service and water is being disinfected.

   c. **Turbidity and Total Coliform Organisms.** Report daily average and maximum turbidity. Turbidity monitoring at FIL-001 is only required if coagulation is not used. If turbidity at FIL-002 exceeds 10 NTU when coagulation is used or 2 NTU when coagulation is not used, and the wastewater is not diverted, the Discharger shall collect a sample as soon as practicable for total coliform at UVS-001.

d. **Total Coliform Organisms.** Collection of total coliform organism samples shall be done directly after disinfection from the end of the lead UV channel or other location approved by the Executive Officer.

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

E. Pyrethroid Pesticides Monitoring

1. **Water Column Chemistry Monitoring Requirements.** The Discharger shall conduct effluent and receiving water (Hartley Slough) baseline monitoring in accordance with Table E-11. Quarterly monitoring shall be conducted for **one year beginning with the first quarter of 2027** concurrent with the Effluent and Receiving Water Characterization Monitoring. 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-11.

   The monitoring shall be conducted in the effluent at **Monitoring Location M-001** and downstream receiving water at **Monitoring Location R-002D1** and the results of such monitoring be submitted to the Central Valley Water Board with the quarterly self-monitoring reports. The Discharger shall use one of the Environmental Laboratory Accreditation Program (ELAP)-accredited laboratories with analytical methods that have been approved by the Central Valley Water Board's Executive Officer for use in assessing compliance with the Basin Plan. 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-11. Pyrethroid Pesticides Monitoring

Parameter	CAS Number	Sample Units	Sample Type	Analytical Method	Reporting Level
Total Bifenthrin	82657-04-3	ng/L	Grab	See Table Note 1	1.3
Total Cyfluthrin	68359-37-5	ng/L	Grab	See Table Note 1	1.3

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

Table E-11 Notes:

1. The Discharger shall use ELAP-accredited laboratories and methods validated by Central Valley Water Board staff for pyrethroid pesticides water column chemistry monitoring. 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).

   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 in Table 4-2 of the Basin Plan.

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 an individual pyrethroid pesticide that is in the freely dissolved phase s(ng/L),

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

KOC = organic carbon-water partition coefficient for the individual pyrethroid pesticide (L/kg),

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

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

KDOC = 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 KOC and KDOC 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 KOC and KDOC in the above equation:

Table E-12. Pyrethroid Pesticide Partition Coefficients

Pyrethroid Pesticide	Receiving water KOC (L/kg)	Receiving water KDOC (L/kg)	Effluent KOC (L/kg)	Effluent KDOC (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 Hartley Slough, the Discharger shall monitor the acute toxicity of the downstream receiving water using U.S. 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 U.S. 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.F of this MRP for specific dates). Downstream receiving water monitoring shall be conducted at monitoring location R-002D1 when discharging to Hartley Slough and the results of such monitoring be 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.

3. **Exceedance of Numeric Triggers.** If the Pyrethroid Pesticides Water Column Chemistry Monitoring identifies an exceedance of any pyrethroid pesticides numeric trigger, the Discharger shall notify the Central Valley Water Board in writing of the exceedance and the Discharger's intent to submit a Pyrethroid Management Plan. Monitoring results should be reviewed quarterly, and the Discharger shall notify the Central Valley Water Board of any exceedances of the Pyrethroid numeric triggers as soon as possible. The Pyrethroid Management Plan, as outlined in section VI.C.3 of this Order, shall be submitted to the Central Valley Water Board within one year from the date that an exceedance is identified by either the Discharger or Central Valley Water Board staff. Pyrethroid concentrations that exceed the acute and/or chronic pyrethroid numeric triggers, as outlined in Table 4-2 of the Basin Plan, constitute an exceedance of a numeric trigger. In the absence of a pyrethroid numeric trigger exceedance, observed toxicity in the water column does not constitute a violation of the pyrethroid conditional prohibition.

   Identification of an exceedance provides the information that the Pyrethroid Pesticides Water Column Chemistry Monitoring was designed to collect, per Chapter V of the Basin Plan; therefore, once an exceedance is identified, the Discharger may cease conducting subsequent Pyrethroid Pesticides Monitoring.

F. Effluent and Receiving Water Characterization

1. **Monitoring Frequency**

   a. **Effluent Sampling.** Samples shall be collected from the effluent (**Monitoring Location M-001**) quarterly between 1 January 2027 and 31 December 2027.

   b. **Receiving Water Sampling.** Samples shall be collected from the upstream receiving water (**Monitoring Location R-002U1**) quarterly between 1 January 2027 and 31 December 2027.

2. **Analytical Methods.** Constituents shall be collected and analyzed consistent with the Discharger's Analytical Methods Report (MRP, X.D.2) 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, if receiving water is sampled.

3. **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. 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 E-16.

4. The Discharger shall conduct effluent and receiving water characterization monitoring in accordance with Table E-13 and the testing requirements described in section IX.F.5 below.

Table E-13. Effluent and Receiving Water Characterization Monitoring

VOLATILE ORGANICS

CTR Number	Volatile Organic Parameters	CAS Number	Units	Effluent Sample Type
25	2-Chloroethyl vinyl Ether	110-75-8	µg/L	Grab
17	Acrolein	107-02-8	µg/L	Grab
18	Acrylonitrile	107-13-1	µg/L	Grab
19	Benzene	71-43-2	µg/L	Grab
20	Bromoform	75-25-2	µg/L	Grab
21	Carbon Tetrachloride	56-23-5	µg/L	Grab

CTR Number	Volatile Organic Parameters	CAS Number	Units	Effluent Sample Type
22	Chlorobenzene	108-90-7	µg/L	Grab
24	Chloroethane	75-00-3	µg/L	Grab
26	Chloroform	67-66-3	µg/L	Grab
35	Methyl Chloride	74-87-3	µg/L	Grab
23	Dibromochloromethane	124-48-1	µg/L	Grab
27	Dichlorobromomethane	75-27-4	µg/L	Grab
36	Methylene Chloride	75-09-2	µg/L	Grab
33	Ethylbenzene	100-41-4	µg/L	Grab
89	Hexachlorobutadiene	87-68-3	µg/L	Grab
34	Methyl Bromide (Bromomethane)	74-83-9	µg/L	Grab
94	Naphthalene	91-20-3	µg/L	Grab
38	Tetrachloroethylene (PCE)	127-18-4	µg/L	Grab
39	Toluene	108-88-3	µg/L	Grab
40	trans-1,2-Dichloroethylene	156-60-5	µg/L	Grab
43	Trichloroethylene (TCE)	79-01-6	µg/L	Grab
44	Vinyl Chloride	75-01-4	µg/L	Grab
	Methyl-tert-butyl ether (MTBE)	1634-04-4	µg/L	Grab
41	1,1,1-Trichloroethane	71-55-6	µg/L	Grab
42	1,1,2-Trichloroethane	79-00-5	µg/L	Grab
28	1,1-Dichloroethane	75-34-3	µg/L	Grab
30	1,1-Dichloroethylene (DCE)	75-35-4	µg/L	Grab
31	1,2-Dichloropropane	78-87-5	µg/L	Grab
32	1,3-Dichloropropylene	542-75-6	µg/L	Grab
37	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	Grab
101	1,2,4-Trichlorobenzene	120-82-1	µg/L	Grab
29	1,2-Dichloroethane	107-06-2	µg/L	Grab
75	1,2-Dichlorobenzene	95-50-1	µg/L	Grab
76	1,3-Dichlorobenzene	541-73-1	µg/L	Grab
77	1,4-Dichlorobenzene	106-46-7	µg/L	Grab

SEMI-VOLATILE ORGANICS

CTR Number	Semi-Organic Volatile Parameters	CAS Number	Units	Effluent Sample Type
60	Benzo(a)Anthracene	56-55-3	µg/L	Grab
85	1,2-Diphenylhydrazine	122-66-7	µg/L	Grab
45	2-Chlorophenol	95-57-8	µg/L	Grab
46	2,4-Dichlorophenol	120-83-2	µg/L	Grab
47	2,4-Dimethylphenol	105-67-9	µg/L	Grab
49	2,4-Dinitrophenol	51-28-5	µg/L	Grab
82	2,4-Dinitrotoluene	121-14-2	µg/L	Grab
55	2,4,6-Trichlorophenol	88-06-2	µg/L	Grab
83	2,6-Dinitrotoluene	606-20-2	µg/L	Grab

CTR Number	Semi-Organic Volatile Parameters	CAS Number	Units	Effluent Sample Type
50	2-Nitrophenol	88-75-5	µg/L	Grab
71	2-Chloronaphthalene	91-58-7	µg/L	Grab
78	3,3-Dichlorobenzidine	91-94-1	µg/L	Grab
62	Benzo(b)Fluoranthene	205-99-2	µg/L	Grab
52	4-Chloro-3-methylphenol	59-50-7	µg/L	Grab
48	2-Methyl-4,6-Dinitrophenol	534-52-1	µg/L	Grab
51	4-Nitrophenol	100-02-7	µg/L	Grab
69	4-Bromophenyl Phenyl Ether	101-55-3	µg/L	Grab
72	4-Chlorophenyl Phenyl Ether	7005-72-3	µg/L	Grab
56	Acenaphthene	83-32-9	µg/L	Grab
57	Acenaphthylene	208-96-8	µg/L	Grab
58	Anthracene	120-12-7	µg/L	Grab
59	Benzidine	92-87-5	µg/L	Grab
61	Benzo(a)Pyrene	50-32-8	µg/L	Grab
63	Benzo(ghi)Perylene	191-24-2	µg/L	Grab
64	Benzo(k)Fluoranthene	207-08-9	µg/L	Grab
65	Bis (2-Chloroethoxy) Methane	111-91-1	µg/L	Grab
66	Bis (2-Chloroethyl) Ether	111-44-4	µg/L	Grab
67	Bis (2-Chloroisopropyl) Ether	108-60-1	µg/L	Grab
68	Bis(2-Ethylhexyl) Phthalate	117-81-7	µg/L	Grab
70	Butylbenzyl Phthalate	85-68-7	µg/L	Grab
73	Chrysene	218-01-9	µg/L	Grab
81	Di-n-butyl Phthalate	84-74-2	µg/L	Grab
84	Di-n-Octyl Phthalate	117-84-0	µg/L	Grab
74	Dibenzo(a,h)anthracene	53-70-3	µg/L	Grab
79	Diethyl Phthalate	84-66-2	µg/L	Grab
80	Dimethyl Phthalate	131-11-3	µg/L	Grab
86	Fluoranthene	206-44-0	µg/L	Grab
87	Fluorene	86-73-7	µg/L	Grab
88	Hexachlorobenzene	118-74-1	µg/L	Grab
90	Hexachlorocyclopentadiene	77-47-4	µg/L	Grab
91	Hexachloroethane	67-72-1	µg/L	Grab
92	Indeno(1,2,3-cd) Pyrene	193-39-5	µg/L	Grab
93	Isophorone	78-59-1	µg/L	Grab
98	N-Nitrosodiphenylamine	86-30-6	µg/L	Grab
96	N-Nitrosodimethylamine	62-75-9	µg/L	Grab
97	N-Nitrosodi-n-Propylamine	621-64-7	µg/L	Grab
95	Nitrobenzene	98-95-3	µg/L	Grab
53	Pentachlorophenol (PCP)	87-86-5	µg/L	Grab
99	Phenanthrene	85-01-8	µg/L	Grab
54	Phenol	108-95-2	µg/L	Grab
100	Pyrene	129-00-0	µg/L	Grab

INORGANICS

CTR Number	Inorganic Parameters	CAS Number	Units	Effluent Sample Type
NL	Aluminum	7429-90-5	µg/L	24-hour Composite
1	Antimony, Total	7440-36-0	µg/L	24-hour Composite
2	Arsenic, Total	7440-38-2	µg/L	24-hour Composite
15	Asbestos	1332-21-4	µg/L	24-hour Composite
3	Beryllium, Total	7440-41-7	µg/L	24-hour Composite
4	Cadmium, Total	7440-43-9	µg/L	24-hour Composite
5a	Chromium, Total	7440-47-3	µg/L	24-hour Composite
6	Copper, Total	7440-50-8	µg/L	24-hour Composite
	Iron, Total	7439-89-6	µg/L	24-hour Composite
7	Lead, Total	7439-92-1	µg/L	24-hour Composite
8	Mercury, Total	7439-97-6	µg/L	Grab
NL	Mercury, Methyl	22967-92-6	µg/L	Grab
NL	Manganese, Total	7439-96-5	µg/L	24-hour Composite
9	Nickel, Total	7440-02-0	µg/L	24-hour Composite
10	Selenium, Total	7782-49-2	µg/L	24-hour Composite
11	Silver, Total	7440-22-4	µg/L	24-hour Composite
12	Thallium, Total	7440-28-0	µg/L	24-hour Composite
13	Zinc, Total	7440-66-6	µg/L	24-hour Composite

NON-METALS/MINERALS

CTR Number	Non-Metal/Mineral Parameters	CAS Number	Units	Effluent Sample Type
NL	Boron	7440-42-8	µg/L	24-hour Composite
NL	Chloride	16887-00-6	mg/L	24-hour Composite
14	Cyanide, Total (as CN)	57-12-5	µg/L	Grab
NL	Sulfate	14808-79-8	mg/L	24-hour Composite
NL	Sulfide (as S)	5651-88-7	mg/L	24-hour Composite

PESTICIDES/PCBs/DIOXINS

CTR Number	Pesticide/PCB/Dioxin Parameters	CAS Number	Units	Effluent Sample Type
110	4,4-DDD	72-54-8	µg/L	24-hour Composite
109	4,4-DDE	72-55-9	µg/L	24-hour Composite
108	4,4-DDT	50-29-3	µg/L	24-hour Composite
112	alpha-Endosulfan	959-98-8	µg/L	24-hour Composite
103	alpha-BHC (Benzene hexachloride)	319-84-6	µg/L	24-hour Composite
102	Aldrin	309-00-2	µg/L	24-hour Composite
113	beta-Endosulfan	33213-65-9	µg/L	24-hour Composite
104	beta-BHC (Benzene hexachloride)	319-85-7	µg/L	24-hour Composite
107	Chlordane	57-74-9	µg/L	24-hour Composite

CTR Number	Pesticide/PCB/Dioxin Parameters	CAS Number	Units	Effluent Sample Type
106	delta-BHC (Benzene hexachloride)	319-86-8	µg/L	24-hour Composite
111	Dieldrin	60-57-1	µg/L	24-hour Composite
114	Endosulfan Sulfate	1031-07-8	µg/L	24-hour Composite
115	Endrin	72-20-8	µg/L	24-hour Composite
116	Endrin Aldehyde	7421-93-4	µg/L	24-hour Composite
117	Heptachlor	76-44-8	µg/L	24-hour Composite
118	Heptachlor Epoxide	1024-57-3	µg/L	24-hour Composite
105	gamma-BHC (Benzene hexachloride or Lindane)	58-89-9	µg/L	24-hour Composite
119	Polychlorinated Biphenyl (PCB) 1016	12674-11-2	µg/L	24-hour Composite
120	PCB 1221	11104-28-2	µg/L	24-hour Composite
121	PCB 1232	11141-16-5	µg/L	24-hour Composite
122	PCB 1242	53469-21-9	µg/L	24-hour Composite
123	PCB 1248	12672-29-6	µg/L	24-hour Composite
124	PCB 1254	11097-69-1	µg/L	24-hour Composite
125	PCB 1260	11096-82-5	µg/L	24-hour Composite
126	Toxaphene	8001-35-2	µg/L	24-hour Composite
16	2,3,7,8-TCDD (Dioxin)	1746-01-6	mg/L	24-hour Composite

CONVENTIONAL PARAMETERS

CTR Number	Conventional Parameters	CAS Number	Units	Effluent Sample Type
NL	pH	--	SU	Grab
NL	Temperature	--	ºC	Grab

NON-CONVENTIONAL PARAMETERS

CTR Number	Nonconventional Parameters	CAS Number	Units	Effluent Sample Type
NL	Foaming Agents (MBAS)	MBAS	mg/L	24-hour Composite
NL	Hardness (as CaCO3)	471-34-1	mg/L	24-hour Composite
NL	Specific Conductance (Electrical Conductivity or EC)	EC	µmhos /cm	24-hour Composite
NL	Total Dissolved Solids (TDS)	TDS	mg/L	24-hour Composite
NL	Dissolved Organic Carbon (DOC)	DOC	mg/L	24-hour Composite

NUTRIENTS

CTR Number	Nutrient Parameters	CAS Number	Units	Effluent Sample Type
NL	Ammonia (as N)	7664-41-7	mg/L	24-hour Composite
NL	Nitrate (as N)	14797-55-8	mg/L	24-hour Composite
NL	Nitrite (as N)	14797-65-0	mg/L	24-hour Composite
NL	Phosphorus, Total (as P)	7723-14-0	mg/L	24-hour Composite

OTHER CONSTITUENTS OF CONCERN

CTR Number	Other Constituents of Concern	CAS Number	Units	Effluent Sample Type
NL	1,2,3-Trichloropropane (TCP)	96-18-4	µg/L	Grab
NL	Trichlorofluoromethane	75-69-4	µg/L	Grab
NL	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	µg/L	Grab
NL	Styrene	100-42-5	µg/L	Grab
NL	Xylenes	1330-20-7	µg/L	Grab
NL	Barium	7440-39-3	µg/L	24-hour Composite
NL	Fluoride	16984-48-8	mg/L	24-hour Composite
NL	Molybdenum	7439-98-7	µg/L	24-hour Composite
NL	Tributyltin	688-73-3	µg/L	24-hour Composite
NL	Alachlor	15972-60-8	µg/L	24-hour Composite
NL	Atrazine	1912-24-9	µg/L	24-hour Composite
NL	Bentazon	25057-89-0	µg/L	24-hour Composite
NL	Carbofuran	1563-66-2	µg/L	24-hour Composite
NL	2,4-D	94-75-7	µg/L	24-hour Composite
NL	Dalapon	75-99-0	µg/L	24-hour Composite
NL	1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	µg/L	24-hour Composite
NL	Di(2-ethylhexyl)adipate	103-23-1	µg/L	24-hour Composite
NL	Dinoseb	88-85-7	µg/L	24-hour Composite
NL	Diquat	85-00-7	µg/L	24-hour Composite
NL	Endothal	145-73-3	µg/L	24-hour Composite
NL	Ethylene Dibromide (EDB)	106-93-4	µg/L	24-hour Composite
NL	Methoxychlor	72-43-5	µg/L	24-hour Composite
NL	Molinate (Ordram)	2212-67-1	µg/L	24-hour Composite
NL	Oxamyl	23135-22-0	µg/L	24-hour Composite
NL	Picloram	1918-02-1	µg/L	24-hour Composite
NL	Simazine (Princep)	122-34-9	µg/L	24-hour Composite
NL	Thiobencarb	28249-77-6	µg/L	24-hour Composite
NL	2,4,5-TP (Silvex)	93-72-1	µg/L	24-hour Composite
NL	Chlorpyrifos	2921-88-2	µg/L	24-hour Composite
NL	Diazinon	333-41-5	µg/L	24-hour Composite

5. **Table E-13 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-13:

    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 month, as required in Table E-3, with the exception of hardness which shall be sampled concurrently with the hardness-dependent metals (cadmium, chromium III, lead, nickel, silver, and zinc).

