

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION**

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**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CA0083721  
ORDER R5-2021-0021**

**WASTE DISCHARGE REQUIREMENTS  
FOR THE BELL-CARTER OLIVE COMPANY, INC. AND CITY OF CORNING, BELL-CARTER  
INDUSTRIAL WASTEWATER TREATMENT PLANT, TEHAMA COUNTY**

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

**Table 1. Discharger Information**

Discharger:	Bell-Carter Olive Company, Inc. and City of Corning
Name of Facility:	Bell-Carter Industrial Wastewater Treatment Plant
Facility Street Address:	Gardiner Ferry Road
Facility City, State, Zip:	Corning, CA 96021
Facility County:	Tehama

**Table 2. Discharge Location**

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Treated Process Wastewater	39° 54' 24"	122° 05' 21"	Sacramento River

**Table 3. Administrative Information**

This Order was Adopted on:	<b>22 April 2021</b>
This Order shall become effective on:	<b>1 June 2021</b>
This Order shall expire on:	<b>30 May 2026</b>
The Discharger shall file a Report of Waste Discharge (ROWD) as an application for reissuance of WDRs in accordance with title 23, California Code of Regulations, and an application for reissuance of a NPDES permit no later than:	<b>30 May 2025</b>
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:	<b>Minor discharge</b>

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 **22 April 2021**.

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**PATRICK PULUPA**, Executive Officer

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## I. FACILITY INFORMATION

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

## II. FINDINGS

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

- A. Legal Authorities.** This Order serves as waste discharge requirements (WDR's) pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as a National Pollutant Discharge Elimination System (NPDES) permit authorizing the Discharger to discharge into waters of the United States at the discharge location described in Table 2 subject to the WDR's in this Order.
- B. 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 H 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 require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. The Monitoring and Reporting Program is provided in Attachment E.

The technical and monitoring reports in this Order are required in accordance with Water Code section 13267, which states the following in subsection (b)(1), "In

conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports and shall identify the evidence that supports requiring that person to provide the reports.”

The Discharger owns and operates the Facility subject to this Order. The monitoring reports required by this Order are necessary to determine compliance with this Order. The need for the monitoring reports is discussed in the Fact Sheet.

- F. Notification of Interested Persons.** The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDR’s for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of the notification are provided in the Fact Sheet.
- G. Consideration of Public Comment.** The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet.

THEREFORE, IT IS HEREBY ORDERED that Order R5-2015-0030 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Central Valley Water Board from taking enforcement action for violations of the previous Order.

### III. DISCHARGE PROHIBITIONS

- A.** Discharge of wastewater from the Facility, as the Facility is specifically described in the Fact Sheet in section II.B, in a manner different from that described in this Order is prohibited.
- B.** The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Federal Standard Provisions I.G. and I.H. (Attachment D).
- C.** Neither the discharge nor its treatment shall create a nuisance as defined in section 13050 of the Water Code.

- D. Discharge of waste classified as ‘hazardous’, as defined in the California Code of Regulations, title 22, section 66261.1 et seq., is prohibited.
- E. **Average Discharge Flow.** Discharges exceeding an average annual flow of 0.75 million gallons per day (MGD) are prohibited. Discharges exceeding an average monthly flow of 0.95 MGD are prohibited. Discharges exceeding a maximum daily flow of 1.4 MGD are prohibited.
- F. **Olive Processing Wastewater Flow.** The discharge of brine-curing and olive processing wastewater, exclusive of rainwater, to the Facility in excess of 255 million gallons per year is prohibited.
- G. **Discharge Flow During Daylight Hours.** Starting 1 July 2022, discharge during daylight hours is prohibited at flow rates greater than 0.072 MGD (equivalent to 50 gallons per minute).

**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**

Parameter	Units	Average Monthly	Maximum Daily	Average Annual
Biochemical Oxygen Demand (BOD), 5-day @ 20°Celsius	milligrams per liter (mg/L)	100	150	--
BOD	pounds per day (lbs/day)	792	1,168	--
BOD	lbs/year	--	--	231,000
Total Suspended Solids (TSS)	mg/L	100	200	--
TSS	lbs/day	792	1,168	--
TSS	lbs/year	--	--	429,000

Parameter	Units	Average Monthly	Maximum Daily	Average Annual
Ammonia Nitrogen, Total (as N)	mg/L	15	38	--
Ammonia Nitrogen, Total (as N)	lbs/day	120	440	--
Chloride	lbs/day	--	27,900	20,900
Copper, Total Recoverable	µg/L	16	37	--
Electrical Conductivity @ 25°C	µmhos/cm	--	--	9,370
Iron, Total Recoverable	µg/L	--	--	4,200
Methylene Chloride	µg/L	91	182	--
Settleable Solids	ml/L	0.1	0.2	--
Total Dissolved Solids	lbs/day	--	79,800	59,800
Zinc, Total Recoverable	µg/L	67	209	--

- b. **pH:**
  - i. 6.5 Standard Units (SU) as an instantaneous minimum.
  - ii. 9.5 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. **Total Residual Chlorine.** Effluent total residual chlorine shall not exceed:
  - i. 0.011 mg/L, as a 4-day average; and
  - ii. 0.019 mg/L, as a 1-hour average.
- e. **Diazinon and Chlorpyrifos.** Effluent diazinon and chlorpyrifos concentrations shall not exceed the sum of one (1.0) as defined below:
  - i. **Average Monthly Effluent Limitation**

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

$C_{D avg}$  = average monthly diazinon effluent concentration in  $\mu\text{g/L}$

$C_{C avg}$  = average monthly chlorpyrifos effluent concentration in  $\mu\text{g/L}$

ii. **Maximum Daily Effluent Limitation**

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

$C_{D max}$  = maximum daily diazinon effluent concentration in  $\mu\text{g/L}$

$C_{C max}$  = maximum daily chlorpyrifos effluent concentration in  $\mu\text{g/L}$

**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 Sacramento River:

1. **Bacteria.** The six-week rolling geometric mean of Escherichia coli (E. coli) shall not exceed 100 colony forming units (cfu) per 100 milliliters (mL), calculated weekly, and a statistical threshold value (STV) of 320 cfu/100 mL not 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, concentrations of dissolved oxygen to fall below 9.0 mg/L. When natural conditions lower dissolved oxygen below this level, the concentration shall be maintained at or above 95 percent 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 (MCL's) set forth in CCR, Title 22, division 4, chapter 15; nor
  - g. Thiobencarb to be present in excess of 1.0 µg/L.
10. **Radioactivity:**



- a. Radionuclides to be present in concentrations that are harmful to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
  - b. Radionuclides to be present in excess of the MCL's specified in Table 64442 of section 64442 and Table 64443 of section 64443 of Title 22 of the California Code of Regulations.
11. **Salinity.** Electrical conductivity to exceed 230  $\mu\text{mhos/cm}$  (50 percentile) or 235  $\mu\text{mhos/cm}$  (90 percentile) at Knights Landing above Colusa Basin Drain, based upon previous 10 years of record.
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° Fahrenheit. Compliance to be determined based on the difference in temperature at Monitoring Locations RSW-001 and RSW-002.
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**

The Facility is also regulated as a Class II Surface Impoundment facility under Title 27, California Code of Regulations (CCR). The operational and construction factors associated with the Facility's Class II Surface Impoundments for groundwater protection are regulated by WDR Order No. R5-2018-0069.

**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. To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Central Valley Water Board and a statement. The statement shall comply with the signatory and certification requirements in the federal Standard Provisions (Attachment D, section V.B) and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.
- p. If the Discharger submits a timely and complete Report of Waste Discharge for permit reissuance, this permit shall continue in force and effect until the permit is reissued or the Regional Water Board rescinds the permit.
- q. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.
- r. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, (e.g., maximum daily effluent limitation, hourly average 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. **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.
- c. **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.
- d. **Water Effects Ratios (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when developing effluent limitations for copper and zinc. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this

Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

- e. **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/)  
([https://www.waterboards.ca.gov/centralvalley/water\\_issues/salinity/](https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/))
- f. **Effluent and Receiving Water Discoloration Conditions Study.** This Order contains a discharge prohibition for effluent flow greater than 0.072 MGD (equal to 50 gpm) during daylight hours in order to meet the receiving water limitations and prevent a discoloration nuisance in the Sacramento River. The Discharger may elect to collect data, including visual observation, to determine receiving water conditions that minimize and/or eliminate the discoloration nuisance at different effluent flows and complete a study to recommend effluent and receiving water conditions that minimize and/or eliminate the discoloration nuisance in the Sacramento River during daylight hours. The results of the study may be used to reopen the permit for addition and/or modification of discharge prohibitions for discharge flow during daylight hours and modification of definition of daylight hours.
- g. **Filtered Iron Study.** If after review of the study results it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective in the receiving water, this Order may be reopened to add water quality-based effluent limitations based on the Secondary Maximum Contaminant Level – Consumer Acceptance Limit for iron.
- h. **Dilution Credits.** The Central Valley Water Board may reopen this Order, as appropriate, to modify dilution credits should the facility performance, treatment, or characteristics of the discharge or receiving water change. Modification of the dilution credit may include increasing the allowed dilution credit, if appropriate.

## 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 (TU<sub>c</sub>) monitoring trigger is **20 TU<sub>c</sub>** (where TU<sub>c</sub> = 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 percent effect is less than 25 percent at 5 percent effluent (the instream waste concentration), check for any operation or sample collection issues and return to routine chronic toxicity monitoring. Otherwise, proceed to step (b).
- (b) **Evaluate 6-week Median.** The Discharger may take two additional samples within 6 weeks of the initial routine sampling event exceeding the chronic toxicity monitoring trigger to evaluate compliance using a 6-week median. If the 6-week median is greater than 20 TU<sub>c</sub> (as 100/EC<sub>25</sub>) and the percent effect is greater than 25 percent at 5 percent effluent, proceed with subsection (c). Otherwise, the Discharger shall check for any operation or sample collection issues and return to routine chronic toxicity monitoring. See Compliance Determination Section VII.L for procedures for calculating 6-week median.
- (c) **Toxicity Source Easily Identified.** If the source(s) of the toxicity is easily identified (e.g., temporary plant upset), the Discharger shall make necessary corrections to the facility and

shall resume routine chronic toxicity monitoring; If the source of toxicity is not easily identified the Discharger shall conduct a site-specific TRE as described in the following subsections.

(d) **Toxicity Reduction Evaluation.** 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. **Filtered Iron Study.** There are indications that the discharge may contain constituents that have a reasonable potential to cause or contribute to an exceedance of water quality objectives for iron. However, there was insufficient data to conduct a reasonable potential analysis. The Discharger shall conduct a filtered iron study to determine the extent of impacts of suspended sediment on effluent and receiving water iron concentrations based on an evaluation of concurrent filtered (through 1.5 micron filter) and total recoverable metals samples taken over, at minimum, a two-year period. The study shall be submitted by the due date in the Technical Reports table.

### 3. **Best Management Practices and Pollution Prevention**

a. **Salinity Evaluation and Minimization Plan.** The Discharger shall continue to implement the February 2016 Salinity Evaluation and Minimization Plan to identify and address sources of salinity discharged from the Facility.

The Discharger shall evaluate the effectiveness of the salinity evaluation and minimization plan and provide a summary by the due date in the Technical Reports table. The summary must include an update to the February 2016 Salinity Evaluation and Minimization Plan and include, at minimum, updated facility process flows and chemical use included in sections 8.1 and 8.2.

### 4. **Construction, Operation and Maintenance Specifications**

- a. **Membrane Filtration.** The Zenon membrane filtration unit shall be operated year-round, to the maximum extent practicable
- b. **Class II Surface Impoundments.** Construction, operation, and maintenance specifications related to the Class II Surface Impoundments is regulated by WDR Order No. R5-2018-0069.
- c. **Treatment Pond Operating Requirements.**
  - i. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.
  - ii. Public contact with wastewater at the WWTP shall be prevented through such means as fences, signs, or acceptable alternatives.
  - iii. Objectionable odors shall not be perceivable beyond the limits of the WWTP property at an intensity that creates or threatens to create nuisance conditions.
  - iv. As a means of ensuring compliance with section iii above, the Discharger shall operate the WWTP as follows:
    - (a) Maintain the dissolved oxygen (DO) content in the upper one foot of any wastewater treatment or storage pond at or above 1.0 mg/L.
    - (b) Maintain an automatic system to control aeration in Ponds 1-6 based on the DO readings of fixed probes within each pond. The minimum DO setpoint of each pond specified in the automatic system shall be 1.0 mg/L.
    - (c) Maintain and replace fixed DO probes in accordance with manufacturer recommendations and as otherwise needed. This includes calibration at minimum once per month.
    - (d) Dredge ponds as necessary to ensure attainment of DO set point levels, including annually for Ponds 4 and 5.
    - (e) Maintain accuracy of readings for fixed DO probes by periodically verifying with portable DO probes.
    - (f) Replace or repair faulty aerators and mixers in all ponds within a timely manner.
    - (g) Notify Central Valley Water Board if any maintenance activities may result in objectionable odors, including aerator replacement or pond liner replacement.

**5. Special Provisions for Publicly-Owned Treatment Works (POTWs) – Not Applicable**

**6. Other Special Provisions – Not Applicable**

**7. Compliance Schedules – Not Applicable**

**VII. COMPLIANCE DETERMINATION**

- A. BOD<sub>5</sub> and TSS Effluent Limitations (Section IV.A.1.a).** Compliance with the final effluent limitations for BOD<sub>5</sub> and TSS required in Waste Discharge Requirements section IV.A.1.a shall be ascertained by 24-hour composite samples. In calculating compliance, the Discharger shall count all non-detect measures at one-half of the detection level.

Average Annual effluent limitations shall be calculated as the total annual mass for a calendar year.

- B. Average Discharge Flow Discharge Prohibition (Section III.E).** The average discharge flow represents the total effluent flow from the Facility, including storm water. Compliance with the average discharge flow discharge prohibition will be determined based on the total effluent flow for the specified time period divided by the total number of days of discharge for the same time period.
- C. Olive Processing Wastewater Flow Prohibition (Section III.G).** Compliance with the total olive processing wastewater flow prohibition shall include total influent flow to the Facility less storm water collected at the processing facilities and sent to the Facility over a calendar year.
- D. Discharge Flow During Daylight Hours Prohibition (Section III.H).** Compliance with this discharge prohibition will be determined based on the definition of “daylight hours” included in Attachment A.
- E. Average Annual Effluent Limitations (Section IV.A.1.a).** Except for BOD<sub>5</sub> and TSS, compliance with annual average effluent limitations shall be determined by calculating the sum of all samples measured during a calendar year divided by the number of samples measured during that year.
- F. Total Residual Chlorine Effluent Limitations (Section IV.A.1.d).** Analyzers for chlorine residual or for dechlorination agent residual in the effluent are appropriate methods for compliance determination. A positive residual dechlorination agent in the effluent indicates that chlorine is not present in the discharge, which demonstrates compliance with the effluent limitations. This type of monitoring can also be used to prove that some chlorine residual exceedances are false positives. Monitoring data showing either a positive dechlorination agent residual or a chlorine residual at or below the prescribed limit are sufficient to show compliance with the total residual chlorine effluent limitations, as long as the instruments are maintained and calibrated in accordance with the manufacturer’s recommendations.

Any excursion above the 1-hour average or 4-day average total residual chlorine effluent limitations is a violation. If the Discharger conducts continuous monitoring

and the Discharger can demonstrate, through data collected from a back-up monitoring system, that a chlorine spike recorded by the continuous monitor was not actually due to chlorine, then any excursion resulting from the recorded spike will not be considered an exceedance, but rather reported as a false positive. Records supporting validation of false positives shall be maintained in accordance with Section IV Standard Provisions (Attachment D).

- G. Mass Effluent Limitations.** The mass effluent limitations contained in the Final Effluent Limitations IV.A.1.a are based on the permitted average discharge flow and calculated as follows:

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

- H. 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.
  - I. **Dissolved Oxygen Receiving Water Limitation (Section V.A.5.a-c).** Monthly receiving water monitoring is required in the Monitoring and Reporting Program (Attachment E) and is sufficient to evaluate the impacts of the discharge and compliance with this Order. Monthly receiving water monitoring data, measured at monitoring locations RSW-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”.
  - J. **Chlorpyrifos and Diazinon Effluent Limitations (Section IV.a.1.e)** Compliance shall be determined by calculating the sum (S), as provided in this Order, with analytical results that are reported as “non-detectable” concentrations considered as zero.
  - K. **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 20 TUc (as 100/NOEC) for any endpoint, the Discharger will be deemed out of compliance with the chronic toxicity effluent trigger if the median percent effect at 5 percent effluent for the same endpoint also 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.

- L. Dissolved Oxygen Treatment Pond Operating Requirements (Section VI.C.4.c.iv).** To evaluate compliance with the treatment pond operating requirements in section VI.C.4.c.iv.a, the Discharger shall maintain the measured DO in each Pond 1, 2, and 3 above 1 mg/L. The measured DO in each pond shall be calculated as the average of the highest 8 hours recorded from the fixed probes in a single day.

## ATTACHMENT A – DEFINITIONS

### 1Q10

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

### 7Q10

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

### Arithmetic Mean ( $\mu$ )

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:

$$\text{Arithmetic mean} = \mu = \Sigma x / n$$

where:  $\Sigma x$  is the sum of the measured ambient water concentrations, and  $n$  is the number of samples.

### Average Monthly Effluent Limitation (AMEL)

The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

### Average Weekly Effluent Limitation (AWEL)

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

### Bioaccumulative

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

### Carcinogenic

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

### Coefficient of Variation (CV)

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

### Daily Discharge

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



The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

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

### **Daylight Hours**

Daylight hours includes the time between sunrise and sunset, including a two hour buffer (one hour at the start and stop of night discharge, respectively).

### **Detected, but Not Quantified (DNQ)**

DNQ are those sample results less than the RL, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

### **Dilution Credit**

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

### **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<sub>25</sub> is a point estimate of the toxicant concentration that would cause an observable adverse effect in 25 percent of the test organisms.

### **Effluent Concentration Allowance (ECA)**

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

### **Enclosed Bays**

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

### **Endpoint**

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

### **Estimated Chemical Concentration**

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

### **Estuaries**

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

### **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). IC25 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).

### **Maximum Daily Effluent Limitation (MDEL)**

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

### **Median**

The middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If

the number of measurements (n) is odd, then the median =  $X_{(n+1)/2}$ . If n is even, then the median =  $(X_{n/2} + X_{(n/2)+1})/2$  (i.e., the midpoint between the n/2 and n/2+1).

### **Method Detection Limit (MDL)**

MDL is the minimum measured concentration of a substance that can be reported with 99 percent confidence that the measured concentration is distinguishable from method blank results, as defined in 40 C.F.R. Part 136, Attachment B.

### **Minimum Level (ML)**

ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

### **Mixing Zone**

Mixing Zone is a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

### **No-Observed-Effect-Concentration (NOEC)**

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

### **Not Detected (ND)**

Sample results which are less than the laboratory's MDL.

### **Ocean Waters**

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

### **Percent Effect**

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

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

### **Persistent Pollutants**

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

**Source of Drinking Water**

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

**Standard Deviation ( $\sigma$ )**

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

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

where:

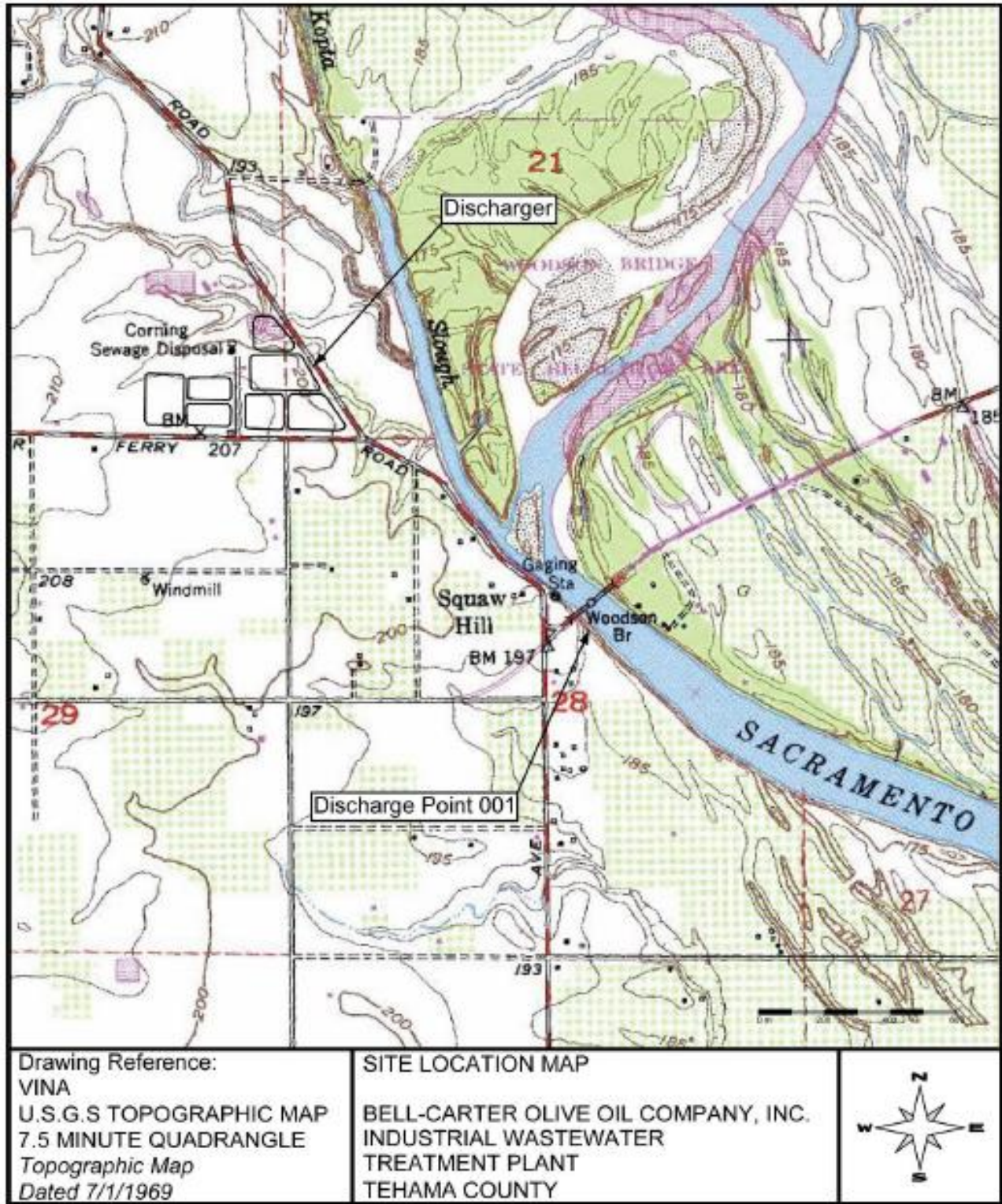
- x is the observed value;
- $\mu$  is the arithmetic mean of the observed values; and
- n is the number of samples.

