CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CA0004821
ORDER R5-2023-0018

WASTE DISCHARGE REQUIREMENTS FOR THE REYNOLDS CONSUMER PRODUCTS LLC, REYNOLDS MOLDED PULP MILL, TEHAMA COUNTY

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

Table 1. Discharger Information

Discharger:	Reynolds Consumer Products LLC
Name of Facility:	Reynolds Molded Pulp Mill
Facility Street Address:	1000 Diamond Avenue
Facility City, State, Zip:	Red Bluff, CA 96080
Facility County:	Tehama County

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Process wastewater and non-contact cooling and sealing water	40°09'10"	122°12'20"	Sacramento River

Table 3. Administrative Information

This Order was Adopted on:	**27 April 2023**
This Order shall become effective on:	**1 June 2023**
This Order shall expire on:	**31 May 2028**
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 May 2027**
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**

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 April 2023**.

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PATRICK PULUPA, Executive Officer

WASTE DISCHARGE REQUIREMENTS
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ATTACHMENTS

I. FACILITY INFORMATION

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

II. FINDINGS

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

A. Legal Authorities. This Order serves as waste discharge requirements (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.

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

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 (Attachment F).

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 (Attachment F).

THEREFORE, IT IS HEREBY ORDERED that this Order supersedes Order R5-2017-0014 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. Neither the discharge nor its treatment shall create a nuisance as defined in section 13050 of the Water Code.

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

E. **Maximum Daily Discharge Flow.** Discharges exceeding a maximum daily discharge flow of 2.7 million gallons per day (MGD) are prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001

1. Final Effluent Limitations – Discharge Point 001

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

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

Table 4. Effluent Limitations

Parameters	Units	Average Monthly	Average Weekly	Maximum Daily
Biochemical Oxygen Demand, 5-day @ 20°Celcius (BOD_5)	milligrams per liter (mg/L)	--	--	22.3
BOD_5	pounds per day (lbs/day)	99	--	242
Total Suspended Solids (TSS)	mg/L	--	--	54.8
TSS	lbs/day	249	--	594
Settleable Solids	mL/L	0.1	--	0.2

b. **pH:**

i. 6.5 Standard Units (SU) as an instantaneous minimum.

ii. 8.5 SU as an instantaneous maximum.

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

i. 70%, minimum for any one bioassay; and

ii. 90%, median for any three consecutive bioassays.

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

i. Average Monthly Effluent Limitation (AMEL)

SAMEL = CD M-avg/0.079 + CC M-avg/0.012 ≤ 1.0

CD M-AVG = average monthly diazinon effluent concentration in µg/L.

CC M-AVG = average monthly chlorpyrifos effluent concentration in µg/L

ii. Maximum Daily Effluent Limitation (MDEL)

SAWEL = CD W-avg/0.16 + CC W-avg/0.025 ≤ 1.0

CD W-AVG = maximum daily diazinon effluent concentration in µg/L.

CC W-AVG = maximum daily chlorpyrifos effluent concentration in µg/L.

2. Interim Effluent Limitations – NOT APPLICABLE

B. Land Discharge Specifications – NOT APPLICABLE

C. Recycling Specifications – NOT APPLICABLE

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

The discharge shall not cause the following in the Sacramento River.

1. **Bacteria.** The six-week rolling geometric mean of Escherichia coli (E. coli) to exceed 100 colony forming units (cfu) per 100 milliliters (mL), calculated weekly, and a statistical threshold value (STV) of 320 cfu/100 mL to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner.

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

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

4. **Color.** Discoloration that causes nuisance or adversely affects beneficial uses.

5. **Dissolved Oxygen:**

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

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

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

    d. From 1 June to 31 August, the dissolved oxygen concentration to be reduced below 9.0 mg/L. When natural conditions lower dissolved oxygen below this level, the concentrations shall be maintained at or above 95 percent of saturation.

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

7. **Oil and Grease.** Oils, greases, waxes, or other materials to be present in concentrations that cause nuisance, result in a visible film or coating on the

surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.

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

9. **Pesticides:**

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

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

    c. Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by U.S. EPA or the Executive Officer**.**

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

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

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

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

10. **Radioactivity:**

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

    b. Radionuclides to be present in excess of the MCLs specified in Table 64442 of section 64442 and Table 64443 of section 64443 of Title 22 of the CCR.

11. **Salinity.** Salinity (chloride, electrical conductivity, TDS, etc.) objectives see Section 3.1.14.

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

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

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

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

16. **Temperature.** The natural temperature to be increased by more than 5 degrees Fahrenheit or to be elevated above 56 degrees Fahrenheit during periods when temperature increases will be detrimental to the fishery, whichever is more restrictive.

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

18. **Turbidity.**

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

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

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

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

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

B. Groundwater Limitations

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

1. Contain waste constituents in concentrations that exceed either the Primary or Secondary MCLs established in Title 22 of the California Code of Regulations, or are statistically greater than background water quality or groundwater objectives, whichever is greater, except that total coliform organisms shall not exceed 2.2 MPN/100 mL over any 7-day period.

2. Exhibit a pH of less than 6.5 or greater than 8.5.

3. Impart taste, odor, toxicity, or color that creates nuisance or impairs any beneficial use.

VI. PROVISIONS

A. Standard Provisions

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

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

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

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

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

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

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

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

      The causes for modification include:

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

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

         iii. Change in sludge use or disposal practice. Under 40 CFR section 122.62(a)(1), a change in the Discharger's sludge use or disposal

practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

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

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

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

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

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

ii. Controls any pollutant limited in the Order.

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

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

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

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

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

i. Safeguard to electric power failure:

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

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

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

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

The technical report shall:

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

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

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

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

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

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

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

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

o. 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 Report of Waste Discharge (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, effluent limitation, or receiving water limitation of this Order, the Discharger shall notify the Central Valley Water Board by telephone (530) 224-4845 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 a new chronic toxicity effluent limitation, a revised acute toxicity effluent limitation, and/or an effluent limitation for a specific toxicant identified in a TRE. Additionally, if the State Water Board revises the SIP's toxicity control provisions, this Order may be reopened to implement the new provisions.

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, except for aquatic life criteria for copper, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when calculating criteria for applicable inorganic constituents and, if needed, developing effluent limitations. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

f. **Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS).** On 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/)

g. **Temperature Study**. If after conducting the Temperature Study Review required in VI.C.2.e below, it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective this Order may be reopened and effluent limitations added for temperature.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. **Toxicity Reduction Evaluation Requirements.** This Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate, effluent toxicity. If the discharge exceeds the chronic toxicity thresholds defined in this Provision, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE) in accordance with an approved TRE Work Plan and take actions to mitigate the impact of the discharge and prevent recurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TREs are designed to identify the causative agents and sources of whole effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. Alternatively, under certain conditions as described in this provision below, the Discharger may participate in an approved Toxicity Evaluation Study (TES) in lieu of conducting a site-specific TRE.

i. **Numeric Toxicity Monitoring Trigger.** The numeric Toxicity Unit (TUc) monitoring trigger is 1 TUc (where TUc = 100/NOEC). The monitoring trigger is not an effluent limitation; it is the toxicity threshold above which the Discharger is required to initiate additional actions to evaluate effluent toxicity as specified in subsection ii, below.

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

(a) **Initial Toxicity Check**. If the result is less than or equal to 1.3 TUc (as $100/EC_{25}$) OR the percent effect is less than 25 percent

at 100 percent effluent, check for any operation or sample collection issues and return to routine chronic toxicity monitoring. Otherwise, proceed to step (b).

(b) **Evaluate 6-week Median**. The Discharger may take two additional samples within 6 weeks of the initial routine sampling event exceeding the chronic toxicity monitoring trigger to evaluate compliance using a 6-week median. If the 6-week median is greater than 1.3 TUc (as $100/EC_{25}$) and the percent effect is greater than 25 percent at 100 percent effluent, proceed with subsection (c). Otherwise, the Discharger shall check for any operation or sample collection issues and return to routine chronic toxicity monitoring. See Compliance Determination Section VII.D for procedures for calculating 6-week median.

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

(d) **Toxicity Evaluation Study.** If the percent effect is ≤ 50 percent at 100 percent effluent, as the median of up to three consecutive chronic toxicity tests within a 6-week period, the Discharger may participate in an approved TES in lieu of a site-specific TRE. The TES may be conducted individually or as part of a coordinated group effort with other similar dischargers. If the Discharger chooses not to participate in an approved TES, a site-specific TRE shall be initiated in accordance with subsection (e)(1), below. Nevertheless, the Discharger may participate in an approved TES instead of a TRE if the Discharger has conducted a site-specific TRE within the past 12 months and has been unsuccessful in identifying the toxicant.

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

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

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

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

- A schedule for these actions.

b. **Groundwater Monitoring Well Network Evaluation.** To determine compliance with the groundwater limitations contained in section V.B. of this Order, the Discharger is required to evaluate the adequacy of its groundwater monitoring network. This provision requires the Discharger to evaluate its groundwater monitoring network to ensure there are one or more background monitoring wells and a sufficient number of designated monitoring wells downgradient of every treatment, storage, and disposal unit that does or may release waste constituents to groundwater. The evaluation of the adequacy of the monitoring well network is due within **6 months following effective date of this Order**.

c**. Groundwater Monitoring Well Installation Work Plan.** After evaluation of the monitoring well network and determination of the need for additional groundwater monitoring wells or replacement wells, the Discharger shall submit a Groundwater Monitoring Well Installation Work Plan within **12 months following effective date of this Order**. The Work Plan shall be prepared in accordance with, and include the items listed in, Attachment I, "Requirements for Monitoring Well Installation Work Plans and Monitoring Well Installation Reports". All monitoring wells shall comply with the appropriate standards as described in California Well Standards Bulletin 74-90 (June 1991) and Water Well Standards: State of California Bulletin 74-81 (December 1981), and any more stringent standards adopted by the Discharger or County pursuant to Water Code section 13801. **Well installation shall be complete no later than 18 months following Work Plan approval by the Executive Officer**

d**. Groundwater Quality Characterization and BPTC Analysis.** The Discharger shall install new groundwater monitoring wells, if necessary, collect monitoring data, and submit a report evaluating the underlying groundwater by **3 years from the effective date of this Order**. If the monitoring shows that any constituent concentrations are increased above background water quality, by **4 years from the effective date of this Order,** the Discharger shall submit a technical report describing the groundwater evaluation report results and critiquing each evaluated facility component with respect to Best Practicable Treatment or Control (BPTC) and minimizing the discharge's impact on groundwater quality.

In accordance with California Business and Professions Code Sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the

required activities. The technical report shall be prepared by or under the direction of appropriately qualified professional(s) and shall bear the professional's signature and stamp.

e. **Groundwater Antidegradation Re-evaluation.** As part of an iterative evaluation of compliance with State Water Board Resolution 68-16, the Statement of Policy with Respect to Maintaining High Quality of Waters in California (State Anti-Degradation Policy), the Discharger shall **submit an Antidegradation Re-evaluation with its Report of Waste Discharge**. The Antidegradation Re-evaluation must use information obtained from the groundwater monitoring and characterization required in section VI.C.2.c, in addition to results of the land discharge and groundwater monitoring, to confirm that any groundwater degradation that has occurred as a result of Facility operations has not resulted in any exceedances of applicable groundwater water quality objectives or in any impacts to beneficial uses.

If the data indicate that exceedances of applicable groundwater water quality objectives or impacts to beneficial uses have occurred, **the Discharger shall include a work plan (with an implementation schedule)** to implement additional treatment or control measures to further limit any impacts from discharges. Determination of background groundwater quality for use in the analysis shall be made using the methods described in Title 27 California Code of Regulations Section 20415(e)(10) or other method approved by the Executive Officer.

f. **Temperature Study Review.** Within 60 days of the effective date of **the permit,** the Discharger shall submit the 2020 Temperature Study to appropriate federal and state resource agencies for review. Applicable resource agencies and the scope and objective of the Temperature Study Review are detailed in Fact Sheet section VI.B.2.e.

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 455 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.

4. Construction, Operation and Maintenance Specifications

a. **Treatment Pond Operating Requirements**

i. Neither discharge nor treatment shall create a nuisance or pollution as defined in Water Code section 13050.

ii. Objectionable odors originating at the Facility shall not be perceivable beyond the limits of the property owned by the Discharger.

iii. The discharge shall not cause the degradation of any water supply.

iv. The dissolved oxygen content of the wastewater treatment discharge shall not be less than 1.0 mg/L in any 24-hour period.

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

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

(b) Weeds shall be minimized.

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

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

vii. Domestic waste shall remain underground at all times.

viii. Ponds shall not have a pH less than 6.0 or greater than 9.0.

5. Compliance Schedules – NOT APPLICABLE

VII. COMPLIANCE DETERMINATION

A. BOD_5 and TSS Effluent Limitations (Section IV.A.1.a). Compliance with the final effluent limitations for BOD_5 and TSS required in Waste Discharge Requirements section IV.A.1.a (Table 4) shall be ascertained by 24-hour composite samples.

B. Maximum Daily Discharge Flow Prohibition (Section III.E). Compliance with the maximum daily discharge flow prohibition will be determined daily based on the maximum daily design flow of 2.7 MGD.

C. Instantaneous Minimum and Maximum Effluent Limitation for pH (Section IV.A.1.b). For example, if the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, then the Discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are lower than the instantaneous minimum effluent limitation would result in two instances of non-compliance with the instantaneous minimum effluent limitation). If pH is monitored continuously, the Discharger shall be in compliance with pH limitations provided that the total excursion time does not exceed 20 minutes within a calendar day. For the purpose of establishing a pH excursion, a 20-minute running average may be used (measured continuously at no greater than 5 second intervals).

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

1. Dischargers shall be deemed out of compliance with an effluent limitation, if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

2. Dischargers shall be required to conduct a Pollutant Minimization Program (PMP) in accordance with section 2.4.5.1 of the SIP when there is evidence that the priority pollutant is present in the effluent above an effluent limitation and either:

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

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

3. When determining compliance with an average monthly effluent limitation (AMEL) and more than one sample result is available in a month, the discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or ND. In those cases, the discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

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

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

of the two data points where DNQ is lower than a value and ND is lower than DNQ.

4. If a sample result, or the arithmetic mean or median of multiple sample results, is below the RL, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the discharger conducts a PMP (as described in section 2.4.5.1), the discharger shall **not** be deemed out of compliance.

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

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

G. Chronic Whole Effluent Toxicity Effluent Trigger (Section VI.C.2.a.i). To evaluate compliance with the chronic whole effluent toxicity effluent trigger, the median chronic toxicity units (TUc) shall be the median of up to three consecutive chronic toxicity bioassays during a six- week period. This includes a routine chronic toxicity monitoring event and two subsequent optional compliance monitoring events. If additional compliance monitoring events are not conducted, the median is equal to the result for routine chronic toxicity monitoring event. If only one additional compliance monitoring event is conducted, the median will be established as the arithmetic mean of the routine monitoring event and compliance monitoring event.