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-13.

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.

h. **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.

i. **TCDD-Dioxin Congener Equivalents** shall include all 17 of the 2,3,7,8 TCDD dioxin congeners as listed in section 3 of the SIP.

j. **Ammonia (as N).** Sampling is only required in the upstream receiving water.

k. **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.

l. **Iron and Manganese.** Prior to analysis, samples shall be filtered through a 1.5-micron filter.

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. 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 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 SMR. 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-14. 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
3/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
1/Month	Permit effective date	1st day of calendar month through last day of calendar month	First day of second calendar month following month of sampling

Sampling Frequency	Monitoring Period Begins On	Monitoring Period	SMR Due Date
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/Quarter (Chronic Toxicity)	Permit effective date	1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	Within 30 days of receipt of results
2/Year	Permit effective date	1 January through 30 June 1 July through 31 December	1 August 1 February of following year
1/Year	Permit effective date	1 January through 31 December	1 February of following year

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

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

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

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

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

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

   d. Dischargers are to instruct laboratories to establish calibration standards so that the Minimum Level (ML) value (or its equivalent if there is

differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

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

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

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

6. **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.

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.C of the Waste Discharge Requirements.

   d. **Dissolved Oxygen Receiving Water Concentrations.** The Discharger shall report monthly in the self-monitoring report the dissolved oxygen concentrations in the effluent (M-001) and the receiving water (R-002U1 and R-002D1).

   e. **Turbidity Receiving Water Calculations.** The Discharger shall calculate and report the turbidity increase in the receiving water applicable to the natural turbidity condition.

   f. **Temperature Receiving Water Calculations.** The Discharger shall calculate and report the temperature increase in the receiving water based on the difference in temperature at Monitoring Locations R-002U1 and R-002D1.

C. Discharge Monitoring Reports (DMRs)

1. DMRs are U.S. EPA reporting requirements. The Discharger shall electronically certify and submit DMRs together with SMRs 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 E-16. 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 E-16:

    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.

    f. A summary of any observations and inspections of the equalization basin at Monitoring Location PND-002 conducted during the calendar year.

3. **Recycled Water Policy Annual Reports.** In accordance with section 3 of the Water Quality Control Policy for Recycled Water (Recycled Water Policy), the Discharger shall electronically submit an annual report of monthly data to the

State Water Board by 30 April annually covering the previous calendar year using the State Water Board's GeoTracker website (https://geotracker.waterboards.ca.gov/). Information for setting up and using the GeoTracker system can be found in the *ESI Guide for Responsible Parties* document on the State Water Board's website for Electronic Submittal of Information (https://www.waterboards.ca.gov/ust/electronic_submittal/index.html).

The annual report to GeoTracker must include volumetric reporting of the items listed in section 3.2 of the Recycled Water Policy (https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2018/121118_7_final_amendment_oal.pdf). A pdf of the upload confirmation from GeoTracker for the Recycled Water Policy Annual Report shall be uploaded into CIWQS annually as a technical report per Table E-16, to demonstrate compliance with this reporting requirement.

4. **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 E-16:

    a. Report of Waste Discharge (Form 200);

    b. NPDES Form 2a; and

    c. NPDES Form 2s.

    d. **Salinity Evaluation and Minimization Plan (SEMP).** The Discharger shall evaluate the effectiveness of the SEMP and provide a summary with the Report of Waste Discharge;

    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., chlorodibromomethane and dichlorobromomethane); and

    f. **Most Sensitive Species Screening.** The Discharger shall perform subsequent sensitive species screening testing to re-evaluate the most sensitive species for chronic whole effluent toxicity testing in accordance with MRP section V.E and results submitted with the ROWD.

5. **Annual Land Application Area Report.** By 1 February of each year, the Discharger shall submit a written report containing the following:

    a. Identification, including a map clearly showing each field or site where the biosolids were applied.

    b. The parameters shown in Table E-15 below.

Table E-15. Annual Land Application Area Report Requirements

Parameter	Units
Quantity of biosolids applied	cubic yards/year and dry tons/year
Biosolids application rate	tons-dry/acre/year
Volume of recycled water applied	acre-feet
Recycled water application rate	acre-feet/year
Total nitrogen loading (from all sources)	lbs/acre/year
Plant available nitrogen (from all sources)	lbs/acre/year
Residual nitrogen (from all sources)	lbs/acre/year
Crop(s) planted	name
Crop yield	tons
Results of plant tissue testing for molybdenum	mg/kg
Results of plant tissue testing for copper	mg/kg
Results of plant tissue testing for selenium	mg/kg

c. The Discharger shall provide the following pollutant loading rate information for arsenic, cadmium, copper, lead, mercury, molybdenum, nickel, selenium, and zinc.

   i. Cumulative loading from previous year [kilograms per acre (kg/acre)];

   ii. Background soils concentration at 6-inch depth (kg/acre);

   iii. Cumulative metal load to date (kg/acre); and

   iv. Percent cumulative limit to date (%).

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

   An annual report shall be submitted by the due date shown in the Technical Reports Table E-16 and include at least the following items:

a. A summary of analytical results from representative sampling of the Facility'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-13 (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.

   Biosolids shall be sampled during the same 24-hour period and analyzed for the same pollutants as the influent and effluent sampling and analysis. The biosolids analyzed shall be a **composite sample of a minimum of 12 discrete samples taken during business hours within the 24-hour period**. Wastewater and biosolids sampling and analysis shall be performed at least annually. The Discharger shall also provide any influent, effluent or biosolids monitoring data for nonpriority pollutants which may be causing or contributing to Interference, Pass-Through or adversely impacting biosolids 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;

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; and

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

7. **Technical Report Submittals.** This Order includes requirements to submit a 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 E-16 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-16. Technical Reports

Report #	Technical Report	Due Date	CIWQS Report Name
Intentionally left blank	[FOR ALL DISCHARGERS] Standard Reporting Requirements	Intentionally left blank	Intentionally left blank
1	Report of Waste Discharge	31 March 2030	ROWD
2	Analytical Methods Report	1 June 2026	MRP X.D.1
3	Analytical Methods Report Certification	1 October 2026	MRP IX.F.3.
4	Annual Operations Report	1 February 2027	MRP X.D.2
5	Annual Operations Report	1 February 2028	MRP X.D.2
6	Annual Operations Report	1 February 2029	MRP X.D.2
7	Annual Operations Report	1 February 2030	MRP X.D.2
8	Annual Operations Report	1 February 2031	MRP X.D.2
9	Recycled Water Policy Annual Report Submittal Confirmation	30 April 2026	MRP X.D.3
10	Recycled Water Policy Annual Report Submittal Confirmation	30 April 2027	MRP X.D.3
11	Recycled Water Policy Annual Report Submittal Confirmation	30 April 2028	MRP X.D.3
12	Recycled Water Policy Annual Report Submittal Confirmation	30 April 2029	MRP X.D.3
13	Recycled Water Policy Annual Report Submittal Confirmation	30 April 2030	MRP X.D.3
14	Annual Land Application Area Report	1 February 2027	MRP X.D.5
15	Annual Land Application Area Report	1 February 2028	MRP X.D.5
16	Annual Land Application Area Report	1 February 2029	MRP X.D.5
17	Annual Land Application Area Report	1 February 2030	MRP X.D.5
18	Annual Land Application Area Report	1 February 2031	MRP X.D.5
19	Annual Pretreatment Report	28 February 2027	MRP X.D.6
20	Annual Pretreatment Report	28 February 2028	MRP X.D.6
21	Annual Pretreatment Report	28 February 2029	MRP X.D.6
22	Annual Pretreatment Report	28 February 2030	MRP X.D.6
23	Annual Pretreatment Report	28 February 2031	MRP X.D.6
Intentionally left blank	Other Reports	Intentionally left blank	Intentionally left blank
24	Former Sludge Drying Beds Closure	1 April 2027	WDR VI.C.2.b

Report #	Technical Report	Due Date	CIWQS Report Name
25	Pyrethroids Management plan (if required)	31 March 2030	WDR VI.C.3.b
26	Pyrethroids Management Plan Mid-Term Progress Report (if required)	31 March 2030	WDR VI.C.3.b
27	Pyrethroids Management Plan End-Term Progress Report (if required)	31 March 2030	WDR VI.C.3.b
28	TRE Work Plan	1 July 2026	MRP V.G.2
29	Pretreatment Program Local Limits Evaluation	31 March 2030	WDR VI.C.5.a.v

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in section II.C 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:	5C240108001
CIWQS Facility Place ID:	214652
Discharger:	City of Merced
Name of Facility:	Merced Wastewater Treatment Facility
Facility Address:	10260 Gove Road
Facility City, State Zip:	Merced, CA 95341
Facility County:	Merced County
Facility Contact, Title and Phone Number:	Bill Osmer, Public Works Manager – Wastewater, (209) 385-6892
Authorized Person to Sign and Submit Reports:	Bill Osmer, Public Works Manager – Wastewater, (209) 385-6892
Mailing Address:	1776 Grogan Avenue Merced, CA 95341
Billing Address:	1776 Grogan Avenue Merced, CA 95341
Type of Facility:	Publicly Owned Treatment Works
Major or Minor Facility:	Major
Threat to Water Quality:	2
Complexity:	A
Pretreatment Program:	Yes
Recycling Requirements:	Producer and User
Facility Permitted Flow:	12.0 million gallons per day (MGD). Upon satisfaction of Provision VI.C.6.a, the

	facility permitted flow may increase up to 16.0 mgd and up to 20.0 mgd.
Facility Design Flow:	12.0 MGD (currently), 16.0 MGD (first expansion), 20.0 MGD (second expansion)
Watershed:	Owens Creek Watershed
Receiving Water:	Hartley Slough and Underlying Groundwater
Receiving Water Type:	Slough and Groundwater

A. The City of Merced (Discharger) is the owner and operator of the Merced Wastewater Treatment Facility (Facility), a Publicly-Owned Treatment Works (POTW).

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

B. The Facility discharges wastewater to Hartley Slough, a water of the United States, tributary to the San Joaquin River within the Owens Creek Watershed. The Discharger was previously regulated by Order R5-2020-0014 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0079219 adopted on 16 April 2020 and expired on 31 May 2025. The NPDES permit was administratively extended by the Executive Officer on 6 May 2025. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

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

D. The Discharger filed a Report of Waste Discharge (ROWD) and submitted an application for reissuance of its waste discharge requirements (WDRs) and NPDES permit on 23 May 2024. The application was deemed complete on 25 October 2024. A site visit was conducted on 13 January 2025 to observe operations and collect additional data to develop permit limitations and requirements for waste discharge.

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

continued pending reissuance of the permit if the Discharger complies with all federal NPDES requirements for continuation of expired permits.

II. FACILITY DESCRIPTION

The Discharger provides sewerage service for the City of Merced and serves a population of approximately 93,000. The design daily average flow capacity of the Facility is 12.0 MGD. Based on demand, the Discharger has plans to complete two phased expansions at the Facility to increase the design daily average flow capacity to 16.0 MGD and up to 20.0 MGD, respectively.

A. Description of Wastewater and Biosolids Treatment and Controls

The treatment system at the Facility consists of the following: a headworks pump station with fine screens and grit removal; primary clarifiers; activated sludge basins with separate anoxic denitrification basins; secondary clarifiers; flocculation basins; filters; ultraviolet (UV) disinfection; a rock re-aeration outfall; and a stormwater basin.

Solids handling and treatment include: a dissolved air flotation thickener, primary digesters, solids holding tank, digester gas holder, solids dewatering facility, centrate pump station, equalization basin, and lined active solar dryers. All dried biosolids are applied to the Land Application Area (LAA) except the abandoned ponds 5 and 6 area. The Facility produces approximately 1,500 dry metric tons of biosolids annually.

During emergencies, if the treated wastewater is not meeting permit requirements, the wastewater is directed to the lined equalization basin. Additionally, under extreme wet weather flow conditions, flows greater than the design maximum flow are diverted to the lined equalization basin. Diverted flows are returned to the plant headworks for treatment as plant capacity allows. In these emergent conditions, if flows are greater than can be contained in the lined equalization basin, flow can be diverted to the unlined emergency storage basin.

B. Discharge Points and Receiving Waters

1. The Facility is located in section 10, T8S, R13E, MDB&M, as shown in Attachment B, a part of this Order.

2. Equivalent disinfected tertiary treated municipal wastewater is discharged at Discharge Point 002 to Hartley Slough at a point latitude 37.253577 degrees N and longitude 120.531599 degrees W. Hartley Slough is a water of the United States and is an ephemeral, effluent dominated water body that flows to Owens Creek and then to the San Joaquin River via a network of natural and artificial channels.

3. Equivalent disinfected tertiary treated municipal wastewater is also discharged at Discharge Point 003 to the Merced Wildlife Management Area (WMA) at a point latitude 37.23424 degrees N and longitude 120.5261 degrees W. The WMA was created in 1978 to mitigate the loss of wetlands that occurred with the

construction of the Facility and the establishment of the Land Application Area (LAA). To create the WMA, berms were constructed to form two ponds using the fill material excavated from the edges of the ponds, resulting in trenches. It is a constructed wetland area isolated from surrounding waters of the United States by a series of levees and is an isolated, intrastate, and non-navigable water that is not subject to regulation under the Clean Water Act. Public access to the WMA is regulated and supervised by the California Department of Fish and Wildlife (DFW). During the hunting season, DFW limits public access to around ten people three days per week. The hunters can contact the water in WMA, particularly during waterfowl hunting season. The WMA is posted to inform the visiting public that water within the WMA is treated effluent.

4. Equivalent disinfected tertiary treated municipal wastewater is also discharged at Discharge Point 004 to the Land Application Area (LAA) at a point latitude 37.24047 degrees N and longitude 120.5261 degrees W. The LAA consists of a total of 670 acres. Abandoned Ponds 5 and 6 make up 90 acres of the LAA, and no biosolids are authorized to be applied to this portion of the LAA. The remaining 580 acres do received biosolids for land application. The LAA has historically been planted with a winter crop of triticale (a hybrid of wheat and rye) or rye and a summer crop of sudan grass. Public access to the area is restricted by two gates that limit access to the LAA and the WMA. Two groundwater monitoring wells are located on the northern and eastern ends of the abandoned Ponds 5 and 6 area of the LAA.

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

1. Effluent

Effluent limitations contained in Order R5-2020-0014 for discharges from Discharge Point 002 to Hartley Slough (Monitoring Location M-001) and representative monitoring data from the term of Order R5-2020-0014 are as follows:

Table F-2 Historic Effluent Limitations

Parameter	Units	Historic Effluent Limitations	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Flow	MGD	AMEL 12.0	7.36	9.71	14.92
Biochemical Oxygen Demand 5-day @20°C	mg/L	AMEL 10 AWEL 15	2.9	3.5	4.6
Total Suspended Solids	mg/L	AMEL 10 AWEL 15	8.1	10.5	14.1

Parameter	Units	Historic Effluent Limitations	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
pH	std units	Instantaneous Max 6.5 Instantaneous Min 8.5	7.2-7.7 (see Note 1)	7.1-7.9 (see Note 1)	6.9-8.6 (see Note 1)
Ammonia Nitrogen, Total (as N)	mg/L	AMEL 1.7 MDEL 3.7	0.48	0.96	2.93
Nitrate plus Nitrite (as N)	mg/L	AMEL 10 AWEL 14	9.5	11.7	14.4
Electrical Conductivity	µmhos /cm	Calendar year average 760	658	674	783
Copper, Total Recoverable	µg/L	AMEL 7.1 MDEL 12	7.6	9.6	9.6
Total Coliform Organisms	MPN/ 100 mL	7-day median 2.2 More than once in 30-days 23 Instantaneous max 240	5	14	170

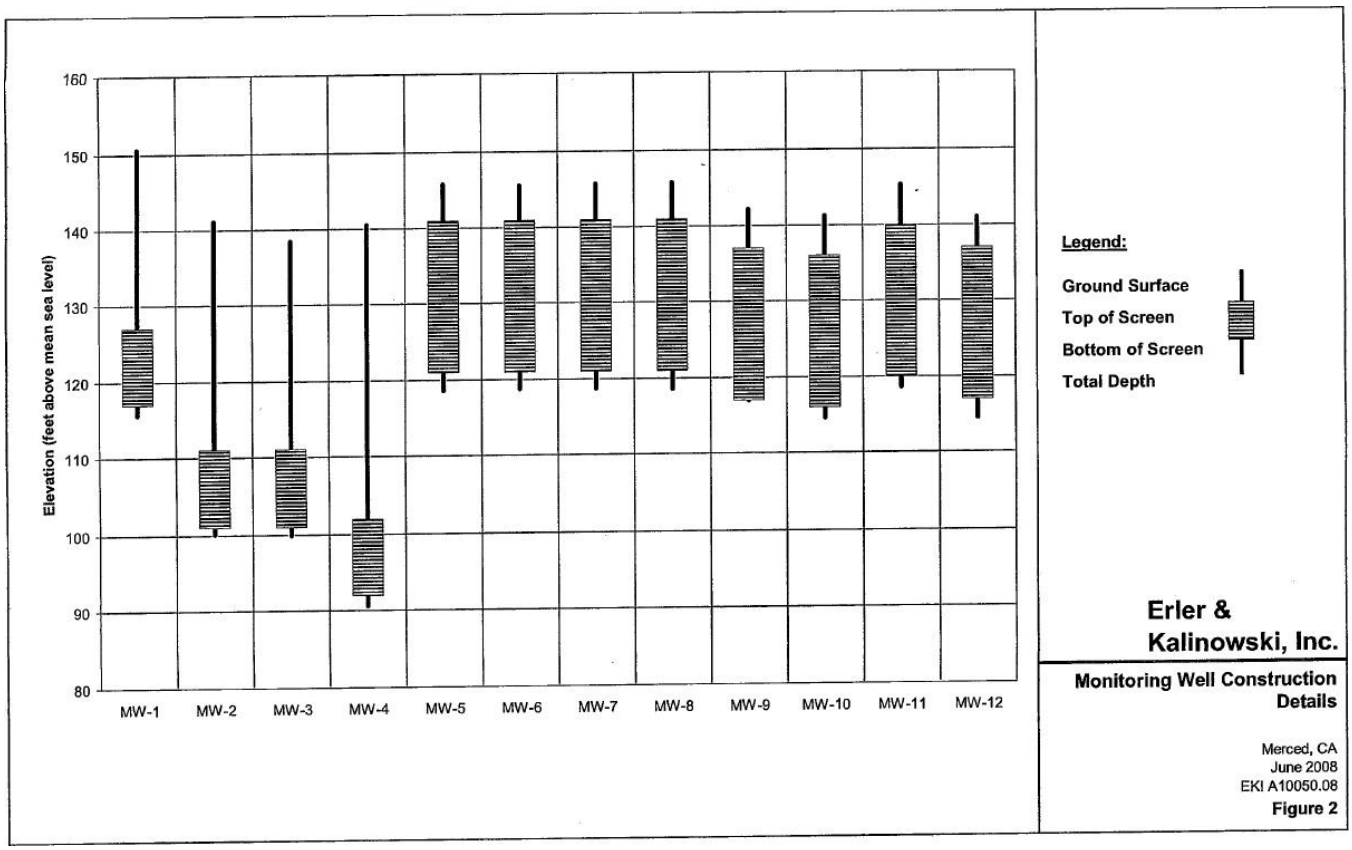
Table F-2 Notes:

1. pH range is summarized as a range of the minimum and maximum for the averaging periods specified.