**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.

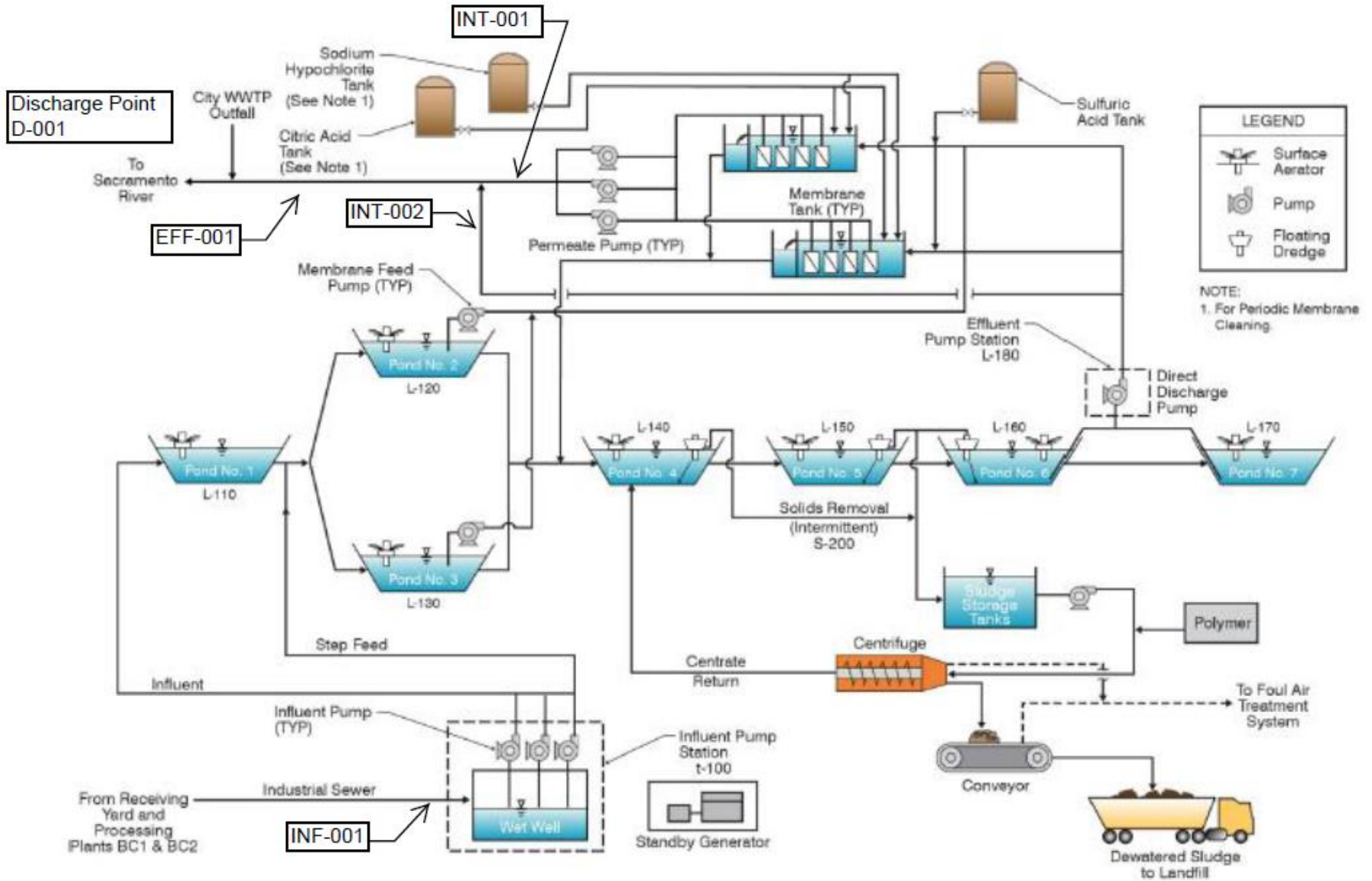
**Toxicity Reduction Evaluation (TRE)**

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 2020, all notices shall be submitted electronically to the initial recipient (State Water Board), defined in Standard Provisions – Reporting V.J below. Notices shall comply with 40 C.F.R. Part 3, section 122.22, and 40 C.F.R. Part 127. (40 C.F.R. 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 2020, all notices shall be submitted electronically to the initial recipient (State Water Board), defined in Standard Provisions – Reporting V.J below. Notices shall comply with 40 C.F.R. Part 3, section 122.22, and 40 C.F.R. Part 127. (40 C.F.R. 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, thorough properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. section 122.41(n)(3)):
  - a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. section 122.41(n)(3)(i));
  - b. The permitted facility was, at the time, being properly operated (40 C.F.R. section 122.41(n)(3)(ii));
  - c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. section 122.41(n)(3)(iii)); and
  - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. section 122.41(n)(3)(iv).)
3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. section 122.41(n)(4).)

## II. STANDARD PROVISIONS – PERMIT ACTION

### A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. section 122.41(f).)

**B. Duty to Reapply**

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. section 122.41(b).)

**C. Transfers**

This Order is not transferable to any person except after notice to the Central Valley Water Board. The Central Valley Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. section 122.41(l)(3); 122.61.)

**III. STANDARD PROVISIONS – MONITORING**

- A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. section 122.41(j)(1).)
- B. Monitoring must be conducted according to test procedures approved under 40 C.F.R. Part 136 for the analyses of pollutants unless another method is required under 40 C.F.R. subchapters N or O. Monitoring must be conducted according to sufficiently sensitive test methods approved under 40 C.F.R. Part 136 for the analysis of pollutants or pollutant parameters or as required under 40 C.F.R. chapter 1, subchapter N or O. For the purposes of this paragraph, a method is sufficiently sensitive when the method has the lowest ML of the analytical methods approved under 40 C.F.R. Part 136 or required under 40 C.F.R. chapter 1, subchapter N or O for the measured pollutant or pollutant parameter, or when:
  - 1. The method minimum level (ML) is at or below the level of the most stringent effluent limitation established in the permit for the measured pollutant or pollutant parameter, and:
    - a. The method ML is at or below the level of the most stringent applicable water quality criterion for the measured pollutant or pollutant parameter, or;
    - b. The method ML is above the applicable water quality criterion but the amount of the pollutant or pollutant parameter in the facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge;

In the case of pollutants or pollutant parameters for which there are no approved methods under 40 C.F.R. Part 136 or otherwise required under 40 C.F.R. chapter 1, subchapters N or O, monitoring must be conducted according to a test procedure specified in this Order for such pollutants or pollutant parameters. (40 C.F.R. sections 122.21(e)(3), 122.41(j)(4); 122.44(i)(1)(iv).)

#### **IV. STANDARD PROVISIONS – RECORDS**

- A.** Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 C.F.R. part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Central Valley Water Board Executive Officer at any time. (40 C.F.R. section 122.41(j)(2).)
  
- B.** Records of monitoring information shall include:
  - 1. The date, exact place, and time of sampling or measurements (40 C.F.R. section 122.41(j)(3)(i));
  - 2. The individual(s) who performed the sampling or measurements (40 C.F.R. section 122.41(j)(3)(ii));
  - 3. The date(s) analyses were performed (40 C.F.R. section 122.41(j)(3)(iii));
  - 4. The individual(s) who performed the analyses (40 C.F.R. section 122.41(j)(3)(iv));
  - 5. The analytical techniques or methods used (40 C.F.R. section 122.41(j)(3)(v)); and
  - 6. The results of such analyses. (40 C.F.R. section 122.41(j)(3)(vi).)
  
- C.** Claims of confidentiality for the following information will be denied (40 C.F.R. section 122.7(b)):
  - 1. The name and address of any permit applicant or Discharger (40 C.F.R. section 122.7(b)(1)); and
  - 2. Permit applications and attachments, permits and effluent data. (40 C.F.R. section 122.7(b)(2).)

#### **V. STANDARD PROVISIONS – REPORTING**

##### **A. Duty to Provide Information**

The Discharger shall furnish to the Central Valley Water Board, State Water Board, or U.S. EPA within a reasonable time, any information which the Central Valley Water Board, State Water Board, or U.S. EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also

furnish to the Central Valley Water Board, State Water Board, or U.S. EPA copies of records required to be kept by this Order. (40 C.F.R. section 122.41(h); Wat. Code, sections 13267, 13383.)

## **B. Signatory and Certification Requirements**

1. All applications, reports, or information submitted to the Central Valley Water Board, State Water Board, and/or U.S. EPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, V.B.5, and V.B.6 below. (40 C.F.R. section 122.41(k).)
2. All permit applications shall be signed by 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).)
3. All reports required by this Order and other information requested by the Central Valley Water Board, State Water Board, or U.S. EPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  - a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 C.F.R. section 122.22(b)(1));
  - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. section 122.22(b)(2)); and
  - c. The written authorization is submitted to the Central Valley Water Board and State Water Board. (40 C.F.R. section 122.22(b)(3).)

4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Central Valley Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. section 122.22(c).)
5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.” (40 C.F.R. section 122.22(d).)
6. Any person providing the electronic signature for such documents described in Standard Provision – V.B.1, V.B.2, or V.B.3 that are submitted electronically shall meet all relevant requirements of Standard Provisions – Reporting V.B, and shall ensure that all of the relevant requirements of 40 C.F.R. part 3 (Cross-Media Electronic Reporting) and 40 C.F.R. part 127 (NPDES Electronic Reporting Requirements) are met for that submission. (40 C.F.R section 122.22(e).)

### **C. Monitoring Reports**

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. section 122.41(l)(4).)
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Central Valley Water Board or State Water Board for reporting the results of monitoring, sludge use, or disposal practices. As of 21 December 2016, all reports and forms must be submitted electronically to the initial recipient, defined in Standard Provisions – Reporting V.J, and comply with 40 C.F.R. part 3, section 122.22, and 40 C.F.R. part 127. (40 C.F.R. section 122.41(l)(4)(i).)
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting

form specified by the Central Valley Water Board. (40 C.F.R. section 122.41(l)(4)(ii).)

4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. section 122.41(l)(4)(iii).)

#### **D. Compliance Schedules**

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

#### **E. Twenty-Four Hour Reporting**

1. The Discharger shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A report shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

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

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

#### **F. Planned Changes**

The Discharger shall give notice to the Central Valley Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 C.F.R. section 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. section 122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are 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).)
3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 C.F.R. section 122.41(l)(1)(iii).)

**G. Anticipated Noncompliance**

The Discharger shall give advance notice to the Central Valley Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order's requirements. (40 C.F.R. section 122.41(l)(2).)

**H. Other Noncompliance**

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in Standard Provision – Reporting V.E and the applicable required data in appendix A to 40 C.F.R. part 127. The Central Valley Water Board may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. section 122.41(l)(7).)

**I. Other Information**

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Central Valley Water Board, State Water Board, or U.S. EPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. section 122.41(l)(8).)

**J. Initial Recipient for Electronic Reporting Data**

The owner, operator, or the duly authorized representative is required to electronically submit NPDES information specified in appendix A to 40 C.F.R. part



127 to the appropriate initial recipient, as determined by U.S. EPA, and as defined in 40 C.F.R. section 127.2(b). U.S. EPA will identify and publish the list of initial recipients on its website and in the Federal Register, by state and by NPDES data group [see 40 C.F.R. section 127.2(c)]. U.S. EPA will update and maintain this listing. (40 C.F.R. section 122.41(l)(9).)

## **VI. STANDARD PROVISIONS – ENFORCEMENT**

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

## **VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS**

### **A. 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 ( $\mu\text{g/L}$ ) (40 C.F.R. section 122.42(a)(1)(i));
  - b. 200  $\mu\text{g/L}$  for acrolein and acrylonitrile; 500  $\mu\text{g/L}$  for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter ( $\text{mg/L}$ ) 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 ( $\mu\text{g/L}$ ) (40 C.F.R. section 122.42(a)(2)(i));
  - b. 1 milligram per liter ( $\text{mg/L}$ ) 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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## **ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)**

The Code of Federal Regulations (40 C.F.R. section 122.48) requires that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Central Valley Water Board to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement federal and California regulations.

### **I. GENERAL MONITORING PROVISIONS**

- A.** Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of the Central Valley Water Board.
- B.** Final effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.
- C.** Chemical, bacteriological, and bioassay analyses of any material required by this Order shall be conducted by a laboratory accredited for such analyses by the State Water Resources Control Board (State Water Board), Division of Drinking Water (DDW), 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. Data generated from field measurements such as pH, dissolved oxygen (DO), electrical conductivity (EC), turbidity, temperature, and residual chlorine, are exempt pursuant to Water Code Section 13176. A manual containing the steps followed in this program for any field measurements such as pH, DO, EC, 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:

State Water Resources Control Board  
Quality Assurance Program Officer  
Office of Information Management and Analysis  
1001 I Street, Sacramento, CA 95814
- H. The Discharger shall file with the Central Valley Water Board technical reports on self-monitoring performed according to the detailed specifications contained in this Monitoring and Reporting Program.
- I. The results of all monitoring required by this Order shall be reported to the Central Valley Water Board, and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order. Unless otherwise specified, discharge flows shall be reported in terms of the monthly average and the daily maximum discharge flows.

## II. MONITORING LOCATIONS

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

**Table E-1. Monitoring Station Locations**

<b>Discharge Point Name</b>	<b>Monitoring Location Name</b>	<b>Monitoring Location Description</b>
--	INF-001	Influent liquid waste. Upstream of the discharge to the surface impoundments Latitude: 39.91416° - Longitude: -122.10697°
001	EFF-001	Final Blended Effluent. Downstream from the last connection through which waste can be added and upstream of the junction with the effluent from the City of Corning Wastewater Treatment Plant. Latitude: 39.91408° - Longitude: -122.10458°
--	INT-001	Membrane Filter Effluent. Immediately downstream from the Zenon membrane filter, and after permeate pump and before combining with flow from Pond 6 and/or Pond 7.
--	INT-002	Pond 6 and Pond 7 effluent. Combined effluent from Pond 6 and Pond 7 before combining with flow from the membrane filter effluent.
--	RSW-001	In the Sacramento River immediately upstream of Discharge Point 001. Monitoring location to be consistent with RSW-001 monitoring location for the City of Corning WWTP and may be changed with the approval of the Executive Officer. Latitude: 39.90695° - Longitude: -122.08964°
--	RSW-002	In the Sacramento River 75 feet downstream of Discharge Point 001. Monitoring location to be consistent with RSW-002 monitoring location for the City of Corning WWTP and may be changed with the approval of the Executive Officer. Latitude: 39.90612° - Longitude: -122.08858°
--	PND-001	Pond 1
--	PND-002	Pond 2
--	PND-003	Pond 3
--	PRD-001	Raw product delivered to processing each month, either as fresh fruit or from storage.
--	PREC-001	Rain gauge located at the Receiving Yard.

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	SW-001	Storm water discharge to Class II Surface Impoundments.

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

### III. INFLUENT MONITORING REQUIREMENTS

#### A. Monitoring Location INF-001

- The Discharger shall monitor influent to the Facility at INF-001 in accordance with Table E-2 and the testing requirements described in section III.A.2 below:

**Table E-2. Influent Monitoring**

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous
Flow, Calculated	MGD	Calculated	Daily
pH	standard units	Grab	1/Week
Biochemical Oxygen Demand (5-day @ 20°Celsius)	mg/L	24-hour Composite	2/Month
Total Suspended Solids	mg/L	24-hour Composite	2/Month
Chemical Oxygen Demand	mg/L	24-hour Composite	1/Month
Chloride	mg/L	24-hour Composite	1/Month
Electrical Conductivity @ 25°C	µmhos/cm	24-hour Composite	1/Week
Iron, Total Recoverable	mg/L	24-hour Composite	1/Month
Sodium, Total	mg/L	24-hour Composite	1/Year
Sulfate	mg/L	24-hour Composite	1/Year
Total Dissolved Solids	mg/L	24-hour Composite	1/Quarter

- Table E-2 Testing Requirements. The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-2:
  - 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. **All grab samples** shall not be collected at the same time each day to get a complete representation of variations in the influent.
- c. **24-hour composite samples** shall be collected from a 24-hour flow proportional composite. Time-weighted composite samples may be used until no later than 1 October 2022.
- d. **Flow, Calculated** shall be influent flow less the daily stormwater flow.

**IV. INTERNAL FLOW MONITORING REQUIREMENTS**

**A. Monitoring Locations INT-001 and INT-002**

- 1. The Discharger shall monitor internal flows at INT-001 and INT-002 in accordance with Table E-3:

**Table E-3. Internal Flow Monitoring**

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous

**V. EFFLUENT MONITORING REQUIREMENTS**

**A. Monitoring Location EFF-001**

- 1. The Discharger shall monitor the effluent at Monitoring Location EFF-001 during periods of discharge in accordance with Table E-4 and the testing requirements described in section V.A.2 below:

**Table E-4. Effluent Monitoring**

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous
Biochemical Oxygen Demand (BOD) 5-day @ 20°Celsius	mg/L	24-hour Composite	1/Week
BOD	lbs/day	Calculate	1/Week
Total Suspended Solids (TSS)	mg/L	24-hour Composite	1/Week
TSS	lbs/day	Calculate	1/Week
pH	standard units	Grab	1/Day



<b>Parameter</b>	<b>Units</b>	<b>Sample Type</b>	<b>Minimum Sampling Frequency</b>
Copper, Total Recoverable	µg/L	Grab	1/Month
Mercury, Total Recoverable	µg/L	Grab	1/Year
Methylene Chloride	µg/L	Grab	1/Month
Zinc, Total Recoverable	µg/L	Grab	1/Month
Priority Pollutants and Other Constituents of Concern	see Section <a href="#">X.D</a>	see Section X.D	see Section X.D
Aluminum, Total Recoverable	µg/L	Grab	1/Year
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Month
Ammonia Nitrogen, Total (as N)	lbs/day	Calculate	1/Month
Chloride	mg/L	Grab	1/Week
Chloride	lbs/day	Calculate	1/Week
Chlorine, Total Residual	mg/L	Grab	1/Day
Chlorpyrifos	µg/L	Grab	1/Year
Diazinon	µg/L	Grab	1/Year
Color	Color units	Grab	1/Month
Electrical Conductivity @ 25°Celsius	µmhos/cm	Grab	1/Week
Hardness, Total (as CaCO3)	mg/L	Grab	1/Month
Iron, Filtered	µg/L	Grab	1/Month
Iron, Total Recoverable	µg/L	Grab	1/Month
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/Quarter
Nitrite Nitrogen, Total (as N)	mg/L	Grab	1/Quarter
Settleable Solids	ml/L	Grab	1/Week
Standard Minerals	mg/L	Grab	1/Year
Sulfate	mg/L	Grab	1/Month
Temperature	°C	Grab	1/Week
Total Dissolved Solids	mg/L	Grab	1/Week
Total Dissolved Solids	lbs/day	Calculate	1/Week

Parameter	Units	Sample Type	Minimum Sampling Frequency
Whole Effluent Toxicity	see Section VI	see Section VI	see Section VI

2. Table E-4 Testing Requirements. The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-4:
  - a. **Applicable to all parameters.** Parameters shall be analyzed using the analytical methods described in 40 CFR part 136 or by methods approved by the Central Valley Water Board or the State Water Board. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 CFR part 136 allowed sample type.
  - b. **24-hour composite samples** shall be collected from a 24-hour flow proportional composite. Time-weighted composite samples may be used until no later than 1 October 2022.
  - c. A hand-held field meter may be used for **temperature** and **pH**, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.
  - d. **Temperature** and **pH** shall be recorded at the time of **ammonia** sample collection.
  - e. **Whole Effluent Toxicity.** Ammonia samples shall be collected concurrently with whole effluent toxicity monitoring.
  - f. **Standard Minerals** shall include: boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus, total alkalinity (including alkalinity series: bicarbonate, carbonate and hydroxide), and hardness, and include verification that the analysis is complete (i.e., cation/anion balance).
  - g. **Hardness** samples shall be collected concurrently with metals samples.
  - h. **Total Mercury.** 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 total mercury shall be by U.S. EPA method 1630 and 1631 (Revision E), respectively, with a **reporting limit of 0.5 ng/L for total mercury**.

- i. **Priority Pollutants.** For all priority pollutant constituents listed in Table E-4 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 and the SSM Rule specified under 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv).
- j. **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.
- k. **Whole Effluent Toxicity.** See section VI for requirements of whole effluent toxicity testing
- l. **Total chlorine residual.** Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.01 mg/L. Total chlorine residual monitoring is required when chlorine or chlorine-containing products are used in the treatment process (i.e. Zenon filter backflush). If backflushing does not occur in a given day, this should be noted in the Discharger's monitoring report and a total chlorine residual sample may be omitted for that day only.
- m. **Filtered Iron.** Filtered samples shall be filtered prior to preservation and analysis using a 1.5-micron filter.
- n. For **pH**, alternative means of monitoring may be implemented (e.g. automatic data logger) when Facility is not fully staffed (i.e. weekends, holidays).

## VI. 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, concurrent with effluent ammonia sampling.
  - 2. **Sample Types** – The Discharger may use flow-through or static renewal testing. For static renewal testing, the samples shall be grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001.
  - 3. **Test Species** – Test species shall be rainbow trout (*Oncorhynchus mykiss*).
  - 4. **Methods** – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.