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

ATTACHMENT A – DEFINITIONS

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).

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 a day of one month 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 (e.g., from January 1 to January 31, from June 15 to July 14, or from January 31 to February 28).

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

Calendar Year
A period of time defined as twelve consecutive calendar months.

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 Reporting Limit (RL), but greater than or equal to the laboratory's Method Detection Limit (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 (WQBEL), 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.

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

Effluent Concentration Allowance (ECA)
ECA is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation (CV) 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 Minimum Level (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.

Inhibition Concentration
Inhibition Concentration (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a non-lethal biological measurement (e.g., reproduction or growth), calculated from a continuous model (i.e., Interpolation Method). IC_{25} is a point estimate of the toxic concentration that would cause a 25-percent reduction in a non-lethal biological measurement.

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 (e.g., concentration), 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.

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

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

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 (WQBEL). 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.

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

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:

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

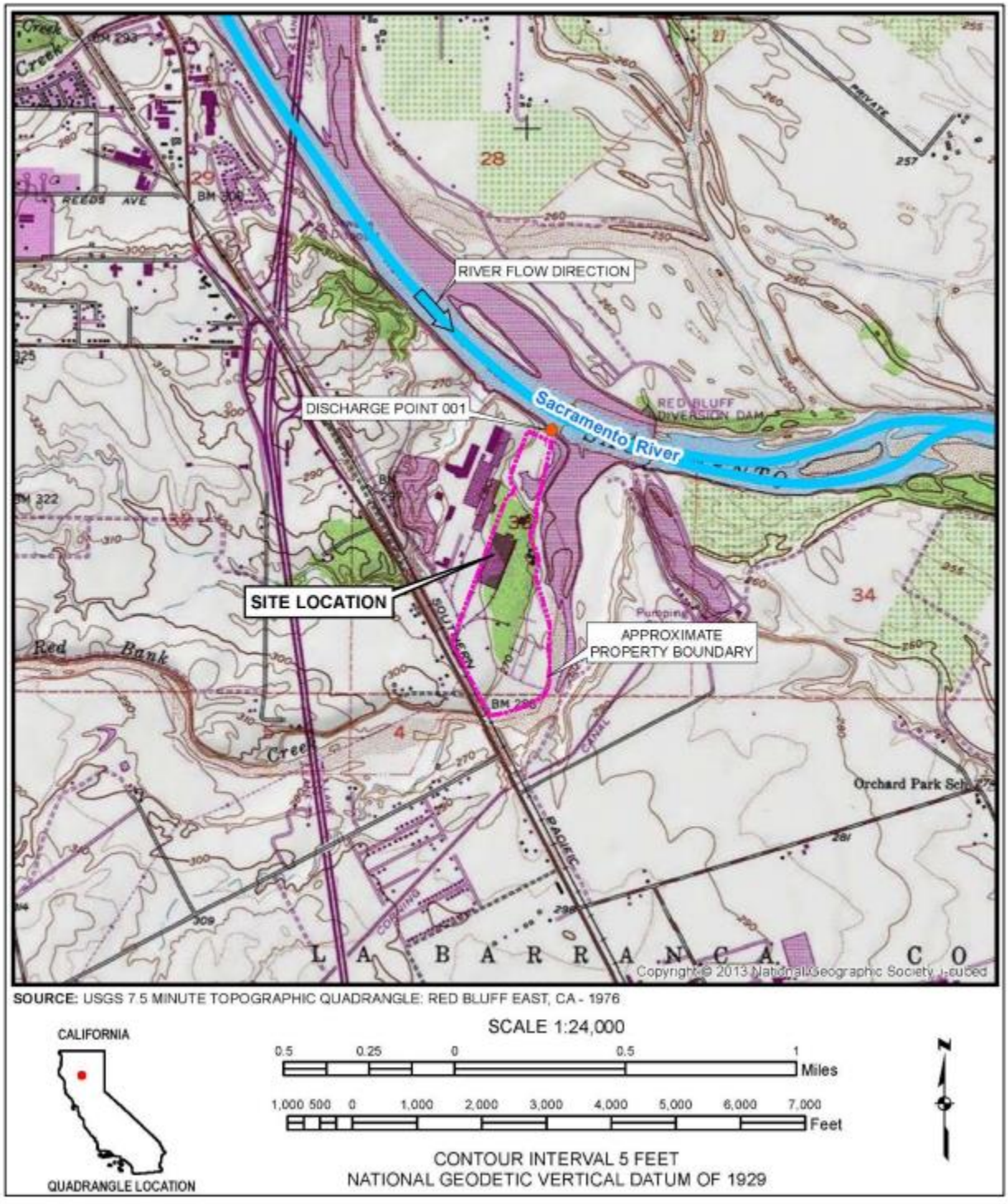
where:

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

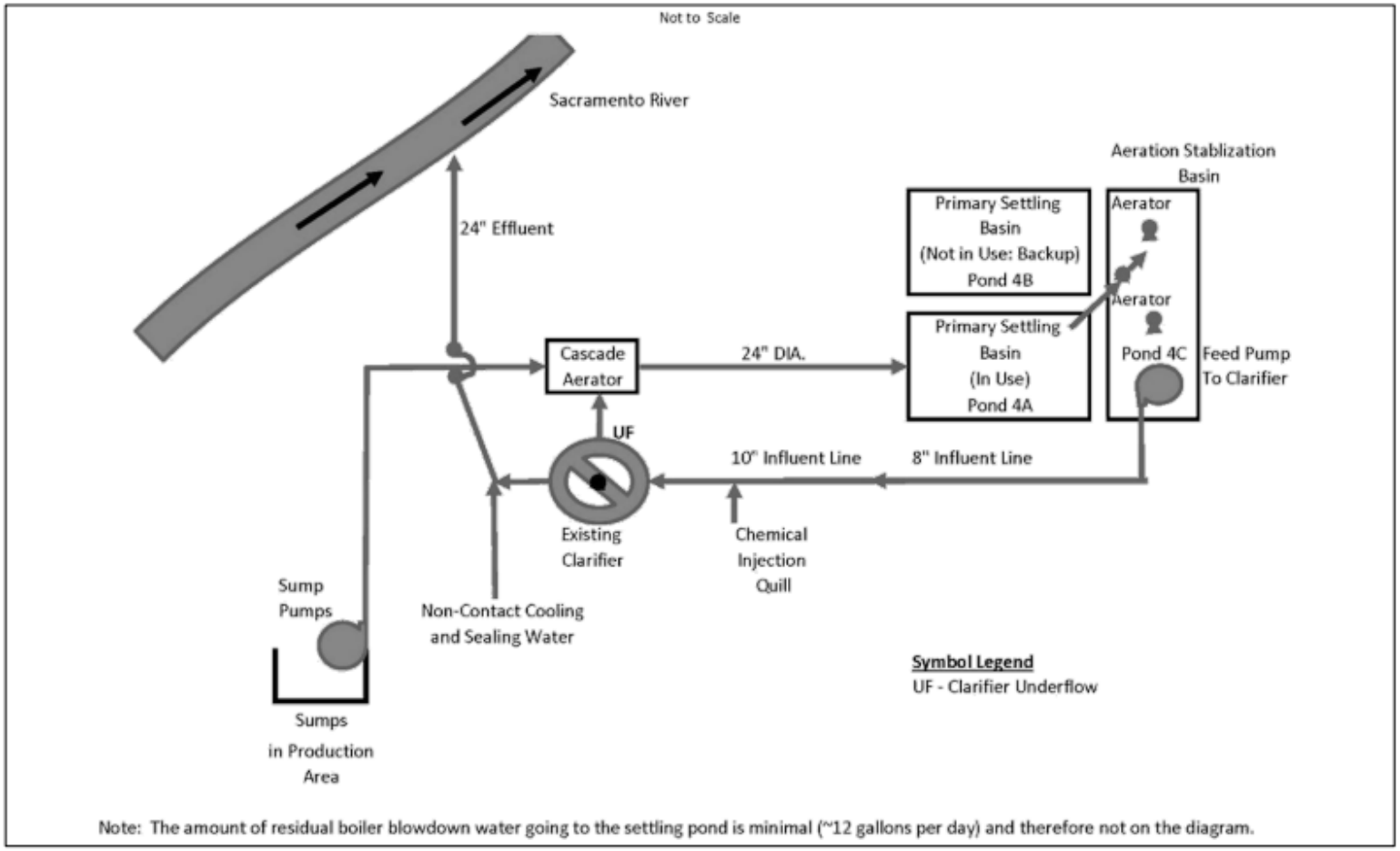
Statistical Threshold Value (STV)
The STV for the bacteria receiving water limitation is a set value that approximates the 90th percentile of the water quality distribution of a bacterial population.

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

ATTACHMENT B – MAP



ATTACHMENT C – FLOW SCHEMATIC



ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply:

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

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

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

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

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

F. Inspection and Entry

The Discharger shall allow the Central Valley Water Board, State Water Board, U.S. EPA, and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (33 U.S.C. section 1318(a)(4)(B); 40 C.F.R. section 122.41(i); Wat. Code, section 13267, 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (33 U.S.C section 1318(a)(4)(B)(ii); 40 C.F.R. section 122.41(i)(1); Wat. Code, sections 13267, 13383);

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. section 1318(a)(4)(B)(ii); 40 C.F.R. section 122.41(i)(2); Wat. Code, sections 13267, 13383);

3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C section 1318(a)(4)(B)(ii); 40 C.F.R. section 122.41(i)(3); Wat. Code, section 13267, 13383); and

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (33 U.S.C section 1318(a)(4)(B); 40 C.F.R. section 122.41(i)(4); Wat. Code, sections 13267, 13383.)

G. Bypass

1. Definitions

    a. “Bypass” means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. section 122.41(m)(1)(i).)

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

2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not

subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. section 122.41(m)(2).)

3. Prohibition of bypass. Bypass is prohibited, and the Central Valley Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. section 122.41(m)(4)(i)):

   a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. section 122.41(m)(4)(i)(A));

   b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. section 122.41(m)(4)(i)(B)); and

   c. The Discharger submitted notice to the Central Valley Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. section 122.41(m)(4)(i)(C).)

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

5. **Notice**

   a. **Anticipated bypass.** If the Discharger knows in advance of the need for a bypass, it shall submit prior notice if possible, at least 10 days before the date of the bypass. The notice shall be sent to the Central Valley Water Board. As of 21 December 2023, all notices shall be submitted electronically to the initial recipient (State Water Board's California Integrated Water Quality System (CIWQS) Program website (http://www.waterboards.ca.gov/water_issues/programs/ciwqs/), defined in Standard Provisions – Reporting V.J below. Notices shall comply with 40 C.F.R. Part 3, section 122.22, and 40 C.F.R. Part 127. (40 C.F.R. section 122.41(m)(3)(i).)

   b. **Unanticipated bypass.** The Discharger shall submit a notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). The notice shall be sent to the Central Valley Water Board. As of 21 December 2023, all notices shall be submitted electronically to the initial recipient (State Water Board's California Integrated Water Quality System (CIWQS) Program website. (http://www.waterboards.ca.gov/water_issues/programs/ciwqs/), defined in Standard Provisions – Reporting V.J below. Notices shall comply with 40

C.F.R. Part 3, section 122.22, and 40 C.F.R. Part 127. (40 C.F.R. section 122.41(m)(3)(ii).)

H. Upset

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

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. section 122.41(n)(2).)

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

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

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

    c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E. 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 below. (40 C.F.R. section 122.41(k).)

2. All permit applications shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 C.F.R. section 122.22(a)(1).)

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).)

   The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under section 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (40 C.F.R. section 122.41(l)(1)(ii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Central Valley Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order's requirements. (40 C.F.R. 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. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural Dischargers shall notify the Central Valley Water Board as soon as they know or have reason to believe (40 C.F.R. section 122.42(a)):

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. section 122.42(a)(1)):

    a. 100 micrograms per liter (µg/L) (40 C.F.R. section 122.42(a)(1)(i));

    b. 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 C.F.R. section 122.42(a)(1)(ii));

    c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. section 122.42(a)(1)(iii)); or

    d. The level established by the Central Valley Water Board in accordance with section 122.44(f). (40 C.F.R. section 122.42(a)(1)(iv).)

2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following “notification levels" (40 C.F.R. section 122.42(a)(2)):

a. 500 micrograms per liter (µg/L) (40 C.F.R. section 122.42(a)(2)(i));

b. 1 milligram per liter (mg/L) for antimony (40 C.F.R. section 122.42(a)(2)(ii));

c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. section 122.42(a)(2)(iii)); or

d. The level established by the Central Valley Water Board in accordance with section 122.44(f). (40 C.F.R. section 122.42(a)(2)(iv).)

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
001	EFF-001	Downstream from the last connection through which treated process wastewater and non-contact cooling and sealing water can be admitted into the outfall. Samples may be collected from "Manhole 11" immediately downstream of the clarifier

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	LND-001A	Location where wastewater can be monitored in the primary settling basin (Pond 4A).
--	LND-001B	Location where wastewater can be monitored prior to entering the primary settling basin (Pond 4A).
--	LND-002	Location where wastewater can be monitored in the backup primary settling basin (Pond 4B).
--	LND-003	Location where wastewater can be monitored in the aeration basin (Pond 4C).
--	RSW-001	In the Sacramento River, immediately upstream from the point of discharge.
--	RSW-002	In the Sacramento River, within 75 feet downstream of the point of discharge.
--	GW-001	Groundwater monitoring well upgradient of Ponds 4A, 4B, and 4C (also referred to as Monitoring Well MW-7).
--	GW-002	Groundwater monitoring well upgradient of Ponds 4A, 4B, and 4C (also referred to as Monitoring Well MW-6R).
--	GW-003	Groundwater monitoring well downgradient of Ponds 4A, 4B, and 4C (also referred to as Monitoring Well MW-8).
--	GW-004	Groundwater monitoring well downgradient of Ponds 4A, 4B, and 4C (also referred to as Monitoring Well MW-10).

III. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor the combined treated process wastewater and non-contact cooling and sealing water at Monitoring Location EFF-001 in accordance with Table E-2 and the testing requirements described in section III.A.2 below:

Table E-2. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous
pH	standard units	Grab	1/Week
Oil and Grease	mg/L	Grab	2/Year
Biochemical Oxygen Demand, 5-day @ 20°Celcius (BOD_5)	mg/L	24-hour Composite	1/Week
Biochemical Oxygen Demand, 5-day @ 20°Celcius (BOD5)	lbs/day	Calculate	1/Week

Parameter	Units	Sample Type	Minimum Sampling Frequency
Total Suspended Solids (TSS)	mg/L	24-hour Composite	1/Week
Total Suspended Solids (TSS)	lbs/day	Calculate	1/Week
Copper, Total Recoverable	µg/L	Grab	1/Quarter
Copper, Dissolved	µg/L	Grab	1/Quarter
Chemical Oxygen Demand	mg/L	Grab	1/Month
Chlorine, Total Residual	mg/L	Grab	1/Week
Chlorpyrifos	µg/L	Grab	2/Year
Diazinon	µg/L	Grab	2/Year
Electrical Conductivity (@ 25°C)	µmhos/cm	Grab	1/Week
Fecal Coliform	MPN/100 mL	Grab	1/Month
Hardness, Total (as CaCO3)	mg/L	24-hour Composite	1/Month
Settleable Solids	mL/L	Grab	1/Week
Temperature	°F	Meter	Continuous
Total Dissolved Solids	mg/L	Grab	1/Month
Whole Effluent Toxicity	See Section IV	--	1/Quarter

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 effluent.