2. **Groundwater**

   a. The groundwater monitoring well network includes four slightly deeper wells (MW-1, MW-2, MW-3, and MW-4) constructed in 1979. MW-5 through MW-11 were constructed in 2002, and MW-12 was constructed in 2004. Well construction information is depicted below in Figure F-1:

Figure F-1: Groundwater Monitoring Well Construction Details



b. According to the Discharger's 2017 Land Use and Groundwater Limitations Report, based on water chemistry and groundwater level characteristics, MW-4 does not monitor first encountered groundwater and should not be used for groundwater gradient determination. Highest groundwater levels are consistently measured at MW-1 at the east side of the LAA, and lowest groundwater levels are typically measured at MW-3 at the west side of the LAA. Lower than anticipated groundwater levels are measured at MW-11 (northeast of the LAA), which is typically thought to be an upgradient well. The Discharger states that this is likely due to agricultural well pumping in the vicinity. Depending on pumping scenarios, MW-11 may be upgradient or more cross gradient of the LAA at times. MW-8 is located to the east of the Abandoned Ponds 5 and 6 near the Effluent Channel and is positioned where it may monitor the LAA.

c. Maximum Contaminant Levels (MCLs) paired with groundwater monitoring data from July 2021 through June 2024 at the wells that are at times upgradient (MW-1 and MW-11); old, unused sludge drying beds (MW-5, MW-6, MW-7, and MW-12); Wildlife Management Area (WMA) wells (MW-9 and MW-10); and Land Application Area (LAA) wells (MW-2, MW-3, MW-4, and MW-8) are summarized as follows with average values depicted in parentheses:

Table F-3 Historic Groundwater Monitoring Data

Parameter	Units	MCL	Upgradient (at times)	Old, Unused Sludge Beds	WMA	LAA
Electrical Conductivity	µmhos /cm	900	650 - 1700 (1200)	870 - 1900 (1520)	780 - 1800 (990)	660 - 1500 (940)
Nitrate plus Nitrite (as N)	mg/L	10	3.6 - 63 (27)	0.37 - 31 (10)	ND - 22 (2.7)	0.32 - 6.5 (2.4)
Total Coliform Organisms	MPN/ 100 mL		ND - 23 (3.9)	ND - >23 (2)	ND - >23 (8)	ND - >23 (2.3)
Arsenic	µg/L	10	4 - 9.9 (6.3)	ND - 25 (11)	10 - 22 (16)	3.1 - 19 (7.7)
Ammonia Nitrogen, Total (as N)	mg/L		ND	ND - 0.16 (0.04)	ND - 1.6 (0.5)	ND
Chloride	mg/L	250	17 - 78 (35)	22 - 110 (69)	73 - 200 (93)	13 - 160 (71)
Manganese	µg/L	50	ND	8.5 - 4700 (1370)	ND - 1700 (477)	ND - 950 (153)
Iron	µg/L	300	ND - 19J (7.8J)	ND - 46 (6)	ND - 36 (3.5)	ND - 67 (10J)
Sodium	mg/L		60 - 210 (130)	110 - 190 (140)	81 - 150 (100)	46 - 120 (72)
Sulfate	mg/L	250	52 - 210 (130)	47 - 260 (150)	19 - 110 (45)	15 - 110 (52)
Total Dissolved Solids	mg/L	500	400 - 1100 (810)	550 - 1200 (960)	460 - 1100 (600)	420 - 990 (570)

d. Groundwater underlying the WMA tends to have results higher than MCLs for both arsenic and manganese. Effluent being discharged to the WMA does not exceed MCLs for arsenic and manganese. However, groundwater under the WMA, as constructed wetlands, has potential for reducing conditions that can convert soil constituents like manganese and arsenic into soluble forms.

Some high manganese results in the LAA well group are from MW-3, which is at the west end of the LAA and just northwest of the WMA and may be representing downgradient influence of the WMA. Other high manganese results in the LAA well group are from MW-8, which is near the northeast corner of the LAA, immediately upgradient of the former sludge drying beds. MW-12, the furthest downgradient well from the former sludge drying beds has an average manganese concentration of 37 ug/L, indicating a limited extent of manganese.

Arsenic exceeding the WQOs is limited to the WMA and the old unused drying beds area. MW-3, the downgradient well from the WMA, has an average arsenic concentration of 4.6 ug/L. MW-12, the furthest downgradient well from the former sludge drying beds has an average arsenic concentration of 4.9 ug/L. These downgradient wells do not exceed the arsenic MCL, indicating a limited extent of arsenic.

D. Compliance Summary

The Discharger exceeded effluent limitations for pH and turbidity one time each throughout the term of Order R5-2020-0014, according to exceedances logged in CIWQS. Additionally, a Notice of Violation was issued to the Discharger on 8 May 2023 addressing mandatory minimum penalties for nitrite plus nitrate, total ammonia, and total copper from 2014 through 2020.

E. Planned Changes

Based on demand, the Discharger has plans to complete two phased expansions at the Facility to increase the flow rate to 16.0 MGD and 20.0 MGD. The expansion to 16.0 MGD will consist of adding a fourth activated sludge basin, a third sludge digester, a solids holding tank, and additional active solar dryers. The expansion to 20.0 MGD will consist of adding a fourth primary clarifier, a fifth activated sludge basin, and a fifth secondary clarifier. Effluent quality is anticipated to stay the same. The Discharger has not proposed a timeframe for the phased expansions.

The Discharger detailed some scheduled improvements in the ROWD. In 2025, the Discharger plans to perform PLC and SCADA hardware and software replacements and updates and UV system PLC replacement with equipment updates. In 2027, the Discharger plans to replace aeration basins 1 and 2, replace blowers, and perform headworks improvements, pending funding.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

This Order serves as WDRs pursuant to article 4, chapter 4, division 7 of the California Water Code (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)

CEQA compliance for the two phased expansions that may be completed under the term of this permit have previously been addressed by the City of Merced's

environmental impact report that was certified on 18 December 2006 and explained in WDRs Order No. R5-2008-0027. In addition, 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 Plans.** Requirements of this Order specifically implement the applicable Water Quality Control Plans.

   a. The Central Valley Water Board adopted a Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (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.

   The Basin Plan at section 2.1 states that the beneficial uses of any specifically identified water body generally apply to its tributary streams. The Basin Plan in Table 2-1, section 2, does not specifically identify beneficial uses for Hartley Slough, but does identify present and potential uses for the San Joaquin River reach between Sack Dam and the Merced River, to which Hartley Slough, via a network of natural and artificial channels, is tributary. 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. Thus, beneficial uses applicable to Hartley Slough, the WMA, and the LAA are as follows:

Table F-4 Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
002	Hartley Slough	Existing: Agricultural supply (AGR); Industrial process supply (PRO); Warm freshwater habitat (WARM); Migration of Aquatic Organisms (warm and cold) (MIGR); Spawning, reproduction, and/or early development (warm) (SPWN); wildlife habitat (WILD); and contact (REC-1) and non-contact (REC-2) water recreation. Potential: Municipal and domestic water supply (MUN); Spawning, reproduction, and/or Early Development (cold) (SPWN)

Discharge Point	Receiving Water Name	Beneficial Use(s)
003	Wildlife Management Area	REC-1; REC-2; WARM, and WILD
004	Land Application Area (i.e., Underlying Groundwater)	MUN; AGR; PRO; and Industrial Service Supply (IND).

b. **Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California.** The Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California (ISWEBE Plan) was adopted by the State Water Resources Control Board (State Water Board) on 1 December 2020, under authority provided by Water Code sections 13140 and 13170. Except as otherwise indicated, this ISWEBE Plan establishes provisions for water quality and sediment quality that apply to all inland surface waters, enclosed bays, and estuaries and coastal lagoons of the state, including both waters of the United States and surface waters of the state. The State Water Board rescinded the ISWEBE Plan on 5 October 2021 in Resolution No. 2021-0044. The portions of the ISWEBE Plan, including the Toxicity Provisions, remain in effect as state policy for water quality control.

c. **Statewide Toxicity Provisions.** On 1 December 2020, the State Water Board adopted State Policy for Water Quality Control: Toxicity Provisions (Toxicity Provisions) which established statewide numeric water quality objectives for both acute and chronic toxicity, using the TST, and a program of implementation to control toxicity. On 5 October 2021, the State Water Board adopted a resolution confirming that the Toxicity Provisions were adopted as a State Policy for Water Quality Control, for all inland surface waters, enclosed bays, estuaries, and coastal lagoons of the state, regardless of their status as waters of the United States. The Toxicity Provisions establish a uniform regulatory approach to provide consistent protection of aquatic life beneficial uses and protect aquatic habitats and life from the effects of known and unknown toxicants. The Toxicity Provisions were approved by OAL on 25 April 2022, and by U.S. EPA on 1 May 2023.

On 14 December 2023, the State Water Board applied for U.S. EPA Region IX review and approval of a limited-use alternative test procedure (ATP), for the use of one-effluent concentration when conducting whole effluent toxicity (WET) testing, pursuant to 40 Code of Federal Regulations section 136.5 (28 Aug. 2017). The application is specific to acute or chronic WET tests in Table 1 of the application when using the Test of Significant Toxicity (TST) statistical approach (U.S. EPA, 2010) for analyzing the data. The application is being sought for all dischargers or facilities in the State of California and their associated laboratories. The ATP application is still pending with U.S. EPA.

The use of the TST has been the subject of litigation. In December 2024, the Second District Court of Appeal upheld the use of the TST in an NPDES permit in the case Camarillo Sanitary District v. California Regional Water Quality Control Board - Los Angeles Region.

A separate legal challenge to the State Water Board's adoption of the Toxicity Provisions originated in Fresno County Superior Court on 18 July 2022, through a petition for writ of mandate filed by Camarillo Sanitary District, City of Simi Valley, City of Thousand Oaks, Central Valley Clean Water Association, and Clean Water SoCal (formerly known as Southern California Alliance of Publicly Owned Treatment Works) (Petitioners). One of the claims was that the Toxicity Provisions was inconsistent with the Clean Water Act. On 9 October 2023, the superior court denied the petition in its entirety.

On 19 December 2023, three of the Petitioners filed a notice of appeal of the Fresno Superior Court's decision upholding the Toxicity Provisions. On 5 August 2025, the Fifth District Court of Appeal issued a published opinion holding that the TST statistical approach, which is an integral component of the Toxicity Provisions, cannot be utilized in NPDES permitting to evaluate WET data because the TST is not an approved method under 40 Code of Federal Regulations Part 136. The Court of Appeal did not, however, disturb the Toxicity Provisions' use of the TST as a part of its water quality objectives. The State Water Board prevailed on all other claims in the litigation. The Court of Appeal's decision became final on 4 September 2025.

On 15 September 2025, the State Water Board filed a petition for review of the Fifth Circuit Court of Appeal's decision with the California Supreme Court. On 12 November 2025, the California Supreme Court granted review. The issues to be briefed and argued are limited to the issues raised in the State Water Board's petition for review.

Pending the California Supreme Court's review, the opinion of the Fifth Circuit Court of Appeal is not binding on the Water Boards. However, the opinion may be cited, not only for its persuasive value, but also for the limited purpose of establishing the existence of a conflict in authority.

In accordance with Water Code sections 13146 and 13247, the Regional Board must fully implement the water quality objectives and their implementation procedures in the Toxicity Provisions. The numeric water quality objectives for chronic and acute toxicity established by the Toxicity Provisions, which are based on the TST, were approved by U.S. EPA and remain in effect. As such, the numeric water quality objectives continue to serve as the applicable federal water quality standards in California.

The Water Boards must also continue to comply with federal Clean Water Act NPDES regulations for determining reasonable potential and

establishing applicable water quality-based effluent limitations (WQBELs). NPDES regulations (40 CFR § 122.44(d)(1)(vii)(A)) require that all WQBELs be derived from and comply with all applicable water quality standards. Moreover, although the Toxicity Provisions left in place narrative water quality objectives for aquatic toxicity in regional water board water quality control plans (basin plans), the Toxicity Provisions did supersede basin plan provisions and portions of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP) for implementing narrative water quality objectives. As such, there are currently no basin plan or SIP procedures in effect for implementing narrative water quality objectives to determine reasonable potential as required by 40 CFR § 122.44(d)(1)(ii). As a result, the Regional Board must fully implement all of the Toxicity Provisions.

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 (MCLs) 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 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.** On 6 December 2022, the State Water Board adopted Order WQ 2022-0103-DWQ, Statewide Waste Discharge Requirements General Order for Sanitary Sewer Systems (General Order), effective 5 June 2023. The General Order requires public agencies that own or operate sanitary sewer systems with greater than 1 mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), among other requirements and prohibitions. The Discharger is subject to the requirements of, and must comply with, State Water Board Order WQ 2022-0103-DWQ 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.

12. **Findings on Water Quality Impacts in Disadvantaged or Tribal Communities and Environmental Justice Concerns.** This Order regulates a Facility that may impact a disadvantaged community and/or tribal community and includes an alternative compliance path that allows the Discharger time to come into

compliance with certain WQOs (i.e., salinity). The Discharger has selected the Alternative Salinity Permitting Approach for the Salt Control Program, which provides an alternative approach for compliance with salinity limits through implementation of specific requirements (i.e., support facilitation and completion of the Salinity P&O Study). The Central Valley Water Board has satisfied the outreach requirements set forth in Water Code section 189.7 by conducting outreach in affected disadvantaged and tribal communities through its notice and comment procedures. Pursuant to Water Code section 13149.2, and as discussed in the following finding, the Central Valley Water Board reviewed readily available information and information raised to the Board by interested persons concerning anticipated water quality impacts in disadvantaged or tribal communities resulting from adoption of these WDRs. The Board also considered environmental justice concerns within the Board's authority previously raised by interested persons with regard to those impacts.

The Central Valley Water Board anticipates that the issuance of this Order will result in water quality impacts within the scope of the Board's authority. Specifically, this Order authorizes the discharge of wastewater with salinity concentrations that may cause degradation or exceedances of applicable WQOs in the near term. The BPTC measures required by this Order, as described in section VI.C.3 of the permit, are intended to minimize and, in the longer term, mitigate the impacts of the Facility's discharges to nearby disadvantaged communities in Merced County. Although this Order may result in limited increases to salinity concentrations in groundwater in the near-term, the Salt Control Program is intended to achieve long-term balance and restoration, where possible, of salt-impacted groundwater basins across the region.

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. The Basin Plan references these lists 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." Hartley Slough is not listed as a WQLS in the 2024 List of WQLSs. However, Hartley Slough is hydraulically connected to Deep Slough, Bear Creek, and the San Joaquin River between Bear Creek and Mud Slough. These segments are listed as WQLSs in the 2024 List for arsenic, DDT, electrical conductivity, Group A pesticides, pH, mercury, total dissolved solids, temperature, boron, indicator bacteria, bifenthrin, and pyrethroids.

2. Total Maximum Daily Loads (TMDLs). Table F-5, below, identifies the 303(d) listings and any applicable TMDLs. At the time of this permit renewal, there are no approved TMDLs with waste load allocations (WLAs) that apply to this Facility.

Table F-5 303 (d) List for Hartley Slough

Pollutant	Potential Sources	TMDL Status
Arsenic	Source Unknown	2027
Bifenthrin	Source Unknown	2035
Boron	Source Unknown	2035
DDT	Source Unknown	2027
Electrical Conductivity	Source Unknown	2027
Group A Pesticides	Source Unknown	2011
Indicator Bacteria	Source Unknown	2035
Mercury	Source Unknown	2012
pH	Source Unknown	2021
Pyrethroids	Source Unknown	2035
Temperature	Source Unknown	2034
Total Dissolved Solids	Source Unknown	2027
Unknown Toxicity	Source Unknown	2021 (Bear Creek), and being addressed by the Irrigated Lands Regulatory Program, General Order R5-2014-0002 (San Joaquin River)

3. The 303(d) listings and TMDLs have been considered in the development of this Order.

E. Other Plans, Polices and Regulations

1. Title 27, California Code of Regulations (CCR), section 20005 et seq (hereafter Title 27).

   a. The discharge authorized herein to Hartley Slough, 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, CCR, section 20005 et seq (hereafter Title 27). The exemption, pursuant to Title 27 CCR section 20090(a), is based on the following:

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

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

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

b. The discharges authorized herein to the Land Application Area and Wildlife Management Area are exempt from the requirements of Title 27. The exemption, pursuant to Title 27, section 20090(h), is based on the Discharger using disinfected tertiary recycled water for irrigation in accordance with Land Discharge Specifications section IV.B and Land Discharge Specifications section IV.C in this Order and the Water Recycling Criteria in Title 22, CCR, Division 4, Chapter 3.

c. The discharges authorized herein to the Land Application Area and Wildlife Management Area are exempt from the requirements of Title 27. The exemption, pursuant to Title 27, section 20090(b) is because they are discharges of wastewater to land and:

1. The Central Valley Water Board is issuing WDRs;

2. The discharge is in compliance with the Basin Plan; and

3. The treatment effluent does not need to be managed as a hazardous waste.

d. The discharge of biosolids to portions of the Land Application Area authorized herein is exempt from the requirements of Title 27. The exemption, pursuant to Title 27, section 20090(f) is because they are discharges of a nonhazardous, decomposable waste used as a soil amendment pursuant to best management practices.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

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

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 implements Water Code section 13263, subdivision (a), which requires that WDRs take into consideration, among other things, "the need to prevent nuisance," as that term is defined in Water Code section 13050.