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

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

1. **Monitoring Frequency** – The Discharger shall perform routine **quarterly** chronic toxicity testing. If the result of the routine chronic toxicity testing event exhibits toxicity, demonstrated by a result greater than **20 TUc** (as 100/NOEC) 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 for procedures for calculating 6-week median.
2. **Sample Types** – Effluent samples shall grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001. The receiving water control shall be a grab sample obtained from Monitoring Location RSW-001, as identified in this Monitoring and Reporting Program.
3. **Sample Volumes** – Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.
4. **Test Species** – The testing shall be conducted using the most sensitive species. The Discharger shall conduct chronic toxicity tests with **Ceriodaphnia dubia**, unless otherwise specified in writing by the Executive Officer.
5. **Methods** – The presence of chronic toxicity shall be estimated as specified in Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA/821-R-02-013, October 2002.
6. **Reference Toxicant** – As required by the SIP, all chronic toxicity tests shall be conducted with concurrent testing with a reference toxicant and shall be reported with the chronic toxicity test results.
7. **Dilutions** – For routine and compliance chronic toxicity monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-5, below. For TRE monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-5, below, unless an alternative

dilution series is detailed in the submitted TRE Action Plan. A receiving water control or laboratory water control may be used as the diluent.

**Table E-5. Chronic Toxicity Testing Dilution Series**

<b>Samples</b>	<b>Dilution%</b>	<b>Dilution%</b>	<b>Dilution%</b>	<b>Dilution%</b>	<b>Dilution%</b>	<b>Controls</b>
% Effluent	50	25	12.5	5	3.125	0
% Control Water	50	75	87.5	95	96.875	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. Routing 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 statistical methods used to calculate endpoints;
  - c. The statistical output page, which includes the calculation of the percent minimum significant difference (PMSD);

- d. The dates of sample collection and initiation of each toxicity test; and
- e. The results compared to the numeric toxicity monitoring trigger.

Additionally, the quarterly 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 5 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 20 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 20 TUc (as 100/NOEC), then of the species exceeding 20 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 20 TUc (as 100/NOEC), but at least one of the species exhibits a percent effect greater than 10 percent at 5% effluent, then the single species that exhibits the highest percent effect at 5% 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.

**VII. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE**

**VIII. RECYCLING MONITORING REQUIREMENTS – NOT APPLICABLE**

**IX. RECEIVING WATER MONITORING REQUIREMENTS**

**A. Monitoring Location RSW-001**

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

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

Parameter	Units	Sample Type	Minimum Sampling Frequency
pH	Standard units	Grab	1/Week
Copper, Dissolved	µg/L	Grab	1/Month
Copper, Total Recoverable	µg/L	Grab	1/Month
Zinc, Dissolved	µg/L	Grab	1/Month
Zinc, Total Recoverable	µg/L	Grab	1/Month
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Quarter
Chloride	mg/L	Grab	1/Month
Dissolved Oxygen	mg/L	Grab	1/Month
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Week
Hardness, Total (as CaCO <sub>3</sub> )	mg/L	Grab	1/Month
Iron, Filtered	µg/L	Grab	1/Month
Iron, Total Recoverable	µg/L	Grab	1/Month
Methylene Chloride	µg/L	Grab	1/Quarter
Sulfate	mg/L	Grab	1/Year
Temperature	°C	Grab	1/Week
Total Dissolved Solids	mg/L	Grab	1/Month
Turbidity	NTU	Grab	1/Week
Priority Pollutants and Other Constituents of Concern	see Section <a href="#">X.D</a>	see Section X.D	see Section X.D

2. Table E-6 Testing Requirements. The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-6:
  - a. **Applicable to all parameters.** Parameters shall be analyzed using the analytical methods described in 40 CFR part 136 or by methods approved by the Central Valley Water Board or the State Water Board. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 CFR part 136 allowed sample type.
  - b. **Filtered Iron.** Filtered sample shall be filtered prior to preservation and analysis with a 1.5-micron filter.
  - c. A hand-held field meter may be used for **temperature** and **pH**, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring



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

- d. **Temperature** and **pH** shall be recorded at the time of **ammonia** sample collection.
  - e. **Hardness** samples shall be collected concurrently with metals samples.
  - f. **Priority Pollutants.** For all priority pollutant constituents listed in Table E-6 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 and the SSM Rule specified under 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv)..
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 the Sacramento River at RSW-002 in accordance with Table E-7 and the testing requirements described in section B.2 below as follows:

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

<b>Parameter</b>	<b>Units</b>	<b>Sample Type</b>	<b>Minimum Sampling Frequency</b>
Color	Presence/absence	Visual	1/Week
pH	Standard units	Grab	1/Week
Chloride	mg/L	Grab	1/Month

Parameter	Units	Sample Type	Minimum Sampling Frequency
Dissolved Oxygen	mg/L	Grab	1/Month
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Week
Hardness, Total (as CaCO <sub>3</sub> )	mg/L	Grab	1/Month
Sulfate	mg/L	Grab	1/Year
Temperature	°C	Grab	1/Week
Total Dissolved Solids	mg/L	Grab	1/Month
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. **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. A hand-held 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.
  - c. **Color** monitoring consists of aerial photography and presence/absence of a discoloration in the effluent plume shall be reported. Monitoring frequency is **1/week if discharging over 50 gpm** during daylight hours. Monitoring frequency is **1/month if discharging under 50 gpm** during daylight hours.

**X. OTHER MONITORING REQUIREMENTS**

**A. Pond Monitoring – Monitoring Locations PND-001, PND-002, and PND-003**

1. The Discharger shall monitor the treatment ponds at Monitoring Locations PND-001, PND-002, and PND-003 in accordance with Table E-8 below.

**Table E-8. Pond Monitoring Requirements**

Parameter	Units	Sample Type	Minimum Sampling
Dissolved Oxygen	mg/L	Meter	Continuous
Excessive odors and other nuisances	presence/absence	Observation	1/Day

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. **Dissolved Oxygen.** The Discharger shall measure the average DO reading from the fixed probes in each pond.

**B. Production Monitoring PRD-001**

The Discharger shall monitor production as tons of raw product delivered to processing each month, either as fresh fruit or from storage. Total monthly production monitoring shall be reported monthly. Total production for the calendar year shall be reported annually, by 1 February (of the following year).

**C. Rainfall and Storm Water Monitoring PREC-001, SW-001**

Daily rainfall shall be monitored (inches) at monitoring location PREC-001 and reported in the monthly self-monitoring report. The monthly amount of storm water generated and discharged to the treatment ponds (gallons) at monitoring location SW-001 shall be calculated and reported monthly.

**D. Effluent and Receiving Water Characterization**

1. **Quarterly Monitoring.** Quarterly samples shall be collected from the effluent and upstream receiving water (Monitoring Locations EFF-001 and RSW-001) and analyzed for the constituents listed in Table E-10, below. Constituents shall be collected and analyzed consistent with the Discharger’s Analytical Methods Report (MRP, X.D.2) using sufficiently sensitive analytical methods and Reporting Levels 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. **Quarterly monitoring shall be conducted for one year beginning with the second quarter of 2022** and the results of such monitoring be submitted to the Central Valley Water Board with the quarterly self-monitoring reports. Each individual monitoring event shall provide representative sample results for the effluent and upstream receiving water.

2. **Concurrent Sampling.** Effluent and receiving water sampling shall be performed at approximately the same time, on the same date.
3. **Sample Type.** All receiving water samples shall be taken as grab samples. Effluent samples shall be taken as described in Table E-9, below.
4. **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.
5. The Discharger shall conduct effluent and receiving water characterization monitoring in accordance with Table E-9 and the testing requirements described in section X.D.6 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
33	Ethylbenzene	100-41-4	µg/L	Grab

CTR Number	Volatile Organic Parameters	CAS Number	Units	Effluent Sample Type
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

CTR Number	Semi-Organic Volatile Parameters	CAS Number	Units	Effluent Sample Type
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

CTR Number	Semi-Organic Volatile Parameters	CAS Number	Units	Effluent Sample Type
86	Fluoranthene	206-44-0	µg/L	Grab
87	Fluorene	86-73-7	µg/L	Grab
88	Hexachlorobenzene	118-74-1	µg/L	Grab
90	Hexachlorocyclopentadiene	77-47-4	µg/L	Grab
91	Hexachloroethane	67-72-1	µg/L	Grab
92	Indeno(1,2,3-cd) Pyrene	193-39-5	µg/L	Grab
93	Isophorone	78-59-1	µg/L	Grab
98	N-Nitrosodiphenylamine	86-30-6	µg/L	Grab
96	N-Nitrosodimethylamine	62-75-9	µg/L	Grab
97	N-Nitrosodi-n-Propylamine	621-64-7	µg/L	Grab
95	Nitrobenzene	98-95-3	µg/L	Grab
53	Pentachlorophenol (PCP)	87-86-5	µg/L	Grab
99	Phenanthrene	85-01-8	µg/L	Grab
54	Phenol	108-95-2	µg/L	Grab
100	Pyrene	129-00-0	µg/L	Grab

**INORGANICS**

CTR Number	Inorganic Parameters	CAS Number	Units	Effluent Sample Type
1	Antimony, Total Recoverable	7440-36-0	µg/L	24-hour Composite
2	Arsenic, Total Recoverable	7440-38-2	µg/L	24-hour Composite
15	Asbestos	1332-21-4	µg/L	24-hour Composite
3	Beryllium, Total Recoverable	7440-41-7	µg/L	24-hour Composite
4	Cadmium, Total Recoverable	7440-43-9	µg/L	24-hour Composite
5a (III)	Chromium, Total	7440-47-3	µg/L	24-hour Composite
7	Lead, Total Recoverable	7439-92-1	µg/L	24-hour Composite
NL	Mercury, Methyl	22967-92-6	µg/L	Grab
NL	Manganese, Total Recoverable	7439-96-5	µg/L	24-hour Composite
9	Nickel, Total Recoverable	7440-02-0	µg/L	24-hour Composite
10	Selenium, Total Recoverable	7782-49-2	µg/L	24-hour Composite
11	Silver, Total Recoverable	7440-22-4	µg/L	24-hour Composite

CTR Number	Inorganic Parameters	CAS Number	Units	Effluent Sample Type
12	Thallium, Total Recoverable	7440-28-0	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	Phosphorus, Total (as P)	7723-14-0	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



CTR Number	Pesticide/PCB/Dioxin Parameters	CAS Number	Units	Effluent Sample Type
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	--	°C	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 CaCO <sub>3</sub> )	471-34-1	mg/L	Grab
NL	Dissolved Organic Carbon (DOC)	DOC	mg/L	24-hour Composite

**NUTRIENTS**

CTR Number	Nutrient Parameters	CAS Number	Units	Effluent Sample Type
7	Ammonia (as N)	7664-41-7	mg/L	24-hour Composite
8	Nitrate (as N)	14797-55-8	mg/L	24-hour Composite
9	Nitrite (as N)	14797-65-0	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	ug/L	Grab

CTR Number	Other Constituents of Concern	CAS Number	Units	Effluent Sample Type
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

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

- a. 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-4, except for hardness, pH, and temperature, which shall be conducted concurrently with the effluent sampling.
- b. All **24-hour composite** samples shall be collected from a 24-hour flow proportional composite. Time-weighted composite samples may be used until no later than 1 October 2022.
- c. **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.

## **XI. 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/) ([http://www.waterboards.ca.gov/water\\_issues/programs/ciwqs/](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 X. The Discharger shall submit monthly SMRs including the results of all required monitoring using U.S. EPA-approved test methods or other test methods specified in this Order. SMRs are to include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR. Monthly SMRs are required even if there is no discharge. If no discharge occurs during the month, the monitoring report must be submitted stating that there has been no discharge.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

<b>Sampling Frequency</b>	<b>Monitoring Period Begins On</b>	<b>Monitoring Period</b>	<b>SMR Due Date</b>
Continuous	Permit effective date	All	Submit with monthly SMR
1/Hour	Permit effective date	Hourly	Submit with monthly SMR
1/Day	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with monthly SMR
1/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
1/Month	Permit effective date	1st day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
1/Quarter	Permit effective date	1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	1 May 1 August 1 November 1 February of following year
1/Year	Permit effective date	1 January through 31 December	1 February of following year

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

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

- a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
- b. Sample results less than the RL, but greater than or equal to the laboratory’s MDL, shall be reported as “Detected, but Not Quantified,” or DNQ. The estimated chemical concentration of the sample shall also be reported.

For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ. The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy ( $\pm$  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 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.** Except for BOD and TSS, 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<sub>5</sub>, TSS, and ammonia, the Discharger shall calculate and report the mass loading (lbs/day) in the SMRs. The mass loading shall be calculated as follows:  
  
$$\text{Mass Loading (lbs/day)} = \text{Flow (MGD)} \times \text{Concentration (mg/L)} \times 8.34$$
  
  
When calculating daily mass loading, the daily average flow and constituent concentration shall be used. For weekly average mass loading, the weekly average flow and constituent concentration shall be used. For monthly average mass loading, the monthly average flow and constituent concentration shall be used.
  - c. **Dissolved Oxygen Receiving Water Limitations.** The Discharger shall report monthly in the self-monitoring report the dissolved oxygen concentrations in the effluent (EFF-001) and the receiving water (RSW-001 and RSW-002).
  - d. **Turbidity Receiving Water Limitations.** The Discharger shall calculate and report the turbidity increase in the receiving water applicable to the natural turbidity condition specified in section V.A.17.a-e. of the Waste Discharge Requirements.
  - e. **Temperature Receiving Water Limitations.** The Discharger shall calculate and report the temperature increase in the receiving water based

on the difference in temperature at Monitoring Locations RSW-001 and RSW-002.

### C. Discharge Monitoring Reports (DMR's)

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

### D. Other Reports

1. **Analytical Methods Report.** The Discharger shall complete and submit an Analytical Methods Report, electronically via CIWQS submittal, by the due date shown in the Technical Reports Table. The Analytical Methods Report shall include the following for each constituent to be monitored in accordance with this Order: 1) applicable water quality objective, 2) reporting level (RL), 3) method detection limit (MDL), and 4) analytical method. The analytical methods shall be sufficiently sensitive with RLs consistent with the SSM Rule per 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv), and with the Minimum Levels (MLs) in the SIP, Appendix 4. The "Reporting Level or RL" is synonymous with the "Method Minimum Level" described in the SSM Rule. If an RL is not less than or equal to the applicable water quality objective for a constituent, the Discharger shall explain how the proposed analytical method complies with the SSM Rule. Central Valley Water Board staff will provide a tool with the permit's Notice of Adoption to assist the Discharger in completing this requirement. The tool will include the constituents and associated applicable water quality objectives to be included in the Analytical Methods Report.
2. **Annual Operations Report.** The Discharger shall submit a written report to the Central Valley Water Board, electronically via CIWQS submittal, containing the following by the due date in the Technical Reports Table:
  - a. The names, certificate grades, and general responsibilities of all persons employed at the Facility.
  - b. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.
  - c. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.
  - d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as



currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.

- e. The Discharger may also be requested to submit an annual report to the Central Valley Water Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.
3. **Report of Waste Discharge (ROWD).** For the 5-year permit renewal, the Discharger shall submit a written report to the Central Valley Water Board, electronically via CIWQS submittal, containing, at minimum, the following by the due date in the Technical Reports Table
- a. Report of Waste Discharge (Form 200);
  - b. NPDES Form 1;
  - c. NPDES Form 2C;
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 and subsequent table notes below summarize all technical reports required by this Order and the due dates for submittal. All technical reports shall be submitted electronically via CIWQS submittal. Technical reports should be uploaded as a PDF, Microsoft Word, or Microsoft Excel file attachment.

**Table E-11. Technical Reports**

Report #	Technical Report	Due Date	CIWQS Report Name
	Standard Reporting Requirements		
1	Report of Waste Discharge	1 year prior to permit expiration date	MRP X.D.4
2	Analytical Methods Report	Within 60 days of permit adoption date	MRP X.D.2
3	Analytical Methods Report Certification	2 months prior to start of characterization monitoring	MRP IX.D.2
4	Annual Operations Report	1 February 2022	MRP X.D.3
5	Annual Operations Report	1 February 2023	MRP X.D.3

<b>Report #</b>	<b>Technical Report</b>	<b>Due Date</b>	<b>CIWQS Report Name</b>
6	Annual Operations Report	1 February 2024	MRP X.D.3
7	Annual Operations Report	1 February 2025	MRP X.D.3
8	Annual Operations Report	1 February 2026	MRP X.D.3
	Other Reports		
9	Toxicity Reduction Evaluation (TRE) Workplan	Within 6 months of permit adoption date	WDR VI.C.2.a.i
10	Salinity Evaluation and Minimization Plan	Within 2 years of permit adoption date.	WDR VI.C.3.a
11	Filtered Iron Study	Within 2 years 6 months of permit effective date.	WDR VI.C.2.c

**ATTACHMENT F – FACT SHEET**

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**ATTACHMENT F – FACT SHEET**

As described in section II.B of this Order, the Central Valley Water Board incorporates this Fact Sheet as findings of the Central Valley Water Board supporting the issuance of this Order. This Fact Sheet discusses the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Only those sections or subsections of this Order that are specifically identified as “not applicable” have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as “not applicable” are fully applicable to this Discharger.

**I. PERMIT INFORMATION**

The following table summarizes administrative information related to the Facility.

**Table F-1. Facility Information**

<b>Waste Discharge ID:</b>	5A520303002
<b>CIWQS Facility Place ID:</b>	209136
<b>Discharger:</b>	Bell-Carter Olive Company, Inc. and City of Corning
<b>Name of Facility:</b>	Bell-Carter Industrial Wastewater Treatment Plant
<b>Facility Address:</b>	Gardiner Ferry Road
<b>Facility City, State Zip:</b>	Corning, CA 96021
<b>Facility County:</b>	Tehama
<b>Facility Contact, Title and Phone Number:</b>	Ron Kerr, Director of Manufacturing, (530) 528-4890
<b>Authorized Person to Sign and Submit Reports:</b>	Ron Kerr, Director of Manufacturing, (530) 528-4890
<b>Mailing Address:</b>	1012 Second Street, Corning, CA 96021
<b>Billing Address:</b>	Same as Mailing Address
<b>Type of Facility:</b>	Industrial (SIC code 2033)
<b>Major or Minor Facility:</b>	Minor
<b>Threat to Water Quality:</b>	1
<b>Complexity:</b>	A
<b>Pretreatment Program:</b>	No
<b>Recycling Requirements:</b>	Not Applicable
<b>Facility Permitted Flow:</b>	1.4 million gallons per day (MGD) as a daily maximum, 0.95 MGD as a monthly average, and 0.75 MGD as an annual average
<b>Facility Design Flow:</b>	0.75 MGD as an annual average

<b>Watershed:</b>	Sacramento – Lower Thomes
<b>Receiving Water:</b>	Sacramento River
<b>Receiving Water Type:</b>	Inland surface water

- A. Bell-Carter Olive Company, Inc. (hereinafter Discharger) is the owner and operator of the Bell-Carter Industrial Wastewater Treatment Plant (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 the Sacramento River, a water of the United States, within the Sacramento – Lower Thomes watershed. The Discharger was previously regulated by Order R5-2015-0030 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0083721 adopted on 17 April 2015 and expired on 31 May 2020. 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 (WDR’s) and NPDES permit on 3 December 2019. Supplemental information was requested and received on 30 December 2019. The application was deemed complete on 31 December 2019. A site visit was conducted on 19 June 2020 to observe operations and collect additional data to develop permit limitations and requirements for waste discharge.
- 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, 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 stores, processes, and cans olives at two separate Bell-Carter Olive Company (Bell-Carter) owned and operated processing facilities, Plant 1 and Plant 2. Wastewater from both processing facilities combines with storm water that falls within the boundaries of the processing facilities and spent cooling water utilized during the canning process and is conveyed to the Facility for treatment prior to discharge to the Sacramento River. The processing facilities, collection system, and Facility is located in Corning, CA. The Facility is adjacent to the City of Corning’s (City) Wastewater Treatment Plant (WWTP) and is located on property owned by the City (Assessor’s Parcel Number 75-300-02).

### Plant 1 Process Wastewater Description

At Plant 1 olives are received, processed, canned, and packaged for distribution. Wastewater from Plant 1 that is collected and sent to the Facility include: storage brines, flume brines, processing lye, pitting wastes, wash-water, blowdown from the retort water recycling system, and storm water.

### Plant 2 Process Wastewater Description

Operations at Plant 2 are similar to those of Plant 1, except that olives are sliced and chopped rather than whole and no raw olives are processed at Plant 2. Since no raw olives are processed at Plant 2, processing lye wastewater is not produced. Wastewater from Plant 2 that is collected and sent to the Facility include: storage brines, flume brines, pitting wastes, wash-water, and storm water. Plant 2 process wastewater is also pretreated with a Dissolved Air Flotation (DAF) unit for BOD<sub>5</sub> reduction prior to discharge to the Facility. Plant 2 does not have a retort water recycling system and currently discharges retort and continuous cooker wastewater to an on-site leach field. The retort waste discharge to the land is regulated separately by WDR Order No. R5-2018-0085.

### Grading and Storage Yard

Raw olive product is stored in the Grading and Storage yard until processed at one of the two processing facilities. Storm water is collected in a sump and can be conveyed to the Facility or discharged directly to Jewett creek. Storm water discharge to Jewett creek is regulated pursuant to WDID number I020858.

### Collection System

Process wastewater from Plant 1 and Plant 2 is conveyed to the Facility through an approximately 6 mile industrial sewer. The City of Corning owns the collection system and Bell-Carter operates and maintains the collection system.

### Industrial Wastewater Treatment Plant

Wastewater from the collection system is discharged to 27 acres of Class II surface impoundments located at the Facility. The wastewater is classified as a liquid designated waste and the impoundments are double-lined in accordance with Title 27 of the California Code of Regulations. The operational and construction factors associated with the Facility's Class II surface impoundments for groundwater protection are regulated by WDR Order No. R5-2018-0069.

Bell-Carter discharges Facility effluent to the Sacramento River through a multiport diffuser outfall that is also used as the City's WWTP effluent outfall. The outfall is owned by the City.