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

    d. **Flow.** 24-hour flow proportional composite. In the event of composite malfunction, a grab sample must be substituted.

    e. **Priority Pollutant.** For priority pollutant constituents the reporting level shall be consistent with Sections 2.4.2 and 2.4.3 of the Policy for

Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (See section VII.A.2 of this MRP below).

f. **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.

g. **Fecal Coliform Monitoring.** Monitoring shall be conducted for a period of one year following the effective date of this Order.

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

i. **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.

j. **Whole Effluent Toxicity.** Whole effluent toxicity monitoring shall be in accordance with section IV of this MRP.

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

IV. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

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

1. **Monitoring Frequency** – The Discharger shall perform **quarterly** acute toxicity testing.

2. **Sample Types** – The Discharger may use flow-through or static renewal testing. For static renewal testing, the samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001. The receiving water control can be a grab sample obtained from Monitoring Location RSW-001, as identified in this Monitoring and Reporting Program.

3. **Test Species** – Test species shall be **rainbow trout** *(Oncorhynchus mykiss*).

4. **Methods** – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.

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

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

1. **Monitoring Frequency** – The Discharger shall perform routine **once per permit term** chronic toxicity testing. If the result of the routine chronic toxicity testing event exhibits toxicity, demonstrated by a result greater than 1.3 TUc (as $100/EC_{25}$) AND a percent effect greater than 25 percent at 100 percent effluent, the Discharger has the option of conducting two additional compliance monitoring events and perform chronic toxicity testing using the species that exhibited toxicity in order to calculate a median. The optional compliance monitoring events shall occur at least one week apart, and the final monitoring event shall be initiated no later than 6 weeks from the routine monitoring event that exhibited toxicity. See Compliance Determination section VII.D for procedures for calculating 6-week median.

2. **Sample Types** – Effluent samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001. The receiving water control can be a grab sample obtained from Monitoring Location RSW-001, as identified in this Monitoring and Reporting Program.

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

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

   a. The cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test);

   b. The fathead minnow, *Pimephales promelas* (larval survival and growth test); and

   c. The green alga*, Pseudokirchneriella subcapitata* (growth test).

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

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

7. **Dilutions** – For routine and compliance chronic toxicity monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-3, below. For TRE monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-3, below, unless an alternative dilution series is detailed in the submitted TRE Action Plan. A receiving water control or laboratory water control may be used as the diluent.

Table E-3. Chronic Toxicity Testing Dilution Series

Samples	Dilution%	Dilution%	Dilution%	Dilution%	Dilution%	Controls
% Effluent	100	75	50	25	12.5	0
% Control Water	0	25	50	75	87.5	100

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

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

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

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

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

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

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

b. The percent effect for each endpoint at the IWC.

c. The statistical methods used to calculate endpoints;

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

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

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

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

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

3. **TRE Reporting.** Reports for TREs shall be submitted in accordance with the schedule contained in the Discharger's approved TRE Workplan, or as amended by the Discharger's TRE Action Plan.

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

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

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

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

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

1. **Frequency of Testing for Species Sensitivity Screening.** Species sensitivity screening for chronic toxicity shall include, at a minimum, chronic WET testing four consecutive calendar quarters using the water flea (*Ceriodaphnia dubia*), fathead minnow (*Pimephales promelas*), and green alga (*Pseudokirchneriella subcapitata*). The tests shall be performed using 100 percent effluent and one control. If the first two species sensitivity re-screening events result in no change

in the most sensitive species, the Discharger may cease the species sensitive re-screening testing and the most sensitive species will remain unchanged.

2. **Determination of Most Sensitive Species.** If a single test in the species sensitivity screening testing exceeds 1 TUc (as 100/NOEC), then the species used in that test shall be established as the most sensitive species. If there is more than a single test that exceeds 1 TUc (as 100/NOEC), then of the species exceeding 1 TUc (as 100/NOEC) that exhibits the highest percent effect shall be established as the most sensitive species. If none of the tests in the species sensitivity screening exceeds 1 TUc (as 100/NOEC), but at least one of the species exhibits a percent effect greater than 25 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.

V. LAND DISCHARGE MONITORING REQUIREMENTS

A. Monitoring Location LND-001A, LND-002, and LND-003

1. The Discharger shall monitor the settling basins (Ponds 4A and 4B) and aeration pond (Pond 4C) at Monitoring Locations LND-001A, LND-002, and LND-003 in accordance with Table E-4 and the testing requirements described in section V.A.2 below:

Table E-4. Land Discharge Monitoring Requirements for Locations LND-001A, LND-002, and LND-003

Parameter	Units	Sample Type	Minimum Sampling Frequency
Freeboard	Feet	Measure	1/Week
Dissolved Oxygen	mg/L	Grab	1/Week
Odors	--	Observation	1/Week
pH	standard units	Grab	1/Week
Electrical Conductivity (@ 25°C)	µmhos/cm	Grab	1/Week
Fecal Coliform	MPN/100 mL	Grab	1/Month

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

   a. **Freeboard.** To be measured vertically to the lowest point of overflow.

   b. **Dissolved Oxygen**. Samples for Pond 4C (Monitoring Location LND-003) may be collected at Monitoring Location EFF-001.

c. **Required Analytical Methods.** 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.

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

e. **Fecal Coliform.** Monitoring required at Monitoring Location LND-001A, only. Monitoring shall be conducted for a period of one year following the effective date of this Order.

B. Monitoring Location LND-001B

1. The Discharger shall monitor wastewater prior to entering Pond 4A at Monitoring Location LND-001B as follows:

Table E-5. Land Discharge Monitoring Requirements for Location LND-001B

Parameter	Units	Sample Type	Minimum Sampling Frequency
Fecal Coliform	MPN/100 mL	Grab	1/Month

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. **Fecal Coliform.** Monitoring shall be conducted for a period of one year following the effective date of this Order. 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.

VI. RECEIVING WATER MONITORING REQUIREMENTS

A. Monitoring Location RSW-001

1. The Discharger shall monitor Sacramento River at RSW-001 in accordance with Table E-6 and the testing requirements described in section VI.A.2 below:

Table E-6. Receiving Water Monitoring Requirements for Location RSW-001

Parameter	Units	Sample Type	Minimum Sampling Frequency
pH	standard units	Grab	1/Week
Copper, Total Recoverable	µg/L	Grab	1/Quarter
Copper, Dissolved	µg/L	Grab	1/Quarter
Chlorpyrifos	µg/L	Grab	1/Year
Diazinon	µg/L	Grab	1/Year
Dissolved Oxygen	mg/L	Grab	1/Week
Electrical Conductivity (@ 25°C)	µmhos/cm	Grab	1/Week
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Month
Temperature	°F	Grab	1/Week
Turbidity	NTU	Grab	1/Week

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. **Required Analytical Methods.** 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. **Hand-held Field Meter.** A hand-held field meter may be used for **pH** and **temperature**, 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. **Priority Pollutant.** For priority pollutant constituents the reporting level shall be consistent with Sections 2.4.2 and 2.4.3 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (See section VII.A.2 of this MRP below).

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

    e. **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.

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

a. Floating or suspended matter;

b. Discoloration;

c. Bottom deposits;

d. Aquatic life;

e. Visible films, sheens, or coatings;

f. Fungi, slimes, or objectionable growths; and

g. Potential nuisance conditions.

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

B. Monitoring Location RSW-002

1. The Discharger shall monitor Sacramento River at RSW-002 in accordance with Table E-7 and the testing requirements described in section VI.B.2 below as follows:

Table E-7. Receiving Water Monitoring Requirements for Location RSW-002

Parameter	Units	Sample Type	Minimum Sampling Frequency
pH	standard units	Grab	1/Week
Dissolved Oxygen	mg/L	Grab	1/Week
Electrical Conductivity (@ 25°C)	µmhos/cm	Grab	1/Week
Temperature	°F	Grab	1/Week
Turbidity	NTU	Grab	1/Week

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. **Required Analytical Methods.** 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. **Hand-held Field Meter.** A hand-held field meter may be used for **pH** and **temperature**, 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. Monitoring Location GW-001, GW-002, GW-003, and GW-004

1. The Discharger shall conduct groundwater monitoring at GW-001, GW-002, GW-003, and GW-004 and any new groundwater monitoring wells in accordance with Table E-8 and the testing requirements described in section VI.C.2 below:

Table E-8. Groundwater Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency
Depth to Groundwater	±0.01 feet	Measurement	1/Quarter
Groundwater Elevation	±0.01 feet	Calculated	1/Quarter
Gradient	feet/feet	Calculated	1/Quarter
Gradient Direction	degrees	Calculated	1/Quarter
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	Grab	1/Quarter
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Quarter
Total Dissolved Solids	mg/L	Grab	1/Quarter
pH	standard units	Grab	1/Quarter
Fecal Coliform	MPN/100 mL	Grab	1/Quarter
Total Coliform	MPN/100 mL	Grab	1/Quarter
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/Quarter
Standard Minerals	µg/L	Grab	1/Quarter

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. **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 (WDR VI.C.2.b). Once installed, all new wells shall be added to the monitoring network (which currently consists of Monitoring Wells GW-001, GW-002, GW-003 and GW-004 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 sampling**, the groundwater elevations shall be measured, and the wells shall be purged of at least three well volumes until temperature, pH, and electrical conductivity have stabilized. Depth to groundwater shall be measured to the nearest 0.01 feet.

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

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. **Iron and Manganese**. Iron and manganese samples shall be analyzed for total or total filtered using a 1.5-micron filter. Filtered samples shall be filtered prior to preservation and analysis using a 1.5 micron filter.

VII. OTHER MONITORING REQUIREMENTS

A. Effluent and Receiving Water Characterization

1. **Monitoring Frequency**

   a. **Effluent and Receiving Water Sampling.** Samples shall be collected from the effluent (Monitoring Location EFF-001) and receiving water (Monitoring Location RSW-001) twice per permit term. Monitoring shall be conducted **twice during the third year of the permit term**, evenly distributed throughout the year (e.g., once during 1st or 2nd quarter and once during the 3rd or 4th quarter).

2. **Analytical Methods.** Constituents shall be collected and analyzed consistent with the Discharger's Analytical Methods Report (MRP, VIII.D.1) using sufficiently sensitive analytical methods and Reporting Levels (RLs) per the SSM Rule specified in 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv). The "Reporting Level" is synonymous with the "Method Minimum Level" described in the SSM Rule. The results of the monitoring shall be submitted to the Central Valley Water Board with the quarterly self-monitoring reports. Each individual monitoring event shall provide representative sample results for the effluent and upstream receiving water.

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-10.

4. The Discharger shall conduct effluent and receiving water characterization monitoring in accordance with Table E-9 and the testing requirements described in section VII.A.5 below.

Table E-9. 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
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
21	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
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

CTR Number	Semi-Organic Volatile Parameters	CAS Number	Units	Effluent Sample Type
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
NL	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, Dissolved	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
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	Grab
NL	Specific Conductance (Electrical Conductivity or EC)	EC	µmhos /cm	24-hour Composite

CTR Number	Nonconventional Parameters	CAS Number	Units	Effluent Sample Type
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

CTR Number	Other Constituents of Concern	CAS Number	Units	Effluent Sample Type
NL	Chlorpyrifos	2921-88-2	µg/L	24-hour Composite
NL	Diazinon	333-41-5	µg/L	24-hour Composite

5. **Table E-9 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.

    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-2, 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-8.

    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 and 1631 (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. **Aluminum, Iron, and Manganese** samples shall be analyzed for total or total filtered using a 1.5-micron filter. Filtered samples shall be filtered prior to preservation and analysis using a 1.5-micron filter.

VIII. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

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

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

3. **Compliance Time Schedules.** For compliance time schedules included in the Order, the Discharger shall submit to the Central Valley Water Board, on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board by letter when it returns to compliance with the compliance time schedule.

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

B. Self-Monitoring Reports (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 VIII. The Discharger shall submit monthly, quarterly, semi-annual, and annual SMRs including the results of all required monitoring using U.S. EPA-approved test methods or other test methods specified in this Order. SMRs are to include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the 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-10. Monitoring Periods and Reporting Schedule

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

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

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

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

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

      For the purposes of data collection, the laboratory shall write the

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

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

d. Dischargers are to instruct laboratories to establish calibration standards so that the Minimum Level (ML) value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

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

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

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

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

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

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

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

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” the Discharger shall report the calendar annual average in the December SMR. The annual average shall be calculated as the average of the samples gathered for the calendar year.

b. **Mass Loading Limitations.** For BOD_5 and TSS, the Discharger shall calculate and report the average weekly and average monthly mass loading (lbs/day) in the SMRs. The mass loading shall be calculated as follows:

Mass Loading (lbs/day) = Total Flow (million gallons) x Concentration (mg/L) x 8.34 divided by Period Length (days)

The weekly average constituent concentration and total weekly flow shall be used for average weekly mass loading. The monthly average constituent concentration and total monthly flow shall be used for average monthly mass loading.

c. **Chlorpyrifos and Diazinon Effluent Limitations.** The Discharger shall calculate and report the value of SAMEL and SMDEL for the effluent, using the equation in Effluent Limitation IV.A.1.d and consistent with the Compliance Determination Language in Section VII.F of the Waste Discharge Requirements.

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

e. **Turbidity Receiving Water Limitations.** The Discharger shall calculate and report the turbidity increase in the receiving water applicable to the natural turbidity condition specified in section V.A.18.a-e. of the Waste Discharge Requirements.

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-11. 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 MPR (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-11:

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

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

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

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

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

3. **Report of Waste Discharge (ROWD).** For the 5-year permit renewal, the Discharger shall submit a written report to the Central Valley Water Board, electronically via CIWQS submittal, containing, at minimum, the following by the due date in the Technical Reports Table E-11:

   a. Report of Waste Discharge (Form 200);

   b. NPDES Form 1 (not needed if submitting Form 2A);

   c. NPDES Form 2C;

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

   e. **Site-specific Metal Translator Request**. A site-specific metal translator support document for any metal translator the Discharger is requesting the continuation of for use in the calculation of criteria (e.g., copper, zinc). The request and supporting documentation shall include, but is not limited to, updated site-specific total and dissolved metals information for the receiving water and effluent and identification any new information that may impact the findings of previous metals translator studies for the Facility.