4. **Prohibition III.D (No discharge of hazardous waste).** This prohibition is based on CCR, 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.

6. **Prohibition III.F (Discharge of salinity).** The Discharger has elected to participate in the Alternative Compliance Pathway for the Salinity Control Program. While the Discharger is fully participating in the Salt Control Program, including the P&O Study), the Discharger is not restricted to the 700 µmhos/cm limitation. If the Discharger's standing and participation in the Salt Control Program changes, the Discharger is prohibited from discharging salinity at concentrations exceeding 700 µmhos/cm (as a monthly average).

7. **Prohibition III.G (Discharges of pyrethroid pesticides).** This prohibition is based on Resolution R5-2017-0057, which adopted the Basin Plan Amendment (BPA) for the Control of Pyrethroid Pesticide Discharges.

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 and Best Professional Judgment (BPJ) in accordance with 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 POTWs [defined in section 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the U.S. EPA Administrator.

Based on this statutory requirement, U.S. EPA developed secondary treatment regulations, which are specified in 40 C.F.R. part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of BOD_5, 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 (WQBELs) 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 WQBELs for BOD_5 and TSS.)

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

Summary of Technology-based Effluent Limitations
Discharge Point 002 (Hartley Slough)

Table F-6 Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations
Biochemical Oxygen Demand (BOD) 5-day @ 20°C	mg/L	AMEL 30 AWEL 45
BOD	% Removal	AMEL 85
Total Suspended Solids (TSS)	mg/L	AMEL 30 AWEL 45
TSS	% Removal	AMEL 85
pH	standard units	Instantaneous Max 9.0 Instantaneous Min 6.0

Table F-6 Notes:

1. Note that more stringent WQBELs for BOD_5, BOD5, removal, TSS, TSS removal, and pH 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 (WQBELs)

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, 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, WQBELs 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 WQBELs when necessary is intended to protect the designated beneficial 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 WLAs 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 July 2021 through June 2024, which includes effluent and ambient background data submitted in SMRs and the Report of Waste Discharge.

c. **Assimilative Capacity/Mixing Zone.** The Discharger has not submitted mixing zone/dilution studies requesting dilution credits. Thus, consistent with the assumptions used for Order R5-2020-0014, the worst-case dilution for Hartley Slough is assumed to be zero to provide protection of the beneficial uses of these receiving waters. The impact of assuming zero assimilative capacity within the receiving waters is that effluent limitations are applied end-of-pipe, with no allowance for dilution within the receiving waters.

d. **Conversion Factors.** 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 when developing effluent limitations for CTR metals, including copper. Furthermore, a conservative dissolved-to-total metal translator of 1 has been used when developing effluent limitations for copper. Per the Reopener Provisions of this Order, if the Discharger performs studies to determine site-specific dissolved-to-total metal translators this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

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 ambient hardness for Hartley Slough ranges from 11 mg/L to 130 mg/L based on collected ambient data from July 2021 through June 2024. 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 11 mg/L (minimum) up to 130 mg/L (maximum).

The Central Valley Water Board finds that the use of the ambient hardness values and associated acute and chronic criteria shown in Table F-7 to conduct the reasonable potential analysis (RPA) and calculate

WQBELs protect beneficial uses under all ambient receiving water conditions and comply with the SIP, CTR, and Basin Plan.

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

CTR Metals	Ambient Hardness (mg/L)	Acute Criteria (µg/L, total)	Chronic Criteria (µg/L, total)
Copper	89	13	8.4
Chromium III	89	1600	190
Cadmium	77 (acute) 89 (chronic)	3.4	2.3
Lead	62	44	1.7
Nickel	89	430	47
Silver	47	1.1	
Zinc	89	110	110

Table F-7 Notes:

1. **Criteria (µg/L total).** Acute and chronic criteria 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-7 represent actual observed receiving water hardness measurements.

3. Determining the Need for WQBELs

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 WLAs 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 RPAs for nearly 200 constituents, including the 126 U.S. EPA priority toxic pollutants. This section includes details of the RPAs 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 RPAs have been conducted based

on U.S. EPA guidance considering multiple lines of evidence and the site-specific conditions of the discharge. Ammonia, chronic toxicity, nitrate plus nitrite, pH, pathogens, and temperature are not priority pollutants. 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 these non-priority pollutant parameters based on a qualitative assessment as recommended by U.S. EPA guidance. 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 WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters)." 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 POTWs, U.S. EPA recommends that, "POTWs should also be characterized for the possibility of chlorine and ammonia problems." (TSD, p. 50)

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 WLA for the discharge prepared by the State and approved by U.S. 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).

Hartley Slough is subject to water quality objectives (WQOs) for diazinon and chlorpyrifos based on TMDLs adopted for the Lower San Joaquin River in Resolution R5-2005-0138.

i. **Diazinon and Chlorpyrifos.**

(a) **WQO.** The Central Valley Water Board completed a TMDL for diazinon and chlorpyrifos for the Sacramento River and San

Joaquin River Basins and amended the Basin Plan to include diazinon and chlorpyrifos waste load allocations and water quality objectives. The Basin Plan Amendment for the Sacramento River and San Joaquin River Basins for Control of Diazinon and Chlorpyrifos Discharges was adopted by the Central Valley Water Board on 28 March 2014 and became effective on 16 August 2017.

The amendment modified Basin Plan Chapter 3 (Water Quality Objectives) to establish site-specific numeric objectives for diazinon and chlorpyrifos for waters with COLD and/or WARM beneficial uses below major dams and identified the requirements to meet the additive formula already in Basin Plan Chapter 4 (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:

$S = Cd/WQOd + Cc/WQOc \leq 1.0$

Where:

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

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

WQOd = acute or chronic diazinon water quality objective in µg/L

WQOc = 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.

The WQOs for chlorpyrifos are 0.025 µg/L as a 1-hour average (acute) and 0.015 µg/L as a 4-day average (chronic). The WQOs for diazinon are 0.16 µg/L as a 1-hour average (acute) and 0.10 µg/L as a 4-day average (chronic).

The WQOs apply to waterbodies that are downstream of the major dams in Table 3-5 of the Basin Plan, which includes Friant Dam on the San Joaquin River. The Facility discharges to Hartley Slough, which is tributary to San Joaquin River reach between Sack Dam and the Merced River, downstream of Friant Dam.

(b) **RPA.** Based on samples from July 2021 to June 2024, the MEC for chlorpyrifos and diazinon was 0.0011 µg/L and 0.0038 µg/L, respectively. These MECs do not exceed the Basin Plan objectives for chlorpyrifos and diazinon. Therefore, chlorpyrifos and diazinon do not demonstrate reasonable potential to cause or contribute to an instream excursion above the Basin Plan WQOs.

b. **Constituents with No Reasonable Potential.** 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. WQBELs 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 the following constituents of concern that were found to have no reasonable potential after assessment of the data:

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.

The 2018 U.S. EPA recommended National Ambient Water Quality Criteria (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 U.S. EPA aluminum criteria have been used to implement the Basin Plan's narrative toxicity objective.

A CMC of 1,180 µg/L and CCC of 566 µg/L were calculated considering pH, hardness, and DOC representative of the receiving water and effluent conditions. Effluent and receiving water sampling results for pH, hardness, and DOC from July 2021 through June 2024 were used in the evaluation.

(b) **RPA Results.** Based on samples from July 2021 to June 2024, the MEC for aluminum was 370 µg/L and the maximum ambient background aluminum concentration was 670 µg/L. The highest annual average effluent aluminum for comparison to the Secondary MCL was 198 µg/L. Therefore, aluminum in the discharge does not demonstrate reasonable potential to cause or contribute to an instream excursion above the Secondary MCL of 200 µg/L. Additionally, effluent aluminum does not exhibit reasonable potential to cause an instream excursion above the NAWQC criteria.

ii. **Iron**

(a) **WQO.** U.S. EPA recommended National Ambient Water Quality Criteria (NAWQC) for iron for the protection of freshwater aquatic life in the Quality Criteria for Water of 1976 (commonly known as the "Red Book") at 1 mg/L, based on information gathered between 1937 and 1974. The 1976 Red Book does not clearly state whether the criteria concentration is as dissolved iron or total iron. U.S. EPA updated the 1976 Red Book for certain constituents in the document titled, Quality Criteria for Water 1986, commonly known as the "Gold Book," however, iron was not updated. Nevertheless, U.S. EPA clarifies the intent and usage of the recommended NAWQC in the Gold Book which states, "These criteria are not rules and they do not have regulatory impact. Rather, these criteria present scientific data and guidance of the environmental effects of pollutants which can be useful to derive regulatory requirements based on considerations of water quality impacts."

The recommended NAWQC for iron of 1.0 mg/L applicable to freshwater aquatic life was based on a 1964 European Inland Fisheries Advisory Commission recommendation for waters managed for aquatic life, but the 1976 Red Book also cited scientific data for iron from other studies. One study conducted on the toxicity of industrial wastes stated that "trout (species not known) died at iron concentrations of 1 – 2 mg/L" [unknown

whether in the form of dissolved or total iron]. Another study conducted in iron polluted waters in Colorado (1967) indicated that “trout was not observable until the waters were diluted or the iron had precipitated to effect a concentration of less than 1.0 mg/L.” Also, field studies regarding stream pollution in a report from 1937 showed “that in 69 of 75 study sites with good fish fauna, the iron concentration was less than 10 mg/L.” The 1976 Red Book also suggests the water quality characteristics of the receiving water affect the toxicity of iron, “Ambient natural waters will vary with respect to alkalinity, pH, hardness, temperature and the presence of ligands which change the valence state and solubility, and therefore the toxicity of the metal.”

Based on the scientific data and information presented in the 1976 Red Book, the Central Valley Water Board determined that the recommended NAWQC for iron is not applicable to the receiving water, and thus, is not appropriate to determine compliance with the Basin Plan’s narrative toxicity objective.

The State Water Resources Control Board, Division of Drinking Water (formerly California Department of Public Health) has established Secondary MCLs to assist public drinking water systems in managing their drinking water for aesthetic conditions such as taste, color, and odor. The Secondary MCL for iron is 300 µg/L, which is applied as an annual average.

(b) **RPA Results.** Iron concentrations in the effluent ranged from 23 µg/L to 52 µg/L, with an average of 41 µg/L, based on nine samples from July 2021 through June 2024. These levels do not exceed the Secondary MCL. Background concentrations in Hartley Slough ranged from 730 µg/L to 870 µg/L, with an average of 820 µg/L, based on four samples from July 2021 through May 2022.

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. Additionally, there are no U.S. EPA numeric water quality criteria for the protection of agricultural, livestock, and industrial uses. Numeric values for the protection of these uses are

typically based on site specific conditions and evaluations to determine the appropriate constituent threshold necessary to interpret the narrative chemical constituent Basin Plan objective. The Central Valley Water Board must determine the applicable numeric limit to implement the narrative objective for the protection of agricultural supply. Table F-8, below, contains various recommended levels for EC or TDS, sulfate, and chloride based on data from 2021 through 2023.

Table F-8 Salinity Water Quality Criteria/Objectives

Parameters	Secondary MCL Recommended Level.	Secondary MCL Upper Level	Secondary MCL Short-term Maximum	U.S. EPA NAWQC	Maximum Calendar Annual Average Effluent Concentration	Maximum Daily Effluent Concentration
EC (µmhos/cm) or TDS (mg/L)	EC 900 or TDS 500	EC 1,600 or TDS 1,000	EC 2,200 or TDS 1,500	N/A	EC 624 TDS 388	EC 783 TDS 410
Sulfate (mg/L)	250	500	600	N/A	25	27
Chloride (mg/L)	250	500	600	860 1-hour / 230 4-day	60	64

Table F-8 Notes:

1. **Agricultural Water Quality Objectives.** Applicable agricultural water quality objectives vary. Procedures for establishing the applicable numeric limitation to implement the narrative chemical constituent objective can be found in the Policy for Application of Water Quality Objectives, section 4.2.2.1.9 of the Basin Plan. However, the Basin Plan does not require improvement over naturally occurring background concentrations. In cases where the natural background concentration of a particular constituent exceeds an applicable water quality objective, the natural background concentration will be considered to comply with the objective.
2. **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.
3. **Chloride.** The Secondary MCL for chloride is 250 mg/L, as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum.
4. **Electrical Conductivity or Total Dissolved Solids.** The Secondary MCL for EC is 900 µmhos/cm as a recommended level, 1600 µmhos/cm as an upper level, and 2200 µmhos/cm as a short-term maximum, or when expressed as TDS is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum.

5. 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 54 mg/L to 64 mg/L, with an average of 60 mg/L. These levels do not exceed the Secondary MCL. Background concentrations in Hartley Slough ranged from 1.4 mg/L to 63 mg/L, with an average of 17 mg/L, for four samples collected by the Discharger from July 2021 through June 2024.

(2) **Electrical Conductivity or Total Dissolved Solids.** A review of the Discharger's monitoring reports shows an average effluent EC of 620 µmhos/cm, with a range from 467 µmhos/cm to 783 µmhos/cm. These levels do not exceed the Secondary MCL of 900 µmhos/cm. The background receiving water EC ranged from 28 µmhos/cm to 590 µmhos/cm, with an average of 80 µmhos/cm. The average TDS effluent concentration was 391 mg/L with concentrations ranging from 350 mg/L to 420 mg/L. These levels do not exceed the Secondary MCL of 500 mg/L. The background receiving water TDS ranged from 44 mg/L to 410 mg/L, with an average of 138 mg/L.

(3) **Sulfate.** Sulfate concentrations in the effluent ranged from 24 mg/L to 38 mg/L, with an average of 28 mg/L. These levels do not exceed the Secondary MCL of 250 mg/L. Background concentrations in Hartley Slough ranged from 2.1 mg/L to 23 mg/L, with an average of 7.6 mg/L.

(c) **WQBELs.**

As discussed above, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity. On 17 January 2020, certain amendments to the Basin Plan incorporating a Program to Control and Permit Salt Discharges to Surface and Groundwater (Salt Control Program) became effective. Other amendments became effective on 2 November 2020 when approved by the U.S. EPA. The Salt Control Program is a three-phased program, with each phase lasting 10 to 15 years. The Basin Plan requires all salt dischargers to comply with the provisions of the program. Two compliance pathways are available for salt dischargers during Phase 1.

The Phase 1 Compliance pathways are: 1) Conservative

Salinity Permitting Approach, which utilizes the existing regulatory structure and focuses on source control, conservative salinity limits on the discharge, and limits the use of assimilative capacity and compliance time schedules; and, 2) Alternative Salinity Permitting Approach, which is an alternative approach to compliance through implementation of specific requirements such as participating in the Salinity Prioritization and Optimization Study (P&O) rather than the application of conservative discharge limits.

The Discharger submitted a Notice of Intent for the Salinity Control Program indicating its intent to meet the Alternative Salinity Permitting Approach. This Order requires implementation of a Salinity Evaluation and Minimization Plan, participation in the Salinity P&O Study, and includes a performance-based trigger for EC consistent with the Alternative Salinity Permitting Approach.

c. **Constituents with Reasonable Potential.** The Central Valley Water Board finds that the discharge has a reasonable potential to cause or contribute to an instream excursion above a water quality standard for ammonia nitrogen (as N), total recoverable copper, nitrate plus nitrite (as N), pathogens, and pH. WQBELs for these constituents are included in this Order. A summary of the RPA is provided in Attachment G, and a detailed discussion of the RPA for each constituent is provided below.

i. **Ammonia**

(a) **WQO.** The 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 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. Through this effort a Criteria Recalculation Report was

developed in January 2020 using toxicity studies for the freshwater mussel species present in Central Valley Region waters.

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.

U.S. EPA Office of Science and Technology reviewed and approved the Criteria Recalculation Report with a more conservative approach for utilizing the acute-to-chronic ratio procedure for developing the site-specific chronic criterion. The Central Valley Water Board finds that the site-specific ammonia criteria provided in the January 2020 Criteria Recalculation Report implements the Basin Plan's narrative toxicity objective to protect aquatic life beneficial uses of the receiving water.

Site-specific Criteria for Hartley Slough. 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 for situations where freshwater mussels are present and where they are absent. The Discharger submitted a *Literature Review Regarding the Current and/or Historic Distribution of Freshwater Mussels Relative to the City of Merced Wastewater Treatment Plant* on 1 April 2015, which ultimately concluded that it was unlikely that freshwater mussels are present in Hartley Slough, given (1) no available records of freshwater mussels in Hartley Slough or Owens Creek, (2) the channelization and straightening of some reaches of Hartley Slough, and (3) the ephemeral nature of Hartley Slough. In this case, for Hartley Slough freshwater mussels have been assumed to be absent. 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 Hartley Slough has a beneficial use of SPWN for salmon and steelhead and the presence of salmonids and early fish life stages 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 July 2021 and June 2024. The most stringent CMC of 6.6 mg/L (ammonia as N) calculated 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 July 2021 and June 2024. The most stringent 30-day rolling average CCC of 2.83 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 2.83 mg/L (ammonia as N), the 4-day average concentration that should not be exceeded is 7.07 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. The Discharger currently uses a biological nutrient removal treatment system to remove ammonia from the waste stream. Inadequate or incomplete treatment may result in the discharge of ammonia to the receiving stream, which creates the basis for the discharge to have a reasonable potential to cause or contribute to an instream 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 WQBELs are required.

(c) **WQBELs.** The Central Valley Water Board calculates WQBELs in accordance with SIP procedures for non-CTR constituents, and ammonia is a non-CTR constituent. The SIP procedure assumes a 4-day averaging period for calculating the long-term average discharge condition (LTA). However, 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. This Order contains a final average monthly effluent limitation (AMEL) and average weekly effluent limitation (AWEL) for ammonia of 2.0 mg/L and 4.4 mg/L, respectively, based on the site-specific ammonia criteria for Hartley Slough.

(d) **Plant Performance and Attainability.** Analysis of the effluent data for ammonia (as N) collected between July 2021 through June 2024 shows that the maximum monthly average concentration of 0.48 mg/L and the maximum weekly average concentration of 0.95 mg/L are below the applicable WQBELs. Furthermore, 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 effluent limits for ammonia is feasible.

ii. **Copper**

(a) **WQO.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for copper. These criteria for copper are presented as dissolved concentrations, as short period exposure acute criteria, and extended period exposure (4-day) chronic criteria. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. Default U.S. EPA translators were used for the effluent and receiving waters. As described in section IV.C.2.e of this Fact Sheet, the applicable acute and chronic criteria for copper in the effluent are 13 µg/L and 8.4 µg/L, respectively, as total recoverable. For the receiving water analysis, applicable acute and chronic criteria for copper in Hartley Slough are 1.7 µg/L and 1.4 µg/L, respectively, as total recoverable.