### Regulatory Background

From the late 1980s to 1995, Bell-Carter discharged pretreated olive processing wastewater to the City WWTP and did not discharge directly to the Sacramento River. Process wastewater flows from Plant 1 and Plant 2 to the Class II surface impoundments at the Facility were limited to 151 million gallons (MG) per year and pretreated olive processing wastewater discharge to the City WWTP was limited to 0.38 MGD. The City WWTP discharged treated municipal and industrial effluent to the Sacramento River and effluent quality was subject to secondary treatment standards for biological oxygen demand (BOD5) and total suspended solids (TSS) (i.e., monthly average: 30 mg/L, weekly average: 45 mg/L, daily maximum: 90 mg/L).

In 1993 Bell-Carter requested an increase in permitted flows to the Facility from 151 MG per year to 255 MG per year and an increase in discharge of pretreated olive processing wastewater to the City WWTP from 0.38 MGD to 0.75 MGD. Environmental review was conducted and in September 1993 the Corning City Council certified the Environmental Impact Report (EIR) for the proposed expansion. The final EIR required mitigation measures at the Facility ponds for project approval. The mitigation measures included an increase to the aeration capacity of the ponds to provide additional treatment for the olive processing wastewater prior to discharge to the City's WWTP.

The Discharger was issued an NPDES permit for the first time in 1995 (Order No. 95-113). Order No. 95-113 permitted a direct discharge of 0.4 MGD (monthly average) to the Sacramento River, while the facility continued to discharge 0.35 MGD pretreated olive processing wastewater to the City WWTP. Bell-Carter's effluent BOD5 and TSS limitations were limited, in part, to a monthly average and daily maximum of 120 mg/L and 200 mg/L, respectively. These effluent limitations were considered interim limits that would be revised downward when treatability studies were completed and additional treatment was implemented. These limitations applied only to the surface water discharge and not the discharge to the City WWTP.

In the late 1990s Bell-Carter installed a dissolved-air floatation (DAF) system and increased aeration which resulted in a decrease of BOD5 and TSS concentrations. Subsequently, when the Discharger's NPDES permit was renewed in 2000, Order No. 5-00-113 imposed more stringent BOD5 and TSS monthly average and daily maximum effluent limits (BOD5 100/150, TSS 100/200) for the surface water discharge. The direct discharge to the Sacramento River was limited to 0.4 MGD as an annual average; however, the Order established a monthly average and daily maximum flow limit to the river of 0.6 and 1.0 MGD, respectively. [Bell-Carter had requested that the daily maximum effluent flow limit be increased to allow more flexibility in pond level management]. The maximum daily limit of 1.0 MGD was considered the "practical physical limit" for Bell-Carter's direct discharge to the City's 2.0 MGD capacity outfall (the City WWTP's permitted flow limit at the time was 1.38 MGD). At the time of issuance of Order 5-00-113, the City's WWTP annual average effluent flow was approximately 1.0 MGD.

In early 2000 Bell-Carter constructed and began operation of a "Zenon" micro-filtration system that, in conjunction with the ponds, was capable of treating its entire waste stream, without relying on the City WWTP. Subsequently, in December 2003 Bell-Carter requested that the Central Valley Water Board increase its flow limitation for direct



discharge to the Sacramento River from 0.4 MGD to 0.75 MGD. The increase in flow would be offset by the decrease in flow (i.e., elimination) of 0.35 MGD to the City WWTP, resulting in a no net increase in flow to the Sacramento River. The request was reviewed and a Special Order (R5-2004-0074) amending the Discharger's current NPDES permit (Order No. 5-00-113) flow limits was adopted by the Central Valley Water Board in June 2004. The amendment established effluent flow limits of 0.95 MGD (monthly average), 0.75 MGD (annual average), and 1.4 MGD (daily maximum). The basis for the monthly average and maximum daily limit is not explicitly clear in the Special Order, but it appears that the net flow increase value of 0.35 MGD was added to the existing monthly average limit of 0.6 MGD to achieve 0.95 MGD and the daily maximum limit of 1.0 MGD increased by 0.4 MGD to 1.4 MGD. The amendment was limited to the flow increase and did not take in consideration the net increase in solids loading from the additional 0.35 MGD of effluent now being treated to Bell-Carter existing BOD5 and TSS effluent limits, which were less stringent than the City's secondary treatment standards. The amendment stated, however, that water quality-based effluent limits and other matters related to the increase would be addressed when Order No. 5-00-113 was renewed in a few years. Upon adoption of the Special Order R5-2004-0074, Bell-Carter ceased discharge to the City WWTP and commenced direct discharge all Facility-treated wastewater to the Sacramento River. In addition, as a result of the installation of the Zenon micro-filtration unit, use of the Facility DAF unit was discontinued (the DAF unit is still located at the treatment plant but is currently off-line) and a new DAF was purchased and installed to serve as pretreatment for Plant 2 process wastewater.

In December 2007, the NPDES permit was renewed and WDR Order No. R5-2007-0166 was adopted. Order No. R5-2007-0166 retained the flow limits established in Special Order R5-2004-0074. The 2007 permit also retained the existing concentration-based BOD5 and TSS effluent limits from Order No. 5-00-113.

In April 2015, the NPDES permit was renewed and WDR Order No. R5-2015-0030 was adopted. Order No. R5-2015-0030 retained the flow limits and concentration-based BOD5 and TSS effluent limits from WDR Order No. R5-2007-0166.

#### **A. Description of Wastewater and Biosolids Treatment and Controls**

The treatment system at the Facility consists of an influent pump station, influent metering and sampling equipment, a two-stage extended aeration pond system, and an ultrafiltration membrane solids separation process.

The extended aeration and sedimentation processes along with wastewater storage occur in seven lined ponds (Class II Surface Impoundments). The influent pump station feeds influent at three different locations in Pond No. 1. Ponds Nos. 1, 2, and 3 serve as extended aeration using floating axial aerators and downdraft mixers for biological treatment. Ponds Nos. 4 and 5 use brush aerators to maintain dissolved oxygen levels and allow for sedimentation of solids and further reduction of waste constituents. Ponds Nos. 6 and 7 use brush aerators to maintain dissolved oxygen levels are used primarily for effluent storage and polishing. Effluent is then primarily discharged from Pond No.7 and would only discharge from Pond No. 6 in the

unlikely event that discharge from Pond No. 7 was not possible. Discharge from Pond 7 is pumped to the outfall pipeline, where it mixes with discharge from the ultrafiltration membrane when in use.

The ultrafiltration membrane utilizes a “Zenon” Membrane filtration unit (Zenon) to treat effluent prior to discharge. Flow is typically introduced to the Zenon unit directly from Ponds 2 and/or 3, but can be introduced directly from Ponds 4, 5, 6, and 7. When in use, the treated effluent from the Zenon unit is discharged directly to the outfall pipe that conveys treated effluent to the outfall pipeline to the Sacramento River. Backwash wastewater from the ultrafiltration membrane system is discharged back to Pond Nos. 4 and 5. In accordance with Special Provision VI.C.4.a of WDR Order No. R5-2013-0030, “the micro-filtration membrane system [Zenon] shall be operated year-round, to the maximum extent practicable”. Long-term operation of the Zenon filtration proves most reliable when the unit is operated at approximately 0.60 MGD (0.45 MGD during the summer months of June, July, and August).

The design average annual flow of the treatment system is 0.75 MGD and the hydraulic capacity is 2.0 MGD. The outfall capacity is inversely related to the river stage, or water surface, within the receiving water. During dry weather conditions when the river level is low, the outfall capacity is at its maximum of 3.8 MGD. During high river flow conditions, the outfall capacity is at its minimum of 2.0 MGD. To accommodate the City WWTP’s firm capacity needs, the City can restrict the amount of flow that Bell-Carter is allowed to discharge. This can occur during periods of high rainfall and/or river flows when the outfall capacity is limited to 2.0 MGD. To alleviate concerns associated with the potential limitation by the City for effluent discharge, Bell-Carter strives to maintain ample available storage within the pond system at all times.

To meet the compliance schedule for discharge color included in WDR Order No. 2015-0030, Bell-Carter started discharging almost 100% of effluent flow during night hours only, starting 1 June 2020. A two hour buffer is used to allow discharge flows to normalize after sunset and before sunrise (one hour each at the start and stop of night discharge, respectively). However, Bell-Carter can discharge effluent at approximately 0.072 MGD (equal to 50 gpm) throughout day and night hours since no discoloration nuisance is observed during daylight hours at this effluent flow rate.

Bell-Carter collects storm water from the processing facilities, which is also discharged to the treatment ponds. The volume of storm water and infiltration discharged to the treatment ponds is not included in the historical 255 million gallons per year flow limit. The Report of Waste Discharge states the average annual rainfall totals were approximately 23 inches per year and average annual storm water discharge to the Facility ponds approximately 0.054 MGD.

Treatment chemicals are used at the processing facilities and the Facility. Chemicals used at the processing facilities as part of olive processing include, but are not limited to, acetic acid, calcium chloride, sodium hydroxide, ferrous gluconate, silicon product, and sodium hypochlorite. Polymers and different cleaning chemicals are

also used at the processing facilities that contribute to the waste stream to the Facility. Chemicals used at the Facility are primarily used for cleaning the Zenon unit and include hydrochloric acid and sodium hypochlorite. Sulfuric acid is used for pH adjustment at the Zenon feed and polymers are used in the solids dewatering process.

Settled solids accumulate in Ponds 4, 5, and 6 throughout the year and are removed periodically by the use of a floating dredge. Solids are transferred to sludge storage tanks prior to polymer addition and dewatering with a centrifuge. Liquid waste from the centrifuge is returned to the pond system at Pond No. 4. Dewatered solids are transferred to storage bins, which are removed from the site daily (when the ponds are being dredged), and the solids are trucked to Anderson Landfill and occasionally Ostrom Road Landfill. The sludge weight hauled from the site is approximately 2,500 to 5,000 tons (dry weight) per year. A carbon adsorption unit treats foul air and is operational at all times during dewatering.

**B. Discharge Points and Receiving Waters**

1. The Facility is located in section 28, T24N, R2W, MDB&M, as shown in Attachment B, a part of this Order.
2. Treated municipal wastewater is discharged at Discharge Point No. 001 to the Sacramento River, a water of the United States at a point latitude 39° 54' 24" N and longitude 122° 05' 21" W.

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

Effluent limitations contained in Order R5-2015-0030 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order R5-2015-0030 are as follows:

**Table F-2. Historic Effluent Limitations**

Parameter	Units	Historic Effluent Limitations	Highest Average Monthly Discharge	Highest Daily Discharge	Highest Average Annual Discharge
Flow	MGD	AMEL 0.95 MDEL 1.4 Average Annual 0.75	0.89	1.4	0.52
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	AMEL 100 MDEL 150	95	172	--
Biochemical Oxygen Demand (5-day @ 20°C)	lbs/day	AMEL 792 MDEL 1,168	603	1,415	--

<b>Parameter</b>	<b>Units</b>	<b>Historic Effluent Limitations</b>	<b>Highest Average Monthly Discharge</b>	<b>Highest Daily Discharge</b>	<b>Highest Average Annual Discharge</b>
Biochemical Oxygen Demand (5-day @ 20°C)	lbs	320,000	--	--	28,076
Total Suspended Solids	mg/L	AMEL 100 MDEL 200	40	53	--
Total Suspended Solids	lbs/day	AMEL 792 MDEL 1,168	279	415	--
Total Suspended Solids	lbs	600,000	--	--	44,869
Copper, Total Recoverable	µg/L	AMEL 63 MDEL 125	25.3	32.1	--
Zinc, Total Recoverable	µg/L	AMEL 67 MDEL 135	119	420	--
Ammonia Nitrogen, Total (as N)	mg/L	AMEL 15 MDEL 44	2.2	8.6	--
Ammonia Nitrogen, Total (as N)	lbs/day	AMEL 120 MDEL 510	8.8	31	--
Iron, Total Recoverable	µg/L	Average Annual 4,200	--	--	1,700
Chloride	lbs/day	MDEL 27,900 Average Annual 20,900	--	18,800	7,900
Settleable Solids	ml/L	AMEL 0.1 MDEL 0.2	<0.1	<0.2	--
Total Dissolved Solids	lbs/day	MDEL 79,800 Average Annual 59,800	--	58,692	30,800
Acute Whole Effluent Toxicity	% Survival	Any one test 70 Three consecutive tests 90	95	>95	--
pH	Standard Units	Instantaneous Max 9.5	7.0	9.4	--

Parameter	Units	Historic Effluent Limitations	Highest Average Monthly Discharge	Highest Daily Discharge	Highest Average Annual Discharge
		Instantaneous Min 6.5			
Total Residual Chlorine	mg/L	1-hour average 0.019 4-day average 0.011	ND	ND	--
Chlorpyrifos and Diazinon	µg/L	AMEL ≤1.0 MDEL ≤1.0	ND	ND	--

#### D. Compliance Summary

The Central Valley Water Board began receiving repeated complaints from a neighboring resident for offensive odors originating from the Facility in September 2016. Central Valley Water Board conducted numerous site visits, including an unannounced inspection of 4 August 2017 when the Discharger was completing maintenance on a pond liner and shut down aerators. During this maintenance period, significant odors were observed. Due to the ongoing nature of the complaint and the continued observed presence of odors by the Central Valley Water Board, the Central Valley Water Board issued a California Water Code Section 13267 Request on 30 November 2017 that required the Discharger to submit a technical report providing analysis of the ponds to “insure adequate aeration, that no oxygen deficient, or ‘dead’, zones occur in the ponds, and that the aerators [were] working effectively.” The Discharger submitted the required technical reports and completed capital improvements to the Facility to ensure adequate aeration occurs at the ponds, reducing the potential for future odor nuisances originating from the Facility.

Due to an exceedance of the chronic toxicity monitoring trigger (20 TUC) during routine Whole Effluent Toxicity monitoring in October 2018, accelerated monitoring was initiated for the *Ceriodaphnia Dubia* test species. The monitoring trigger was also exceeded during accelerated monitoring, so the Discharger was required to initiate a Toxicity Reduction Evaluation (TRE) and take actions to mitigate the impact of the discharge and prevent a recurrence of toxicity. The Discharger concluded that a new cleaning chemical used at the processing facilities was likely the source of elevated toxicity in *Ceriodaphnia Dubia* and demonstrated that the TUC was reduced below the monitoring trigger once the use of this new cleaning chemical was discontinued. The Central Valley Water Board agreed with this conclusion and allowed the Discharger to exit the TRE in March 2020.

The Central Valley Water Board issued a Notice of Violation on 6 July 2020 for effluent limitation violations for zinc that occurred between November 2017 and May 2018. The Central Valley Water Board issued Expedited Payment Letter R5-2020-0551 on 13 November 2020 that resolved these violations and assessed \$9,000 in minimum mandatory penalties.

### **E. Planned Changes**

In order to reduce the potential for future odor nuisances originating at the Facility, the Discharger added four new mixers to Pond 1, one new aerator to Pond 5, and made changes to the aerator control in Pond 1 to provide more efficient aeration. Additional capital improvements are not anticipated, but some operation and maintenance activities, including notification of neighbors and the Central Valley Water Board when pond maintenance is anticipated, will be done in the future.

The Discharger completed pilot testing for various pretreatment equipment to reduce solids loading from the waste streams of the processing facilities, and may implement new equipment during the permit term.

## **III. APPLICABLE PLANS, POLICIES, AND REGULATIONS**

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

### **A. Legal Authorities**

This Order serves as WDR's pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this Facility to surface waters.

### **B. California Environmental Quality Act (CEQA)**

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

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

1. Water Quality Control Plan. Requirements of this Order specifically implement the applicable Water Quality Control Plans.
  - a. **Basin Plan.** The Central Valley Water Board adopted a Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fifth Edition, May 2018 (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 the Sacramento River are as follows:

**Table F-3 Basin Plan Beneficial Uses**

Discharge Point	Sacramento River	Beneficial Uses
001	Sacramento River (Shasta Dam to Colusa Basin Drain)	<u>Existing:</u> Municipal and domestic water supply (MUN); agricultural supply, including irrigation and stock watering (AGR); industrial service supply (IND); industrial power supply (POW); contact (REC-1) and non-contact (REC-2) water recreation; warm freshwater habitat (WARM); cold freshwater habitat (COLD); migration of aquatic organisms (MIGR); spawning, reproduction, and/or early development, warm and cold (SPWN); wildlife habitat (WILD), and navigation (NAV).

2. National Toxics Rule (NTR) and California Toxics Rule (CTR). U.S. EPA adopted the NTR on 22 December 1992, and later amended it on 4 May 1995 and 9 November 1999. About forty criteria in the NTR applied in California. On 18 May 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on 13 February 2001. These rules contain federal water quality criteria for priority pollutants.
  
3. **State Implementation Policy.** On 2 March 2000, the State Water Board adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). The SIP became effective on 28 April 2000, with respect to the priority pollutant criteria promulgated for California by the U.S. EPA through the NTR and to the priority pollutant objectives established by the Central Valley Water Board in the Basin Plan. The SIP became effective on 18 May 2000, with respect to the priority pollutant criteria promulgated by the U.S. EPA through the CTR. The State Water Board adopted amendments to the SIP on 24 February 2005, that became effective on 13 July 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.
  
4. **Antidegradation Policy.** Federal regulation 40 C.F.R. section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California’s antidegradation policy in State Water Board Resolution 68-16 (“Statement of Policy with Respect to Maintaining High Quality of Waters in California”) (State Anti-Degradation Policy). The State Anti-Degradation Policy is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. The State Anti-Degradation Policy requires that existing water quality be maintained unless degradation is justified based

on specific findings. The Central Valley Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of 40 C.F.R. section 131.12 and the State Anti-Degradation Policy. The Board finds this order is consistent with the Federal and State Water Board antidegradation regulations and policy.

5. **Anti-Backsliding Requirements.** Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.
6. **Domestic Water Quality.** In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.
7. **Endangered Species Act Requirements.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code, sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.
8. **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 industrial facilities. Industrial facilities are applicable industries under the storm water program and are obligated to comply with the federal regulations. The Facility submitted is covered under the General Industrial Storm Water Permit with Waste Discharge Identification 5R52I020858.

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

1. Under section 303(d) of the 1972 CWA, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 6 April 2018 U.S. EPA gave final approval to California's 2014-2016 section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (WQLSs), which are defined as "...those sections of lakes, streams, rivers or other fresh water



bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 C.F.R. part 130, et seq.).” The Basin Plan also states, “Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment.” The listing for the Sacramento River from Red Bluff to Knights Landing includes DDT, dieldrin, mercury, polychlorinated biphenyls (PCBs), and unknown toxicity.

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

**Table F-4. 303 (d) List for the Sacramento River from Red Bluff to Knights Landing**

Pollutant	Potential Sources	TMDL Planned for Completion
DDT	Unknown	2027
Dieldrin	Unknown	2027
Mercury	Unknown	2027
PCBs	Unknown	2027
Toxicity	Unknown	2027

In 2007, the Central Valley Water Board adopted an amendment to the Basin Plan that addressed impairments within the Sacramento River and Feather River Basins by promulgating a water quality objective for diazinon and chlorpyrifos as well as an implementation program designed to ensure compliance with the new water quality objective. Per this implementation program, all NPDES permits for discharges (both direct and indirect) to the Sacramento or Feather Rivers must contain an effluent limit equivalent to the diazinon and chlorpyrifos water quality objective. This Order requires the Discharger to monitor the effluent for diazinon and chlorpyrifos, and includes effluent limitations for diazinon and chlorpyrifos.

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

**E. Other Plans, Polices and Regulations**

1. **Title 27.** The Facility is also regulated as a Class II Surface Impoundment facility under Title 17, California Code of Regulations (CCR). The Waste Discharge Requirements (WDR Order No. R5-2018-0069) for the Class II Surface Impoundments pertain only to operational factors associated with the Class II Surface Impoundments and groundwater protection regulations contained in Title 27, CCR, Section 20080, et seq.

#### IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

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

The CWA mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law [33 U.S.C., section 1311(b)(1)(C); 40 C.F.R. section 122.44(d)(1)]. NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to federal regulations, 40 C.F.R. section 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that “are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality.” Federal regulations, 40 C.F.R. section 122.44(d)(1)(vi), further provide that “[w]here a state has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits.”

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 C.F.R. section 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 C.F.R. section 122.44(d) requires that permits include WQBEL’s to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established. The Basin Plan at page 4-27, contains an implementation policy, “Policy for Application of Water Quality Objectives”, that specifies that the Central Valley Water Board “will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives.” This Policy complies with 40 C.F.R. section 122.44(d)(1). With respect to narrative objectives, the Central Valley Water Board must establish effluent limitations using one or more of three specified sources, including: (1) U.S. EPA’s published water quality criteria, (2) a proposed state criterion (i.e., water quality objective) or an explicit state policy interpreting its narrative water quality criteria (i.e., the Central Valley Water Board’s “Policy for Application of Water Quality Objectives”)(40 C.F.R. section 122.44(d)(1)(vi)(A), (B) or (C)), or (3) an indicator parameter.

The Basin Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, discoloration, radionuclides, and tastes and odors. The narrative toxicity objective states: “All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.” (Basin Plan at section 3.1.20) The Basin Plan states that

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

#### **A. Discharge Prohibitions**

- 1. Prohibition III.A (No discharge or application of waste other than that described in this Order).** This prohibition is based on Water Code section 13260 that requires filing of a ROWD before discharges can occur. The Discharger submitted a ROWD for the discharges described in this Order; therefore, discharges not described in this Order are prohibited.
- 2. Prohibition III.B (No bypasses or overflow of untreated wastewater, except under the conditions at CFR section 122.41(m)(4)).** As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal regulations, 40 C.F.R. section 122.41(m), define "bypass" as the intentional diversion of waste streams from any portion of a treatment facility. This section of the federal regulations, 40 C.F.R. section 122.41(m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Regional Water Board's prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites the federal regulations, 40 C.F.R. section 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.
- 3. Prohibition III.C (No controllable condition shall create a nuisance).** This prohibition is based on Water Code section 13050 that requires water quality objectives established for the prevention of nuisance within a specific area. The Basin Plan prohibits conditions that create a nuisance
- 4. Prohibition III.D (No discharge of hazardous waste).** This prohibition is based on California Code of Regulations, title 22, section 66261.1 et seq, that prohibits discharge of hazardous waste.
- 5. Prohibition III.E (Average Discharge Flow).** This prohibition is based on the design annual average flow treatment capacity rating and previous Order effluent limitations for the Facility and ensures the Facility is operated within its treatment capacity. Previous Order R5-2015-0030 included flow as an effluent

limit based on the Facility design flow. Flow is not a pollutant and therefore has been changed from an effluent limit to a discharge prohibition in this Order, which is an equivalent level of regulation. This Order is not less stringent because compliance with flow as a discharge prohibition will be calculated the same way as the previous Order.