4. **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-11 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-11. Technical Reports

Report #	Technical Report	Due Date	CIWQS Report Name
Intentionally left blank	Standard Reporting Requirements	Intentionally left blank	Intentionally left blank
1	Report of Waste Discharge	1 year prior to permit expiration date	ROWD

Report #	Technical Report	Due Date	CIWQS Report Name
2	Analytical Methods Report	Within 60 days of permit effective date	MRP VIII.D.1
3	Analytical Methods Report Certification	3 months prior to start of characterization monitoring	MRP VII.A.3
4	Annual Operations Report	1 February 2024	MRP VIII.D.2
5	Annual Operations Report	1 February 2025	MRP VIII.D.2
6	Annual Operations Report	1 February 2026	MRP VIII.D.2
7	Annual Operations Report	1 February 2027	MRP VIII.D.2
8	Annual Operations Report	1 February 2028	MRP VIII.D.2
9	EC Evaluation and Salinity Evaluation and Minimization Plan	1 year prior to permit expiration date (with Report of Waste Discharge)	WDR VI.C.3.a
10	Groundwater Monitoring Well Network Evaluation	Within 6 months following effective date of Order.	WDR VI.C.2.a
11	Groundwater Monitoring Well Installation, Work Plan	Within 12 months following effective date of Order.	WDR VI.C.2.b
12	Groundwater Quality Characterization, Evaluation Final Report	Within 36 months following effective date of Order	WDR VI.C.2.c
13	Groundwater Technical Report/BPTC	Within 48 months following effective date of Order	WDR VI.C.2.c
14	Groundwater Antidegradation Re-evaluation, Final Report	1 year prior to permit expiration date (with Report of Waste Discharge)	WDR VI.C.2.d
15	TRE Work Plan	Within 90 days of permit effective date	MRP IV.F.3
16	Temperature Study Review Submittal	Within 60 days following effective date of Order.	WDR VI.C.2.e
17	Most Sensitive Species Screening	1 year prior to permit expiration date (with Report of Waste Discharge)	WDR IV.E

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:	5A522001004
CIWQS Facility Place ID:	247342
Discharger:	Reynolds Consumer Products LLC
Name of Facility:	Reynolds Molded Pulp Mill
Facility Address:	1000 Diamond Avenue
Facility City, State Zip:	Red Bluff, CA 96080
Facility County:	Tehama County
Facility Contact, Title and Phone Number:	Jason Macey, Plant Manager, (530) 528-3333
Authorized Person to Sign and Submit Reports:	Sarah Adams, Environmental Health and Safety Manager, (530) 528-3301
Mailing Address:	Same as Facility Address
Billing Address:	Same as Facility Address
Type of Facility:	Industrial (SIC code 2679 for converted paper)
Major or Minor Facility:	Major
Threat to Water Quality:	1
Complexity:	B
Pretreatment Program:	Not Applicable
Recycling Requirements:	Not Applicable
Facility Permitted Flow:	2.7 million gallons per day (MGD)
Facility Design Flow:	2.7 MGD
Watershed:	Sacramento River- Lower Thames
Receiving Water:	Sacramento River
Receiving Water Type:	Inland Surface Water

A. Reynolds Consumer Products LLC (hereinafter Discharger) is the owner and operator of the Reynolds Molded Pulp Mill (hereinafter Facility), an industrial discharge.

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 Sacramento River, a water of the United States, within The Sacramento – Lower Thames watershed. The Discharger was previously regulated by Order R5-2017-0014 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0004821 adopted on 24 February 2017 and expired on 31 March 2022. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

C. The Discharger filed a Report of Waste Discharge (ROWD) and submitted an application for reissuance of its waste discharge requirements (WDRs) and NPDES permit on 31 March 2021.

D. 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 owns and operates a molded pulp processing plant, process wastewater treatment system, and disposal conveyance lines. The plant operates 24 hours a day, except during holidays. Historically, the plant produced paper plates, egg cartons, and other molded paper products (e.g., berry baskets). Currently, only paper plates are produced at the Facility using both recycled and virgin pulp. The Discharger does not plan to increase production during the term of this Order. The long-term daily average flow during the term of the previous Order was 1.3 MGD.

The plant currently produces a maximum of 55,000 pounds of product per day and approximately 43,000 pounds of product per day as a 30-day average. Roughly 65 percent of this fiber is from secondary sources. Paper plates manufacturing is a two-part process consisting of a top liner and a back liner. The top liner is a blend of purchased virgin pulp, which is defibered and refined. It is further modified with chemicals that provide oil and water holdout properties. The back liner consists of white blank news, the unprinted cuttings and sheets of white newsprint or other uncoated white groundwood paper. This fiber is mixed with hot water, defibered, and further modified with chemicals that provide water holdout properties. Chemicals used in the manufacturing process

include retention aids to retain fines and improve drainage, and chemicals to provide water resistance (i.e., water and oil hold-out properties).

Process and domestic water are supplied by two water wells operated by the Discharger. The wells, designated No. 1 and No. 3 are approximately 500 feet deep. Well No. 3 operates continuously, and Well No. 1 provides makeup water. An additional well (Well No. 2) is located on the adjacent Meyer's property, west of the Facility, but is not used by the Facility. The Facility is located on approximately 100 acres owned by the Discharger. The Facility is located on the south bank of the Sacramento River approximately one-quarter mile upstream of the Red Bluff Diversion Dam structure.

A. Description of Wastewater and Biosolids Treatment and Controls

Process wastewater from the production of recyclable paper food service products and boiler blowdown wastewater is transported through a cascade aerator before entering two sump basins. Process wastewater is then discharged into a primary settling pond (Pond 4A). A second settling pond (Pond 4B) is used only during emergency operations and maintenance. Supernatant from the settling pond flows by gravity to a 1.6 million gallon aeration basin (Pond 4C) before entering a 75-foot diameter clarifier. Sludge from the clarifier is returned to the primary settling pond. Clarified process wastewater is combined with non-contact cooling and sealing water and is subsequently discharged into the Sacramento River at Discharge Point 001. The amount of boiler blowdown is limited. Blowdown occurs three times per day with each blowdown taking approximately 20 seconds. The amount of residual boiler blowdown water that goes to the settling pond is minimal, approximately 12 gallons per day.

The permitted maximum daily discharge flow is 2.7 MGD. In 2013, the existing wastewater treatment system for the Facility was modified and a low-hydraulic conductivity clay-barrier layer (clay liner) was installed in the bottoms of Ponds 4A, 4B, and 4C.

B. Discharge Points and Receiving Waters

1. The Facility is located in Section 33, T27N, R3W, MDB&M, as shown in Attachment B, a part of this Order.

2. Treated industrial wastewater is discharged at Discharge Point 001 to Sacramento River, a water of the United States at a point latitude 40°09'10"N and longitude 122°12'20"W.

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

Effluent limitations contained in Order R5-2017-0014 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order R5-2017-0014 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	2.7	1.5	1.6	1.9
Biochemical Oxygen Demand (5-Day @ 20°C)	mg/L	AMEL -- AWEL -- MDEL 11.4	2.0	7.0	7.0
Biochemical Oxygen Demand (5-Day @ 20°C)	lbs/day	AMEL 138 AWEL -- MDEL 264	48.0	88.1	88.1
pH	Standard units	Instantaneous Min 6.5 Instantaneous Max 8.5	6.9 (min.) 8.0	6.6 (min.) 8.3	6.6 (min.) 8.3
Total Suspended Solids	mg/L	AMEL -- AWEL -- MDEL 28.5	4.12	9.30	9.30
Total Suspended Solids	lbs/day	AMEL 348 AWEL -- MDEL 648	61.0	138	138
Copper, Total Recoverable	µg/L	AMEL 7.1 AWEL -- MDEL 10	5.85	--	5.85
Settleable Solids	mL/L	AMEL 0.1 AWEL -- MDEL 0.2	0.1	--	0.1
Acute Toxicity	% Survival	Any one test:70 Three consecutive tests: 90	95	--	95
Diazinon and Chlorpyrifos	µg/L	AMEL ≤1.0 AWEL ≤1.0	ND	--	ND
Mercury, Total Recoverable	lbs/year	0.0065 lbs	0.00089 (Note 3)	--	--

Table F-2 Notes:

1. The maximum daily discharge flow shall not exceed 2.7 MGD.
2. ND: Non-detect.
3. Maximum of the total annual mercury is 0.00089 lbs/year (2019).

D. Compliance Summary

The Discharger was not subject to any enforcement actions during the 5-year term of WDR Order R5-2017-0014.

E. Planned Changes

There are no planned changes for the Facility. However, in October 2022, the Discharger trialed and switched to a per-and polyfluoroalkyl substances (PFAS)-free chemical for use in the plate manufacturing process. The new PFAS-free chemical is Topscreen MF305-NA.

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)

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

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

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

    a. Basin Plan. The Central Valley Water Board adopted a Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fifth Edition, February 2019 (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Requirements in this Order implement the Basin Plan. In addition, the Basin Plan implements State Water Board Resolution 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to Sacramento River from Shasta Dam to the Colusa Basin Drain are as follows:

Table F-3 Basin Plan Beneficial Uses

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

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 toxicity, 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.

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, receiving water limits, and other requirements to protect the beneficial uses of waters of the state**.** The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

8. **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 manufacturing facilities. Manufacturing facilities are applicable industries under

the storm water program and are obligated to comply with the federal regulations. The Facility submitted its Notice of Intent (NOI) to be covered under the General Industrial Storm Water Permit on 27 March 2015.

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

1. Under section 303(d) of the 1972 CWA, states, territories, and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 11 May 2022 U.S. EPA gave final approval to California's 2020 – 2022 section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (WQLSs), which are defined as "…those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 C.F.R. part 130, et seq.)." The Basin Plan also states, "Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment." The listing for the Sacramento River from Red Bluff to Knights Landing includes DDT, dieldrin, mercury, dissolved oxygen, polychlorinated biphenyls (PCB's), and unknown toxicity

2. Total Maximum Daily Loads (TMDLs). Table F-4, below, identifies the 303(d) listings and any applicable TMDLs.

Table F-4 303 (d) List for Sacramento River

Pollutant	Potential Sources	TMDL Status
DDT	Unknown	2027
Dieldrin	Unknown	2027
Mercury	Unknown	2027
Dissolved Oxygen	Unknown	2035
PCB's	Unknown	2027
Unknown Toxicity	Unknown	2027

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

E. Other Plans, Polices and Regulations

1. **Title 27.** Discharges of wastewater to land, including but not limited to evaporation ponds or percolation ponds, are exempt from the requirements of Title 27, CCR, based on section 20090 et seq. Title 27 CCR section 20090(b) contains an exemption for discharges of wastewater to land where the discharge is covered by WDRs, the discharge is in compliance with the Basin Plan, and the discharge does not need to be managed as a hazardous waste. This Order serves as WDR's for the discharge and the discharge does not need to be

managed as hazardous waste. The Facility contains two settling basins (Ponds 4A and 4B) and an aeration basin (Pond 4C) where a determination has been made by the Regional Water Board whether the treatment basins meet the exemptions from Title 27.

The treatment system previously included three settling basins (Ponds 1, 2, and 3) and an aeration stabilization basin (Pond 5). Order No. R5-2004-0124 required the Discharger to submit a Process Wastewater Evaluation and Treatment Report identifying the Best Practicable Treatment or Control (BPTC) to prevent infiltration to groundwater of pollutants that could impact groundwater. The Discharger conducted a pond liner assessment and determined that the ponds were constructed with a clay liner and were capped with gravel, presumably to provide a working surface for heavy equipment during removal of solids. Ponds 1 through 3 were utilized for several years and emptied many times. Due to the high quality of the liner of Pond 4, the Discharger concluded that providing treatment in Pond 4, modified to provide settling and aeration in three basins, and discontinuation of the use of Ponds 1 through 3 and the aeration stabilization basin would constitute BPTC. The Discharger completed modification to Pond 4 and discontinued the use of Ponds 1 through 3 and the aeration stabilization basin in 2013.

In order to qualify for an exemption from Title 27 under section 20090(b), the Discharger must demonstrate compliance with the Basin Plan, which includes meeting BPTC and complying with water quality objectives for groundwater. Based on groundwater monitoring conducted since 2013, increases in concentrations of electrical conductivity and total coliform organisms in down gradient wells have been observed. However, several environmental conditions have resulted in a change in aquifer dynamics, including: (1) movement of the pond treatment system to the current location in May 2013 and (2) gates at the Red Bluff Diversion Dam were permanently raised in 2013, which influenced the direction and magnitude of groundwater flow. Until the Discharger provides further information (e.g., groundwater monitoring data), the Regional Water Board cannot determine whether the process wastewater treated in Ponds 4A, 4B, and 4C, and the underlying groundwater, complies with the applicable water quality control plan, as required by the exemption at Title 27 section 20090(b). Therefore, this Order requires the Discharger to collect groundwater monitoring data to discern whether discharges to Ponds 4A, 4B, and 4C are degrading water quality.

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 Effluent Limitations (TBELs) and standards; and 40 C.F.R. section 122.44(d) requires that permits include Water Quality-Based Effluent

Limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water.

A. Discharge Prohibitions

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

2. **Prohibition III.B (No bypasses or overflow of untreated wastewater, except under the conditions at CFR section122.41(m)(4)).** As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal regulations, 40 C.F.R. section 122.41(m), define "bypass" as the intentional diversion of waste streams from any portion of a treatment facility. This section of the federal regulations, 40 C.F.R. section 122.41(m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Regional Water Board's prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites the federal regulations, 40 C.F.R. section 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.

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

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

5. **Prohibition III.E (Maximum Daily Discharge Flow)**. This prohibition is based on the maximum daily design flow treatment capacity rating for the Facility and ensures the Facility is operated within its treatment capacity. Previous Order R5-2017-0014 included flow as an effluent limit based on the Facility design flow. Flow is not a pollutant and therefore has been changed from an effluent limit to a discharge prohibition in this Order, which is an equivalent level of regulation. This Order is not less stringent because compliance with flow as a discharge prohibition will be calculated the same way as the previous Order.

B. Technology-Based Effluent Limitations (TBELs)

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 Effluent Limitations Guidelines and Standards (ELG's) for the Secondary Fiber Non-Deink Subcategory of the Pulp, Paper, and Paperboard Point Source Category in 40 C.F.R. part 430 subpart J, which is applicable to facilities where molded products from wastepaper are produced without deinking.

The CWA requires that Technology-Based Effluent Limitations (TBELs) be established based on several levels of controls:

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

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

c. Best conventional pollutant control technology (BCT) represents the control from existing industrial point sources of conventional pollutants including BOD_5, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering a two-part reasonableness test. The first test compares the relationship between the costs of attaining a reduction in effluent discharge and the resulting benefits. The second test examines the cost and level of reduction of pollutants from the discharge from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources. Effluent limitations must be reasonable under both tests.