(b) **RPA Results.** The MEC for copper in the effluent was 9.6 µg/L, as total recoverable, based on 28 samples collected at Monitoring Location M-001 from July 2021 through June 2024. The maximum copper concentration observed in Hartley Slough was 6.4 µg/L, based on four samples collected at Monitoring Location R-002U1 from July 2021 through June 2024. Reasonable potential exists based on the effluent exceeding its applicable criteria.

(c) **WQBELs.** Due to no assimilative capacity, dilution credits are not allowed for development of the WQBELs for copper. This Order contains a final AMEL of 7.5 µg/L and a MDEL of 12 µg/L for total recoverable copper, based on the CTR criteria for the protection of freshwater aquatic life.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 9.6 µg/L is less than the applicable MDEL. The average effluent copper was 5.1 µg/L, which is less than the applicable AMEL. Depending on how many samples the Discharger collects in a month for use in calculation of the AMEL, the Discharger has the potential to comply with the AMEL.

iii. **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. The Discharger currently uses a two-step biological nutrient removal treatment process to first convert the ammonia to nitrate, then remove the nitrate from the waste stream. Inadequate or incomplete treatment may result in the discharge of nitrate and/or nitrite to the receiving stream in concentrations that may exceed the Primary MCL and would violate the Basin Plan's narrative chemical constituents' objective. Therefore, the Central Valley Water Board finds the discharge has a reasonable potential to cause or contribute to an instream excursion above the Primary MCL and WQBELs are required for nitrate plus nitrite.

(c) **WQBELs.** Due to no assimilative capacity, dilution credits are not allowed for development of the WQBELs for nitrate plus nitrite. This Order contains an average monthly effluent limitation (AMEL) and average weekly effluent limitation (AWEL) for nitrate plus nitrite of 10 mg/L and 15 mg/L, respectively, based on the Basin Plan's narrative chemical constituents objective for protection of the MUN beneficial use. These effluent limitations are included in this Order to assure the treatment process adequately nitrifies and denitrifies the waste stream to protect the beneficial use of municipal and domestic supply.

(d) **Plant Performance and Attainability.** Analysis of the effluent data for nitrate plus nitrite (as N) collected between July 2021 through June 2024 shows that the maximum monthly average concentration of 9.45 mg/L and the maximum weekly average concentration of 11.7 mg/L are below the applicable WQBELs. Furthermore, the Facility is designed to provide tertiary treatment and fully denitrify the wastewater. Therefore, the

Central Valley Water Board finds that immediate compliance with the effluent limits for nitrate plus nitrite is feasible.

iv. **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 is not directly applicable to surface waters; however, the Central Valley Water Board finds the stringent disinfection criteria 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. The beneficial uses of Hartley Slough include municipal and domestic supply, water contact recreation, and agricultural irrigation supply, and there is, at times, less than 20:1 dilution. To protect these beneficial uses, the Central Valley Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease. Although the Discharger provides disinfection, inadequate or incomplete disinfection creates the potential for pathogens to be discharged. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for pathogens and WQBELs are required.

(c) **WQBELs.** Special Provisions VI.C.6.a of this Order requires, “Wastewater shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to the State Water Board, DDW reclamation criteria, CCR, Title 22, division 4, chapter 3, (Title 22), or equivalent.” 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 tertiary treatment process, or equivalent, is capable of reliably treating wastewater to a turbidity level of 2 nephelometric turbidity units (NTU) as a daily average. 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, in addition to total coliform organisms effluent limitations, this Order includes operational specifications for turbidity of 2 NTU as a daily average; 5 NTU, not to be exceeded more than 5 percent of the time within a 24-hour period; and 10 NTU as an instantaneous maximum. This Order also includes operational specifications for turbidity, when coagulation is not used, of 5 NTU for more than 15 minutes and never more than 10 NTU (measured at the influent of the filtration unit) and never more than 2 NTU at any time (measured at the effluent of the filtration unit).

Final WQBELs for BOD_5 and TSS are also required based on the technical capability of the tertiary process. 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 technology-based secondary standards. Therefore, this Order requires AMELs for BOD_5 and TSS of 10 mg/L, which is technically based on the capability of a tertiary system.

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.

(d) **Plant Performance and Attainability.** The Facility provides tertiary treatment and utilizes a UV 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.

v. **pH**

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

(b) **RPA Results.** Raw domestic wastewater inherently has variable pH. Additionally, some wastewater treatment processes can increase or decrease wastewater pH which if not properly controlled, would violate the Basin Plan's numeric objective for pH in the receiving water. Therefore, reasonable potential exists for pH and WQBELs are required.

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

(d) **Plant Performance and Attainability.** Analysis of the effluent data from July 2021 through June 2024 shows that representative pH results ranged from 6.93 to 7.86, which is within the range of the applicable WQBELs. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

4. WQBEL Calculations

a. This Order includes WQBELs for ammonia (as N), BOD_5, TSS, pH, nitrate plus nitrite (as N), total recoverable copper, and total coliform organisms. The general methodology for calculating WQBELs based on the different criteria/objectives is described in subsections IV.C.5.b through e, below. See Attachment H for the WQBEL calculations.

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

ECA = C + D(C – B) 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 MCLs 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 MCLs that protect public welfare (e.g., taste, odor, and staining), WQBELs 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 WQBELs 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, WQBELs 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 WQBELs 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, WQBELs are calculated using similar procedures, except that an AWEL is established using the MDEL/AMEL multiplier from Table 2 of the SIP.

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

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

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

where:

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

Summary of Water Quality-Based Effluent Limitations
Discharge Point 002 (Hartley Slough)

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

Parameter	Units	Average Monthly Effluent Limitations	Average Weekly Effluent Limitations	Maximum Daily Effluent Limitations	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand 5-day @20°C (BOD_5)	mg/L	10	15			
Total Suspended Solids (TSS)	mg/L	10	15			
pH	std units				6.5	8.5
Ammonia Nitrogen (as N)	mg/L	2.0	4.4			
Nitrate plus Nitrite (as N)	mg/L	10	15			
Copper, Total Recoverable	µg/L	7.5		12		

Parameter	Units	Average Monthly Effluent Limitations	Average Weekly Effluent Limitations	Maximum Daily Effluent Limitations	Instantaneous Minimum	Instantaneous Maximum
Total Coliform Organisms	MPN/ 100 mL	See notes below		See notes below		

Table F-9 Notes:

1. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed:
   i. 2.2 most probable number (MPN) per 100 mL, as a 7-day median.
   ii. 23 MPN/100 mL, more than once in any 30-day period.
   iii. 240 MPN/100 mL, at any time.
2. **Percent Removal.** The average monthly percent removal of BOD_5 and TSS shall not be less than 90 percent.

5. Whole Effluent Toxicity (WET)

The State Water Board's toxicity provisions, which include numeric objectives for acute and chronic aquatic toxicity, are applicable to this discharge and are hereafter referred to as the Toxicity Provisions.

a. **Chronic Toxicity.** The chronic aquatic toxicity water quality objective is expressed as a null hypothesis and an alternative hypothesis with a regulatory management decision (RMD) of 0.75, where the following null hypothesis, Ho, shall be used:

Ho: Mean response (ambient water) ≤ 0.75 • mean response (control)

And where the following alternative hypothesis, Ha, shall be used:

Ha: Mean response (ambient water) > 0.75 • mean response (control)

Attainment of the water quality objective is demonstrated by conducting chronic aquatic toxicity testing and rejecting this null hypothesis in accordance with the Test of Significant Toxicity (TST) statistical approach 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. When the null hypothesis is rejected, the alternative hypothesis is accepted in its place, and there is no exceedance of the chronic aquatic toxicity water quality objective. Failing to reject the null hypothesis (referred to as a “fail”) is equivalent to an exceedance of the chronic aquatic toxicity water quality objective.

To evaluate compliance with the Statewide Toxicity Provisions' aquatic toxicity numeric objectives, acute and chronic whole effluent toxicity testing data has been evaluated in the development of this Order.

The table below is chronic WET testing performed by the Discharger from August 2021 through October 2024.

Table F-10 Chronic Whole Effluent Toxicity Testing Results – Test of Significant Toxicity at the IWC (100 Percent Effluent)

Date	Fathead Minnow (*Pimephales promelas)* Survival		Fathead Minnow (*Pimephales promelas)* Growth		Water Flea (*Ceriodaphnia dubia)* Survival		Water Flea (*Ceriodaphnia dubia)* Reproduction		Green Algae (*Pseudokirchneriella subcapitata)* Growth	
	Pass/ Fail	Percent Effect	Pass/ Fail	Percent Effect	Pass/ Fail	Percent Effect	Pass/ Fail	Percent Effect	Pass/ Fail	Percent Effect
8/9/21					Pass	0	Pass	4		
10/4/21					Pass	0	Pass	-10.9		
1/3/22					Pass	0	Pass	13.7		
4/4/22					Pass	0	Pass	-1.8		
7/25/22					Pass	0	Pass	-12.5		
10/10/22					Pass	0	Pass	5.2		
2/27/23	Pass	2.5	Pass	6.8	Pass	0	Pass	-0.6	Pass	-38
5/8/23	Pass	0	Pass	-4.6	Pass	0	Pass	-11	Pass	-55
7/10/23					Pass	0	Pass	-28.1		
10/2/23					Pass	0	Pass	13.6		
3/4/24					Fail	20	Fail	27.4		
4/22/24					Pass	0	Pass	16.2		
8/12/24					Pass	0	Pass	-2.2		
10/14/24					Pass	0	Pass	8.9		

i. **RPA.** The Facility is a POTW with a permitted ADWF of greater than or equal to 5 MGD that treats domestic wastewater containing ammonia and other toxic pollutants and is required to have a pretreatment program by the terms of 40 C.F.R. § 403.8(a). Per the Statewide Toxicity Provisions, effluent limitations for chronic toxicity must be issued to the discharge without regard for a reasonable potential analysis for chronic toxicity. Water quality-based effluent limits for chronic toxicity are included in this Order.

ii. **WQBELs.** The following effluent limitations have been established for chronic whole effluent toxicity:

Chronic Whole Effluent Toxicity Median Monthly Effluent Limitation (MMEL). No more than one *Ceriodaphnia dubia* chronic

aquatic toxicity test initiated in a toxicity calendar month shall result in a "Fail" at the IWC for any endpoint.

Chronic Whole Effluent Toxicity Maximum Daily Effluent Limitation (MDEL). No *Ceriodaphnia dubia* chronic aquatic toxicity test shall result in a "Fail" at the Instream Waste Concentration (IWC) for the sub-lethal endpoint measured in the test and a percent effect for the survival endpoint greater than or equal to 50 percent.

b. **Acute Toxicity.** The acute aquatic toxicity water quality objective is expressed as a null hypothesis and an alternative hypothesis with a regulatory management decision (RMD) of 0.80, where the following null hypothesis, Ho, shall be used:

Ho: Mean response (ambient water) ≤ 0.80 • mean response (control)

And where the following alternative hypothesis, Ha, shall be used:

Ha: Mean response (ambient water) > 0.80 • mean response (control)

Attainment of the water quality objective is demonstrated by conducting acute aquatic toxicity testing and rejecting this null hypothesis in accordance with the TST statistical approach. When the null hypothesis is rejected, the alternative hypothesis is accepted in its place, and there is no exceedance of the acute aquatic toxicity water quality objective. Failing to reject the null hypothesis (referred to as a "fail") is equivalent to an exceedance of the acute aquatic toxicity water quality objective.

The table below is acute WET testing performed by the Discharger from August 2021 through October 2024.

Table F-11 Acute Whole Effluent Toxicity Testing Results – Test of Significant Toxicity

Date	Fathead Minnow (*Pimephales promelas*) Survival		Notes
	Pass/Fail	Percent Effect	
8/9/2021	Pass	0	
10/4/2021	Pass	0	
1/3/2022	Pass	0	
4/4/2022	Pass	-5	
7/11/2022	Pass	-5	Dissolved oxygen (DO) crash, aerated
10/10/2022	Pass	-5	DO crash, aerated
2/27/2023	Pass	5	DO crash, aerated
5/8/2023	Fail	40	DO crash, aerated
5/13/2023	Pass	10	DO crash, aerated
7/10/2023	Pass	5	DO crash, aerated
10/2/2023	Fail	25	DO crash, aerated

Date	Fathead Minnow (*Pimephales promelas*) Survival		Notes
	Pass/Fail	Percent Effect	
3/4/2024	Pass	5	
4/22/2024	Fail	20	DO crash, aerated
7/15/2024	Fail	25	DO crash, aerated
10/14/2024	Pass	0	

i. **RPA.** The Toxicity Provisions do not require a reasonable potential analysis for acute toxicity for the Facility and there are no special circumstances (e.g., high dilution rate, threatened/endangered aquatic species, etc.) for the Facility that may warrant one. However, acute toxicity results during the previous permit term were available for analysis and included and summarized in this section.

TST data was evaluated at an IWC of 100 percent. Several toxicity tests indicated a dissolved oxygen (DO) crash, which at times resulted in decreased survival. The 8 May 2023 acute toxicity test resulted in a Fail with a percent effect of 40 percent and also indicated a DO crash. On the same day, a chronic toxicity test was conducted from effluent collected at the same time. The chronic toxicity test resulted in a pass for all three species, in particular a -4.6% effect for *Pimephales promelas.* According to the 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, “[i]n static test, low DOs commonly occur in the higher concentrations of wastewater” and “[u]nless aeration is initiated during the first 8 [hours] of the test, the DO may be exhausted during an unattended period, thereby invalidating the test.” Aeration was performed in the DO crash events. The results indicating a DO crash in these cases should be invalidated. The remaining acute toxicity testing result in Passes of the TST.

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. Pursuant to the exceptions to mass limitations provided in 40 C.F.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 MCLs) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

2. Averaging Periods for Effluent Limitations

40 C.F.R. section 122.45 (d) requires average weekly and average monthly discharge limitations for POTWs unless impracticable. For total recoverable copper, average weekly effluent limitations have been replaced with maximum daily effluent limitations in accordance with section 1.4 of the SIP. Furthermore for pH and total coliform organisms, weekly average effluent limitations have been replaced or supplemented with effluent limitations utilizing shorter averaging periods. The rationale for using shorter averaging periods for these constituents is discussed in section IV.C.3 of this Fact Sheet.

3. Satisfaction of Anti-Backsliding Requirements

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

The effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order, with the exception of effluent limitations for chlorpyrifos, diazinon, electrical conductivity, ammonia nitrogen, nitrate plus nitrite, total recoverable copper, and acute whole effluent toxicity. The effluent limitations for these pollutants are less stringent than those in Order R5-2020-0014. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

a. **CWA section 402(o)(1) and 303(d)(4).** CWA section 402(o)(1) prohibits the establishment of less stringent water quality-based effluent limits "except in compliance with section 303(d)(4)." CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters.

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

   ii. For attainment waters, CWA section 303(d)(4)(B) specifies that a limitation based on a water quality standard may be relaxed where the action is consistent with the antidegradation policy.

   Hartley Slough is considered an attainment water for ammonia nitrogen, nitrate plus nitrite, and total recoverable copper because the receiving water is not listed as impaired on the 303(d) list for these constituents. The exceptions in section 303(d)(4) address both waters in attainment with water quality standards and those not in attainment, i.e. waters on the section 303(d) impaired waters list. As discussed in

section IV.D.4, below, relaxation or removal of the effluent limits complies with federal and state antidegradation requirements. Thus, relaxation of effluent limitations for ammonia nitrogen, nitrate plus nitrite, and total recoverable copper from Order R5-2020-0014 meets the exception in CWA section 303(d)(4)(B).

b. **CWA section 402(o)(2).** CWA section 402(o)(2) provides several exceptions to the anti-backsliding regulations. CWA 402(o)(2)(B)(i) allows a renewed, reissued, or modified permit to contain a less stringent effluent limitation for a pollutant if information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.

As described further in section IV.C.3 of this Fact Sheet, updated information that was not available at the time Order R5-2020-0014 was issued indicates that electrical conductivity, chlorpyrifos, diazinon, and acute whole effluent toxicity do not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water and justifies relaxation of ammonia, nitrate plus nitrite, and total recoverable copper effluent limitations. The updated information that supports the relaxation or removal of effluent limitations for these constituents includes the following:

i. **Acute Whole Effluent Toxicity.** This Order removes the effluent limitation for acute whole effluent toxicity per standard approach under the new Statewide Toxicity Provisions, because chronic toxicity testing is generally protective of both acute and chronic toxicity. This Order includes effluent limitations for chronic whole effluent toxicity, consistent with the Statewide Toxicity Provisions.

ii. **Ammonia.** WQBELs for ammonia were calculated based on monitoring data collected from July 2021 through June 2024, which is representative of current treatment plant performance. Therefore, Central Valley Water Board staff considers this effluent data to be the most representative and reliable dataset to use to determine current Facility performance and development of WQBELs.

The AMEL and AWEL for ammonia in this Order are different values than in previous Order R5-2020-0014. The reasons for the change in AMEL and AWEL are due to a change in the variability of the effluent data for ammonia, use of the 2013 U.S. EPA National Ambient Water Quality Criteria, and updated pH and temperature monitoring data collected between July 2021 through June 2024. The WQBELs, however, are equally protective of the beneficial uses. The level of treatment needed to maintain compliance with the effluent limits remains the same.

iii. **Chlorpyrifos and Diazinon.** Effluent monitoring data collected between July 2021 and June 2024 indicate that chlorpyrifos and diazinon in the discharge do not exhibit reasonable potential to cause or contribute to an exceedance of the Basin Plan objectives.

iv. **Copper.** As described in section IV.C.3.c.ii of this Fact Sheets, criteria for total recoverable copper are hardness-dependent. Based on updated effluent and receiving water hardness data from July 2021 through June 2024, this Order includes a less stringent AMEL for copper.

v. **Electrical Conductivity.** Effluent monitoring data collected between July 2021 through June 2024 indicate that EC in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives. This Order includes alternative effluent limitations for salinity by enforcing best management practices, which includes ongoing participation in CV-SALTS. The Discharger is participating in the CV-SALTS Salinity Control Program Alternative Pathway. This Order removes the effluent limitation for EC and establishes a performance-based effluent trigger for EC in accordance with the Alternative Pathway.