6. **Prohibition III.F (Olive Processing Wastewater Flow).** No discharge of brine-curing and olive processing wastewater to the Facility in excess of 255 million gallons per year). This prohibition is retained from Order R5-2015-0030 and is included to ensure that adequate capacity is available within the Facility. In addition, the final Environmental Impact Report (EIR) dated August 1993 states that the basis for the 1993 expansion was a proposed annual flow of 255 million gallons per year. Any proposed increase in the flow of olive processing wastewater to the industrial treatment ponds would require modification of the EIR. The Discharger collects storm water from the processing facilities, which is also discharged to the Facility. The volume of storm water and infiltration discharged to the treatment ponds is not included in the 255 million gallons per year flow limit.
7. **Prohibition III.H (Discharge Flow During Daylight Hours).** No discharge of effluent at flow rates greater than 0.072 MGD (equivalent to 50 gpm) during daylight hours. This prohibition is based on visual observation by the Discharger using aerial photography that shows a marginal discoloration in the receiving water at a discharge flow of 100 gpm and a receiving water flow of 7,365 cubic feet per second, near the lower end of annual receiving water flow. Additionally, based on aerial photography by the Discharger, an effluent discharge flow rate lower than 50 gpm during daylight hours is not expected to produce discoloration. Therefore, this prohibition ensures there is no discoloration nuisance in the receiving water during daylight hours. The discharge prohibition starts on 1 July 2022 to allow the Discharger to collect additional data, including visual observation, to determine receiving water conditions that minimize and/or eliminate the discoloration nuisance in the Sacramento River during daylight hours. If the Discharger decides to complete the Effluent and Receiving Water Discoloration Conditions Study to recommend effluent and receiving water conditions that minimize and/or eliminate the discoloration nuisance in the Sacramento River during daylight hours as described in Special Provision VI.C.2.b., this Prohibition may be modified.

## **B. Technology-Based Effluent Limitations**

### **1. Scope and Authority**

Section 301(b) of the CWA and implementing U.S. EPA permit regulations at 40 C.F.R. section 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Effluent Limitations Guidelines and

Standards for the Canned and Preserved Fruits Subcategory of the Canned and Preserved Fruits and Vegetables Processing Point Source Category in 40 C.F.R. part 407, subpart F or Best Professional Judgment (BPJ) in accordance with 40 C.F.R. section 125.3.

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

- a. Best practicable treatment control technology (BPT) represents the average of the best existing performance by well-operated facilities within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.
- b. Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.
- c. Best conventional pollutant control technology (BCT) represents the control from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering a two-part reasonableness test. The first test compares the relationship between the costs of attaining a reduction in effluent discharge and the resulting benefits. The second test examines the cost and level of reduction of pollutants from the discharge from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources. Effluent limitations must be reasonable under both tests.
- d. New source performance standards (NSPS) represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

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

## 2. Applicable Technology-Based Effluent Limitations

- a. **BOD<sub>5</sub> and TSS.** U.S. EPA's final ELGs for the Canned and Preserved Fruits Subcategory of the Canned and Preserved Fruits and Vegetables Processing Point Source Category in 40 C.F.R. part 407, subpart F

established ELGs applicable to discharges resulting from the processing of olives. The ELGs at 40 C.F.R. section 407.62 include the following effluent limitations representing the degree of effluent reduction attainable for the application of BPT and BCT for BOD<sub>5</sub> and TSS.

**Table F-5. Effluent Limitations Guidelines for BOD<sub>5</sub> and TSS**

Parameter	Units	Daily Maximum	30-Day Average	Annual Average
BOD <sub>5</sub>	lbs/1,000 lbs of raw material	5.44	3.34	2.39
TSS	lbs/1,000 lbs of raw material	9.79	6.92	4.44

Consistent with 40 C.F.R. sections 122.45 and 407.61, this Order includes annual average, average monthly, and maximum daily effluent limitations for BOD<sub>5</sub> and TSS based on a reasonable measure of the actual production for the Facility and the applicable limitation from the ELG. 40 C.F.R. section 407.61(x) defines annual average as “the maximum allowable discharge of BOD<sub>5</sub> or TSS as calculated by multiplying the total mass (kkg or 1000 lb) of each raw commodity processed for the entire processing season or calendar year by the applicable annual average limitation.” 40 C.F.R. section 407.61(y) specifies that the daily average mass of material processed during the peak thirty consecutive day production period should be used for average monthly and maximum daily effluent limitations. Therefore, average annual effluent limits are calculated using the maximum “rolling” annual raw fruit production and the average monthly and maximum daily effluent limitations are calculated using the maximum monthly raw fruit production during the last 3 years.

- b. **pH.** The ELGs at 40 C.F.R. section 407.62(c) requires that the pH be maintained within the range of 6.0 to 9.5 at all times. Effluent limitations for pH in this Order are based on the requirements found in 40 C.F.R. section 407.62(c).

**Summary of Technology-based Effluent Limitations  
 Discharge Point D-001**

**Table F-6. Summary of Technology-based Effluent Limitations**

Parameter	Units	Effluent Limitations
BOD <sub>5</sub>	lbs/day	MDEL 3,240 AMEL 1,990
BOD <sub>5</sub>	lbs/year	231,000

Parameter	Units	Effluent Limitations
TSS	lbs/day	MDEL 5,820 AMEL 4,120
TSS	lbs/year	429,000
pH	Standard Units	Instantaneous Max 9.5 Instantaneous Min 6.0

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

**1. Scope and Authority**

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

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

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

Finally, 40 C.F.R. section 122(d)(1)(vii) requires effluent limits to be developed consistent with any available waste load allocations developed and approved for the discharge.

**2. Applicable Beneficial Uses and Water Quality Criteria and Objectives**

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

established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply.

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

The federal CWA section 101(a)(2), states: "it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983." Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal Regulations, 40 CFR sections 131.2 and 131.10, require that all waters of the State regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shellfish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. 40 C.F.R. section 131.3(e) defines existing beneficial uses as those uses actually attained after 28 November 1975, whether or not they are included in the water quality standards. Federal Regulation, 40 C.F.R. section 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

- a. **Receiving Water and Beneficial Uses.** Refer to III.C.1. above for a complete description of the receiving water and beneficial uses.
- b. **Effluent and Ambient Background Data.** The reasonable potential analysis (RPA), as described in section IV.C.3 of this Fact Sheet, was based on data from April 2017 through March 2020, which includes effluent and ambient background data submitted in SMRs and the Report of Waste Discharge (ROWD). Additional data outside of this range was also analyzed, including electrical conductivity over the last 10 calendar years to account for drought conditions in California and effluent data for Benzo(a)pyrene, Bis (2-ethylhexyl) phthalate, and Pentachlorophenol, which were required to be sampled once per quarter in the effluent for the first two years of WDRs Order No. 2015-0030.
- c. **Assimilative Capacity/Mixing Zone.**
  - i. **Regulatory Guidance for Dilution Credits and Mixing Zones.** The CWA directs the states to adopt water quality standards to protect the quality of its waters. U.S. EPA's current water quality standards



regulation authorizes states to adopt general policies, such as mixing zones, to implement state water quality standards (40 CFR parts 122.44 and 122.45). The U.S. EPA allows states to have broad flexibility in designing its mixing zone policies. Primary policy and guidance on determining mixing zone and dilution credits is provided by the SIP and the Basin Plan. If no procedure applies in the SIP or the Basin Plan, then the Central Valley Water Board may use the U.S. EPA Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2-90-001) (TSD).

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

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

For incompletely mixed discharges, the Discharger must complete an independent mixing zone study to demonstrate to the Central Valley

Water Board that a dilution credit is appropriate. In granting a mixing zone, section 1.4.2.2 of the SIP requires the following to be met:

**“A mixing zone shall be as small as practicable.** The following conditions must be met in allowing a mixing zone:

A mixing zone shall not:

1. compromise the integrity of the entire water body;
2. cause acutely toxic conditions to aquatic life passing thorough the mixing zone;
3. restrict the passage of aquatic life;
4. adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws;
5. produce undesirable or nuisance aquatic life;
6. result in floating debris, oil, or scum;
7. produce objectionable color, odor, taste, or turbidity;
8. cause objectionable bottom deposits;
9. cause nuisance;
10. dominate the receiving water body or overlap a mixing zone from different outfalls; or
11. be allowed at or near any drinking water intake. A mixing zone is not a source of drinking water. To the extent of any conflict between this determination and the Sources of Drinking Water Policy (Resolution No. 88-63), this SIP supersedes the provisions of that policy.”

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

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

- ii. **Diffuser Configuration.** The Facility discharges to the Sacramento River via a multiport diffuser. The City owns the diffuser from which both the Discharger and the City discharge. The outfall capacity is inversely related to the river stage, or water surface elevation, within

the Sacramento River. During dry weather conditions when the river level is low, the outfall capacity is at its maximum of 3.8 MGD. However, during high river flows, the outfall capacity is at its minimum of 2.0 MGD. The City can restrict the amount of flow that the Facility is allowed to discharge. The diffuser is 30 feet in length and consists of four 8-inch diffuser ports with approximately 10 feet between each port. The ports extend upward from the outfall pipe, which is buried below the river bottom and is perpendicular to the river bank, and are approximately 2.5 to 3.5 feet above the channel bed. The river channel at the diffuser has a width of approximately 500 feet.

iii. **Dilution/Mixing Zone Study Results.**

Previous Studies

The Discharger completed a 2010 Mixing Zone Study with addenda in 2013 and 2014 to update the critical flows in the Sacramento River to account for drought conditions. The Discharger also submitted a 2014 pH Mixing Zone Study demonstrating that the Basin Plan objective maximum for pH of 8.5 is met at the edge of a mixing zone boundary when considering a maximum pH of 9.5 (set at the TBEL) and based on a dilution credit of 40:1. These studies served as the basis for the mixing zone and dilution credits in Order No. R5-2015-0030. However, Order No. R5-2015-0030 required a mixing zone/dilution confirmation field study to verify the model results of the previous studies and addenda.

2019 Mixing Zone/Dilution Confirmation Study

The Discharger completed a field confirmation dye study in October 2019. Dye measurements were collected at transects of 32, 59, 137, and 240 feet downstream of the diffuser. At approximately 800 feet downstream of the diffuser, an island bifurcates the Sacramento River. With the relatively low river flow during the time of the study, a 1,000 foot downstream transect was not measured on the west side of the island, but it was confirmed that no effluent was flowing on the east side of the island.

Results of the measured dye study were used to select an appropriate model to establish mixing zone distances and dilution credits in accordance with the SIP. Results of the model are included in the ROWD and show the mixing zone sizes for selected dilution ratios:

**Table F-7. Mixing Zone length (in feet) for different criteria based on dilution ratios**

Dilution Ratio	Acute Criteria	Chronic Criteria	Human Health Criteria
10:1	19	15	4
20:1	39	29	8
40:1	104	68	17
60:1	252	139	25
80:1	--	275	35
100:1	--	--	46
120:1	--	--	61
140:1	--	--	79
160:1	--	--	100

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

The Discharger has requested acute and chronic aquatic life mixing zones for compliance with acute and chronic water quality criteria. Based on the mixing zone studies, the acute and chronic aquatic life mixing zones extend up to 275 feet downstream.

The acute and chronic aquatic life mixing zones extending up to 275 feet downstream of the outfall meet the requirements of the SIP as follows:

- (a) Shall not compromise the integrity of the entire water body – The TSD states that, “If the total area affected by elevated concentrations within all mixing zones combined is small compared to the total area of a water body (such as a river segment), then mixing zones are likely to have little effect on the integrity of the water body as a whole, provided that the mixing zone does not impinge on unique or critical habitats.” The width of the Sacramento River at the outfall is approximately 500 feet. During the field dye study conducted in 2019, the dye was not

measured more than 90 feet from the west bank of the Sacramento River. Additionally, the Sacramento River is a large river spanning over 100 miles in length downstream of the outfall. The mixing zones are small relative to the large size of the receiving water; therefore, the aquatic life mixing zones do not compromise the integrity of the entire water body.

- (b) Shall not cause acutely toxic conditions to aquatic life passing through the mixing zone – The SIP requires that the acute mixing zone be appropriately sized to prevent lethality to organisms passing through the mixing zone. This Order includes acute toxicity effluent limitations that require compliance to be determined based on acute bioassays using 100 percent effluent. Compliance with these requirements ensures that acutely toxic conditions to aquatic life passing through the acute and chronic mixing zones do not occur.
- (c) Shall not restrict the passage of aquatic life – The acute and chronic mixing zones are small relative to the large size of the receiving water; therefore, there is an adequate zone of passage for aquatic life in the Sacramento River.
- (d) Shall not adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or state endangered species laws – The acute and chronic mixing zones will not cause acutely toxic conditions, will allow adequate zones of passage, and are sized appropriately to ensure that there will be no adverse impacts to biologically sensitive or critical habitats.
- (e) Shall not produce undesirable or nuisance aquatic life; result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable bottom deposits; cause nuisance – The allowance of acute and chronic aquatic life mixing zones will not produce undesirable or nuisance aquatic life, result in floating debris, oil, or scum; produce objectionable color during daylight hours, odor, taste, or turbidity; cause objectionable bottom deposits, or cause nuisance.
- (f) Shall not dominate the receiving water body or overlap a mixing zone from different outfalls – The acute and chronic aquatic life mixing zones are small relative to the water body, so they will not dominate the water body. The Discharger shares an outfall with the City of Corning WWTP, and the 2019 Mixing Zone/Dilution Confirmation Study accounted for both discharges. There are no other outfalls or mixing zones in the vicinity of the discharge.

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

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

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

Based on the 2019 Mixing Zone/Dilution Confirmation Study and the ROWD, the human health mixing zone extends up to 100 feet downstream at a dilution ratio of 160:1. The human health mixing zone meets the requirements of the SIP as follows:

- (a) Shall not compromise the integrity of the entire water body – The TSD states that, "If the total area affected by elevated concentrations within all mixing zones combined is small compared to the total area of a water body (such as a river segment), then mixing zones are likely to have little effect on the integrity of the water body as a whole, provided that the mixing zone does not impinge on unique or critical habitats." the mixing zone does not impinge on unique or critical habitats." The width of the Sacramento River at the outfall is approximately 500 feet. During the field dye study conducted in 2019, the dye was not measured more than 90 feet from the west bank of the Sacramento River at low flows. Additionally, the Sacramento River is a large river spanning over 100 miles in length downstream of the outfall. The mixing zones are small relative to the large size of the receiving water; therefore, the human health mixing zones do not compromise the integrity of the entire water body.

- (b) Shall not cause acutely toxic conditions to aquatic life passing through the mixing zone – The human health mixing zone is not applicable to aquatic life criteria. Therefore, acutely toxic conditions will not occur in the mixing zone.
- (c) Shall not restrict the passage of aquatic life – The human health mixing zone is not applicable to aquatic life criteria. Therefore, acutely toxic conditions will not occur in the mixing zone.
- (d) Shall not adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or state endangered species laws – The human health mixing zone is not applicable to aquatic life criteria. Therefore, acutely toxic conditions will not occur in the mixing zone.
- (e) Shall not produce undesirable or nuisance aquatic life; result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable bottom deposits; cause nuisance – The allowance of human health mixing zones will not produce undesirable or nuisance aquatic life, result in floating debris, oil, or scum; produce objectionable color during daylight hours, odor, taste, or turbidity; cause objectionable bottom deposits, or cause nuisance.
- (f) Shall not dominate the receiving water body or overlap a mixing zone from different outfalls – The human health mixing zones are small relative to the water body, so they will not dominate the water body. The Discharger shares an outfall with the City of Corning WWTP, and the 2019 Mixing Zone/Dilution Confirmation Study accounted for both discharges. There are no other outfalls or mixing zones in the vicinity of the discharge.
- (g) Shall not be allowed at or near any drinking water intake – The human health mixing zones are not near a drinking water intake.

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

Dilution credits allowed for in this Order are in accordance with section 1.4.2.2 of the SIP. The allowance of a mixing zone and dilution credits are a discretionary act by the Central Valley Water Board. When determining the appropriate dilution credits for a specific pollutant, several factors must be considered, such as assimilative capacity, Facility performance, and best practicable treatment or control (BPTC).

The Central Valley Water Board has determined that the maximum dilution credit on a constituent-by-constituent basis needed for this discharge are shown in the following table (also discussed further in section IV.C.3.c).

In the table below the dilution credits are calculated using the steady-state mass balance equation rearranged to solve for the dilution credit, as follows:

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

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

Pollutant	Units	ECA	Criterion	Background	Dilution Credit
Ammonia Nitrogen, Total (as N)	mg/L	38.2 acute 13.0 chronic	0.59 acute 5.41 acute 0.22 chronic 2.6 chronic	0.04	7 acute 5 chronic
Copper, Total Recoverable	µg/L	37.5 acute 20.7 chronic	5.6 acute 4.1 chronic	3.9	18 acute 80 chronic
Methylene Chloride	µg/L	90.7	4.7	0.4	20
Zinc, Total Recoverable	µg/L	209 acute 144 chronic	16 acute 54 chronic	9.0	27.5 acute 2 chronic

**Table F-8 Notes:**

- Ammonia Nitrogen, Total (as N).** Criteria calculated from effluent pH and temperature, listed first, and upstream receiving water pH and temperature, listed second, for both acute and chronic criteria
- Copper, Total Recoverable.** Maximum dissolved background concentration converted to total recoverable concentration using default translators to evaluate assimilative capacity

The Central Valley Water Board considered Facility performance and the receiving water’s assimilative capacity for each individual pollutant in determining the dilution needed. The consideration of these factors is necessary to avoid allocating an unnecessarily large portion of the receiving water’s assimilative capacity for each pollutant and possibly violating the Antidegradation Policy.

- Ammonia.** The receiving water contains assimilative capacity for ammonia and acute and chronic aquatic life criteria mixing zones meet the mixing zone requirements of the SIP.

The mixing zones and dilution credits for ammonia permitted in this Order will result in a minor increase in the discharge (i.e., using up less than 10 percent of the remaining available assimilative capacity for these constituents in the receiving water). According to U.S. EPA’s memorandum on Tier 2 Antidegradation Reviews and Significance Thresholds, any individual decision to lower water quality for nonbioaccumulative chemicals that is limited to 10 percent of the available assimilative capacity represents minimal risk to the receiving



water and is fully consistent with the objectives and goals of the Clean Water Act. The mixing zones are as small as practicable for this Facility and the increased loading complies with the state and federal antidegradation requirements.

- (b) **Copper.** The receiving water contains assimilative capacity for copper and acute and chronic aquatic life criteria mixing zones meet the mixing zone requirements of the SIP.

The mixing zones and dilution credits for copper permitted in this Order will result in a minor increase in the discharge (i.e., using up less than 10 percent of the remaining available assimilative capacity for these constituents in the receiving water). According to U.S. EPA's memorandum on Tier 2 Antidegradation Reviews and Significance Thresholds, any individual decision to lower water quality for nonbioaccumulative chemicals that is limited to 10 percent of the available assimilative capacity represents minimal risk to the receiving water and is fully consistent with the objectives and goals of the Clean Water Act. The mixing zones are as small as practicable for this Facility and the increased loading complies with the state and federal antidegradation requirements.

- (c) **Methylene Chloride.** The receiving water contains assimilative capacity for methylene chloride and the human health criteria mixing zone meets the mixing zone requirements of the SIP.

The mixing zones and dilution credits for methylene chloride permitted in this Order will result in a minor increase in the discharge (i.e., using up less than 10 percent of the remaining available assimilative capacity for these constituents in the receiving water). According to U.S. EPA's memorandum on Tier 2 Antidegradation Reviews and Significance Thresholds, any individual decision to lower water quality for nonbioaccumulative chemicals that is limited to 10 percent of the available assimilative capacity represents minimal risk to the receiving water and is fully consistent with the objectives and goals of the Clean Water Act. The mixing zones are as small as practicable for this Facility and the increased loading complies with the state and federal antidegradation requirements.

- (d) **Zinc.** The receiving water contains assimilative capacity for zinc and acute and chronic aquatic life criteria mixing zones meet the mixing zone requirements of the SIP.

The mixing zones and dilution credits for zinc permitted in this Order will result in a minor increase in the discharge (i.e., using up less than 10 percent of the remaining available assimilative capacity for these constituents in the receiving water). According to U.S. EPA's memorandum on Tier 2

Antidegradation Reviews and Significance Thresholds, any individual decision to lower water quality for nonbioaccumulative chemicals that is limited to 10 percent of the available assimilative capacity represents minimal risk to the receiving water and is fully consistent with the objectives and goals of the Clean Water Act. The mixing zones are as small as practicable for this Facility and the increased loading complies with the state and federal antidegradation requirements.

vii. **Regulatory Compliance for Dilution Credits and Mixing Zones.** To fully comply with all applicable laws, regulations and policies of the state, the Central Valley Water Board-approved mixing zones and the associated dilution credits are based on the following:

- (a) Mixing zones are allowed under the SIP provided all elements contained in section 1.4.2.2 are met. Based on the mixing zone studies conducted by the Discharger, the Central Valley Water Board has determined that these factors are met.
- (b) Section 1.4.2.2. of the SIP requires mixing zones to be as small as practicable. Based on the mixing zone studies conducted by the Discharger, the Central Valley Water Board has determined the mixing zones are as small as practicable.
- (c) In accordance with section 1.4.2.2 of the SIP, the Central Valley Water Board has determined the mixing zones are as small as practicable and will not compromise the integrity of the entire water body, restrict the passage of aquatic life, dominate the water body, or overlap existing mixing zones from different outfalls. The mixing zones are small relative to the large size of the receiving water and do not overlap a mixing zone from a different outfall. Additionally, there are no known downstream drinking water intakes.
- (d) The Central Valley Water Board is allowing mixing zones for acute aquatic life, chronic aquatic life, and human health constituents, and has determined allowing such mixing zones will not cause acutely toxic conditions to aquatic life passing through the mixing zone.
- (e) The Central Valley Water Board has determined that the allowance of mixing zones will not adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under the federal or state endangered species laws, because the mixing zones are relatively small and acutely toxic conditions will not occur in the mixing zones.
- (f) As required by the SIP, in determining the extent of or whether to allow mixing zones and dilution credits, the Central Valley Water Board has considered the presence of pollutants in the

discharge that are carcinogenic, mutagenic, teratogenic, persistent, bioaccumulative, or attractive to aquatic organisms, and concluded that the allowance of the mixing zones and dilution credits are adequately protective of the beneficial uses of the receiving water.