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

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

2. Applicable Technology-Based Effluent Limitations (TBELs)

a. **BOD_5, TSS, and pH.** ELG's were established at 40 C.F.R. part 430, subpart J for the Secondary Fiber Non-Deink Subcategory of the Pulp, Paper, and Paperboard Point Source Category. The Discharger produces molded pulp products primarily from secondary fibers without deinking at the Facility, and thus the requirements of 40 C.F.R. part 430, subpart J are applicable to the discharge of process wastewater from the Facility. Discharge from the Facility is continuous, with few exceptions.

40 C.F.R. section 430.102(b) requires that existing point sources subject to subpart J achieve the effluent limitations representing the degree of effluent reduction attainable by the application of BPT for continuous dischargers as described in Table F-5 and notes below.

Table F-5 BPT Effluent Limitations for Secondary Fiber Non-Deink Facilities Where Molded Products from Wastepaper Are Produced Without Deinking

Parameter	Units	Effluent Limitations
Biochemical Oxygen Demand (5-Day @ 20°C)	lbs/1,000 lbs of product	Maximum for any 1 day: 4.4 Average of daily values for 30 consecutive days: 2.3
Total Suspended Solids	lbs/1,000 lbs of product	Maximum for any 1 day: 10.8 Average of daily values for 30 consecutive days: 5.8
pH	standard units	Instantaneous Max 9.0 Instantaneous Min 5.0

Table F-5 Notes:

1. The Discharger produces approximately 645 tons (1.29 million pounds) of product per month and operates daily, resulting in an average daily production of 43,000 pounds. Effluent limitations for BOD_5 and TSS were calculated based on the applicable BPT effluent limitations described in Table F-5 above and using a 30-day average production of 43,000 pounds of product and a maximum daily production of 55,000 pounds of product.

   The effluent limitation guidelines at 40 C.F.R. part 430, subpart J do not require concentration-based effluent limitations for BOD_5 and TSS; however, Order R5-2017-0014 established a concentration-based maximum daily effluent limitation (MDEL). This Order includes a concentration-based MDEL for BOD_5 and TSS based on the long-term average flow of 1.3 MGD.

b. **Pentachlorophenol and Trichlorophenol**. 40 C.F.R. section 430.104 requires that existing point sources subject to subpart J and where chlorophenolic-containing biocides are used, achieve the effluent

limitations representing the degree of effluent reduction attainable by the application of BAT as described in Table F-6 and notes below.

Table F-6. BAT Effluent Limitations for Secondary Fiber Non-Deink Facilities Where Molded Products from Wastepaper Are Produced Without Deinking

Parameter	Units	Effluent Limitations
Pentachlorophenol	lbs/1,000 lbs of product	0.0026
Pentachlorophenol	mg/L	(0.029)(21.1)/y
Trichlorophenol	lbs/1,000 lbs of product	0.00088
Trichlorophenol	mg/L	(0.010)(21.1)/y

Table F-6 Notes:

1. y = wastewater discharged in kgal per ton of product.

   Dischargers not using chlorophenolic-containing biocides are required to certify that they are not using these biocides. The Discharger submitted a letter dated 25 January 2023 certifying that chlorophenolic-containing biocides are not used at the Facility. Thus, effluent limitations for pentachlorophenol and trichlorophenol based on BAT are not included in this Order.

Summary of Technology-based Effluent Limitations
Discharge Point 001

Table F-7. Summary of Technology-based Effluent Limitations

Parameter	Units	Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
BOD_5	lbs/day	99	242	--	--
BOD_5	mg/L	--	22.3	--	--
TSS	lbs/day	249	594	--	--
TSS	mg/L	--	54.8	--	--
pH	standard units	--	--	5.0	9.0

Table F-7 Notes:

1. Note that a more stringent WQBEL for pH is applicable and are established as final effluent limitations in this Order (see section IV.C.3.c. of this Fact Sheet).
2. **lbs/day**. The determination for lbs/day, maximum daily and average monthly, is based on a maximum daily production of 55,000 pounds and the 30-day average production of 43,000 pounds, respectively.
3. **mg/L**. The determination for mg/L was based on the observed long-term average daily flow of 1.3 MGD and the maximum daily load (lbs/day).

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.

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 Waste Load Allocations (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 C.F.R. sections 131.2 and 131.10, require that all waters of the State regulated to protect the beneficial uses of public water supply, protection and propagation of fish, 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.** The Facility discharges to the Sacramento River via a 24-inch diameter steel pipe at Discharge Point 001. Discharge Point 001 is located just upstream of Red Bank Creek and approximately one-quarter mile upstream of the Red Bluff Diversion Dam. The Sacramento River, downstream of Discharge Point 001, is an important migratory corridor for California Endangered Species Act and Federal Endangered Species Act listed adult and juvenile salmonids including: winter and spring-run Chinook salmon (*Oncorhynchus tshawytscha*) and Central Valley steelhead (*O. mykiss*). It is also a spawning and migratory area for fall and late fall-run Chinook salmon (*O. tshawytscha*), as well as home to numerous other native and non-native fish species. Listed species are actively migrating, spawning, and/or rearing in all months of the year in this area of the Sacramento River.

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

b. **Effluent and Ambient Background Data.** The reasonable potential analysis (RPA), as described below in section IV.C.3 of this Fact Sheet, was based on data from April 2017 through February 2022, which includes effluent and ambient background data submitted in SMRs and the ROWD. In addition, receiving water copper data collected by the City of Red Bluff wastewater treatment plant from March 2017 through December 2021 approximately three-quarters of a mile upstream of the Discharger's outfall was used in assessing background copper concentration in the RPA.

c. **Assimilative Capacity/Mixing Zone**

   i. The Discharger submitted a *Mixing Zone Study for NPDES Permitted Discharges* (URS) in April 2004 requesting mixing zones for zinc and cadmium. The Discharger submitted an *Update of Mixing Zone Modeling Evaluation of Pactiv Corporation Red Bluff, CA Facility Discharge to the Sacramento River* (LimnoTech) dated March 2009 to

verify that the mixing zones and dilution credits proposed in the 2004 study were still valid.

The Discharger requested that mixing zones for copper, zinc, and chronic toxicity be allowed in Order R5-2011-0036; however, the Central Valley Water Board did not authorize mixing zones for these parameters because the 2004 Study and 2009 Update did not address mixing zones for copper or chronic toxicity and assimilative capacity for zinc was not available.

The Discharger has not provided an updated mixing zone study or requested mixing zones be granted in this Order.

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 arsenic, cadmium, chromium III, chromium VI, lead, nickel, silver, and zinc. Site specific acute and chronic copper conversion factors were used to calculate water quality criteria for copper. Furthermore, a conservative dissolved-to-total metal translator of 1 has been used when developing criteria 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, if any, for the applicable inorganic constituents.

The Discharger submitted a Copper and Zinc Translator Study (December 2017); the study proposed a conversion factor (translator) of 0.71 for an acute site-specific copper translator and 0.58 for a chronic site-specific copper translator. The study states that a metal translator for zinc is no longer needed for the current permit term but requests that if a zinc dissolved to total metal translator is needed in the future, that sampling data for the Translator Study be used to convert the applicable dissolved criteria to total criteria.

e. **Hardness-Dependent CTR Metals Criteria.** The CTR and the NTR contain water quality criteria for seven metals that vary as a function of hardness. The lower the hardness the lower the water quality criteria. The metals with hardness-dependent criteria include cadmium, copper, chromium III, lead, nickel, silver, and zinc. For the Sacramento River and its tributaries above State Highway 32 bridge at Hamilton City the Basin Plan contains hardness-dependent site-specific objectives for cadmium, copper, and zinc that apply in lieu of the CTR acute criteria for these metals. 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 the Sacramento River ranges from 38 mg/L to 61 mg/L based on collected ambient data from April 2017 through

February 2022. 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 38 mg/L (minimum) up to 61 mg/L (maximum).

The Central Valley Water Board finds that the use of the ambient hardness values and associated total recoverable acute and chronic criteria shown in Table F-8 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-8. Summary of Criteria for CTR Hardness-dependent Metals

CTR Metals	Ambient Hardness (mg/L)	Acute Criteria, Total (µg/L, total)	Chronic Criteria, Total (µg/L, total)
Copper	61	12	10
Chromium III	61	1200	140
Cadmium	61 (acute) 61 (chronic)	0.38	1.7
Lead	61	44	1.7
Nickel	61	310	34
Silver	61	1.7	--
Zinc	61	23	79

Table F-8 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-8 represent actual observed receiving water hardness measurements.
3. **Copper.** This Order allows a site-specific metal translator for acute aquatic life (0.71) and for chronic aquatic life (0.58) to calculate the criteria (see Section IV.C.2.d).
4. **Acute Criteria.** The acute criteria for Cadmium, Copper, and Zinc are based on site-specific objectives provided in the Basin Plan.

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 (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.

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).

The Sacramento River is subject to TMDLs for diazinon and chlorpyrifos and WLAs under those TMDLs are available. The Central Valley Water Board developed WQBELs for these pollutants pursuant to 40 C.F.R. section 122.44(d)(1)(vii), which does not require or contemplate a reasonable potential analysis.

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 WLAs apply to waterbodies that are downstream of the major dams in Table 3-5 of the Basin Plan, which includes Keswick Dam on the Sacramento River. The Facility discharges to the Sacramento River, downstream of Keswick Dam.

(b) **WQBELs.** WQBELs for diazinon and chlorpyrifos are required per the TMDL. This Order includes effluent limits calculated based on the WLAs contained in the TMDL, as follows:

Average Monthly Effluent Limitation (AMEL)

$S(AMEL) = Cd\ (M\text{-}avg)/0.079 + Cc\ (M\text{-}avg)/0.012 \leq 1.0$

Where:

Cd(M-avg) = average monthly diazinon effluent concentration in µg/L
Cc (M-avg) = average monthly chlorpyrifos effluent concentration in µg/L

Maximum Daily Effluent Limitation (MDEL)

S(MDEL) = Cd (W-avg)/0.16+ Cc (W-avg)/0.025≤ 1.0
Where:
Cd(W-avg) = maximum daily diazinon effluent concentration in µg/L
Cc (W-avg) = maximum daily chlorpyrifos effluent concentration in µg/L

(c) **Plant Performance and Attainability.** Chlorpyrifos and diazinon were not detected in the effluent in the two sampling events conducted between June 2017 and May 2018. Furthermore, since these pesticides have been banned for public use, they are not expected to be present in the source water for the Facility. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

b. **Constituents with No Reasonable Potential.** Central Valley Water Board staff conducted 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. **Mercury**

(a) **WQO.** The current NAWQC for protection of freshwater aquatic life, continuous concentration, for mercury is 0.77 µg/L (30-day average, chronic criteria). The CTR contains a human health criterion (based on a threshold dose level causing neurological effects in infants) of 0.050 µg/L for waters from which both water and aquatic organisms are consumed. In addition, the State

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

(b) **RPA Results.** Based on samples from April 2017 to February 2022 the Maximum Effluent Concentration (MEC) for mercury was 0.67 ng/L and the maximum ambient background mercury concentration was 1.52 ng/L. Therefore, mercury in the discharge does not demonstrate a reasonable potential to cause or contribute to an instream excursion above the CTR criteria or the Sport Fish Water Quality Objective and the effluent limitation for mercury has not been retained in this Order. Removal of this effluent limitations is in accordance with federal anti-backsliding regulations (see section III.C.5 of the Fact Sheet).

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 in dissolved concentrations, as 1-hour acute criteria and 4-day chronic criteria. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. The Discharger conducted a site-specific metal translator study that was used for calculating the acute and chronic aquatic life criteria for copper (refer to section IV.C.2.d). Using an ambient hardness of 61 mg/L (as $CaCO_3$) and the site-specific copper translators (acute and chronic), the applicable acute (1-hour average) and chronic (4-day average) criteria for copper in the effluent are 12 µg/L and 10 µg/L, respectively, as total recoverable. Using the minimum receiving water hardness of 38 mg/L (as $CaCO_3$) and the site-specific copper translators (acute and chronic), the applicable acute (1-hour average) and chronic (4-day average) criteria for copper in the effluent are 7.6 µg/L and 6.7 µg/L, respectively, as total recoverable.

The Basin Plan includes a hardness-dependent water quality objective for total recoverable copper for the Sacramento River and its tributaries above the State Highway 32 bridge at Hamilton City, which is applicable to the receiving water. Using an ambient hardness of 61 mg/L (as $CaCO_3$) and the site specific acute aquatic life copper translator, the applicable Basin Plan objective for copper is 12 µg/L. Using the minimum receiving water hardness of 38 mg/L (as $CaCO_3$) and the site specific acute aquatic life copper translator, the applicable Basin Plan objective for copper is 7.6 µg/L.

Order R5-2017-0014 included effluent limitations for copper based on the Basin Plan objective.

(b) **RPA Results.** Based on samples from April 2017 to February 2022 the MEC for copper was 5.85 µg/L and the maximum ambient background copper concentration was 10.1 µg/L (sampled on 4 February 2019). However, the reported maximum background concentration of 10.1 µg/L has been determined to be not representative of the receiving water based on review of receiving water conditions during the time period of collection and review of total recoverable and dissolved copper data collected by the City of Red Bluff wastewater treatment plant upstream of the Discharger's outfall during the same time period as the Discharger's reported maximum background concentration of 10.1 µg/L. The additional copper data set included a reported total recoverable copper concentration of 2.5 µg/L and a reported dissolved copper concentration of 1.6 µg/L in the Sacramento River on 7 February 2019.

Section 1.2 of the SIP states, "*The RWQCB shall have discretion to consider if any data are inappropriate or insufficient for use in implementing this Policy*." Since the receiving water copper result for the sampling event conducted on 8 January 2020 is unusually high compared to the rest of the effluent copper results collected over the term of Order R5-2016-0020-01, the Central Valley Water Board concludes that the 4 February 2019 result is not representative of the receiving water and is therefore insufficient for use in the RPA. Excluding the 4 February 2019 sample, a maximum background copper concentration of 6.2 µg/L was used in the RPA. The maximum background copper concentration was observed on 4 March 2019.

The MEC of 5.85 µg/L is less than applicable criteria and the Basin Plan Objective, calculated using the ambient hardness of 61 mg/L (as $CaCO_3$). The maximum background concentration of 6.2 µg/L is less than applicable criteria and the Basin Plan

Objective, calculated using a minimum receiving water hardness of 38 mg/L (as $CaCO_3$). Therefore, total recoverable copper in the discharge does not demonstrate reasonable potential to cause or contribute to an instream excursion above the CTR criteria for copper and the Basin Plan Objective for copper, and the effluent limitation for copper has not been retained in this Order. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section III.C.5 of the Fact Sheet).

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-9, below, contains various recommended levels for EC, sulfate, and chloride.