Thus, removal or relaxation of the effluent limitations for acute whole effluent toxicity, ammonia, chlorpyrifos, diazinon, total recoverable copper, and electrical conductivity from Order R5-2020-0014 is in accordance with CWA section 402(o)(2)(B)(i), which allows for less stringent effluent limitations based on information that was not available at the time of permit issuance.

c. **Nitrate plus Nitrite.** For nitrate plus nitrite, the AWEL has changed from the previous Order. However, the effluent limits are not less stringent. In this case, the waste load allocation (WLA) in this Order and the previous Order are identical. The WLA provides a definition of effluent quality that is necessary to meet the water quality standards of the receiving water and is used to derive WQBELs that are used to enforce the WLA.

The TSD warns that, "*Direct use of a WLA as a permit limit creates a significant risk that the WLA will be enforced incorrectly, since effluent variability and the probability basis for the limit are not considered specifically*." (TSD, p. 96) The SIP and TSD include identical procedures for calculating WQBELs that use the statistical variability of the effluent to convert the WLA to AMELs and MDELs.

The new effluent data used to calculate WQBELs for this Order has different statistical variability (i.e., coefficient of variation (CV) is different) than used in the previous Order. Changes in the CV can result in small changes to the effluent limits. However, the slight changes in effluent limits do not allow for an increase in the pollutants discharged. The TSD states,

"*Since effluents are variable and permit limits are developed based on a low probability of exceedance, the permit limits should consider effluent variability and ensure that the requisite loading from the WLA is not exceeded under normal conditions. In effect then, the limits must "force" treatment plant performance, which, after considering acceptable effluent variability, will only have a low statistical probability of exceeding the WLA and will achieve the desired loadings*." (TSD, p. 97) Therefore, although there are slight differences in the effluent limits, the WLAs are identical, so the level of treatment needed to maintain compliance with the effluent limits remains the same. Consequently, the effluent limits are not less stringent than the previous Order, and there is no backsliding.

WQBELs for nitrate plus nitrite were calculated based on monitoring data collected between July 2021 and June 2024, which is representative of current treatment plant performance. Therefore, Central Valley Water Board staff considers this effluent data to be the most representative and reliable dataset to use to determine current Facility performance and development of WQBELs.

The AWEL for nitrate plus nitrite in this Order was calculated as a higher value than in previous Order R5-2020-0014. However, the AMEL remains the same. The WQBELs in both Orders are based on the same WLA (i.e., the WLA is based on the CTR human health criterion for nitrate plus nitrite). The reason for the change in the AWEL is due to a change in the variability of the effluent data for nitrate plus nitrite. The WQBELs, however, are equally protective of the beneficial uses. The level of treatment needed to maintain compliance with the effluent limits remains the same. Consequently, the effluent limit is not less stringent than the previous permit, and there is no backsliding.

4. Antidegradation Policies

This Order does not authorize lowering water quality as compared to the level of discharge authorized in the previous order, which is the baseline by which to measure whether degradation will occur. This Order does not allow for an increase in flow or mass of pollutants to the receiving water. This Order requires compliance with applicable federal technology-based standards and with WQBELs where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards. Accordingly, 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 removes effluent limitations for acute whole effluent toxicity, chlorpyrifos, diazinon, and electrical conductivity, based on updated monitoring data demonstrating that the effluent does not cause or contribute to an exceedance of the applicable water quality criteria or objectives in the receiving water. This Order relaxes effluent limitations for ammonia nitrogen, total recoverable copper, and nitrate plus nitrite, based on updated information water

quality data that affects the calculation of water quality criteria and water quality effluent limitations. The removal and relaxation of WQBELs for these parameters will not result in an increase in pollutant concentration or loading, a decrease in the level of treatment or control, or a reduction of water quality. Therefore, the Central Valley Water Board finds that the removal and relaxation of the effluent limitations does not result in an increase in pollutants or any additional degradation of the receiving water. Thus, the removal and relaxation of effluent limitations is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Anti-Degradation Policy.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on BOD_5, TSS, and pH. Restrictions on BOD_5, TSS, and pH are discussed in section IV.B of the Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order contains effluent limitations more stringent than the minimum, federal technology-based requirements that are necessary to meet water quality standards. For BOD_5, TSS, BOD_5 and TSS removal, and pH, both technology-based effluent limitations and water quality-based effluent limitations are applicable. The more stringent of these effluent limitations are implemented by this Order.

Summary of Final Effluent Limitations
Discharge Point 002 (Hartley Slough)

Table F-12 Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations	Basis (see 1 below)
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5)	mg/L	AMEL 10 AWEL 15	TTC
Total Suspended Solids (TSS)	mg/L	AMEL 10 AWEL 15	TTC
pH	standard units	Instantaneous Min 6.5 Instantaneous Max 8.5	BP
Ammonia Nitrogen (as N)	mg/L	AMEL 2.0 AWEL 4.4	NAWQC
Nitrate plus Nitrite (as N)	mg/L	AMEL 10 AWEL 15	MCL
Copper, Total Recoverable	µg/L	AMEL 7.5 MDEL 12	CTR

Parameter	Units	Effluent Limitations	Basis (see 1 below)
Total Coliform Organisms	MPN/100 mL	See 2 below	Title 22
BOD_5 and TSS Percent Removal	Percent	See 3 below	TTC
Chronic Whole Effluent Toxicity	% Effect and TST	See 4 below	BP

Table F-12 Notes:

1. **TTC** – Based on tertiary treatment capability. These effluent limitations reflect the capability of a properly operated tertiary treatment plant.
   BP – Based on water quality objectives contained in the Basin Plan.
   CTR – Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.
   NAWQC – Based on U.S. EPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
   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).
2. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed:
   i. 2.2 most probable number (MPN) per 100 mL, as a 7-day median.
   ii. 23 MPN/100 mL, more than once in any 30-day period.
   iii. 240 MPN/100 mL, at any time.
3. **Percent Removal.** The average monthly percent removal of BOD_5 and TSS shall not be less than 90 percent.
4. **Chronic Whole Effluent Toxicity.**
   i. No *Ceriodaphnia dubia* chronic aquatic toxicity test shall result in a "Fail" at the Instream Waste Concentration (IWC) for the sub-lethal endpoint measured in the test AND a percent effect for the survival endpoint greater than or equal to 50 percent.
   ii. No more than one *Ceriodaphnia dubia* chronic aquatic toxicity test initiated in a toxicity calendar month shall result in a "Fail" at the IWC for any endpoint.

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications – Wildlife Management Area

The Merced Wildlife Management Area (WMA) was created by the City of Merced many years ago as mitigation for loss of wetland caused by the establishment of the

Land Application Area (LAA). The WMA is managed by the California Department of Fish and Wildlife to provide wetland habitat for migratory waterfowl and other wildlife. The public is allowed limited access for hunting and other wetland related activities that include REC-1, REC-2, WARM, and WILD beneficial uses. The Division of Drinking Water indicates that the WMA meets the definition of a "restricted recreational impoundment" as defined in section 60301.760, article 1, chapter 3, title 22 of the California Code of Regulations. Treated effluent discharged to the WMA shall be at least "disinfected secondary-2.2 recycled water," as defined in section 60301.220, article 1, chapter 3, title 22 of the California Code of Regulations, and comply with the following specifications to maintain beneficial uses of the WMA.

1. Effluent shall be contained in the WMA.

2. Recycled water shall be managed to conform to the requirements of title 22, division 4, chapter 3 of the California Code of Regulations.

3. Objectionable odors related to the discharge shall not be perceived beyond the limits of the WMA.

4. Public contact with recycled water shall be controlled through such means as fences or signs, or other acceptable alternatives. All areas where recycled water is used that are accessible to the public shall be posted with signs that are visible to the public, in a size no less than 4-inches high by 8-inches wide, that include the following wording:

   "RECYCLED WATER – DO NOT DRINK
   AQUA DE DESPERDICIO RECLAMADA – NO TOME"

   Each sign shall display an international symbol similar to that shown in **Attachment I**.

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

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

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

6. There shall be no cross-connections between potable water supply piping and piping containing recycled water. Supplementing recycled water with potable water shall not occur except through an air-gap separation or, if approved by DDW, a reduced pressure principle backflow device.

7. Ponds within the WMA shall be managed to maintain the integrity of pond embankments.

8. The Discharger has the ability to discharge to the WMA and LAA simultaneously, but the entire flow is metered before it splits to the WMA or LAA. Accurate flow measurements and loading calculations to the WMA and LAA are not possible with the current meter location. Therefore, effluent shall not be discharged to the WMA and LAA simultaneously, unless the flow to each of these locations can be metered separately.

In addition, since the Facility provides a tertiary level of treatment, the following specifications are also required for treated effluent discharged to the WMA:

Summary of Land Discharge Specifications
Discharge Point 003 (Wildlife Management Area)
Table F-13 WMA Land Discharge Specifications

Parameter	Units	Discharge Specifications
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5)	mg/L	AMEL 10 AWEL 15
Total Suspended Solids (TSS)	mg/L	AMEL 10 AWEL 15
pH	standard units	Instantaneous Min 6.5 Instantaneous Max 8.5
Nitrate plus Nitrite (as N)	mg/L	AMEL 10 AWEL 15
Total Coliform Organisms	MPN/100 mL	See 1 below
BOD_5 and TSS Percent Removal	Percent	See 2 below

Table F-13 Notes:

1. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed:
   i. 2.2 most probable number (MPN) per 100 mL, as a 7-day median.
   ii. 23 MPN/100 mL, more than once in any 30-day period.
2. **Percent Removal.** The average monthly percent removal of BOD_5 and TSS shall not be less than 90 percent.

G. Land Discharge Specifications – Land Application Area

1. Recycled Water Specifications

The Discharger submitted a Title 22 Engineering Report for the discharge of recycled water to the LAA on 27 March 2006. DDW conditionally approved the

Title 22 Engineering Report in a letter dated 20 July 2006. The additional 90 acres of the abandoned ponds 5 and 6 added in Order R5-2014-0096 were later covered in a revised Title 22 Engineering Report. To protect public health and water quality, recycled water discharged to the LAA shall be at least "disinfected secondary-23 recycled water," as defined in Section 60301.225, article 1, chapter 3, title 22 of the California Code of Regulations and comply with the following specifications:

a. Recycled water shall be contained within the Land Application Area at all times.

b. Recycled water shall be managed to conform with the requirements of title 22, division 4, chapter 3, California Code of Regulations.

c. Objectionable odors related to the discharge shall not be perceivable beyond the limits of the Land Application Area at any time.

d. Public contact with recycled water shall be controlled through such means as fences or signs, or other acceptable alternatives. All areas where recycled water is used that are accessible to the public shall be posted with signs that are visible to the public, in a size no less than 4-inches high by 8-inches wide that include the following wording**:**

"RECYCLED WATER – DO NOT DRINK
AGUA DE DESPERDICIO RECLAMADA – NO TOME"

Each sign shall display the international symbol similar to the shown in **Attachment I**.

e. The combined application of recycled water, biosolids, fertilizers, and other soil amendments to the Land Application Area shall not exceed the nitrogen or hydraulic loading reasonably necessary to satisfy the nitrogen or water uptake needs of the Land Application Area considering the plant, soil, climate, and irrigation management system (i.e., generally accepted agronomic rates).

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

   i. Ditches not serving as wildlife habitat shall be maintained free from emergent, marginal, and floating vegetation.

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

g. Discharges to the LAA shall be managed to minimize erosion.

h. There shall be no standing water in the LAA 24 hours after recycled water is applied.

i. The Discharger may not discharge recycled water to the LAA during periods of measurable precipitation, or when soils within the LAA are saturated.

j. No irrigation with disinfected tertiary recycled water shall take place within 50 feet of any domestic supply well unless all of the following are met:

   i. A geological investigation demonstrates that an aquitard exists at the well between the uppermost aquifer being drawn from and the ground surface.

   ii. The well contains an annular seal that extends from the surface into the aquitard.

   iii. The well is housed to prevent any recycled water spray from coming into contact with the wellhead facilities.

   iv. The ground surface immediately around the wellhead is contoured to allow surface water to drain away from the well.

   v. The owner of the well approves of the elimination of the buffer zone requirement.

k. No impoundment of disinfected tertiary recycled water shall occur within 100 feet of any domestic water supply well.

l. No irrigation with, or impoundment of, disinfected secondary-23 recycled water shall take place within 100 feet of any domestic water supply well.

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

n. There shall be no cross-connection between potable water supply piping and piping containing recycled water. Supplementing recycled water with potable water shall not occur except through an air-gap separation or, if approved by the DDW, a reduced pressure principle backflow device.

o. The Discharger has the ability to discharge to the WMA and LAA simultaneously, but the entire flow is metered before it splits to the WMA or LAA. Accurate flow measurements and loading calculations to the WMA and LAA are not possible with the current meter location. Therefore, effluent shall not be discharged to the WMA and LAA simultaneously, unless the flow to each of these locations can be metered separately.

In addition, since the Facility provides a tertiary level of treatment, the following specifications are also required for treated effluent discharged to the LAA:

Summary of Land Discharge Specifications
Discharge Point 004 (Land Application Area)
Table F-14 LAA Recycled Water Specifications

Parameter	Units	Discharge Specifications
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5)	mg/L	AMEL 10 AWEL 15
Total Suspended Solids (TSS)	mg/L	AMEL 10 AWEL 15
pH	standard units	Instantaneous Min 6.5 Instantaneous Max 8.5
Nitrate plus Nitrite (as N)	mg/L	AMEL 10 AWEL 15
Total Coliform Organisms	MPN/100 mL	See 1 below
BOD_5 and TSS Percent Removal	Percent	See 2 below

Table F-14 Notes:

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

   i. 23 most probable number (MPN) per 100 mL, as a 7-day median.

   ii. 240 MPN/100 mL, more than once in any 30-day period.

2. **Percent Removal.** The average monthly percent removal of BOD5 and TSS shall not be less than 90 percent.

2. Biosolids Discharge Specifications

Due to the extensive work done by the U.S. EPA, this Order uses the 40 C.F.R. part 503 requirements as baseline requirements for biosolids discharge specifications. However, the biosolids discharge specifications applies to biosolids applied to land and is not intended to solely regulate the Discharger as a biosolids generator. The 40 C.F.R. part 503 permit requirements are only intended for and enforceable against a biosolids generator. Therefore, this Order does not constitute compliance with 40 C.F.R. part 503. Since the Regional Water Board is not delegated with authority for the Federal Biosolids Program, the U.S. EPA is the only authority to determine compliance with 40 C.F.R. part 503.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

On 4 March 2025, the U.S. Supreme Court issued a decision in the case of the City and County of San Francisco vs. U.S. Environmental Protection Agency (2025) 145 U.S. 704, which challenged some of the limits in NPDES permits. The Court ruled that "end result" provisions (e.g. receiving water limitations) are not allowed by the federal Clean Water Act and that NPDES permits must have specific requirements to meet water quality objectives and protect beneficial uses. Based on this ruling, no receiving water limitations are included in this Order.

The Clean Water Act and implementing regulations specify that effluent limitations are required when there is reasonable potential for a discharge to cause or contribute to an exceedance of any applicable water quality standard. A Reasonable Potential Analysis (RPA) is a key step taken by permit writers to determine if a discharge has the potential to violate water quality standards. An RPA includes characterization of the effluent and receiving waters and an assessment of the water quality standards to see if projected concentrations in the receiving water after mixing with the effluent have the "reasonable potential" (RP) to exceed the water quality criteria. Effluent limitations and other permit conditions are prescribed based on an evaluation of this information. RPAs and effluent limitation calculations follow established NPDES program procedures and requirements (State Water Resources Control Board, 2005 and U.S. Environmental Protection Agency, 1991).

This Order also requires regular effluent and receiving water sampling to document any potential effects to the receiving water. In addition, this Order requires characterization monitoring of priority pollutants in the upstream receiving water and effluent during the permit term. All Central Valley NPDES permits contain a general re-opener provision that allow the Central Valley Water Board to amend the permit and include conditions, effluent limitations, provisions, or prohibitions. This would include scenarios where monitoring data indicate the need for new effluent limitations to ensure receiving water quality objectives are met. As an additional assurance, this Order prohibits operational changes that would significantly impact the character of the waste discharge.

Nonetheless, the question remains as to whether an NPDES permit is adequately protective of water quality when the receiving water limitations are removed; or alternatively, whether additional conditions should be considered when removing receiving water limitations.

1. Below is a summary of the specific considerations for the removal of receiving water limitations. These considerations include associated effluent limitations, best management practices (BMPs) and/or water quality monitoring requirements.

    a. ***Bacteria.*** On 7 August 2018 the State Water Board adopted Resolution No. 2018-0038 establishing Bacteria Provisions, which are specifically titled "Part

3 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California—Bacteria Provisions and a Water Quality Standards Variance Policy" and "Amendment to the Water Quality Control Plan for Ocean Waters of California—Bacteria Provisions and a Water Quality Standards Variance Policy." The Bacteria Water Quality Objectives established in the Bacteria Provisions supersede any numeric water quality objective for bacteria for the REC-1 beneficial use contained in a water quality control plan before the effective date of the Bacteria Provision. However, the Statewide Bacteria Provisions provide that where a permit, waste discharge requirement (WDR), or waiver of WDR includes an effluent limitation or discharge requirement that is derived from a water quality objective or other guidance to control bacteria (for any beneficial use) that is more stringent than the Bacteria Water Quality Objective, the Bacteria Water Quality Objective would not be implemented in the permit, WDR, or waiver of WDR. Since this Order includes effluent limitations and discharge requirements equivalent to the DDW Title 22 disinfected tertiary reclamation criteria that are more stringent than the Statewide Bacteria Objectives, the Statewide Bacteria Objectives have not been implemented in this Order.

The Facility is a POTW that treats its water to tertiary standards and has strict total coliform limitations that meet Title 22 disinfection or equivalent standards. This Order contains total coliform effluent limitations based on the Title 22 disinfection or equivalent reclamation criteria, which are more stringent than the Statewide Bacteria Objectives described below.

b. ***Biostimulatory Substances and Dissolved Oxygen requirements.*** The Basin Plan contains a biostimulatory narrative water quality objective (WQO) and dissolved oxygen numeric water quality objectives that have been incorporated into previous permits as receiving water limitations. Biostimulatory substances and low dissolved oxygen can cause eutrophication and excessive algal growth in the receiving water along with other water quality issues related to taste, odor, color and toxicity. Discharges with high Biological Oxygen Demand (BOD) and/or Chemical Oxygen Demand (COD) may contribute to dissolved oxygen problems downstream.