- (g) The Central Valley Water Board has determined the mixing zones comply with the SIP for priority pollutants.
- (h) Section 1.4.2.2.B of the SIP, in part states, “The RWQCB shall deny or significantly limit a mixing zone and dilution credits as necessary to protect beneficial uses, meet the conditions of this Policy, or comply with other regulatory requirements.” The Central Valley Water Board has determined full allowance of dilution is not needed or necessary for the Discharger to achieve compliance with effluent limitations for all constituents in this Order.
- (i) The Central Valley Water Board has determined the mixing zones comply with the Basin Plan for non-priority pollutants. The Basin Plan requires a mixing zone not adversely impact beneficial uses. Beneficial uses will not be adversely affected for the same reasons discussed above. In determining the size of the mixing zones, the Central Valley Water Board has considered the procedures and guidelines in section 5.1 of U.S. EPA’s Water Quality Standards Handbook, 2nd Edition (updated July 2007) and section 2.2.2 of the TSD. The SIP incorporates the same guidelines.
- (j) The Central Valley Water Board has determined that allowing dilution factors that exceed those proposed by this Order would not comply with the State Antidegradation Policy for receiving waters outside the allowable mixing zone. The State Antidegradation Policy incorporates the federal Antidegradation Policy and requires that existing quality of waters be maintained unless degradation is justified based on specific findings. Item 2 of the State Antidegradation Policy states:

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

The effluent limitations established in the Order for ammonia, copper, pH, methylene chloride, and zinc have been adjusted

for dilution credits based on Facility performance. The Central Valley Water Board determined the effluent limitations required by this Order will result in the Discharger implementing BPTC of the discharge necessary to assure that pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the state will be maintained. The Central Valley Water Board also determined the Discharger will be in immediate compliance with the effluent limitations.

Therefore, the Central Valley Water Board has determined the effluent limitations established in the Order for ammonia, copper, pH, methylene chloride, and zinc, which have been adjusted for dilution credits, are appropriate and necessary to comply with the Basin Plan, SIP, federal antidegradation regulations and the State Antidegradation Policy.

- d. **Conversion Factors.** The CTR contains aquatic life criteria for arsenic, cadmium, chromium III, chromium VI, copper, lead, nickel, silver, and zinc which are presented in dissolved concentrations. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. The default U.S. EPA conversion factors contained in Appendix 3 of the SIP were used to convert the applicable dissolved criteria to total recoverable criteria.
- e. **Hardness-Dependent CTR Metals Criteria.** The CTR and the NTR contain water quality criteria for seven metals that vary as a function of hardness. The lower the hardness the lower the water quality criteria. The metals with hardness-dependent criteria include cadmium, copper, chromium III, lead, nickel, silver, and zinc.

This Order has established the criteria for hardness-dependent metals based on the hardness of the receiving water (actual ambient hardness) as required by the SIP<sup>1</sup> and the CTR<sup>2</sup>. The SIP and the CTR require the use of “receiving water” or “actual ambient” hardness, respectively, to determine effluent limitations for these metals. The CTR requires that the hardness values used shall be consistent with the design discharge conditions for design flows and mixing zones (40 C.F.R. section 131.3(c)(4)(ii)). Where design flows for aquatic life criteria include the lowest one-day flow with an average reoccurrence frequency of once in ten years (1Q10) and the lowest average seven consecutive day flow with

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<sup>1</sup> The SIP does not address how to determine the hardness for application to the equations for the protection of aquatic life when using hardness-dependent metals criteria. It simply states, in section 1.2, that the criteria shall be properly adjusted for hardness using the hardness of the receiving water.

<sup>2</sup> The CTR requires that, for waters with a hardness of 400 mg/L (as CaCO<sub>3</sub>), or less, the actual ambient hardness of the surface water must be used (40 C.F.R. section 131.38(c)(4)).

an average reoccurrence frequency of once in ten years (7Q10).<sup>3</sup> This section of the CTR also indicates that the design conditions should be established such that the appropriate criteria are not exceeded more than once in a three year period on average.<sup>4</sup> The CTR requires that when mixing zones are allowed the CTR criteria apply at the edge of the mixing zone, otherwise the criteria apply throughout the water body including at the point of discharge.<sup>5</sup> The CTR does not define the term “ambient,” as applied in the regulations. Therefore, the Central Valley Water Board has considerable discretion to consider upstream and downstream ambient conditions when establishing the appropriate water quality criteria that fully complies with the CTR and SIP.

### Summary findings

The ambient hardness for the Sacramento River is represented by the data in Figure F-1, below, which shows ambient hardness ranging from 38 mg/L to 57 mg/L based on collected ambient data from May 2017 through March 2020. Given the 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 57 mg/L (maximum). Staff recommends that the Board use the ambient hardness values shown in Table F-9 for the following reasons.

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

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<sup>3</sup> 40 C.F.R. section 131.38(c)(2)(iii) Table 4

<sup>4</sup> 40 C.F.R. section 131.38(c)(2)(iii) Table 4, notes 1 and 2

<sup>5</sup> 40 C.F.R. section 131.38(c)(2)(i)

proposed effluent limitations are protective of beneficial uses under all flow conditions.

- iii. Using an ambient hardness that is higher than the minimum of 38 mg/L will result in limits that may allow increased metals to be discharged to the river, but such discharge is allowed under the State Antidegradation Policy (State Water Board Resolution 68-16). The Central Valley Water Board finds that this degradation is consistent with the antidegradation policy (see antidegradation findings in section IV.D.4 of the Fact Sheet). The Antidegradation policy requires the Discharger to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that: a) a pollution or nuisance will not occur, and b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.
- iv. Using the ambient hardness values shown in Table F-9 is consistent with the CTR and SIP's requirements for developing metals criteria.

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

CTR Metals	Ambient Hardness (mg/L)	CTR Criteria (µg/L, total recoverable) (Acute)	CTR Criteria (µg/L, total recoverable) (Chronic)	Basin Plan Objective (µg/L, total recoverable)
Copper	38	N/A	4.1	5.6
Chromium III	57	1100	130	--
Cadmium	57 (acute) 57 (chronic)	N/A	1.6	0.35
Lead	57	40	1.6	--
Nickel	57	290	32	--
Silver	57	1.5	--	--
Zinc	39	N/A	54	16

**Table F-9 Notes:**

1. **CTR Criteria (ug/L total recoverable).** Acute and chronic numbers were rounded to two significant figures in accordance with the CTR (40 C.F.R. section 131.38(b)(2)).
2. **Ambient hardness (mg/L).** Values in Table F-9 represent actual observed receiving water hardness measurements from the dataset shown in Figure F-1.
3. **The CTR's hardness dependent metals criteria** equations vary differently depending on the metal, which results in differences in the range of ambient hardness values that may be used to develop effluent limitations that are protective of beneficial uses and comply with CTR criteria for all ambient flow conditions.

4. Acute criteria for **copper, cadmium, and zinc** do not apply due to site specific criteria adopted in the Basin Plan.

### **Background**

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

For this discussion, all hardness values are expressed in mg/L as CaCO<sub>3</sub>. The equation describing the total recoverable regulatory criterion, as established in the CTR, is as follows:

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

Where:

H = ambient hardness (as CaCO<sub>3</sub>)

WER = water-effect ratio

m, b = metal- and criterion-specific constants

The direction in the CTR regarding hardness selection is that it must be based on ambient hardness and consistent with design discharge conditions for design flows and mixing zones. Consistent with design discharge conditions and design flows means that the selected “design” hardness must result in effluent limitations under design discharge conditions that do not result in more than one exceedance of the applicable criteria in a three year period.<sup>6</sup> Where design flows for aquatic life criteria include the lowest one-day flow with an average reoccurrence frequency of once in ten years (1Q10) and the lowest average seven consecutive day flow with an average reoccurrence frequency of once in

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<sup>6</sup> 40 C.F.R. section 131.38(c)(2)(iii) Table 4, notes 1 and 2

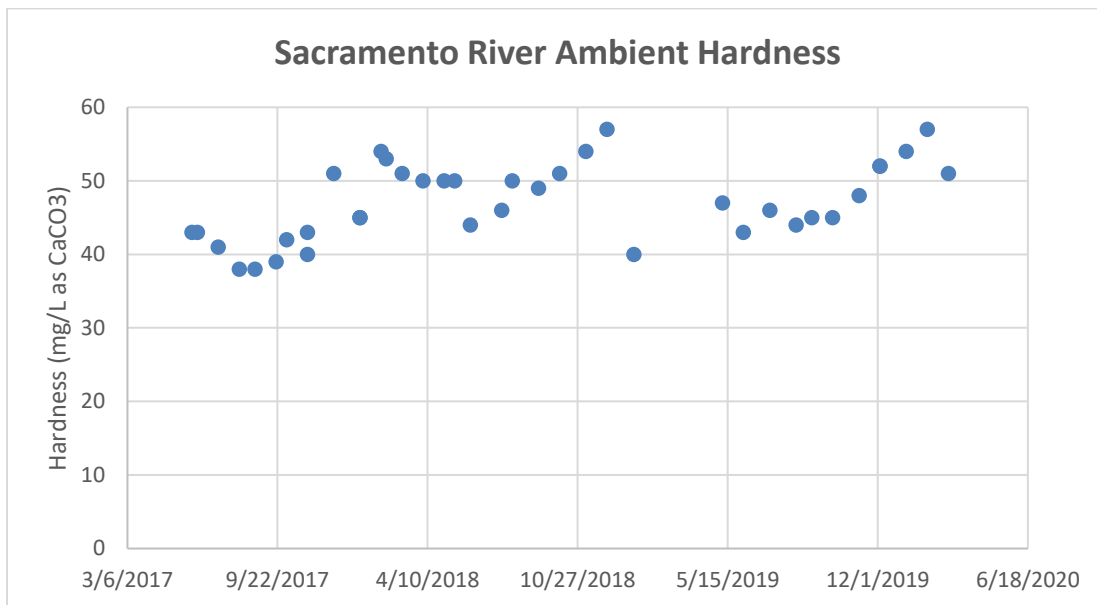
ten years (7Q10). The 1Q10 and 7Q10 Sacramento River flows are 3,800 cfs and 3,930 cfs, respectively.

**Ambient conditions**

The ambient receiving water hardness varied from 38 mg/L to 57 mg/L, based on 38 samples from May 2017 through March 2020 (see Figure F-1).



**Figure F-1. Observed Ambient Hardness Concentrations 38 mg/L - 57 mg/L**



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

**Approach to derivation of criteria Where No Dilution Allowed**

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

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

Reasonable worst-case ambient conditions:

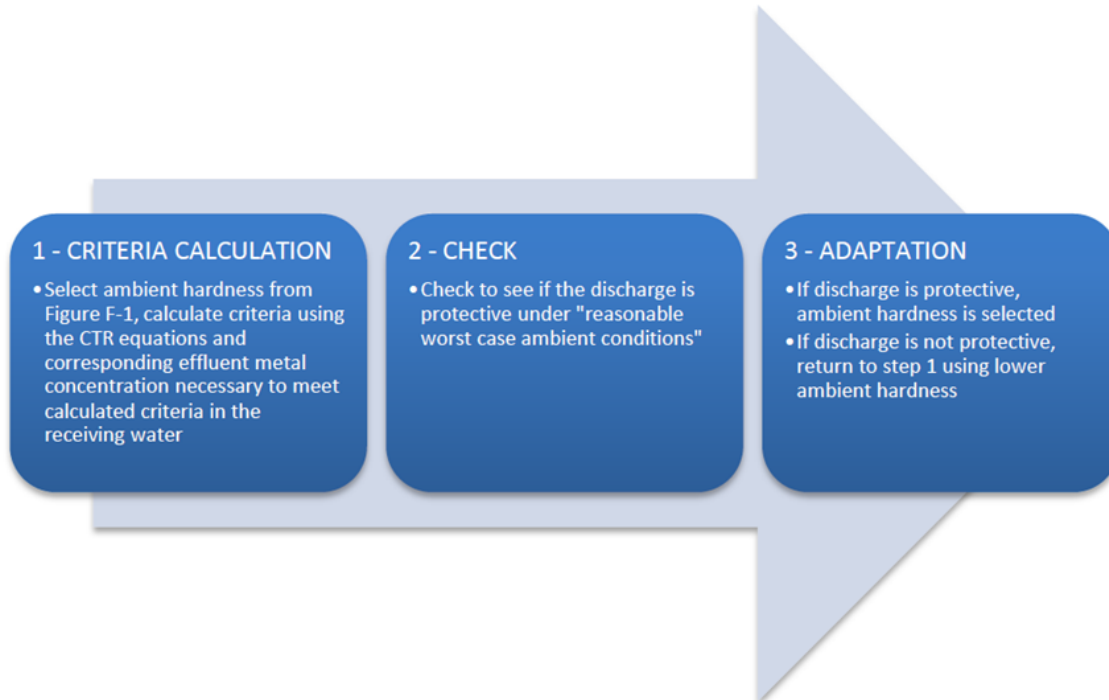
- “Low receiving water flow.” CTR design discharge conditions (1Q10 and 7Q10) have been selected to represent reasonable worst-case receiving water flow conditions.
- “High receiving water flow (maximum receiving water flow).” This additional flow condition has been selected consistent with the Davis Order, which required that the hardness selected be protective of water quality criteria under all flow conditions.
- “Low receiving water hardness.” The minimum receiving water hardness condition of 38 mg/L was selected to represent the reasonable worst-case receiving water hardness.
- “Background ambient metal concentration at criteria.” This condition assumes that the metal concentration in the background receiving water is equal to CTR criteria (upstream of the facility’s discharge). Based on data in the record, this is a design condition that does not regularly occur in the receiving water and is used in this analysis to ensure that limits are protective of beneficial uses even in the situation where there is no assimilative capacity.

Iterative approach.

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

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

**Figure F-2. Criteria Calculation CTR**



1. **CRITERIA CALCULATION.** CTR criteria are calculated using the CTR equations based on actual measured ambient hardness sample results, starting with the maximum observed ambient hardness of 57 mg/L. Effluent metal concentrations necessary to meet the above calculated CTR criteria in the receiving water are calculated in accordance with the SIP.<sup>7</sup> This should not be confused with an effluent limit. Rather, it is the Effluent Concentration Allowance (ECA), which is synonymous with the wasteload allocation defined by U.S. EPA as “a definition of effluent water quality that is necessary to meet the water quality standards in the receiving water.”<sup>8</sup> If effluent limits are found to be needed, the limits are calculated to enforce the ECA considering effluent variability and the probability basis of the limit.
2. **CHECK.** U.S. EPA’s simple mass balance equation<sup>9</sup> is used to evaluate if discharge at the computed ECA is protective. Resultant downstream metal concentrations are compared with downstream calculated CTR criteria under reasonable worst-case ambient conditions.

<sup>7</sup> SIP section 1.4.B, Step 2, provides direction for calculating the Effluent Concentration Allowance.

<sup>8</sup> U.S. EPA Technical Support Document for Water Quality-based Toxics Control (TSD), pg. 96.

<sup>9</sup> U.S. EPA NPDES Permit Writers’ Handbook (EPA 833-K-10-001 September 2010, pg. 6-24)

3. ADAPT. If step 2 results in:
  - (A) receiving water metal concentration that complies with CTR criteria under reasonable worst-case ambient conditions, then the hardness value is selected.
  - (B) receiving water metal concentration greater than CTR criteria, then return to bullet 1, selecting a lower ambient hardness value.

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

#### **Results of Iterative Analysis Where No Dilution Allowed**

The above iterative analysis for each CTR hardness-dependent metal results in the selected ambient hardness values are shown in Table F-9, above. Using these actual receiving water sample hardness values to calculate criteria will result in effluent limitations that are protective under all ambient flow conditions. Ambient hardness values are used in the CTR equations to derive criteria and effluent limitations. As an example of the three-step iterative process, Table F-10 below summarizes the numeric results for nickel based on an ambient hardness of 57 mg/L and a calculated ECA of 32.4 µg/L. Table F-11 below summarizes the numeric results for silver based on an ambient hardness of 57 mg/L and a calculated ECA of 1.5 µg/L. The analysis evaluated all flow conditions, and the numeric values for the critical flow conditions are summarized in Tables F-10 and F-11, below. Ambient concentrations for nickel and silver are calculated using the worst-case downstream ambient conditions, which allows for a conservative assumption that will ensure the receiving water complies with CTR criteria. Under the "check" step, worst-case ambient receiving water conditions are used to test whether the effluent discharge results in compliance with CTR criteria and protection of beneficial uses.

The results of the above iterative analysis, summarized in the tables below, show that the ambient hardness values selected using the three-step iterative process results in protective effluent limitations that achieve CTR criteria under all flow conditions. Tables F-10 and F-11 below, summarize the critical flow conditions. There is no effluent limitation for nickel or silver as it demonstrates no reasonable potential.

#### **Table F-10. Verification of CTR Compliance for Nickel Downstream Worst-Case Ambient Receiving Water Conditions**

Critical Flow Conditions	Hardness (mg/L)	CTR Criteria (µg/L)	Ambient Nickel Concentration (µg/L)	Complies with CTR?
1Q10	38.025	23.02	23.01	Yes
7Q10	38.025	23.02	23.01	Yes
Max receiving water flow	38.001	23.0073	23.0071	Yes

**Table F-11. Verification of CTR Compliance for Silver  
 Downstream Worst-Case Ambient Receiving Water Conditions**

Critical Flow Conditions	Hardness	CTR Criteria (µg/L)	Ambient Silver Concentration (µg/L)	Complies with CTR?
1Q10	38.025	0.7694	0.7689	Yes
7Q10	38.025	0.7693	0.7689	Yes
Max receiving water flow	38.001	0.76849	0.76848	Yes

**Approach to derivation of criteria Where Dilution Allowed**

As discussed in Section IV.C.2 c, above, dilution credits for copper and zinc have been allowed in the calculation of WQBELs for these hardness-dependent criteria parameters. The allowed copper dilution credit for chronic aquatic life criteria is 80:1, which represents an effluent fraction of 1.2%, and the allowed acute aquatic life dilution credit is 18:1, which represents an effluent fraction of 5.2%. The allowed zinc dilution credit for chronic aquatic life criteria is 2:1, which represents an effluent fraction of 33.3%, and the allowed acute aquatic life dilution credit is 28:1, which represents an effluent fraction of 3.5%. These values define the points in the receiving water (i.e., edge of mixing zone) that must be in compliance with aquatic life criteria. When the effluent and receiving water are at their respective minimum observed hardness values (i.e., 83 mg/L and 38 mg/L as CaCO<sub>3</sub>, respectively), and the effluent fraction is 1.2% and 3.5%, the mixed hardness is 38.6 mg/L and 39.6 mg/L (as CaCO<sub>3</sub>), respectively. Therefore, an actual observed ambient hardness of 38 mg/L (as CaCO<sub>3</sub>) has been used in this Order for calculating hardness-dependent copper criteria and an actual observed ambient hardness of 39 mg/L (as CaCO<sub>3</sub>) for calculating hardness-dependent zinc criteria. Using the ambient hardness to calculate the hardness-dependent metals criteria is consistent with the CTR and the SIP.

Tables F-12 and F-13, below, demonstrate that protective effluent limitations result when using this approach for determining the appropriate hardness. In this example the mixed receiving water copper and zinc

concentrations do not exceed the mixed CTR criteria for copper and zinc at the edge of the mixing zone.

**Table F-12. Verification of CTR Compliance for Copper**

<b>Receiving Water Hardness Used to Compute Effluent Limitations</b>				<b>38 mg/L</b>
<b>Chronic Aquatic Life Dilution Credit</b>				<b>80:1</b>
<b>Maximum Ambient Background Copper Concentration</b>				<b>3.7 µg/L</b>
<b>Effluent Concentration Allowance, chronic (ECAc) for Copper</b>				<b>21.3 µg/L</b>
<b>Effluent Fraction</b>	<b>Downstream Ambient Concentrations Under Worst-Case Ambient Receiving Water Conditions</b>			<b>Complies with CTR Criteria?</b>
	<b>Hardness (mg/L)</b>	<b>CTR Criteria (µg/L)</b>	<b>Ambient Copper Concentration (µg/L)</b>	
0.5%	38.2	3.94	3.79	<b>Yes</b>
1%	38.5	3.96	3.88	<b>Yes</b>
1.2%	38.6	3.97	3.92	<b>Yes</b>

**Table F-12 Notes:**

- 1. Maximum Ambient Background Copper Concentration.** All copper concentrations are dissolved concentrations to determine assimilative capacity
- 2. Effluent Concentration Allowance, chronic (ECAc) for Copper.** ECA calculated per section 1.4 of the SIP.
- 3. Effluent Fraction.** Table shows effluent fractions ranging from 0.5% to 1.2% to show conditions outside the allowable mixing zone for copper.
- 4. Ambient Copper Concentration (µg/L).** Derived using worst-case ambient conditions. These conservative assumptions will ensure that the receiving water always complies with CTR criteria.