Table F-9. 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)	900	1,600	2,200	N/A	351	432
Sulfate (mg/L)	250	500	600	N/A	110	110
Chloride (mg/L)	250	500	600	860 1-hour / 230 4-day	14.9	14.9

Table F-9 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. The Basin Plan contains a site-specific receiving water electrical conductivity limit not to exceed 230 µmhos/cm (50 percentile) or 235 µmhos/cm (90 percentile) in the Sacramento River (at Knights Landing above Colusa Basin Drain), based upon the previous 10 years of record.
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 13.5 mg/L to 14.9 mg/L, with an average of 14.2 mg/L. These levels do not exceed the Secondary MCL of, 250 mg/L. Background concentrations in the Sacramento River ranged from 2.15 mg/L to 2.58 mg/L, with an average of 2.36 mg/L, for two samples collected by the Discharger from 9 May 2019 through 20 October 2020. This Order has no effluent limitation for Chloride, since the Chloride in the Discharge does not demonstrate a reasonable potential to exceed the Secondary MCL.

(2) **Electrical Conductivity or Total Dissolved Solids.** A review of the Discharger's monitoring reports shows an average effluent EC of 321 µmhos/cm, with a range from 104 µmhos/cm to 432 µmhos/cm. The maximum annual average EC was 351 µmhos/cm (in 2021). These levels do not exceed the Secondary MCL, however these levels do exceed the Basin Plan site-specific EC objective of 230 µmhos/cm. The background receiving water EC averaged 130 µmhos/cm.

For priority pollutants, the SIP dictates the procedures for conducting the RPA. Salinity is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used its judgement in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

For conducting the RPA, the U.S. EPA recommends using a mass-balance approach to determine the expected critical downstream receiving water concentration using a steady-state approach. This downstream receiving water concentration is then compared to the applicable water quality objectives to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion. This approach allows assimilative capacity and dilution to be factored into the RPA. This U.S. EPA recommended approach has been used for electrical conductivity.

Electrical conductivity concentrations in the effluent ranged from 104 µmhos/cm to 432 µmhos/cm, with a maximum annual average of 351 µmhos/cm based on 252 samples collected from April 2017 through February 2022. Background concentrations in the Sacramento River ranged from 84 µmhos/cm to 177 µmhos/cm with a maximum annual average of 144 µmhos/cm, based on 254 samples collected from April 2017 through February 2022. Thus, the receiving water has been consistently in compliance with the Basin Plan objective (230 µmhos/cm) resulting in available assimilative capacity for consideration in the RPA.

Based on a mass balance using critical effluent and receiving water flows, the critical downstream receiving water electrical conductivity concentration does not exceed the Basin Plan objective of 230 µmhos/cm. Considering the large dilution and assimilative capacity in the receiving water, a small increase in electrical conductivity caused by the discharge does not result in a reasonable potential to cause or contribute to an exceedance of the Basin Plan objective for electrical conductivity in the receiving water. Thus, this Order does not include an effluent limitation for Electrical Conductivity.

(3) **Sulfate.** Sulfate concentrations in the effluent ranged from 11.3 mg/L to 110 mg/L, with an average of 60.6 mg/L. These levels do not exceed the Secondary MCL. Background concentrations in the Sacramento River ranged from 3.3 mg/L to 4.4 mg/L, with an average of 3.8 mg/L. Thus, this Order has no effluent limitation for Sulfate, since the Sulfate in the Discharge does not demonstrate a reasonable potential to exceed the Secondary MCL.

(c) **WQBELs.**

As discussed above (Fact Sheet section IV.C.3.b.iii), 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 **of 455 µmhos/cm** 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 pH

and settleable solids. 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. **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.** The effluent pH ranged from 6.57 to 8.3 while the upstream receiving water pH ranged from 7.0 to 8.5.

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

(d) **Plant Performance and Attainability.** The effluent pH was within the instantaneous minimum and maximum effluent limitations based on 251 samples. The Central Valley Water Board concludes, therefore, that immediate compliance with this effluent limitation is feasible.

ii. **Settleable Solids**

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

(b) **RPA Results.** The discharge of process wastewater and non-contact cooling and sealing water has a reasonable potential to cause or contribute to an excursion above the Basin Plan's narrative objective for settleable solids.

(c) **WQBELs.** This Order contains average monthly and maximum daily effluent limitations for settleable solids of 0.1 mL/L and 0.2 mL/L, respectively. Because the amount of settleable solids is measured in terms of volume per volume without a mass component, it is impracticable to calculate mass limitations for inclusion in this Order. A daily maximum effluent limitation for settleable solids is included in the Order, in lieu of a weekly average, to ensure that the treatment works operate in accordance with design capabilities.

(d) **Plant Performance and Attainability.** Settleable solids were detected three times in the effluent at a concentration of 0.1 mL/L based on 301 samples collected between April 2017 and February 2022. The Central Valley Water Board concludes,

therefore, that immediate compliance with this effluent limitation is feasible.

d. Constituents with Insufficient Data. Reasonable potential cannot be determined for the following constituents because effluent data are limited or ambient background concentrations are not available, or further information is required to determine appropriate applicability of a water quality objective. The Discharger is required to continue to monitor for these constituents in the effluent using analytical methods that provide the best feasible detection limits. When additional data become available, further analysis will be conducted to determine whether to add numeric effluent limitations or to continue monitoring.

i. Temperature

(a) **WQO.** The Basin Plan requires that the temperature of COLD or WARM intrastate waters shall not be increased more than 5°F above natural receiving water temperature. Table III-4 of the Basin Plan includes specific temperature water quality objectives for the Sacramento River from Keswick Dam to Hamilton City which are applicable to the discharge and requires that the temperature not be elevated above 56°F during periods when temperature increases will be detrimental to the fishery. The Basin Plan specifies that the more stringent objective shall apply to the extent of any conflict with these objectives.

(b) **RPA Results.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Temperature is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

The effluent temperature ranged from 49 ºF to 112 ºF degrees based on daily effluent temperature collected from April 2017 through February 2022. Annual average effluent temperature for 2018 through 2021 ranged from 85 ºF to 89 ºF. Temperature greater than 90 ºF has occurred in every month of the year, however, peak effluent temperatures typically occur in June and July.

Upstream receiving water temperature ranged from 45.5 ºF to 65 ºF based on weekly receiving water temperature collected from April 2017 through February 2022. Upstream receiving water temperature exceeded 56 ºF on 115 occasions during the

weekly sampling events. Receiving water temperatures exceeding 56 ºF were observed in all months except for December, January, February, and March. On approximately 10 occasions, where the upstream receiving water temperature was greater than 56 ºF, the downstream receiving water temperature was measured 1 ºF higher than the upstream temperature. These occasions were observed in the following months: April, May, June, July, August, and September. The upstream receiving water monitoring location (RSW-001) is located immediately upstream of the discharge and the downstream receiving water monitoring location (RSW-002) is located approximately 75 feet below the discharge location.

A determination on the reasonable potential for the effluent to cause an exceedance in the temperature water quality objectives cannot be made at this time. Additional information on the applicable time periods when temperature increases will be detrimental to the fishery must be verified with appropriate resource agencies. This Order requires the Discharger to submit for review their 2020 Temperature Study to appropriate federal and state resource agencies. The input received by the resource agencies during the review process will help gather the necessary information for a reasonable potential analysis on temperature to be conducted on the discharge. This Order may be reopened in accordance with Special Provision VI.C.1.g. and modified by adding an appropriate temperature effluent limitation.

4. WQBEL Calculations

a. This Order includes WQBELs for diazinon and chlorpyrifos, pH, and settleable solids. The general methodology for calculating WQBELs based on the different criteria/objectives is described in subsections IV.C.4.b through e, below. See Attachment H for the WQBEL calculations.

b. **Effluent Concentration Allowance (ECA).** 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, and
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 MDEL is calculated using the MDEL/AMEL multiplier 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 V long-term average (LTA) equal to the secondary MCL and using the AMEL multiplier to set the AMEL. The MDEL was calculated using the MDEL/AMEL multiplier from Table 2 of the SIP.

d. **Aquatic Toxicity Criteria.** For constituents 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

e. **Human Health Criteria.** For constituents 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.

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

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

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

where:

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

Summary of Water Quality-Based Effluent Limitations
Discharge Point 001

Table F-10. Summary of Water Quality-Based Effluent Limitations

Parameter	Units	Average Monthly Effluent Limitations	Average Weekly Effluent Limitations	Maximum Daily Effluent Limitations
pH	Standard Units	--	--	6.5-8.5
Diazinon and Chlorpyrifos	µg/L	See Table Notes	See Table Notes	--
Settleable Solids	mL/L	0.1	--	0.2

Table F-10 Notes:

1. Diazinon and Chlorpyrifos – Average Monthly Effluent Limitation

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

2. Diazinon and Chlorpyrifos – Maximum Daily Effluent Limitation

$$S_{MDEL} = \frac{C_{D\ W-AVG}}{0.16} + \frac{C_{C\ W-AVG}}{0.025} \leq 1.0$$

5. Whole Effluent Toxicity (WET)

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

a. **Acute Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at section 3.1.20) The Basin Plan also states that, "…effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate…".

For priority pollutants, the SIP dictates the procedures for conducting the RPA. Acute toxicity is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Acute whole effluent toxicity is not a priority pollutant. Therefore, due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA. U.S. EPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through

a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters)." Although the discharge has been consistently in compliance with the acute effluent limitations, the Facility discharges process wastewater and cooling and sealing water containing metals and other acutely toxic pollutants. Acute toxicity effluent limits are required to ensure compliance with the Basin Plan's narrative toxicity objective.

U.S. EPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc." Accordingly, effluent limitations for acute toxicity have been included in this Order as follows:

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

70%, minimum for any one bioassay; and

90%, median for any three consecutive bioassays.

b. **Chronic Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at page section 3.1.20) The table below is chronic WET testing performed by the Discharger from February 2017 through February 2022. This data was used to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

Table F-11. Whole Effluent Chronic Toxicity Testing Results

Date	Fathead Minnow (*Pimephales promelas)* Survival (TUc)	Fathead Minnow (*Pimephales promelas)* Growth (TUc)	Water Flea (*Ceriodaphnia dubia)* Survival (TUc)	Water Flea (*Ceriodaphnia dubia)* Reproduction (TUc)	Green Algae (*Pseudokirchneriella subcapitata)* Growth (TUc)
11/06/2017	1	1	1	1	1

i. **RPA.** No dilution has been granted for chronic whole effluent toxicity. Chronic toxicity testing results exceeding 1 chronic toxicity units (TUc) (as 100/NOEC) and a percent effect at 100 percent effluent exceeding 25 percent demonstrates the discharge has a reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective. Based on chronic toxicity testing conducted between February 2017 and February 2022 the maximum chronic toxicity result was 1 TUc on 6 November 2017 with a percent effect of 10 percent, therefore, the discharge does not have reasonable potential to cause or contribute to an instream exceedance of the Basin Plan's narrative toxicity objective.

D. Final Effluent Limitation Considerations

1. Mass-based Effluent Limitations

40 C.F.R section 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 C.F.R. section 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. This Order includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass limitations provided in 40 CF.R. section 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g., CTR criteria and 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 maximum daily and average monthly discharge limitations for all dischargers other than POTWs unless impracticable. The rationale for using alternative averaging periods for pH 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 BOD_5, TSS, copper, and mercury. The effluent limitations for these pollutants are less stringent than those in Order R5-2017-0014. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

a. **CWA sections 402(o)(1), 303(d)(4) and 402(o)(2).** CWA section 402(o)(1) prohibits the establishment of less stringent water quality-based effluent limits except in compliance with either Section 303(d)(4) or 402(o)(2).

For attainment waters, CWA section 303(d)(4)(B) specifies that a limitation based on a water quality standard may be relaxed where the action is consistent with the antidegradation policy. The Sacramento River is considered an attainment water for copper because the receiving water is not listed as impaired on the 303(d) list for these constituents, As discussed in section IV.D.4, below, relaxation or removal of the effluent limits complies with federal and state antidegradation requirements. Thus, removal of these effluent limitations from Order R5-2017-0014 meets the exception in CWA section 303(d)(4)(B).

Additionally, 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.b of this Fact Sheet, updated information that was not available at the time Order R5-2017-0014 was issued indicates that copper and mercury do not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. The updated information that supports the relaxation of effluent limitations for these constituents includes effluent and receiving water monitoring data collected between April 2017 and February 2022. Thus, removal or relaxation of the effluent limitations for copper and mercury from Order R5-2017-0014 is in accordance with CWA section 402(o)(2)(B)(i).

In addition, 40 C.F.R. section 122.44(*l*)(2)(i)(B)(2) allows a renewed, reissued, or modified permit to contain a less stringent effluent limitation for a pollutant if technical mistakes or mistaken interpretation of law were made in issuing the permit. As described in section IV.B. of this Fact Sheet, the concentration-based effluent limitations for BOD_5 and TSS have been derived from applicable ELGs and the Facility's long-term

average daily flow. Previously, Order R5-2017-0014 established TBELs for BOD_5 and TSS based, in part, on the facility's maximum permitted flow of 2.7 MGD. The calculation of concentration-based BOD_5 and TSS effluent limitations using the maximum permitted flow of 2.7 MGD in Order R5-2017-0014 is a technical mistake, as the use of the long-term average flow is most appropriate for the calculation of concentration limits because it will reflect the range of concentrations that could be expected in a well operated Facility. This Order correctly applies the long-term average flow for the Facility in the calculation of concentration based BOD_5 and TSS effluent limitations. Thus, the relaxation of the concentration effluent limitations for BOD_5 and TSS from Order R5-2017-0014 is in accordance with 40 C.F.R. section 122.44(*l*)(2)(i)(B)(2).

4. Antidegradation Policies

a. **Surface Water.** This Order does not allow for an increase in flow or mass of pollutants to the receiving water. Therefore, a complete antidegradation analysis is not necessary. The Order requires compliance with applicable federal technology-based standards and with WQBEL's where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards. The permitted discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

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 removes effluent limitations for copper and mercury based on updated information, as described further in sections IV.C.3.b and IV.D.3 of this Fact Sheet; specifically, lack of reasonable potential to cause or contribute to exceedances of water quality standards based on updated monitoring. The Order requires compliance with applicable federal technology-based standards and effluent limitations where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards and requires compliance with receiving water limitations. This Order does not allow for an increase in flow or mass of pollutants to the receiving water or a decrease in the level of treatment or control compared to the prior permit. Thus, removal of effluent limitations for these parameters will not result in reduction of water quality. Accordingly, the Order is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Anti-Degradation Policy.

b. **Groundwater.** The Discharger utilizes a primary settling pond (Pond 4A) and an aeration basin (Pond 4C). A second setting pond (Pond 4B) is only used during emergency operations and maintenance. Process wastewater from the molded pulp process contains constituents such as total

dissolved solids, electrical conductivity, general minerals, and oxygen demanding substances such as BOD and chemical oxygen demand (COD). Percolation from the settling basins and aeration basin may result in an increase in the concentration of these constituents in groundwater. The State Anti-degradation Policy generally prohibits the Central Valley Water Board from authorizing activities that will result in the degradation of high-quality waters unless it has been shown that

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

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

iii. The discharger will employ BPTC to minimize degradation; and

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

Some degradation of groundwater may be consistent with the State Anti-Degradation Policy provided that the Discharger is implementing BPTC measures. The Discharger's treatment constitutes BPTC and complies with the State Anti-Degradation Policy.