There is no RP for dissolved oxygen, but the permit requires frequent monitoring of dissolved oxygen in the receiving water as well as visual monitoring of the receiving water for fungi, slimes, or objectionable growths. This Order includes effluent limitations for BOD and percent removal of BOD5 and TSS along with regular monitoring of Dissolved Organic Carbon (DOC) in the receiving water.

c. ***Chemicals, Pesticides, and Radioactive requirements.*** The Basin Plan has narrative and numeric water quality objectives for chemicals, pesticides, and radionuclides that are typically used as receiving water limitations in NPDES permits. As with other water quality constituents, NPDES regulations require effluent limitations where existing data indicate reasonable potential to

cause or contribute to an exceedance in the receiving water. Attachments G and H provide details regarding the specific chemical constituents with reasonable potential and associated effluent limitations. These effluent limitations ensure the protection of beneficial uses in the receiving water. There is no RP based on existing data for any radioactive constituents or pesticides on the characterization monitoring list.

There is RP for total recoverable copper in the effluent. This Order includes effluent limitations for total recoverable copper and monitoring of the effluent and receiving water for copper.

d. ***Color, Taste, and Odors requirements.*** The Basin plan has a narrative water quality objective for color as well as one for taste and odors. These have been incorporated into previous permits as receiving water limitations. Color, taste, and odors are rarely concerns for tertiary treated wastewater discharges in the Central Valley, and no effluent limitations are included in this permit. However, frequent visual monitoring of the receiving water for discoloration and other potential nuisance conditions is required.

e. ***pH requirements.*** The Basin Plan has narrative water quality objectives for pH that have been used as receiving water limitations in previous permits. A pH that is too high or too low can influence the solubility of metals and nutrients in the receiving water and impact the overall health of aquatic life. The discharge does not have RP for pH based on existing data. However, the permit does include pH effluent limitations and requires frequent monitoring of pH in the receiving water.

f. ***Temperature requirements.*** The previous permit included receiving water limitations for temperature based on the Discharger's December 2011 *Hartley Slough Temperature Study* and comments received from the California Department of Fish and Wildlife regarding the temperature study. There is no RP for temperature based on existing data. This Order does include frequent monitoring of temperature in the receiving water. The monitoring will be used in the future to evaluate whether the discharge causes Hartley Slough's 1) natural temperature to increase by more than 5 degrees Fahrenheit on an average annual basis; 2) the daily average temperature to exceed 86 degrees Fahrenheit at any time; or 3) the average temperature to exceed the following:

a. 77 degrees F from 1 June through 15 June,
b. 76 degrees F from 16 May through 31 May,
c. 75 degrees F from 1 May through 15 May,
d. 74 degrees F from 16 April through 30 April,
e. 73 degrees F from 1 April through 15 April.

g. ***Toxicity requirements.*** The Basin Plan contains a narrative water quality objective for toxicity that has been incorporated into previous permits as a receiving water limitation. However, with the adoption of the Statewide

Toxicity Provisions (State Water Resources Control Board, 2021) in 2023, numeric aquatic toxicity water quality objectives were established along with required effluent limitations and/or targets for non-stormwater NPDES permits to ensure the protection of aquatic life beneficial uses in receiving waters.

This Order includes chronic whole effluent toxicity effluent limitations and requires frequent monitoring of chronic whole effluent toxicity. This Order also has effluent limitations for Ammonia Nitrogen, Total (as N). Elevated levels of ammonia are known to be toxic to aquatic organisms, so effluent limitations ensure that the aquatic life beneficial use is protected in the receiving water body.

h. ***Turbidity requirements.*** The Basin Plan includes numeric turbidity water quality objectives that are based on existing turbidity in the receiving waters. These have been incorporated into previous permits as receiving water limitations. The discharge does not have reasonable potential or effluent limitations for turbidity, however the permit requires frequent monitoring of turbidity in the receiving waters. The Facility is a POTW that treats their water to tertiary standards. The permit includes filtration system operating specifications with strict turbidity requirements to ensure disinfection systems are effective. These limitations are low enough to ensure protection of beneficial uses in the receiving water.

i. ***Floating Material, Oil and Grease, Suspended Sediments, Suspended Material, and Settleable Substances requirements.*** The previous permit contained receiving water limitations relative to narrative water quality objectives in the Basin Plan for Floating Material, Oil and Grease, Suspended Sediments, Suspended Material and Settleable Substances. These constituents can affect water quality by reducing water clarity and light penetration which can ultimately lead to increased water temperatures, decreased dissolved oxygen levels, and eutrophication. Contamination from these substances can impact both aquatic and human health.

This Order requires frequent visual monitoring in the receiving waters for floating material, visible films, sheens or coating, suspended matter, and bottom deposits. This Order also includes numeric effluent limitations for Total Suspended Solids.

2. **Review of Other Relevant Factors**

In addition to the considerations listed in Section V.A.1 above, Central Valley Water Board staff also considered the other relevant factors below in the review of receiving water limitations.

i. ***Synergistic effects.*** Is there a known concern that the discharge will combine with the receiving water and produce adverse synergistic effects? For example, surface water discharges may be fully compliant with dissolved oxygen and narrative objectives, but may combine with poor conditions in the

receiving water to cause harmful algal blooms (HABs), eutrophication, dissolved oxygen sag, toxic effects, taste and odor, and other harmful conditions. Is there the concern that the discharge when combined with the receiving water would have color concerns (e.g., mine discharge, floc due to pH change, etc.)?

There are no known concerns for adverse synergistic effects in the receiving water.

ii. ***Limitations enforced within the receiving water.*** Are there specific chemicals or pesticides that have Basin Plan objectives that are not enforced through effluent limitations? For example, certain organochlorine pesticides effluent limitations are based on numeric water quality objectives consistent with applicable regulations. However, more stringent Basin Plan objectives require the receiving water to be "non-detect" for these materials. In these circumstances, removing the receiving water limitation would result in reduced protections that are required under federal and state regulations.

The discharge does not demonstrate exceedances of the Basin Plan's receiving water quality objectives for this category of chemicals and/or pesticides.

iii. ***Other site-specific information.*** Are there any special studies that have been conducted in the receiving water body/watershed or impairments that relate to existing receiving water limitations?

This Order considers the Clean Water Act 303(d) List of Impaired Water Bodies when they are developed. The receiving water has no Total Maximum Daily Load (TMDL) requirements.

The Central Valley Water Board's Pyrethroid Control Program, adopted in 2017, requires larger POTWs (> 1 million gallons a day of discharge) to monitor for pyrethroids to determine if they have RP. The Discharger will be conducting pyrethroid monitoring during the current permit term and additional requirements are stipulated in the permit if they are found to have RP.

Salinity constituents are also a concern in Central Valley water bodies. The permit requires continued implementation of a Salinity Evaluation and Minimization Plan (SEMP) to identify salinity sources and reduce salinity in discharges, consistent with the requirements of the Salt Control Program.

As discussed in section V.A.1.e, a site-specific study was conducted for temperature, but the discharge does not show RP to exceed criteria proposed in the site-specific study.

iv. ***Data characterization.*** Have the effluent and receiving water been fully characterized?

This Order requires characterization monitoring in the effluent and receiving water every permit term. A full scan of priority pollutant and other constituents of concern is required.

v. ***Compliance history.*** Has the facility had any compliance issues meeting receiving water limitations during the most recent permit term (e.g., received a Notice of Violation for exceeding a receiving water limitation)? Overall, does the facility have any ongoing compliance issues (e.g., frequent operational upsets).

The Facility does not have ongoing compliance issues.

3. **Review of Receiving Water Limitations.**

Based on Central Valley Water Board staff review of the considerations presented above, existing permit provisions are adequate to ensure the Facility discharge consistently meets federal and state regulations for the protection of beneficial uses in the receiving water. The effluent limitations and receiving water monitoring in this Order along with the permit prohibitions and reopener provisions provide a multi-pronged approach to ensuring water quality standards are met. As such, receiving water limitations from the previous permit can be removed without the inclusion of additional conditions. Table F-15 below provides a summary of the considerations in removing the receiving water limitations.

Table F-15 Receiving Water (RW) Limitations Review

Receiving Water Limitations Removed	Effluent Limitations and/or Monitoring	Other Relevant Factors
Bacteria (Numeric WQO)	No reasonable potential (RP), and receiving water limitation is not needed due to tertiary treatment standards. Total coliform effluent limitations are included.	
Biostimulatory Substances (Narrative WQO)	No RP based on effluent data, but Biochemical Oxygen Demand (BOD), BOD percent removal effluent limitations are included. Dissolved Organic Carbon monitoring (quarterly) is required in RW.	
Chemical Constituents (Narrative WQO)	Copper effluent limitation	Quarterly priority pollutant characterization monitoring (effluent and upstream RW) during 2027.

Receiving Water Limitations Removed	Effluent Limitations and/or Monitoring	Other Relevant Factors
	Electrical conductivity effluent monitoring trigger	Implementation of the Salinity Evaluation and Minimization Plan is required, as well as submittal of a summary of its effectiveness.
Color (Narrative WQO)	No RP due to tertiary treatment standards. Visual monitoring (monthly) for discoloration is required in RW.	
Dissolved Oxygen (Numeric WQO)	No RP, tertiary treatment results in minimal DO impacts. Monitoring (weekly) is required in RW.	
Floating Material (Narrative WQO)	No RP due to tertiary treatment standards. Visual monitoring (monthly) is required in RW.	
Oil and Grease (Narrative WQO)	No RP due to tertiary treatment standards. Visual monitoring (monthly) of visible films, sheens, or coatings is required in the RW.	
pH (Numeric WQO)	No RP, but pH effluent limitations are included. Monitoring (weekly) is required in the RW.	
Pesticides (Narrative/Numeric WQO)	No RP for pesticides in the characterization monitoring list.	Quarterly pyrethroid monitoring is required in the downstream RW during 2027.
Radioactivity (Narrative/Numeric WQO)	No RP. With tertiary treatment standards, no adverse impacts to beneficial uses are expected in the RW.	
Suspended Sediments (Narrative WQO)	No RP based on effluent data, but Total Suspended Solids effluent limitation is included. Visual monitoring (monthly) of suspended matter is required in the RW.	
Settleable Substances (Narrative WQO)	No RP based on effluent data, but Total Suspended Solids	

Receiving Water Limitations Removed	Effluent Limitations and/or Monitoring	Other Relevant Factors
	effluent limitation is included. Visual monitoring (monthly) for bottom deposits is required in the RW.	
Suspended Material (Narrative WQO)	No RP based on effluent data, but Total Suspended Solids effluent limitation is included. Visual monitoring (monthly) of suspended matter is required in the RW.	
Taste and Odors (Narrative WQO)	No RP due to tertiary treatment standards. Monitoring (monthly) of potential nuisance conditions is required in the RW.	
Temperature (Numeric WQO)	No RP. Monitoring (weekly) for temperature is required in the RW.	
Toxicity (Narrative WQO)	Ammonia Nitrogen, Total (as N) effluent limitations.	
	Chronic Whole Effluent Toxicity effluent limitations.	
Turbidity (Numeric WQO)	No effluent limitation due to Filtration System Operating Specifications. Monitoring (weekly) for turbidity is required in the RW.	

B. Groundwater

1. The beneficial uses of the groundwater underlying potential recycled water use areas are municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply.

2. Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, and toxicity of groundwater. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial uses. The Basin Plan also establishes numerical water quality objectives for chemical constituents and radioactivity in groundwaters designated as municipal supply. These include, at a minimum,

compliance with MCLs in Title 22 of the CCR. The bacteria objective prohibits coliform organisms at or above 2.2 MPN/100 mL over any seven-day period. The Basin Plan requires the application of the most stringent objective necessary to ensure that waters do not contain chemical constituents, toxic substances, radionuclides, taste- or odor-producing substances, or bacteria in concentrations that adversely affect municipal or domestic supply, agricultural supply, industrial supply or some other beneficial use.

3. Groundwater limitations are required to protect the beneficial uses of the underlying groundwater.

4. Groundwater limitations establish that the release of waste constituents from any portion of the Facility shall not cause or contribute to the exceedance of water quality objectives in the receiving water. If the Facility's discharge contains waste at a level greater than a water quality objective but the groundwater receiving the waste remains below the water quality objective, the limitation would not be violated. However, if the same discharge causes the receiving water to exceed a water quality objective, the groundwater limitation would be violated. Similarly, if the same discharge is above the water quality objective and the receiving water is above the objective, the Facility's discharge would be contributing to an exceedance of the water quality objective and would be violating the receiving water limitation. In the scenario where the level of waste in the Facility's discharge is below the water quality objective and the receiving water exceeds the water quality objective, the limitation would not be violated. Where natural background conditions exceed the water quality objective, compliance would be evaluated considering the established natural background concentration instead of the water quality objective. Only discharges causing or contributing to the exceedance of the water quality objective or natural background concentration (if greater than the water quality objective) in the groundwater would be in violation of the limitation.

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

c. **Ultraviolet Light (UV) Disinfection Operating Specifications.** UV system operating specifications are required to ensure that the UV system is operated to achieve the required pathogen removal. UV disinfection system specifications and monitoring and reporting requirements are required to ensure that adequate UV dosage is applied to the wastewater to inactivate pathogens (e.g., viruses) in the wastewater. UV dosage is dependent on several factors such as UV transmittance, UV power setting, wastewater turbidity, and wastewater flow through the UV disinfection system. The UV specifications in this Order are based on the National Water Research Institute (NWRI) and American Water Works Association Research Foundation (AWWRF) “Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse” first published in December 2000 and revised as a Third Edition dated August 2012 (NWRI guidelines). If the Discharger conducts a site-specific UV engineering study that identifies site-specific UV operating specifications that will achieve the virus inactivation required by Title 22 for disinfected tertiary recycled water, this Order may be reopened to modify the UV specifications, in accordance with Reopener Provision VI.C.1.f.

d. **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/)

e. **Updated Title 22 Engineering Report.** The Discharger is currently authorized to send disinfected tertiary-treated wastewater to the Land Application Area (LAA) and the Wildlife Management Area (WMA). Discharge specifications for the LAA include meeting "disinfected secondary-23 recycled water" requirements, as defined in article 1, chapter 3, title 22 of the California Code of Regulations (Title 22), section 60301.225. Discharge specifications for the WMA include meeting "disinfected secondary-2.2 recycled water" requirements, as defined in Title 22, section 60301.220. The Discharger has expressed intent to develop an updated Title 22 Engineering Report to justify less stringent recycled water treatment at the LAA and/or the WMA. If the Discharger develops an updated Title 22 Engineering Report and the Division of Drinking Water approves the updated report, this Order may be reopened to modify the discharge specifications and monitoring requirements for the LAA and the WMA as appropriately justified in the updated report.

f. **Whole Effluent Toxicity – Toxicity Provisions.** This Order may be reopened for modification to revise the aquatic toxicity provisions if the Supreme Court determines that the test of significant toxicity cannot be used in NPDES permits or the State Water Board suspends or revises the aquatic toxicity water quality standards. See Fact Sheet Section III.C.1.c for more information.

2. Special Studies and Additional Monitoring Requirements

a. **Toxicity Reduction Evaluation (TRE).** Pursuant to the Toxicity Provisions, the Discharger is required to initiate a TRE when any combination of two or more MDEL or MMEL exceedances at Discharge Point 002 or any combination of two or more MDET or MMET exceedances occur within a single toxicity calendar month or within two successive toxicity calendar months. In addition, if other information indicates toxicity (e.g., results of additional monitoring, fish kills, intermittent recurring toxicity), the Central Valley Water Board may require a TRE. A TRE may also be required when there is no effluent available to complete a routine monitoring test, MMEL compliance test, or MMET test. MRP Section V.F provides additional details regarding the TRE.

b. **Former Sludge Drying Beds Closure.** This provision requires the Discharger to address the former sludge drying beds by developing a

Closure Work Plan and Final Technical Report to certify that the former sludge drying beds do not pose a threat to underlying groundwater quality. The work plan shall include an implementation plan and a schedule of actions that shall not exceed seven years from the effective date of the permit.

3. Best Management Practices and Pollution Prevention

a. Salinity Evaluation and Minimization Plan (SEMP). The Basin Plan includes a Salt Control Program for discharges to groundwater and surface water. The Salt Control Program is a phased approach to address salinity in the Central Valley Region. During Phase I the focus will be on conducting a Prioritization and Optimization (P&O) Study to provide information for subsequent phases of the Salt Control Program. During Phase I, the Salt Control Program includes two compliance pathways for dischargers to choose; a Conservative Salinity Permitting Approach and an Alternative Salinity Permitting Approach.

The Discharger submitted a notice to intent for the Salt Control Program on 29 June 2021, indicating its intent to meet the Alternative Salinity Permitting Approach. Under the Alternative Permitting Approach, the Basin Plan requires dischargers implement salinity minimization measures to maintain existing salinity levels and participate in the P&O Study. The Discharger's NOI demonstrated adequate participation in the P&O and this Order requires continued participation to meeting the requirements of the Alternative Salinity Permitting Approach. This Order also requires continued implementation of the Discharger's SEMP and includes a performance-based salinity trigger to ensure salinity levels do not increase. In accordance with the Basin Plan, the salinity trigger was developed based on existing facility performance and considers possible temporary increases that may occur due to water conservation and/or drought.

b. **Pyrethroid Management Plan.** On 8 June 2017, the Central Valley Water Board adopted Resolution R5-2017-0057, which adopted the Basin Plan Amendment (BPA) for the Control of Pyrethroid Pesticide Discharges. Per the Basin Plan, section 4.2.2.4.12), if concentrations of pyrethroids are found to exceed the acute and/or chronic pyrethroid triggers (Table 4.2 of the Basin Plan), the Discharger must submit a draft Pyrethroid Management Plan for approval by the Executive Officer within one year from the date that an exceedance is identified by either the Discharger or Central Valley Water Board staff and comply with progress reporting requirements.

4. Construction, Operation, and Maintenance Specifications

a. To protect water quality and public health, this Order requires the Facility to be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

b. To protect public health, this Order requires the Discharger to preclude public contact with wastewater through such means as fences and signs, or other acceptable alternatives.

c. To protect public health and prevent nuisance conditions, this Order requires the Discharger to control objectionable odors originating at the Facility.

d. **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 tertiary treatment process utilized at this Facility is capable of reliably meeting a turbidity limitation of 2 NTU as a daily average. 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 and could impact UV dosage. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. The operational included in this Order are specified in sections 60301.320 and 60304, title 22, California Code of Regulations.

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

The NWRI guidelines include UV operating specifications for compliance with Title 22. For water recycling in accordance with Title 22, the UV system shall be an approved system included in the Treatment Technology Report for Recycled Water, December 2009 (or a later version, as applicable) published by the DDW. The UV system shall also conform to all requirements and operating specifications of the NWRI guidelines. A memorandum dated 1 November 2004 issued by DDW to Regional Water Board executive offices recommended that provisions be included in permits for water recycling treatment plants employing UV

disinfection requiring dischargers to establish fixed cleaning frequency of lamp sleeves, as well as, include provisions that specify minimum delivered UV dose that must be maintained (per the NWRI Guidelines).