**Table F-13. Verification of CTR and Basin Plan objective Compliance for Zinc**

<b>Receiving Water Hardness Used to Compute Effluent Limitations</b>				<b>39 mg/L</b>
<b>Acute Aquatic Life Dilution Credit</b>				<b>27.5:1</b>
<b>Maximum Ambient Background Zinc Concentration</b>				<b>9.0 µg/L</b>
<b>Effluent Concentration Allowance, acute (ECAa) for Zinc</b>				<b>209 µg/L</b>
<b>Effluent Fraction</b>	<b>Downstream Ambient Concentrations Under Worst-Case Ambient Receiving Water Conditions</b>			<b>Complies with CTR Criteria?</b>
	<b>Hardness (mg/L)</b>	<b>CTR Criteria (µg/L)</b>	<b>Ambient Zinc Concentration</b>	

			(µg/L)	
1%	38.5	15.8	11.0	<b>Yes</b>
2%	38.9	16.0	13.1	<b>Yes</b>
3%	39.4	16.1	15.1	<b>Yes</b>
3.5%	39.6	16.2	16.0	<b>Yes</b>

**Table F-13 Notes:**

1. **Effluent Concentration Allowance, acute (ECAa) for Zinc.** ECA calculated per section 1.4 of the SIP.
2. **Effluent Fraction.** Table shows effluent fractions ranging from 1.0% to 3.5% to show conditions outside the allowable mixing zone for zinc.
3. **Ambient Zinc Concentration (µg/L).** Derived using worst-case ambient conditions. These conservative assumptions will ensure that the receiving water always complies with CTR criteria.

### 3. Determining the Need for WQBEL's

Clean Water Act section 301(b)(1)(C) requires effluent limitations necessary to meet water quality standards, and 40 C.F.R. section 122.44(d) requires NPDES permits to include conditions that are necessary to achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality. Federal regulations at 40 C.F.R. 122.44(d)(1)(i) state, "Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." Additionally, 40 C.F.R. section 122(d)(1)(vii) requires effluent limits to be developed consistent with any available wasteload allocations developed and approved for the discharge. The process to determine whether a WQBEL is required as described in 40 C.F.R. section 122.44(d)(1)(i) is referred to as a reasonable potential analysis or RPA. Central Valley Water Board staff conducted RPA's for nearly 200 constituents, including the 126 U.S. EPA priority toxic pollutants. This section includes details of the RPA's for constituents of concern for the Facility. The entire RPA is included in the administrative record and a summary of the constituents of concern is provided in Attachment G. For priority pollutants, the SIP dictates the procedures for conducting the RPA. For non-priority pollutants the Central Valley Water Board is not restricted to one particular RPA method, therefore, the RPA's have been conducted based on EPA guidance considering multiple lines of evidence and the site-specific conditions of the discharge.

#### a. **Constituents with Total Maximum Daily Load (TMDL).**

40 C.F.R. section 122.44(d)(1)(vii) provides: "When developing water quality-based effluent limits under [section 122.44(d)(1)], the permitting authority shall ensure that: (A) The level of water quality to be achieved by

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

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

**i. Diazinon and Chlorpyrifos.**

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

The amendment modifies the Basin Plan Chapter III (Water Quality Objectives) to establish site specific numeric objectives for chlorpyrifos and diazinon in the Sacramento and Feather Rivers. The amendment also “...identifies the requirements to meet the additive formula already in Basin Plan Chapter IV (implementation), for the additive toxicity of diazinon and chlorpyrifos.”

The amendment provides that: “The Waste Load Allocations (WLA) for all NPDES-permitted dischargers... shall not exceed the sum (S) of one (1) as defined below.

$$S = \frac{C_D}{WQO_D} + \frac{C_C}{WQO_C} \leq 1.0$$

where:

$C_D$  = diazinon concentration in  $\mu\text{g/L}$  of the point source discharge...

$C_C$  = chlorpyrifos concentration in  $\mu\text{g/L}$  of the point source discharge...



WQO<sub>D</sub> = acute or chronic diazinon water quality objective in µg/L.

WQO<sub>C</sub> = 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.

- (b) **RPA Results.** Diazinon was not detected in the effluent based on 5 samples collected from November 2017 through October 2019. Diazinon was not detected in the upstream receiving water based on 2 samples collected from November 2017 through February 2018.

Chlorpyrifos was not detected in the effluent based on 5 samples collected November 2017 through October 2019. Chlorpyrifos was not detected in the upstream receiving water based on 2 samples collected from November 2017 through February 2018.

Although diazinon and chlorpyrifos were not detected in the effluent or receiving water, due to the TMDL for diazinon and chlorpyrifos in the Sacramento and Feather Rivers, WQBEL's for these constituents are required. The TMDL WLA applies to all NPDES dischargers to the Sacramento River from Shasta Dam to Colusa Basin Drain and will serve as the basis for WQBEL's for this Facility.

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

Average Monthly Effluent Limitation (AMEL)

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

C<sub>D avg</sub> = average monthly diazinon effluent concentration in µg/L

C<sub>C avg</sub> = average monthly chlorpyrifos effluent concentration in µg/L

Maximum Daily Effluent Limitation (MDEL)

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

$C_{D\ max}$  = maximum daily diazinon effluent concentration in  $\mu\text{g/L}$

$C_{C\ max}$  = maximum daily chlorpyrifos effluent concentration in  $\mu\text{g/L}$

- (d) **Plant Performance and Attainability.** Diazinon and chlorpyrifos were not detected in the effluent. Therefore, the Central Valley Water Board concludes 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. WQBEL's are not included in this Order for constituents that do not demonstrate reasonable potential to cause or contribute to an instream excursion of an applicable water quality objective; however, monitoring for those pollutants is established in this Order as required by the SIP. If the results of effluent monitoring demonstrate reasonable potential, this Order may be reopened and modified by adding an appropriate effluent limitation.

Most constituents with no reasonable potential are not discussed in this Order. This section only provides the rationale for the reasonable potential analyses for the following constituents of concern that were found to have no reasonable potential after assessment of the data:

i. **Aluminum**

- (a) **WQO.** The State Water Board Division of Drinking Water (DDW) has established Secondary Maximum Contaminant Levels (MCLs) to assist public drinking water systems in managing their drinking water for public welfare considerations, such as taste, color, and odor. The Secondary MCL for aluminum is 200  $\mu\text{g/L}$  for protection of the MUN beneficial use. Title 22 requires compliance with Secondary MCLs on an annual average basis.

Aluminum is the third most abundant element in the earth's crust and is ubiquitous in both soils and aquatic sediments. When mobilized in surface waters, aluminum has been shown

to be toxic to various fish species. However, the potential for aluminum toxicity in surface waters is directly related to the chemical form of aluminum present, and the chemical form is highly dependent on water quality characteristics that ultimately determine the mechanism of aluminum toxicity. Surface water characteristics, including pH, temperature, colloidal material, fluoride and sulfate concentrations, and dissolved organic carbon, all influence aluminum speciation and its subsequent bioavailability to aquatic life.

The 2018 U.S. EPA NAWQC for protection of freshwater aquatic life for aluminum recommends acute (1-hour average; criteria maximum concentration or CMC) and chronic (4-day average; criteria continuous concentration or CCC) standards based upon Multiple Linear Regression (MLR) models for vertebrate and invertebrate species that use pH, dissolved organic carbon (DOC), and total hardness to quantify the effects of these water chemistry parameters on the bioavailability and resultant toxicity of aluminum to aquatic organisms. The 2018 Aluminum NAWQC document provides look up tables or a Microsoft Excel spreadsheet to calculate the criteria based on pH, DOC, and total hardness. The U.S. EPA aluminum criteria have been used to implement the Basin Plan's narrative toxicity objective.

A site-specific CMC of 1300 µg/L and CCC of 500 µg/L were calculated considering pH, hardness, and DOC representative of the receiving water and effluent conditions. Effluent and receiving water sampling results for pH and hardness from April 2017 through March 2020 were used in the evaluation. In the absence of DOC data, the criteria were calculated considering a conservative assumption of DOC for the receiving water and effluent of 1 mg/L and 5 mg/L, respectively.

- (b) **RPA Results.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Aluminum is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent. The Secondary MCL is derived from human welfare considerations (e.g., taste, odor, laundry staining), not for toxicity. Secondary MCL's are drinking water standards contained in Title 22 of the California Code of Regulations and requires compliance with these standards on an annual average basis, when sampling at least quarterly. To be consistent with

how compliance with the standards is determined, for the Secondary MCL the RPA was conducted based on the calendar annual average effluent aluminum concentrations. Calculating a maximum annual average concentration considers variability in the data, per 40 C.F.R. § 122.44(d)(1)(ii).

The maximum annual average effluent concentration for aluminum was 59 µg/L based on 24 samples collected between April 2017 through January 2020. Effluent aluminum is consistently less than the concentrations in the receiving water and below the Secondary MCL. Therefore, the Central Valley Water Board finds the discharge does not have reasonable potential to cause or contribute to an exceedance in the receiving water and the Facility is adequately controlling the discharge of aluminum.

For the 2018 U.S. EPA NAWQC the RPA was conducted considering the maximum effluent concentration (MEC) for aluminum, which was 78.7 µg/L based on 24 samples collected between April 2017 and January 2020. Effluent aluminum is consistently less than the concentrations in the receiving water and below the NAWQC. Therefore, the Central Valley Water Board finds the discharge does not have reasonable potential to cause or contribute to an exceedance of the narrative toxicity objective in the receiving water and the Facility is adequately controlling the discharge of aluminum.

## ii. **Mercury**

- (a) **WQO.** The current NAWQC for protection of freshwater aquatic life, continuous concentration, for mercury is 0.77 µg/L (30-day average, chronic criteria). The CTR contains a human health criterion (based on a threshold dose level causing neurological effects in infants) of 0.050 µg/L for waters from which both water and aquatic organisms are consumed. Both values are controversial and subject to change. In 40 C.F.R. part 131, U.S. EPA acknowledges that the human health criteria may not be protective of some aquatic or endangered species and that "...more stringent mercury limits may be determined and implemented through use of the State's narrative criterion." In the CTR, U.S. EPA reserved the mercury criteria for freshwater and aquatic life and may adopt new criteria at a later date.

The State Water Board adopted Resolution 2017-0027 on 2 May 2017, which approved Part 2 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California, Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions (Statewide Mercury Provisions). The Statewide Mercury Provisions establish a Sport Fish Water

Quality Objective of an average 0.2 mg/kg methylmercury fish tissue concentration within a calendar year for waters with the beneficial uses of commercial and sport fishing (COMM), tribal tradition and culture (CUL), wildlife habitat (WILD), and marine habitat (MAR). This fish tissue objective corresponds to a water column concentration of 12 ng/L of total mercury for flowing water bodies (e.g., rivers, creeks, streams, and waters with tidal mixing). As shown in Table F-3, the beneficial uses of the Sacramento River include WILD; therefore, the Sport Fish Water Quality Objective is applicable and is the most stringent objective.

- (b) **RPA Results.** The Statewide Mercury Provisions specify that the RPA shall be conducted using the maximum annual average effluent and background mercury concentrations for comparison with the Sport Fish Water Quality Objective. The maximum observed effluent mercury concentration was 0.75 ng/L, with a maximum annual average of 0.50 ng/L, based on 6 samples collected from April 2017 through March 2020. The maximum annual average background concentration for mercury was 0.73 ng/L based on 4 samples collected from April 2017 through March 2020.

Therefore, the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Sport Fish Water Quality Objective in the receiving water.

### iii. Nitrate and Nitrite

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

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

- (b) **RPA Results.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Nitrate and Nitrite are not priority pollutants. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used its judgement in determining the appropriate method for conducting the RPA for this non-priority pollutant

constituent. The most stringent objective is the Primary MCL, which is designed to be protective of human health for short-term exposure.

The maximum effluent concentration (MEC) for nitrate was 10.8 mg/L while the maximum observed upstream receiving water concentration was 0.09 mg/L. The maximum effluent concentration (MEC) for nitrite was 0.226 mg/L while the maximum observed upstream receiving water concentration was <0.003 mg/L. Since there is available assimilative capacity in the receiving water, a mixing zone is allowed based on the approved mixing zone described in Section IV.2.C.c of this Fact Sheet. Therefore, the Central Valley Water Board has determined that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Primary MCL for nitrate and nitrite.

#### iv. **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-14, below, contains various recommended levels for EC or TDS, sulfate, and chloride.

**Table F-14. Salinity Water Quality Criteria/Objectives**

Parameters	Secondary MCL Recommended Level	Secondary MCL Upper Level	Secondary MCL Short-term Maximum	U.S. EPA NAWQC	Maximum Calendar Annual Average Effluent Concentration	Maximum Daily Effluent Concentration
EC (µmhos/cm) or TDS (mg/L)	EC 900 or TDS 500	EC 1,600 or TDS 1,000	EC 2,200 or TDS 1,500	N/A	EC 8,520 TDS 5,030	EC 11,300 TDS 6,570
Sulfate (mg/L)	250	500	600	N/A	526	965
Chloride (mg/L)	250	500	600	860 1-hour 230 4-day	1,291	1,880

**Table F-14 Notes:**

- 1. Agricultural Water Quality Objectives.** Applicable agricultural water quality objectives vary. Narrative chemical constituent objective of the Basin Plan. Procedures for establishing the applicable numeric limitation to implement the narrative objective can be found in the Policy for Application of Water Quality Objectives, section 4.2.2.1.9 of the Basin Plan. However, the Basin Plan does not require improvement over naturally occurring background concentrations. In cases where the natural background concentration of a particular constituent exceeds an applicable water quality objective, the natural background concentration will be considered to comply with the objective.
- 2. 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 EC limit of **230 µmhos/cm** for the Sacramento River from Shasta Dam to Colusa Basin Drain.
- 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.
- 6. Electrical Conductivity Data.** EC data is from the last 10 calendar years in order to capture drought conditions in California

- (b) **RPA Results.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Salinity is not priority a 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 chloride, electrical conductivity, sulfate, and total dissolved solids. The critical downstream receiving water concentration is calculated using the equation below:

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

Where:

Qs = Critical stream flow

Qd = Critical effluent flow from discharge flow data

Cs = Critical upstream pollutant concentration

Cd = Critical effluent pollutant concentration

Cr = Critical downstream receiving water pollutant concentration

The most stringent water quality objective for chloride is the NAWQC chronic criterion for protection of freshwater aquatic life. Therefore, for chloride, a critical stream flow (Qs) of 2,540 MGD was used, which represents the 7Q10, and a critical effluent flow (Qd) of 1.4 MGD (permitted maximum daily flow) was used for the RPA. The Basin Plan objective for electrical conductivity and the Secondary MCL for total dissolved solids are long-term objectives.



Therefore, a critical stream flow ( $Q_s$ ) of 5,358 MGD (harmonic mean) and a critical effluent flow ( $Q_d$ ) of 0.75 MGD (permitted annual average flow) were used for electrical conductivity and total dissolved solids. Additional maximum observed annual average effluent and receiving water concentrations were used to represent the critical effluent pollutant concentration ( $C_d$ ) and critical upstream receiving water pollutant concentrations ( $C_r$ ), respectively.

- (1) **Chloride.** Chloride concentrations in the effluent ranged from 608 mg/L to 1,880 mg/L, with a maximum annual average of 1,290 mg/L based on 147 samples collected from April 2017 through March 2020. Background concentrations in the Sacramento River ranged from 1.6 mg/L to 7.2 mg/L, with a maximum annual average of 3.6 mg/L, based on 38 samples collected from April 2017 through March 2020. Thus, the receiving water has been consistently in compliance with the NAWQC resulting in available assimilative capacity for consideration in the RPA.

$$Q_s = 2,540 \text{ MGD}$$

$$Q_d = 1.4 \text{ MGD}$$

$$C_s = 7.2 \text{ mg/L}$$

$$C_d = 1,880 \text{ mg/L}$$

$$C_r = \frac{(2,540 \text{ MGD} \times 7.2 \text{ mg/L}) + (1.4 \text{ MGD} \times 1,880 \text{ mg/L})}{(2,540 \text{ MGD} + 1.4 \text{ MGD})} = 15.4 \text{ mg/L}$$

The critical downstream receiving water chloride concentration,  $C_r$ , is 15.4 mg/L, which does not exceed the NAWQC of 230 mg/L. Considering the large dilution and assimilative capacity in the receiving water, the small increase in chloride caused by the discharge does not result in a reasonable potential to cause or contribute to an exceedance of the objectives for chloride in the receiving water.

- (2) **Electrical Conductivity or Total Dissolved Solids.** Electrical conductivity concentrations in the effluent ranged from 4,090  $\mu\text{mhos/cm}$  to 11,300  $\mu\text{mhos/cm}$ , with a maximum annual average of 8,520 based on 517 samples collected from June 2010 through May 2020. Background

concentrations in the Sacramento River ranged from 104  $\mu\text{mhos/cm}$  to 384  $\mu\text{mhos/cm}$  with a maximum annual average of 151  $\mu\text{mhos/cm}$ , based on 254 samples collected from June 2010 through May 2020. Thus, the receiving water has been consistently in compliance with the Basin Plan objective resulting in available assimilative capacity for consideration in the RPA.

$$Q_s = 5,358 \text{ MGD}$$

$$Q_d = 0.75 \text{ MGD}$$

$$C_s = 151 \mu\text{mhos/cm}$$

$$C_d = 8,520 \mu\text{mhos/cm}$$

$$C_r = \frac{(5,358 \text{ MGD} \times 151 \mu\text{mhos/cm}) + (0.75 \text{ MGD} \times 8,520 \mu\text{mhos/cm})}{(5,358 \text{ MGD} + 0.75 \text{ MGD})} = 152 \mu\text{mhos/cm}$$

The critical downstream receiving water electrical conductivity concentration,  $C_r$ , is 152  $\mu\text{mhos/cm}$ , which does not exceed the Basin Plan objective of 230  $\mu\text{mhos/cm}$ . Considering the large dilution and assimilative capacity in the receiving water, the 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.

**Total Dissolved Solids** concentrations in the effluent ranged from 2,440 mg/L to 6,570 mg/L, with a maximum annual average of 5,025 mg/L based on 141 samples collected from April 2017 through March 2020. Background concentrations in the Sacramento River ranged from 72 mg/L to 118 mg/L with a maximum annual average of 94 mg/L, based on 38 samples collected from April 2017 through March 2020. Thus, the receiving water has been consistently in compliance with the secondary MCL resulting in available assimilative capacity for consideration in the RPA.

$$Q_s = 5,358 \text{ MGD}$$

$$Q_d = 0.75 \text{ MGD}$$

$$C_s = 94 \text{ mg/L}$$

$$C_d = 5,025 \text{ mg/L}$$

$$C_r = \frac{(5,358 \text{ MGD} \times 94 \text{ mg/L}) + (0.75 \text{ MGD} \times 5,025 \text{ mg/L})}{(5,358 \text{ MGD} + 0.75 \text{ MGD})} = 95 \text{ mg/L}$$

The critical downstream receiving water total dissolved solids concentration,  $C_r$ , is 95 mg/L, which does not exceed the Secondary MCL of 500 mg/L. Considering the large dilution and assimilative capacity in the receiving water, the small increase in total dissolved solids caused by the discharge does not result in a reasonable potential to cause or contribute to an exceedance of the Secondary MCL for total dissolved solids in the receiving water.

- (3) **Sulfate.** Sulfate concentrations in the effluent ranged from 25.6 mg/L to 965 mg/L, with a maximum annual average of 526 mg/L based on 47 samples collected from April 2017 through March 2020. Background concentrations in the Sacramento River ranged from 3 mg/L to 5.7 mg/L with a maximum annual average of 4.3 mg/L, based on 38 samples collected from April 2017 through March 2020. Thus, the receiving water has been consistently in compliance with the secondary MCL resulting in available assimilative capacity for consideration in the RPA.

$$Q_s = 5,358 \text{ MGD}$$

$$Q_d = 0.75 \text{ MGD}$$

$$C_s = 4.3 \text{ mg/L}$$

$$C_d = 526 \text{ mg/L}$$

$$C_r = \frac{(5,358 \text{ MGD} \times 4.3 \text{ mg/L}) + (0.75 \text{ MGD} \times 526 \text{ mg/L})}{(5,358 \text{ MGD} + 0.75 \text{ MGD})} = 4.4 \text{ mg/L}$$

The critical downstream receiving water sulfate concentration,  $C_r$ , is 4.4 mg/L, which does not exceed the Secondary MCL of 250 mg/L. Considering the large dilution and assimilative capacity in the receiving water, the small increase in sulfate caused by the discharge does not result in a reasonable potential to cause or contribute to an exceedance of the Secondary MCL for sulfate in the receiving water.

- (c) **WQBEL's.**

As described in subsection IV.C.1.a.iv(b) above, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity. However, allowing the Discharger to increase its current salt loading may be contrary to the Region-wide effort to address salinity in the Central Valley.

Therefore, this Order includes a new performance-based effluent limitation of 9,370  $\mu\text{mhos/cm}$  for EC to be applied as calendar annual average effluent limitations (AAEL) to limit the discharge to current levels. This performance-based effluent limitation represents the maximum calendar annual average effluent EC concentration plus 10 percent for a calendar year using data from 2010 through 2019. A 10 percent factor has been added to the maximum annual average effluent EC concentration to allow for fluctuations in EC concentrations that occur due to water conservation during low rainfall years (e.g., drought conditions). The maximum annual average of 8,520  $\mu\text{mhos/cm}$  occurred during the year 2011. Additionally, this Order retains the mass limitations for total dissolved solids and chloride from Order R5-2015-0030. Based on the sample results for the effluent, it appears the Discharger can meet these limitations.

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

#### TDS and Chloride effluent limits background

The mass limits for TDS and chlorides were previously specified in both the Facility's original NPDES permit (Order No. 95-113) and the WDRs for the Class II Surface Impoundments (Order No. 95-134). The sum of the annual average mass limits from these two Orders was 60,200 lbs TDS and 21,200 lbs chloride. The daily maximum limit contained in these historic permits was 87,600 lbs TDS and 31,300 lbs chloride.