This Order requires the Discharger to conduct groundwater characterization study in order to complete an antidegradation re-evaluation as specified in Special Provisions section VI.C.2 of this Order. Groundwater monitoring, as specified in the MRP (see section VI.C. of Attachment E of this Order), along with the antidegradation re-evaluation will be used to evaluate degradation, if any, to the groundwater quality when compared to background as a result of the discharge. Groundwater limitations have been included in this Order (at or below) the water quality objective for protection of the domestic or municipal supply (MUN) beneficial use of groundwater.

5. Stringency of Requirements for Individual Pollutants

This Order contains both TBELs and WQBELs for individual pollutants. The TBELs consist of restrictions on BOD_5, and TSS (Fact Sheet section IV.B). This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. These limitations are not more stringent than required by the CWA.

WQBELs (Fact Sheet section IV.C) have been derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant

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

Summary of Final Effluent Limitations
Discharge Point 001

Table F-12 Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations	Basis[1]
Biochemical Oxygen Demand (5-Day @ 20°C	mg/L	AMEL -- AWEL -- MDEL 22.3	ELG
Biochemical Oxygen Demand (5-Day @ 20°C	lbs/day	AMEL 99 AWEL -- MDEL 242	ELG
pH	standard units	Instantaneous Max 6.5 Instantaneous Min 8.5	BP
Total Suspended solids	mg/L	AMEL -- AWEL -- MDEL 54.8	ELG
Total Suspended solids	lbs/day	AMEL 249 AWEL -- MDEL 594	ELG
Diazinon and Chlorpyrifos	µg/L	AMEL ≤ 1.0 AWEL ≤ 1.0 MDEL -- see table notes for equation	TMDL
Settleable Solids	mL/L	AMEL 0.1 AWEL -- MDEL 0.2	BP
Acute Toxicity	Percent Survival	70% minimum for one 90% median for three	BP

Table F-12 Notes:

ELG – Based on Effluent Limitations Guidelines and Standards established at 40 C.F.R. part 430, subpart J.

BP – Based on water quality objectives contained in the Basin Plan.

TMDL – Based on the TMDL for salinity and boron in the lower San Joaquin River.

1. **Diazinon and Chlorpyrifos Effluent Limitations:**

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

MDEL: $S_{MDEL} = \frac{C_{D\,W-AVG}}{0.16} + \frac{C_{C\,W-AVG}}{0.025} \leq 1.0$

E. Interim Effluent Limitations - Not Applicable

F. Land Discharge Specifications- Not Applicable

G. Recycling Specifications- Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

1. CWA section 303(a-c), requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Central Valley Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that "[t]he numerical and narrative water quality objectives define the least stringent standards that the Regional Water Board will apply to regional waters in order to protect the beneficial uses." The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains receiving surface water limitations based on the Basin Plan numerical and narrative water quality objectives for bacteria, biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, suspended sediment, settleable substances, suspended material, taste and odors, temperature, toxicity, and turbidity.

    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 Provisions.

The Bacteria Water Quality Objectives correspond with the risk protection level of 32 illnesses per 1,000 recreators and use E. coli as the indicator of pathogens in freshwaters and enterococci as the indicator of pathogens in estuarine waters and ocean waters.

The Bacteria Provisions provide that where a permit 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. This standard has not been met in this Order, therefore, the Bacteria Water Quality Objective has been implemented as a receiving water limitation.

b. **Dissolved Oxygen.** Table III-2 of the Basin Plan includes specific dissolved oxygen water quality objectives for the Sacramento River from Keswick Dam to Hamilton City which are applicable to the discharge and requires that dissolved oxygen concentrations not be reduced below 9 mg/L between 1 June and 31 August. When natural conditions lower dissolved oxygen below this level, concentrations shall be maintained at or above 95 percent of saturation. This Order requires receiving water limitations based on the water quality objectives in Table III-2 of the Basin Plan which are applicable from 1 June to 31 August. This Order also includes water quality objectives applicable to surface waters outside the legal boundaries of the Delta applicable from 1 September to 31 May.

c. **Temperature**. The Basin Plan requires that the temperature of COLD or WARM intrastate waters shall not be increased more than 5°F above natural receiving water temperature. Table III-4 of the Basin Plan includes specific temperature water quality objectives for the Sacramento River from Keswick Dam to Hamilton City which are applicable to the discharge and requires that the temperature not be elevated above 56°F during periods when temperature increases will be detrimental to the fishery. The Basin Plan specifies that the more stringent objective shall apply to the extent of any conflict with these objectives. Consistent with the Basin Plan and Order No. R5-2017-0014, this Order requires that the discharge shall not cause the normal ambient temperature to be increased more than 5°F, or higher than 56°F when such an increase will be detrimental to the fishery, whichever is more restrictive.

B. Groundwater

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

2. Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, and toxicity of groundwater. The toxicity objective requires that groundwater be maintained free of toxic substances in

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

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

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

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

Sections 122.41(a)(1) and (b) through (n) of 40 C.F.R. establish conditions that apply to all state issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) of 40 C.F.R. allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 C.F.R. section 123.25, this Order omits federal conditions that address enforcement authority specified in 40 C.F.R. sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

a. **Mercury.** This provision allows the Central Valley Water Board to reopen this Order in the event mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted. In addition, this Order may be reopened if the Central Valley Water Board

determines that a mercury offset program is feasible for dischargers subject to NPDES permits.

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

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

d. **Temperature Study**. If after review of the Temperature Study it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective this Order may be reopened and effluent limitations added for temperature.

e. **Whole Effluent Toxicity.** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate, effluent toxicity through a site-specific Toxicity Reduction Evaluation (TRE). This Order may be reopened to include a new chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE.

2. Special Studies and Additional Monitoring Requirements

a. **Groundwater Monitoring Well Network Evaluation.** To determine compliance with the groundwater limitations contained in section V.B. of this Order, the Discharger is required to evaluate the adequacy of its groundwater monitoring network. This provision requires the Discharger to evaluate its groundwater monitoring network to ensure there are one or more background monitoring wells and a sufficient number of designated

monitoring wells downgradient of every treatment, storage, and disposal unit that does or may release waste constituents to groundwater. The evaluation of the adequacy of the monitoring well network is due within **6 months following effective date of this Order**.

b. **Groundwater Monitoring Well Installation Work Plan.** After evaluation of the monitoring well network and determination of the need for additional groundwater monitoring wells or replacement wells, the Discharger shall submit a Groundwater Monitoring Well Installation Work Plan as specified in section VI.C.2.b, in order to ensure the Facility can adequately measure local and regional groundwater flow direction, background groundwater quality and downgradient groundwater quality that may be impacted by Facility operations.

c. **Groundwater Quality Characterization and BPTC Analysis.** The Discharger must install new groundwater monitoring wells, if necessary, collect monitoring data, and submit a report evaluating the underlying groundwater by **3 years from the effective date of this Order**. If the monitoring shows that any constituent concentrations are increased above background water quality, by **4 years from the effective date of this Order,** the Discharger shall submit a technical report describing the groundwater evaluation report results and critiquing each evaluated facility component with respect to Best Practicable Treatment and Control (BPTC) and minimizing the discharge's impact on groundwater quality.

d. **Groundwater Antidegradation Re-evaluation.** The Discharger is required to submit an Antidegradation Re-evaluation, as specified in section VI.C.2.d, to confirm that the land discharge continues to be consistent with the State Anti-degradation Policy.

e. **Temperature Study Review**. **Within 60 days of the effective date of the permit,** the Discharger's 2020 Temperature Study shall be submitted to applicable federal and state resource agencies for review and comment.

Table III-4 of the Basin Plan includes specific temperature water quality objectives for the Sacramento River from Keswick Dam to Hamilton City, which are applicable to the discharge, and requires that the temperature not be elevated above 56°F during periods when temperature increases will be detrimental to the fishery. This Order requires that the discharge shall not cause the normal ambient temperature to be higher than 56°F when such an increase will be detrimental to the fishery.

Order R5-2017-0014 included provisions requiring the Discharger to conduct a temperature study to collect sufficient information to quantify impact from thermal discharge and determine the level of improvement needed in order to meet Basin Plan Objectives and comply with receiving water limits. The Temperature Study Report was submitted in November

2020. The Temperature Study Report concluded that there wasn't adequate habitat near the outfall for salmonids or endangered sturgeon to utilize. The study also stated that at no time during the period of analysis did the water temperature between RSW-001 and RSW-002 rise higher than 0.9°F. The Study did not include any recommendations for site-specific implementation criteria for the receiving water limit. Furthermore, the study was not submitted to appropriate federal and state resource agencies including, but not limited to, California Department of Fish and Wildlife, U.S. Fish and Wildlife Agency, National Marine Fisheries Service for review and comment.

The temperature of the Sacramento River typically exceeds the Basin Plan objective of 56°F during the summer months. Effluent temperatures ranged from 49°F to 112°F between April 2017 and February 2022 and can be significantly higher than receiving water temperatures at times when receiving water temperature is already higher than 56°F. The Sacramento River, downstream of Discharge Point 001, is an important migratory corridor for California Endangered Species Act and Federal Endangered Species Act listed adult and juvenile salmonids including: winter and spring-run Chinook salmon (O. tshawytscha) and Central Valley steelhead (O. mykiss). It is also a spawning and migratory area for fall and late fall-run Chinook salmon (O. tshawytscha), as well as home to numerous other native and non-native fish species. Listed species are actively migrating, spawning, and/or rearing in all months of the year in this area of the Sacramento River. Compliance with the Basin Plan objective is necessary to protect these sensitive aquatic life species.

Furthermore, effluent temperatures can be highly elevated at times relative to the receiving water temperature (e.g., 112°F). Such temperatures, especially for a side-bank discharge that may have little immediate mixing, can impact the immediate area around the outfall and along the shoreline of the riverbank. Water temperature is a pollutant, and elevated temperature can affect the survival and growth rates of aquatic life in waterways. The observed range in effluent temperatures during the past permit term indicate that temperature control measures at the Facility may be limited and unable to maintain a temperature range that is protective of the beneficial uses of the receiving water.

The Order requires the Discharger to submit the 2020 Temperature Study to appropriate federal and state resource agencies. The goal of the review is to seek input from resource agencies to provide sufficient information for the Central Valley Water Board to determine an appropriate interpretation of the water quality objective. Specifically, the Central Valley Water Board is seeking to obtain additional site-specific information for appropriate application of the temperature objective to the discharge, including, in part, a period of applicability and appropriate averaging periods. The Central Valley Water Board is also seeking to

obtain additional information on the discharge's impact to receiving water and habitat in the immediate zone of discharge as a result of the elevated temperature discharge.

f. Chronic Whole Effluent Toxicity Requirements. The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at page III-8.00) Based on whole effluent chronic toxicity testing performed by the Discharger from February 2017 through February 2022, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

The Monitoring and Reporting Program of this Order requires chronic WET monitoring to demonstrate compliance with the Basin Plan's narrative toxicity objective. If the discharge exceeds the chronic toxicity monitoring trigger this provision requires the Discharger either participate in an approved Toxicity Evaluation Study (TES) or conduct a site-specific Toxicity Reduction Evaluation (TRE).

A TES may be conducted in lieu of a TRE if the percent effect at 100 percent effluent is less than or equal to 50 percent. Determining the cause of toxicity can be challenging when the toxicity signal is low. Several Central Valley facilities with similar treatment systems have been experiencing intermittent low level toxicity. The dischargers have not been successful identifying the cause of the toxicity because of the low toxicity signal and the intermittent nature of the toxicity. Due to these challenges, the Central Valley Clean Water Association (CVCWA), in collaboration with staff from the Central Valley Water Board, has initiated a Special Study to Investigate Low Level Toxicity Indications (Group Toxicity Study). This Order allows the Discharger to participate in an approved TES, which may be conducted individually or as part of a coordinated group effort with other similar dischargers that are exhibiting toxicity. Although the current CVCWA Group Toxicity Study is related to low-level toxicity, participation in an approved TES is not limited to only low-level toxicity issues.

See the WET Monitoring Flow Chart (Figure F-1), below, for further clarification of the decision points for determining the need for TES/TRE initiation.

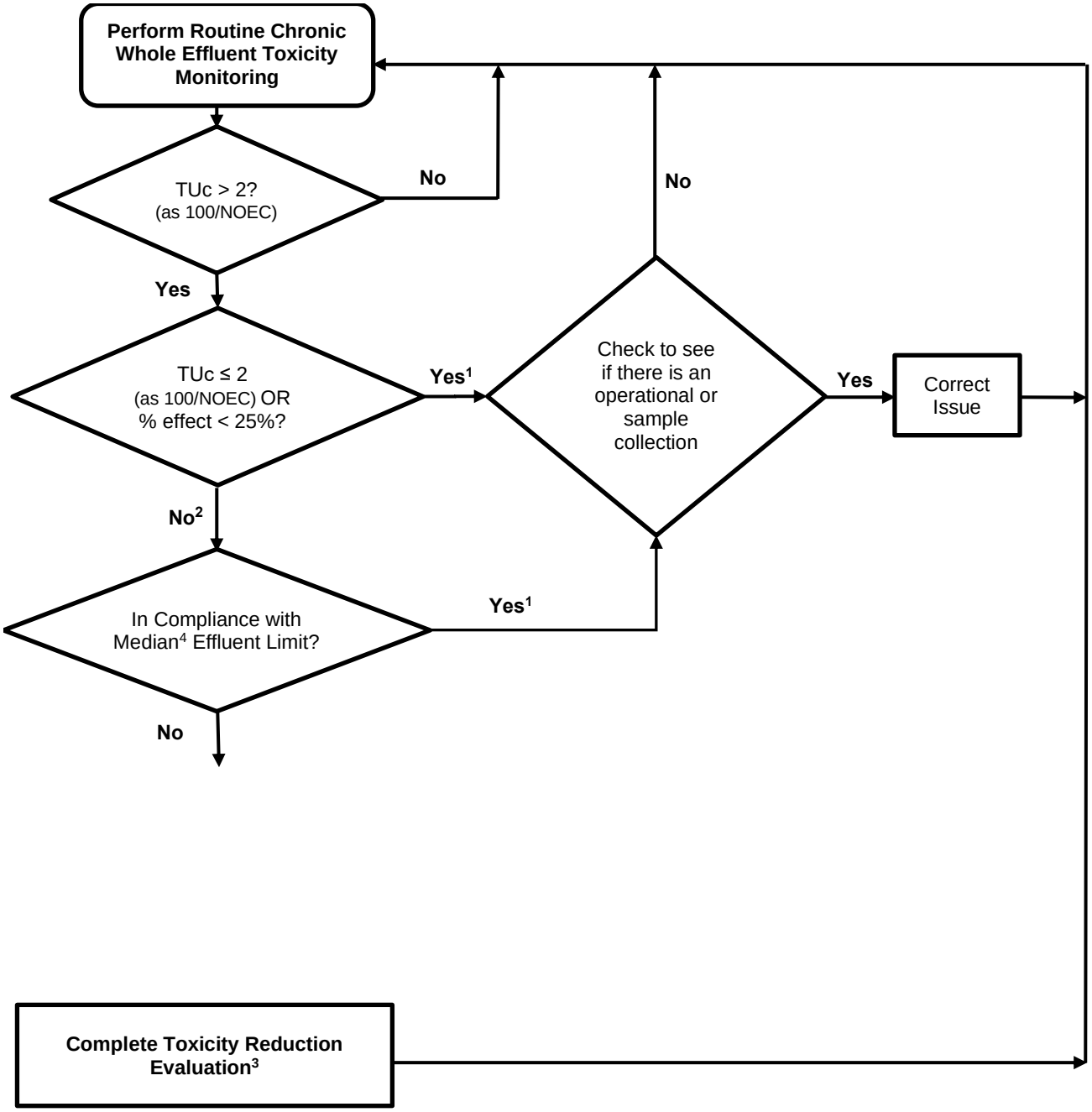

Figure F-1 Notes:

1. The Discharger may participate in an approved TES if the discharge has exceeded the chronic toxicity effluent limitation twice or more in the past 12-month period and the cause is not identified and/or addressed.
2. The Discharger may elect to take additional samples to determine the 3-sample median. The samples shall be collected at least one week apart and the final sample shall be within 6 weeks of the initial sample exhibiting toxicity.
3. The Discharger may participate in an approved TES instead of a TRE if the Discharger has conducted a TRE within the past 12 months and has been unsuccessful in identifying the toxicant.