The Discharger submitted a Field Commissioning Test Report dated February 2011 that demonstrates the UV system is equivalent to a Title 22 approved UV system. The Test Report also demonstrates that during validation testing a minimum hourly average UV dose of 118 mJ/cm^2 with a minimum UV transmittance of 56 percent will achieve the virus inactivation required by Title 22 for Disinfected Tertiary Recycled Water. Therefore, in lieu of the UV dose and transmittance requirements of the NWRI Guidelines, this Order includes an operating specification for a minimum hourly average UV dosage of 118 mJ/cm^2 and a UV transmittance of 56 percent, in accordance with the site-specific validation testing.

f. **Emergency Storage Pond Operating Requirements.** The emergency storage pond will be operated such that mosquito breeding is prevented, erosion is controlled, weeds are minimized, debris does not accumulate on the water, freeboard is never less than two feet, and necessary repairs are completed in reasonable timeframes.

g. **Equalization Basin Operating Requirements.** The operation and maintenance specifications for the lined equalization basin are necessary to protect the beneficial uses of the groundwater.

5. Special Provisions for 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.

b. **Resource Recovery from Anaerobically Digestible Material (ADM).** Some POTWs choose to accept organic material such as food waste, fats, oils, and grease into their anaerobic digesters for co-digestion to increase

production of methane and other biogases for energy production and to prevent such materials from being discharged into the collection system, which could cause sanitary sewer overflows. The California Department of Resources Recycling and Recovery has proposed an exemption from requiring Process Facility/Transfer Station permits where this activity is regulated under waste discharge requirements or NPDES permits. The proposed exemption is restricted to ADM that has been prescreened, slurried, and processed/conveyed in a closed system to be co-digested with regular POTW sludge. The proposed exemption requires that a POTW develop Standard Operating Procedures (SOPs) for the proper handling, processing, tracking, and management of the ADM before it is received by the POTW.

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

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

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

6. Other Special Provisions

a. **Increase in Permitted Flow Rate.** The Discharger has developed a phased expansion plan, which upon execution will eventually be able to increase treatment capacity up to 20.0 mgd. In order to begin discharge in excess of 12.0 mgd, the Discharger must complete the requirements in section VI.C.6.a. The provision is carried over from the previous Orders.

b. **Title 22, or Equivalent, Disinfection Requirements.** Consistent with previous Order R5-2020-0014, this Order requires wastewater to be oxidized, coagulated, filtered, and adequately disinfected consistent with DDW reclamation criteria, CCR, Title 22, division 4, chapter 3 (Title 22), or equivalent. The disinfection requirements are discussed in detail above in section IV.C.3, Determining the Need for WQBELs (see Pathogens).

7. Compliance Schedules – Not Applicable

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 and sample types have been retained from Order R5-2020-0014, except as noted in Table F-16, below.

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 have been retained from Order R5-2020-0014, except as noted in Table F-16, below.

3. **Pyrethroid Pesticides Monitoring.** A Basin Plan Amendment and TMDL for the Control of Pyrethroid Pesticide Discharges in the Sacramento and San Joaquin River basins (Resolution R5-2017-0057) was approved by the Central Valley Water Board on 8 June 2017 and is now effective. The Pyrethroids Control Program, Section 5.1.16 of the Basin Plan, requires monitoring by domestic and municipal wastewater dischargers discharging at least 1 MGD for the concentrations of pyrethroid pesticides, total and dissolved organic carbon in the water column, and water column toxicity testing. Monitoring is required to evaluate the potential impacts of discharges of pyrethroid pesticides to receiving waters.

C. Receiving Water Monitoring

1. Surface Water

a. Receiving water monitoring is necessary to assess the impacts of the discharge on the receiving stream. Receiving surface water monitoring frequencies and sample types have been retained from Order R5-2020-0014.

2. Groundwater

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

b. Monitoring of the groundwater must be conducted to determine if the discharge has caused an increase in constituent concentrations, when compared to background. The monitoring must, at a minimum, require a complete assessment of groundwater impacts including the vertical and lateral extent of degradation, an assessment of all wastewater-related constituents which may have migrated to groundwater, an analysis of whether additional or different methods of treatment or control of the discharge are necessary to provide BPTC to comply with the State Anti-Degradation Policy. Economic analysis is only one of many factors considered in determining BPTC. If monitoring indicates that the discharge has incrementally increased constituent concentrations in groundwater above background, this permit may be reopened and modified. Until groundwater monitoring is sufficient, this Order contains Groundwater Limitations that allow groundwater quality to be degraded for certain constituents when compared to background groundwater quality, but not to exceed water quality objectives. If groundwater quality has been

degraded by the discharge, the incremental change in pollutant concentration (when compared with background) may not be increased. If groundwater quality has been or may be degraded by the discharge, this Order may be reopened, and specific numeric limitations established consistent with the State Anti-Degradation Policy and the Basin Plan.

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

d. Groundwater monitoring frequencies and parameters have been retained from Order R5-2020-0014, except as noted in Table F-16, below:

Table F-16 Summary of Monitoring Changes

Parameter, Units	Type of Monitoring	Prior Sample Frequency	Revised Sample Frequency	Reason for Change
Electrical Conductivity	Influent	3/Week		Influent monitoring is not necessary for compliance determination
Chlorpyrifos	Effluent	1/Quarter		Effluent limitations were removed. Monitoring is still required as part of the Effluent and Receiving Water Characterization Study.
Diazinon	Effluent	1/Quarter		Effluent limitations were removed. Monitoring is still required as part of the Effluent and Receiving Water Characterization Study.
Indeno(1,2,3-cd)pyrene	Effluent	Every other month for 1 year		Monitoring for the Constituent Study was satisfied. Monitoring is still required as part of the Effluent and Receiving Water Characterization Study.
Dibenzo(a,h) anthracene	Effluent	Every other month for 1 year		Monitoring for the Constituent Study was satisfied. Monitoring is still required as part of the Effluent and Receiving Water Characterization Study.

Parameter, Units	Type of Monitoring	Prior Sample Frequency	Revised Sample Frequency	Reason for Change
Acute Whole Effluent Toxicity	Effluent	1/Quarter		Effluent limitations were removed.
Total Organic Carbon	Effluent		4/Permit	Monitoring is required as part of the Pyrethroids Basin Plan Amendment.
Pyrethroid Pesticides	Effluent		4/Permit	Monitoring is required as part of the Pyrethroids Basin Plan Amendment.
Ammonia Nitrogen, Total (as N)	Receiving Water	1/Week		Adequate dataset. Monitoring is still required as part of the Effluent and Receiving Water Characterization Study.
Gradient	Groundwater	2/Year	1/Year	Groundwater gradient is well established, so the frequency has been reduced.
Gradient Direction	Groundwater	2/Year	1/Year	Groundwater gradient is well established, so the frequency has been reduced.
Total Organic Carbon	Groundwater		2/Year	Monitoring is needed to characterize groundwater.

D. Whole Effluent Toxicity Testing Requirements

Aquatic toxicity testing is necessary to evaluate the aggregate toxic effect of a mixture of toxicants in the effluent on the receiving water. Acute toxicity testing is conducted over a short time period and measures mortality, while chronic toxicity testing is conducted over a short or longer period and may measure mortality, reproduction, and growth. For this permit, aquatic toxicity testing is to be performed following methods identified in the Code of Federal Regulations, title 40, part 136, or other U.S. EPA-approved methods, or included in the following U.S. EPA method manuals: Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition (EPA-821-R-02-013).

Quarterly chronic whole effluent toxicity testing is required to demonstrate compliance with the chronic toxicity effluent limitations/targets.

1. The discharge is subject to determination of “Pass” or “Fail” from a chronic toxicity test using the Test of Significant Toxicity (TST) statistical t-test approach 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.

2. The null hypothesis (Ho) for the TST statistical approach is:

   Mean discharge IWC response ≤ RMD x Mean control response, where the chronic RMD = 0.75.

   A test result that rejects this null hypothesis is reported as “Pass.” A test result that does not reject this null hypothesis is reported as “Fail.”

3. The relative “Percent Effect” at the discharge IWC is defined and reported as:

   Percent Effect = ((Mean control response – Mean discharge IWC response) / Mean control response) x 100.

   This is a t-test (formally Student’s t-Test), a statistical analysis comparing two sets of replicate observations, i.e., a control and IWC. The purpose of this statistical test is to determine if the means of the two sets of observations are different (i.e., if the IWC differs from the control, the test result is “Fail”). The Welch’s t-test employed by the TST statistical approach is an adaptation of Student’s t-test and is used with two samples having unequal variances.

4. **Species Sensitivity Screening.** Under the Toxicity Provisions, the Discharger shall perform subsequent species sensitivity screening to re-evaluate the most sensitive species if the effluent used in the initial species sensitivity screening is no longer representative of the effluent or if a species sensitivity screening has not been performed in the last fifteen years. Subsequent species sensitivity screening may also be required prior to every order issuance, renewal or reopening, if reopening to address aquatic toxicity.

   Pursuant to Section V.F of the MRP, the Discharger is required to perform its initial species sensitivity screening and submit the results with the Report of Waste Discharge. Species sensitivity screening for chronic toxicity shall include, at a minimum, chronic WET testing four consecutive calendar quarters using the water flea (*Ceriodaphnia dubia*), fathead minnow (*Pimephales promelas*), and green algae (*Pseudokirchneriella subcapitata*). The tests shall be performed at an IWC of no less than 100 percent effluent and one control. For subsequent species sensitivity screening, if the first two species sensitivity re-screening events result in no change in the most sensitive species, the Discharger may cease the subsequent species sensitivity screening and the most sensitive species will remain unchanged.

   The most sensitive species to be used for chronic toxicity testing was determined in accordance with the process outlined in the MRP section V.F. Three species toxicity testing was queried from 2016 through 2023. Based on the three species toxicity testing data set, the species that exhibited the highest percent effect was the water flea (*Ceriodaphnia dubia*), with a percent effect of 47 percent. Consequently, *Ceriodaphnia dubia* has been established as the most sensitive species for chronic WET testing.

5. **Toxicity Reduction Evaluation (TRE).** The Monitoring and Reporting Program of this Order requires chronic WET testing to demonstrate compliance with the numeric chronic toxicity effluent limitation or target. The Discharger is required to initiate a TRE when there is any combination of two or more chronic toxicity MDEL or MMEL violations at Discharge Point 002 or any combination of two or more chronic toxicity MDET or MMET exceedances at Discharge Point 003 within a single toxicity calendar month or within two successive toxicity calendar months has occurred. In addition, if other information indicates toxicity (e.g., results of additional monitoring, fish kills, intermittent recurring toxicity), the Central Valley Water Board may require a TRE. A TRE may also be required when there is no effluent available to complete a routine monitoring test, MMET test, or MMEL compliance test.

E. Other Monitoring Requirements

1. Biosolids Monitoring

Biosolids monitoring is required to ensure compliance with the pretreatment requirements contained in 40 C.F.R. part 403 and implemented in section VI.C.5.a. of this Order. Biosolids monitoring is required per U.S. EPA guidance to evaluate the effectiveness of the pretreatment program. Biosolids monitoring for compliance with 40 C.F.R. part 503 regulations is not included in this Order since it is a program administered by U.S. EPA's part 503 Biosolids Program (https://www.epa.gov/biosolids/compliance-and-annual-reporting-guidance-about-clean-water-act-laws)

2. Pond Monitoring

Pond monitoring is required of the equalization basin and the emergency storage basin to ensure proper operation. When any type of wastewater is directed to the emergency storage basin, a daily log shall be kept and include general observations, freeboard, and estimated volume. Whenever any type of wastewater is directed to the emergency storage basin and held for more than seven days, monitoring, in addition to the daily log, is required, including odors (1/Day), freeboard (1/Day), dissolved oxygen (1/Month), and pH (1/Month). The monitoring requirements will serve to evaluate any potential impacts to groundwater.

3. Water Supply Monitoring

Water supply monitoring is required to evaluate the source of constituents in the wastewater.

4. Filtration System Monitoring

Filter system monitoring and reporting are required to ensure that the filtration system is operated to adequately clarify the waste stream so that the UV

disinfection system can be effective. Filtration system monitoring is imposed to achieve equivalency to requirements established by DDW.

5. **UV Disinfection System Monitoring**

   UV system monitoring and reporting are required to ensure that the UV system is operated to adequately inactivate pathogens in the wastewater. UV disinfection system monitoring is imposed to achieve equivalency to requirements established by the DDW, and the NWRI, Guidelines.

6. **Wildlife Management Area Monitoring**

   Wildlife Management Area monitoring is required to ensure that the discharge to the Wildlife Management Area complies with the Land Discharge Specifications in section IV.B.1 of this Order. Monitoring frequencies and sample types for flow (continuous), berm seepage (weekly), odors (weekly), and freeboard (weekly) have been retained from Order R5-2020-0014.

7. **Land Discharge Monitoring**

   Land discharge monitoring is required to ensure that the discharge to the land disposal area complies with the Land Discharge Specifications in section IV.C.1 of this Order. Monitoring frequencies and sample types for flow (continuous), rainfall (daily), wastewater application rate (daily), total nitrogen loading rate from all sources (monthly), total dissolved solids loading rate (monthly), biosolids applied (yearly), plant available nitrogen from all sources (yearly), residual nitrogen from all sources (yearly), type of crop (each harvest), and crop yield (each harvest) have been retained from Order R5-2020-0014.

8. **Pyrethroid Pesticides Monitoring**

   On 8 June 2017, the Central Valley Water Board adopted Resolution R5-2017-0057, which adopted the Basin Plan Amendment (BPA) for the Control of Pyrethroid Pesticide Discharges. Pyrethroid pesticides and toxicity monitoring has been included in this Order in accordance with the Pyrethroids Pesticides BPA, as required for POTWs with design average dry weather flow greater than or equal to 1 million gallons per day.

9. **Effluent and Receiving Water Characterization Monitoring**

   In accordance with section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order requires effluent and receiving water monitoring for priority pollutants and other constituents of concern beginning the second year of the permit term (1 January 2027 through 31 December 2027). The data obtained from the effluent and receiving water characterization monitoring is needed to conduct an RPA for the next permit

renewal. See section IX.F of the MRP (Attachment E) for more detailed requirements related to performing priority pollutant monitoring.

10. **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 WDRs that will serve as an NPDES permit for the Merced Wastewater Treatment Facility. As a step in the WDR adoption process, the Central Valley Water Board staff has developed tentative WDRs and has encouraged public participation in the WDR adoption process.

A. Notification of Interested Persons

The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through the following: direct mailing to agencies and known interested parties; posting of a Notice of Public Hearing at the Facility entrance, nearest city hall, nearest post office, and the Central Valley Regional Water Board's web site.

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 WDRs as provided through the notification process. Comments were due either in

person or by mail to the Executive Office at the Central Valley Water Board at the address on the cover page of this Order.

To be fully responded to by staff and considered by the Central Valley Water Board, the written comments were due at the Central Valley Water Board office by 5:00 p.m. on **21 July 2025**.

C. Public Hearing

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

Date: 27 February 2026
Time: 9:00 a.m.
Location: Regional Water Quality Control Board, Central Valley Region and Online
11020 Sun Center Dr., Suite #200
Rancho Cordova, CA 95670

Interested persons were invited to attend. At the public hearing, the Central Valley Water Board heard testimony pertinent to the discharge, WDRs, and permit. For accuracy of the record, important testimony was requested in writing.

D. Reconsideration of Waste Discharge Requirements

Any 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 CCR, 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 (559) 445-5116.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Central Valley Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Nicolette Dentoni at (559) 444-2505, or at Nicolette.Dentoni@waterboards.ca.gov.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Ammonia Nitrogen (as N)	mg/L	2.93	9.17	2.83	6.6	2.83	NA	NA	NA	NA	Yes[2]
Chlorpyrifos	µg/L	0.0011	ND	0.015	0.02	0.014	NA	NA	0.015	NA	No
Copper	µg/L	9.6	6.4	8.4[3]/ 1.4[4]	13[3]/ 1.7[4]	8.4[3]/ 1.4[4]	1300	NA	NA	1000	Yes
Diazinon	µg/L	0.0038	ND	0.10	0.08	0.05	NA	NA	0.1	NA	No
Electrical Conductivity	µmhos/cm	783	590	1600						1600	No
pH	std units	6.9-8.6		6.5-8.5					6.5-8.5		Yes[2]
Nitrate plus Nitrite (as N)	mg/L	14.4	NA	10			10			10	Yes

Attachment G Table Notes:

1. All inorganic concentrations are given as a total concentration.
2. Effluent limitations were included based on the nature of the discharge.
3. Criterion to be compared to the MEC, based on the lowest observed effluent hardness of 89 mg/L.
4. Criterion to be compared to the B, based on the lowest observed upstream receiving water hardness of 11 mg/L.

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

ATTACHMENT H-1 – CALCULATION OF WQBELS

HUMAN HEALTH WQBELS CALCULATIONS

Parameter	Units	Criteria	Mean Background Concentration	Effluent CV	Dilution Factor	AWEL/AMEL Multiplier	AMEL Multiplier	AMEL	MDEL	AWEL
Nitrate plus Nitrite (as N)	mg/L	10	NA	0.40	0	1.51	1.36	10		15

Attachment H-1 Table Notes:

1. CV was established according to section 1.4 of the SIP.

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
NA = Not Available

ATTACHMENT H-2 – CALCULATION OF WQBELS

AQUATIC LIFE WQBELS 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[2]	AWEL[3]	MDEL[4]
Ammonia Nitrogen, Total (as N)	mg/L	6.6	2.83[1]	9.2	2.88	0	0	0.09	0.62	0.36	1.01	3.26	7.05		2.0	4.4	
Copper, Total Recoverable	µg/L	13	8.4	6.4	0.33	0	0	0.5	6.5	0.69	5.8	1.29		2.0	7.5		12

Attachment H-2 Table Notes:

1. 30-day ammonia criteria.
2. AMEL calculated according to section 1.4 of the SIP using a 95th percentile occurrence probability.
3. AWEL calculated according to section 1.4 of the SIP using a 98th percentile occurrence probability.
4. MDEL calculated according to section 1.4 of the SIP using a 99th percentile occurrence probability.

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
AMEL = Average Monthly Effluent Limitation
MDEL = Maximum Daily Effluent Limitation
AWEL = Average Weekly Effluent Limitation

ATTACHMENT I – RECYCLED WATER SIGNAGE