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

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 1 July 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.

4. Construction, Operation, and Maintenance Specifications

a. The operation and maintenance specifications for the settling basins and aeration basin are necessary to protect the beneficial uses of the groundwater. The specifications included in this Order are retained from Order R5-2017-0014. In addition, reporting requirements related to use of the settling basins and aeration are required to monitor their use and the potential impact on groundwater.

5. Compliance Schedules – Not Applicable

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

CWA section 308 and 40 C.F.R. sections 122.41(h), (j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 authorize the Central Valley Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The Monitoring and Reporting Program (MRP), Attachment E of this Order establishes monitoring, reporting, and recordkeeping requirements that implement federal and state requirements. The burden, including costs, of these monitoring and reporting requirements bears a

reasonable relationship to the need for the reports and the benefits to be obtained therefrom. The Discharger, as owner and operator of the Facility, is required to comply with these requirements, which are necessary to determine compliance with this Order. The Discharger is responsible for the discharges of waste at the facility subject to this Order. The following provides additional rationale for the monitoring and reporting requirements contained in the MRP for this facility.

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

Section 13176 cannot be interpreted in a manner that would violate federal holding time requirements that apply to NPDES permits pursuant to the CWA. (Wat. Code sections 13370, subd. (c), 13372, 13377.). Section 13176 is inapplicable to NPDES permits to the extent it is inconsistent with CWA requirements. (Wat. Code section 13372, subd. (a).) Lab accreditation is not required for field tests such as tests for color, odor, turbidity, pH, temperature, dissolved oxygen, electrical conductivity, and disinfectant residual. The holding time requirements are 15 minutes for (40 C.F.R. section 136.3(e), Table II). Due to the location of the Facility, it is both legally and factually impossible for the Discharger to comply with section 13176 for constituents with short holding times.

A. 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 R5-2017-0014, except as noted in Table F-14, below:

3. This Order establishes effluent limitations for diazinon and chlorpyrifos based on the TMDL for the control of diazinon and chlorpyrifos runoff into the Sacramento and San Joaquin River Basins. Therefore, this order establishes annual effluent monitoring requirements for diazinon and chlorpyrifos to determine compliance with the applicable effluent limitations.

4. Based on groundwater monitoring conducted since 2013, increases in concentrations of total coliform organisms in down gradient groundwater monitoring wells have been observed. However, several environmental conditions have resulted in a change in aquifer dynamics, including movement of the pond treatment system to the current location in May 2013 and the Red Bluff Diversion Dam gates in the Sacramento River were permanently raised in 2013, influencing the direction and magnitude of groundwater flows. In order to determine whether process wastewater in Ponds 4A, 4B, and 4C, is the source of

the elevated groundwater concentrations, this Order requires the Discharger to collect effluent monitoring data for and fecal coliform organisms.

5. In accordance with Section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order requires effluent monitoring for priority pollutants and other constituents of concern twice during the third year of the permit term. See section VII.A of the Monitoring and Reporting Program (Attachment E) for more detailed requirements related to performing priority pollutant monitoring.

B. Receiving Water Monitoring

1. Surface Water

a. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream. Receiving surface water monitoring frequencies and sample types have been retained from Order No. R5-2017-0014, except as noted in Table F-14, below:

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.” 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 No. R5-2017-0014 except as noted in Table F-14, below.

Table F-13 Summary of Monitoring Changes

Parameter, Units	Type of Monitoring	Prior Sample Frequency	Revised Sample Frequency	Reason for Change
Copper	Effluent	1/Month	1/Quarter	Reduced because there are no longer effluent limits.
Mercury	Effluent	1/Month	None	No longer effluent limits and parameter listed in Effluent Characterization Study
Copper	Receiving Water	1/Month	1/Quarter	Reduced because there is no longer effluent limits.
TDS	Receiving Water	1/Month	None	Parameter listed in Receiving Water Characterization Study
Standard minerals	Groundwater	1/Year	1/Quarter	Better understand groundwater quality
BOD_5	Groundwater	--	1/Quarter	Better understand groundwater quality

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity**. Quarterly 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.

2. **Chronic Toxicity**. Once per permit term chronic whole effluent toxicity testing is required in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

3. **Sensitive Species Screening.** The Discharger shall perform rescreening to re-evaluate the most sensitive species if there is a significant change in the nature of the discharge. If there are no significant changes during the permit term, a rescreening must be performed prior to permit reissuance and results submitted with the Report of Waste Discharge. Species sensitivity screening for chronic toxicity shall include, at a minimum, chronic WET testing four consecutive calendar quarters using the water flea (*Ceriodaphnia dubia*), fathead minnow (*Pimephales promelas*), and green alga (*Pseudokirchneriella subcapitata*). The tests shall be performed using 100 percent effluent and one control. For rescreening, if the first two species sensitivity re-screening events result in no change in the most sensitive species, the Discharger may cease the species sensitive re-screening testing and the most sensitive species will remain unchanged.

D. Other Monitoring Requirements

1. **Land Discharge Monitoring**

   Land discharge monitoring is required to ensure that the discharge to the land disposal area complies with the Storage Pond and Land Disposal Operating Requirements in section VI.C.4 of this Order. Monitoring frequencies and sample types for flow (continuous), pH (once weekly), dissolved oxygen (once weekly), electrical conductivity (once weekly), and fecal coliform organisms (monthly) have been retained from Order R5-2017-0014.

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

   Effluent and Receiving Water Characterization is required to gather data to complete a reasonable potential analysis for the subsequent NPDES permit renewal.

3. **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 Reynolds Consumer Pulp Mill (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 identified Interested Parties, posting at the facility, courthouse, post office, and the Central Valley Water Board's website.

The public had access to the agenda and any changes in dates and locations through the Central Valley Water Board's website (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 **24 March 2023**.

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 April 2023**
Time: **8:30 a.m.**
Location: Online
and
Kern County Board of Supervisors Chambers
1115 Truxtun Avenue
Bakersfield, CA 93301

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 (530) 224-4845.

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 Stacey Alexander at (530) 224-3219, or Stacey.Alexander@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
Aluminum	µg/L	6.3	311	200	600	330	N/A	N/A	N/A	200	No
Copper (MEC>C)	µg/L	5.85	--	10	11.88	10.12	1300	N/A	17.5	1300	No
Copper (B>C)	µg/L	--	10.1	6.7	7.6	6.7	1300	N/A	7.6	1300	No
Iron	µg/L	30.4	347	300	N/A	1000	N/A	N/A	300	300	No
Mercury	ng/L	0.67	1.52	12	1400	770	50	N/A	N/A	12 (table note 3)	No
Diazinon	µg/L	0.006	0.006	0.1	0.08	0.05	N/A	N/A	0.1	N/A	Yes, TMDL
Chlorpyrifos	µg/L	0.006	0.006	0.015	0.02.	0.014	N/A	N/A	0.015	N/A	Yes, TMDL
Zinc (MEC>C)	µg/L	6.7	--	22.7	79	79	7400	2600	22.7	5000	No
Zinc (B>C)	µg/L	--	3.7	15.3	53	53	7400	2600	15.3	5000	No
EC @ 25°C	umhos/ cm	351 (table note 2)	141 (table note 2)	230	--	--	--	--	230	900	No
Chloride	mg/L	14.9	2.85	250	860	230	N/A	N/A	N/A	250	No
Sulfate	mg/L	110	4.4	250	--	--	--	--	--	250	No
Total Dissolved Solids	mg/L	247	107	500	N/A	NA	N/A	N/A	N/A	500	No

Attachment G Table Notes:

1. All inorganic concentrations are given as a total concentration.
2. Represents maximum observed annual average concentration
3. State Water Board Sport Fish Water Quality Objective for mercury.

4. Design ambient hardness is 61 mg/L as $CaCO_3$. MEC>C, based on hardness of 61 mg/L as $CaCO_3$. B>C, based on hardness of 38 mg/L as $CaCO_3$.

5. Site-specific translators used to develop acute and chronic aquatic life criteria for copper.

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 – CALCULATION OF HUMAN HEALTH WQBELS

HUMAN HEALTH WQBELS CALCULATIONS – Not Applicable

Parameter	Units	Criteria	Mean Background Concentration	Effluent CV	Dilution Factor	MDEL/AMEL Multiplier	AMEL Multiplier	AMEL	MDEL	AWEL

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

ATTACHMENT I - REQUIREMENTS FOR MONITORING WELL INSTALLATION WORKPLANS AND MONITORING WELL INSTALLATION REPORTS

Prior to installation of groundwater monitoring wells, the Discharger shall submit a workplan containing, at a minimum, the information listed in Section 1, below. Wells may be installed after staff approves the workplan. Upon installation of the monitoring wells, the Discharger shall submit a well installation report which includes the information contained in Section 2, below. All workplans and reports must be prepared under the direction of, and signed by, a registered geologist or civil engineer licensed by the State of California.

SECTION 1 - MONITORING WELL INSTALLATION WORKPLAN AND GROUNDWATER SAMPLING AND ANALYSIS PLAN

The monitoring well installation workplan shall contain the following minimum information:

A. General Information:

- Purpose of the well installation project
- Brief description of local geologic and hydrogeologic conditions
- Proposed monitoring well locations and rationale for well locations
- Topographic map showing facility location, roads, and surface water bodies
- Large scaled site map showing all existing on-site wells, proposed wells, surface drainage courses, surface water bodies, buildings, waste handling facilities, utilities, and major physical and man-made features

B. Drilling Details:

- On-site supervision of drilling and well installation activities
- Description of drilling equipment and techniques
- Equipment decontamination procedures
- Soil sampling intervals (if appropriate) and logging methods

C. Monitoring Well Design (in narrative and/or graphic form):

Diagram of proposed well construction details

- Borehole diameter
- Casing and screen material, diameter, and centralizer spacing (if needed)
- Type of well caps (bottom cap either screw on or secured with stainless steel screws)
- Anticipated depth of well, length of well casing, and length and position of perforated interval

- Thickness, position and composition of surface seal, sanitary seal, and sand pack
- Anticipated screen slot size and filter pack

D. Well Development (not to be performed until at least 48 hours after sanitary seal placement):

- Method of development to be used (i.e., surge, bail, pump, etc.)
- Parameters to be monitored during development and record keeping technique
- Method of determining when development is complete
- Disposal of development water

E. Well Survey (precision of vertical survey data shall be at least 0.01 foot):

- Identify the Licensed Land Surveyor or Civil Engineer that will perform the survey
- Datum for survey measurements
- List well features to be surveyed (i.e. top of casing, horizontal and vertical coordinates, etc.)

F. Schedule for Completion of Work

G. Appendix: Groundwater Sampling and Analysis Plan (SAP)

The Groundwater SAP shall be included as an appendix to the workplan, and shall be utilized as a guidance document that is referred to by individuals responsible for conducting groundwater monitoring and sampling activities.

Provide a detailed written description of standard operating procedures for the following:

- Equipment to be used during sampling
- Equipment decontamination procedures
- Water level measurement procedures
- Well purging (include a discussion of procedures to follow if three casing volumes cannot be purged)
- Monitoring and record keeping during water level measurement and well purging (include copies of record keeping logs to be used)
- Purge water disposal
- Analytical methods and required reporting limits
- Sample containers and preservatives
- Sampling

- General sampling techniques
- Record keeping during sampling (include copies of record keeping logs to be used)
- QA/QC samples
- Chain of Custody
- Sample handling and transport

SECTION 2 - MONITORING WELL INSTALLATION REPORT

The monitoring well installation report must provide the information listed below. In addition, the report must also clearly identify, describe, and justify any deviations from the approved workplan.

A. General Information:

- Purpose of the well installation project
- Brief description of local geologic and hydrogeologic conditions encountered during installation of the wells
- Number of monitoring wells installed and copies of County Well Construction Permits
- Topographic map showing facility location, roads, surface water bodies
- Scaled site map showing all previously existing wells, newly installed wells, surface water bodies, buildings, waste handling facilities, utilities, and other major physical and man-made features.

B. Drilling Details (in narrative and/or graphic form):

- On-site supervision of drilling and well installation activities
- Drilling contractor and driller's name
- Description of drilling equipment and techniques
- Equipment decontamination procedures
- Soil sampling intervals and logging methods
- Well boring log (including the following):
  - Well boring number and date drilled
  - Borehole diameter and total depth
  - Total depth of open hole (same as total depth drilled if no caving or back-grouting occurs)
  - Depth to first encountered groundwater and stabilized groundwater depth

- Detailed description of soils encountered, using the Unified Soil Classification System

C. Well Construction Details (in narrative and/or graphic form).

- Well construction diagram, including:
  - Monitoring well number and date constructed
  - Casing and screen material, diameter, and centralizer spacing (if needed)
  - Length of well casing, and length and position of perforated interval
  - Thickness, position and composition of surface seal, sanitary seal, and sand pack
  - Type of well caps (bottom cap either screw on or secured with stainless steel screws)

D. Well Development:

- Date(s) and method of development
- How well development completion was determined
- Volume of water purged from well and method of development water disposal
- Field notes from well development should be included in report

E. Well Survey (survey the top rim of the well casing with the cap removed):

- Identify the coordinate system and datum for survey measurements
- Describe the measuring points (i.e. ground surface, top of casing, etc.)
- Present the well survey report data in a table
- Include the Registered Engineer or Licensed Surveyor’s report and field notes in appendix.