The EIR of April 1993 presented a model of plume concentrations at various distances from the outfall, based on a TDS concentration of 4,556 mg/l, a chloride concentration of 1,576 mg/l and a flow of 1.75 mgd (1.0 mgd domestic flow from the City and 0.75 mgd industrial flow from Bell-Carter). This is equivalent to mass discharge of 22,993 lbs/day chloride and 66,470 lbs/day TDS for the combined discharge from the City

and Bell-Carter. The analysis indicated that at minimum flows in the Sacramento River, (4,121 mgd); the increase in TDS and chloride at full mixing (1000 ft. downstream of the outfall) would be from 80 mg/l to 84.3 mg/l and from 3.0 mg/l to 3.74 mg/l respectively. The dilution factor at minimum river flow and 1.75 mgd combined flow from the City's WWTP and Bell-Carter at the time was approximately 2,350:1.

In 2000, the Discharger's NPDES permit (Order 5-00-113), contained effluent mass limits for TDS and chlorides that applied to the total discharge from Bell-Carter (discharge to the City's WWTP and the direct discharge to the City-owned outfall line). The reason for this was that TDS and chlorides discharged from Bell-Carter to the City's WWTP were not treated. The annual average effluent limit of 59,800 lbs/day TDS in Order 5-00-113 was based on the EIR value less the contribution from the City domestic wastewater. The City's contribution was based on a flow of 1.0 mgd and a TDS concentration of 800 mg/l. The annual average effluent limit of 20,900 lbs/day chlorides in Order 5-00-113 was based on a chloride contribution from the City of 250 mg/l. The daily maximum limits of 79,800 lbs/day TDS and 27,900 lbs/day chloride were based on the ratio of the increase from the annual average flow of 0.75 to 1.0 mgd daily maximum flow.

The previous NPDES permit (Order R5-2015-0030) retained the effluent limits specified for TDS and chlorides in Order 5-00-113, as does this Order.

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 performance-based effluent limits for EC, chloride, and TDS in this Order are consistent with the Alternative Salinity Permitting Approach and compliance with the effluent limitations does not ensure the Facility can participate in the Conservative Salinity Permitting Approach. If the Discharger is authorized to participate in the Conservative Salinity Permitting Approach the conservative salinity limits required by the Salinity Control Program will be applied, which may result in more stringent effluent limits.

- c. **Constituents with No Data or Insufficient Data.** Reasonable potential cannot be determined for the following constituents because effluent data are limited or ambient background concentrations are not available. The Discharger is required to continue to monitor for these constituents in the effluent using analytical methods that provide the best feasible detection limits. When additional data become available, further analysis will be conducted to determine whether to add numeric effluent limitations or to continue monitoring.

i. **Cadmium**

- (a) **WQO.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for cadmium. These criteria for cadmium are presented in dissolved concentrations, as 1-hour acute criteria and 4-day chronic criteria. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. Default U.S. EPA translators were used for the receiving water and effluent. As described in section IV.C.2.e of this Fact Sheet, the applicable chronic criteria for cadmium in the effluent is 1.6 µg/L, as total recoverable.

The Basin Plan includes a hardness-dependent, site-specific objective for cadmium for the Sacramento River and its tributaries above the State Highway 32 Bridge at Hamilton City. As described in section IV.C.2.e of this Fact Sheet, the applicable Basin Plan objective for cadmium in the effluent is 0.35 µg/L, as total recoverable, applied as the acute criteria.

Footnote 4, page 3 of the Introduction of the SIP states, "If a water quality objective and a CTR criterion are in effect for the same priority pollutant, the more stringent of the two applies." The Basin Plan objective cannot be directly compared to the CTR criteria to determine the most stringent objective because they have different averaging periods. In this situation, the RPA

has been conducted considering both the CTR criteria and the Basin Plan site-specific objective.

- (b) **RPA Results.** Cadmium was not detected in any of the 4 samples collected in the effluent and the receiving water. All 4 effluent samples were ND with a method detection limit as low as 2.5 µg/L (which is greater than the water quality objective) and all 4 samples in the receiving water were ND with a method detection limit of 0.05 µg/L. Therefore, the data is inappropriate and insufficient to determine reasonable potential.

The Central Valley Water Board can require additional monitoring for a pollutant in place of an effluent limitation if data are unavailable or insufficient. Instead of effluent limitations, monitoring for cadmium will be included as part of the effluent and receiving water characterization. Should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified by adding an appropriate effluent limitation

ii. **Fluoride**

- (a) **WQO.** DDW has adopted a Primary MCL for fluoride of 2 mg/L, which is protective of the Basin Plan’s chemical constituent objective.
- (b) **RPA Results.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Fluoride 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. The most stringent objective is the Primary MCL, which is designed to be protective of human health for short-term exposure. The fluoride data collected by the Discharger in the 4 priority pollutant samples is shown in the table below.

**Table F-15. Summary of Fluoride Data**

Sample Date	Monitoring Location	Method Detection Level (MDL)	Reporting Level (RL)	Fluoride Result
23 August 2017	EFF-001	1	5	3.3 J
1 November 2017	EFF-001	1	5	1.75 J
14 February 2018	EFF-001	1	5	1.9 J
16 May 2018	EFF-001	2	5	ND
23 August 2017	RSW-001	0.02	0.1	0.06 J

Sample Date	Monitoring Location	Method Detection Level (MDL)	Reporting Level (RL)	Fluoride Result
1 November 2017	RSW-001	0.02	0.1	0.06 J
14 February 2018	RSW-001	0.02	0.1	0.08 J
16 May 2018	RSW-001	0.04	0.1	0.06 J

Of the 4 effluent samples collected, 3 resulted in estimated values. Therefore, the submitted effluent data is inappropriate and insufficient to determine reasonable potential.

The Central Valley Water Board can require additional monitoring for a pollutant in place of an effluent limitation if data are unavailable or insufficient. Instead of effluent limitations, monitoring for fluoride will be as part of the effluent and receiving water characterization. Should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified by adding an appropriate effluent limitation

iii. **Iron**

- (a) **WQO.** The Secondary MCL – Consumer Acceptance Limit for iron is 300 µg/L. The State Water Board Division of Drinking Water (DDW) has established Secondary MCLs to assist public drinking water systems in managing their drinking water for public welfare considerations, such as taste, color, and odor. The Secondary MCL is used to implement the Basin Plan’s chemical constituent objective for protection of municipal and domestic supply. Title 22 requires compliance with Secondary MCLs on an annual average basis.
- (b) **RPA Results.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Iron 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. The most stringent objective is the Secondary MCL, which is derived from human welfare considerations (e.g., taste, odor, laundry staining), not for toxicity. Secondary MCL’s are drinking water standards contained in Title 22 of the CCR.

Title 22 requires compliance with these standards on an annual average basis, when sampling at least quarterly.



The CV-SALTS Basin Plan Amendment specifies that compliance with Secondary MCLs for iron be determined from samples that have been passed through a 1.5-micron filter to reduce filterable residue which may have increased concentrations of suspended sediment. No field-filtered or dissolved iron samples were taken. Therefore, the submitted effluent data is inappropriate and insufficient to determine reasonable potential.

Section 1.3, step 8 of the SIP allows the Central Valley Water Board to require additional monitoring for a pollutant in place of an effluent limitation if data are unavailable or insufficient. Instead of effluent limitations, the Discharger will be required to collect total recoverable and filtered effluent and receiving water iron samples monthly, as described in section IV.A of the MRP, Attachment E. The Discharger will also be required to submit a study report to the Central Valley Water Board, as described in Special Provision VI.C.2.c of the Order, evaluating the results of the total recoverable and filtered samples to determine the extent of the impacts of suspended sediment on effluent and receiving water iron concentrations. Should the results of the study indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified by adding an appropriate water quality-based effluent limitation.

Additionally, in order to limit the discharge to current levels, this Order retains the existing annual average iron effluent limitation from Order R5-2015-0030.

- d. **Constituents with Reasonable Potential.** The Central Valley Water Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for ammonia, BOD and TSS, chlorine residual, copper, methylene chloride, pH, settleable solids, and zinc. WQBEL's for these constituents are included in this Order. A summary of the RPA is provided in Attachment G, and a detailed discussion of the RPA for each constituent is provided below.

i. **Ammonia**

- (a) **WQO.** The 2013 U.S. EPA National Ambient Water Quality Criteria (NAWQC) for the protection of freshwater aquatic life for total ammonia (2013 Criteria), recommends acute (1-hour average; criteria maximum concentration or CMC) and chronic (30-day average; criteria continuous concentration or CCC) standards based on pH and temperature. U.S. EPA also recommends that no 4-day average concentration should exceed 2.5 times the 30-day CCC.

The 2013 Criteria reflects the latest scientific knowledge on the toxicity of ammonia to certain freshwater aquatic life, including toxicity data on sensitive freshwater unionid mussels, non-pulmonary snails, and other freshwater organisms. The inclusion of new toxicity data for unionid mussels resulted in substantially more stringent criteria. In many cases, current wastewater treatment technologies are not capable of complying with effluent limitations based on the more stringent criteria.

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

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

Initial work under this project indicated the need to understand whether freshwater mussels are present or absent in POTW receiving waters in order to properly permit the discharge of ammonia in NPDES permits. Hence, a Phase II of the CVCWA study was conducted that developed and validated an effective environmental DNA (eDNA) method for determining the presence/absence of the three freshwater mussel genera in water bodies of the Central Valley. A Phase IIb of the study involved further study and application of the eDNA methodology.

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

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

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

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

The Basin Plans' Policy for Application of Water Quality Objectives requires the Central Valley Water Board to consider, "...on a case-by-case basis, direct evidence of beneficial use impacts, all material and relevant information submitted by the discharger and other interested parties, and relevant numerical criteria and guidelines developed and/or published by other agencies and organizations...In considering such criteria, the

Board evaluates whether the specific numerical criteria which are available through these sources and through other information supplied to the Board, are relevant and appropriate to the situation at hand and, therefore, should be used in determining compliance with the narrative objective.”

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

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

The acute (1-hour average) criterion or CMC was calculated using paired effluent pH and temperature data, collected during the period from April 2017 through March 2020. The most stringent CMC of 0.59 mg/L (ammonia as N) calculated using the paired effluent pH and temperature data has been implemented in this Order.

The chronic (30-day average) criterion or CCC was calculated using paired effluent pH and temperature data, collected during the period from April 2017 through March 2020. The most stringent 30-day rolling average CCC of 0.22 mg/L (ammonia as N) has been implemented in this Order.

The chronic (4-day average) concentration is derived in accordance with the U.S. EPA criterion as 2.5 times the 30-day CCC. Based on the 30-day CCC of 0.22 mg/L (ammonia as N),

the 4-day average concentration that should not be exceeded is 0.54 mg/L (ammonia as N).

- (b) **RPA Results.** The maximum effluent concentration (MEC) for ammonia was 0.9 mg/L while the maximum observed upstream receiving water concentration was 0.04 mg/L. The ammonia concentration in the discharge exceeds the criteria, therefore the effluent has a reasonable potential to cause or contribute to an in-stream excursion above the narrative toxicity objective.
- (c) **WQBEL's.** The Central Valley Water Board calculates WQBEL's in accordance with SIP procedures for non-CTR constituents, and ammonia is a non-CTR constituent. The SIP procedure assumes a 4-day averaging period for calculating the long-term average discharge condition (LTA). However, U.S. EPA recommends modifying the procedure for calculating permit limits for ammonia using a 30-day averaging period for the calculation of the LTA corresponding to the 30-day CCC. Therefore, while the LTAs corresponding to the acute and 4-day chronic criteria were calculated according to SIP procedures, the LTA corresponding to the 30-day CCC was calculated assuming a 30-day averaging period. The lowest LTA representing the acute, 4-day CCC, and 30-day CCC is then selected for deriving the average monthly effluent limitation (AMEL) and the maximum daily effluent limitation (MDEL).

As noted in section IV.4.C.3.c of this Fact Sheet, a mixing zone for pH is granted to meet the Basin Plan objective of 8.5. Since the ammonia criteria varies with pH and due to constraints with modeling pH mixing downstream of the discharge while accounting for the City's effluent, the ammonia criteria is instead calculated as a worst-case scenario using paired effluent pH and temperature.

However, the receiving water contains assimilative capacity for ammonia based on upstream samples that should be accounted for when determining effluent limits. In order to account for assimilative capacity available in the receiving water, paired upstream pH and temperature was used to calculate criteria in the receiving water to compare to the upstream samples (B).

As explained above, the Effluent Concentration Allowance for ammonia is calculated by the following equation:

$$ECA = C_1 + D(C_2 - B)$$

Where:

ECA = effluent concentration allowance

D = dilution credit

C<sub>1</sub> = criteria calculated from effluent pH and temperature

C<sub>2</sub> = criteria calculated from upstream receiving water pH and temperature

B = ambient background concentration

The remainder of the WQBEL calculation for ammonia was performed according to the SIP procedures.

An acute aquatic life dilution credit of 7 and a chronic aquatic life dilution credit of 5 were allowed in the development of WQBEL's for ammonia. This Order contains a final average monthly effluent limitation (AMEL) and maximum daily effluent limitation (MDEL) for ammonia of 15 mg/L and 38 mg/L, respectively, based on the acute aquatic life criteria.

- (d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 0.9 mg/L is less than the applicable WQBEL's. Therefore, the Central Valley Water Board concludes that immediate compliance with these effluent limitations is feasible.

ii. **BOD<sub>5</sub> and TSS**

- (a) **WQO.** There are no applicable water quality objectives for BOD<sub>5</sub> and TSS for the receiving water. However, BOD<sub>5</sub> is an oxygen-demanding substances that can reduce dissolved oxygen concentrations in the receiving water. The Basin Plan contains a water quality objective for the Sacramento River from Keswick Dam to Hamilton City for dissolved oxygen of 9.0 mg/L, from 1 June to 31 August, and 7.0 mg/L at all other times. Furthermore, the Basin Plan contains a water quality objective for suspended material that states, "*Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.*"
- (b) **RPA Results.** Federal regulations at 40 C.F.R. section 122.44(d)(1)(i) requires that, "Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." For priority pollutants, the SIP dictates the procedures for conducting the RPA. BOD<sub>5</sub> and TSS are not priority pollutants. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used its judgment in determining the appropriate method for conducting the RPA for

these non-priority pollutant constituents.

U.S. EPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available...A permitting authority might also determine that WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters)." U.S. EPA's TSD also recommends that factors other than effluent data should be considered in the RPA, "When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data."

The Discharger is an industrial wastewater treatment plant that treats olive processing wastewater. Olive process wastewater inherently contains BOD<sub>5</sub> and TSS, with maximum influent concentrations of 7,700 mg/L and 4,132 mg/L, respectively. Unless properly treated, the discharge of BOD<sub>5</sub> and TSS can cause or contribute to an excursion of the applicable water quality objectives in the Basin Plan noted above. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for BOD<sub>5</sub> and TSS and WQBELs are required.

- (c) **WQBEL's.** Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgement in determining the appropriate effluent limitations based on the information below.

The previous permit Order R5-2015-0030 maintained the AMELs and MDELs for BOD<sub>5</sub> and TSS from the previous order (BOD<sub>5</sub> 100/150, TSS 100/200) and required the Discharger to conduct a treatability study on each effluent source (e.g., Pond 6, Pond 7, and Zenon unit) in order to assess treatment for BOD<sub>5</sub> and TSS removal. In addition, the order required effluent monitoring at each effluent location so that representative samples of effluent from the multiple treatment trains could be monitored.

With respect to BOD<sub>5</sub> and TSS, the treatability study showed that there was minimal difference of BOD<sub>5</sub> removal between

each effluent source, but a noticeable improvement in TSS removal from the Zenon unit compared to the ponds. The study also demonstrated the average final blend of effluent from each source was approximately 30% from the Zenon unit, 70% from Pond 7, and 0% from Pond 6.

This Order also contains a provision that requires the Discharger to operate the micro-filtration membrane system year-round and to the fullest extent practicable. The provision is necessary to satisfy the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16 and ensure the use of best practicable treatment or control of the discharge.

Due to the information collected in the previous permit and the nature and variability of the influent to the Facility, this Order maintains AMELs and MDELs for BOD<sub>5</sub> and TSS from the previous order. The AMEL and MDEL for BOD<sub>5</sub> are 100 mg/L and 150 mg/L, and the AMEL and MDEL for TSS are 100 mg/L and 200 mg/L.

- (d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MECs for BOD<sub>5</sub> and TSS of 41 mg/L and 48 mg/L, respectively, are less than the applicable WQBEL's. Therefore, the Central Valley Water Board concludes that immediate compliance with these effluent limitations is feasible.

### iii. Chlorine Residual

- (a) **WQO.** U.S. EPA developed NAWQC for protection of freshwater aquatic life for chlorine residual. The recommended 4-day average (chronic) and 1-hour average (acute) criteria for chlorine residual are 0.011 mg/L and 0.019 mg/L, respectively. These criteria are protective of the Basin Plan's narrative toxicity objective.
- (b) **RPA Results.** The concentrations of chlorine used during the pulsed backflush of the Zenon unit are high enough to harm aquatic life and violate the Basin Plan narrative toxicity objective if discharged to the receiving water. Reasonable potential therefore does exist and effluent limits are required.

Federal regulations at 40 C.F.R. section 122.44(d)(1)(i) requires that, "Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." For priority pollutants, the SIP dictates the



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

U.S. EPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available...A permitting authority might also determine that WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters)." U.S. EPA's TSD also recommends that factors other than effluent data should be considered in the RPA, "When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data."

The Discharger occasionally uses a chlorine-containing compound to periodically backflush the Zenon unit, which is extremely toxic to aquatic organisms. The existing chlorine use and the potential for chlorine to be discharged provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the NAWQC.

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

U.S. EPA's NAWQC, which implements the Basin Plan's narrative toxicity objective for protection of aquatic life.

- (d) **Plant Performance and Attainability.** Chlorine residual was not detected at concentration exceeding the applicable effluent limitations during the previous permit term. Therefore, the Central Valley Water Board concludes that immediate compliance with these effluent limitations is feasible.

#### iv. **Copper**

- (a) **WQO.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for copper. These criteria for copper are presented in dissolved concentrations, as 1-hour acute criteria and 4-day chronic criteria. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. Default U.S. EPA translators were used for the receiving water and effluent. As described in section IV.C.2.e of this Fact Sheet, the applicable chronic criteria for copper in the effluent is 4.1 µg/L as total recoverable and 3.9 as dissolved concentration.

The Basin Plan includes a hardness-dependent, site-specific objective for copper for the Sacramento River and its tributaries above the State Highway 32 Bridge at Hamilton City. As described in section IV.C.2.e of this Fact Sheet, the applicable Basin Plan objective for copper in the effluent is 5.6 µg/L as total recoverable and 5.4 as dissolved concentration, applied as the acute criteria.

Footnote 4, page 3 of the Introduction of the SIP states, "If a water quality objective and a CTR criterion are in effect for the same priority pollutant, the more stringent of the two applies." The Basin Plan objective cannot be directly compared to the CTR criteria to determine the most stringent objective because they have different averaging periods. In this situation, the RPA has been conducted considering both the CTR criteria and the Basin Plan site-specific objective.

- (b) **RPA Results.** Section IV.C.2 of this Fact Sheet includes procedures for conducting the RPA for hardness-dependent CTR metals, such as copper. The CTR and Basin Plan include hardness-dependent criteria for copper for the receiving water.

The MEC for total recoverable copper in the effluent was 32.1 µg/L based on 60 samples collected from April 2017 through March 2020. The maximum observed upstream receiving water total recoverable copper concentration used in the RPA was 4.2 µg/L based on 36 samples collected from April 2017 through March 2020.

Therefore, copper in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan objective and CTR criteria for the protection of freshwater aquatic life.

- (c) **WQBEL's.** The receiving water contains assimilative capacity for copper when comparing upstream dissolved sampling data with the dissolved criteria, therefore, an acute aquatic life dilution credit of 18 and a chronic aquatic life dilution credit of 80 was allowed in the development of the WQBEL's for copper. This Order contains a final average monthly effluent limitation (AMEL) and maximum daily effluent limitation (MDEL) for copper, total recoverable, of 16 µg/L and 37 µg/L, respectively, based on the Basin Plan objective and the CTR criterion for protection of freshwater aquatic life.
- (d) **Plant Performance and Attainability.** Effluent copper concentrations exceeded the applicable AMEL 10 times but did not exceed the MDEL during the previous permit term. However, the Central Valley Water Board contends that immediate compliance with these effluent limitations is feasible.

#### v. Methylene Chloride

- (a) **WQO.** The CTR includes a criterion of 4.7 µg/L for methylene chloride for the protection of human health for waters from which both water and organisms are consumed.
- (b) **RPA Results.** The maximum effluent concentration (MEC) for methylene chloride was 20.8 µg/L while the maximum observed upstream receiving water concentration was non-detect with an MDL of 0.4 µg/L. Therefore, methylene chloride in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of human health.
- (c) **WQBEL's.** The receiving water contains assimilative capacity for methylene chloride, therefore, a dilution credit of 20:1 was allowed in the development of the WQBEL's for methylene chloride. This Order contains a final average monthly effluent limitation (AMEL) and maximum daily effluent limitation (MDEL) of 91 µg/L and 182 µg/L, respectively, based on the CTR criterion for the protection of human health.
- (d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 20.8 µg/L is less than the applicable WQBEL's. Therefore, the Central Valley Water Board concludes that immediate compliance with these effluent limitations is feasible.

#### vi. 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.** Olive processing wastewater inherently has variable pH. Additionally, some industrial wastewater treatment processes can increase or decrease wastewater pH which, if not properly controlled, would violate the Basin Plan’s numeric objective for pH in the receiving water. Therefore, reasonable potential exists for pH and WQBEL’s are required.

Federal regulations at 40 C.F.R. section 122.44(d)(1)(i) requires that, “Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.” For priority pollutants, the SIP dictates the procedures for conducting the RPA. pH is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used its judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

U.S. EPA’s September 2010 NPDES Permit Writer’s Manual, page 6-30, states, “State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available...A permitting authority might also determine that WQBEL’s are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL’s for pathogens in all permits for POTW’s discharging to contact recreational waters).” U.S. EPA’s TSD also recommends that factors other than effluent data should be considered in the RPA, “When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data.”

The Facility is an industrial wastewater treatment plant that treats olive processing wastewater. The effluent pH ranged from 6.95 to 9.13 based on 806 samples collected from April 2017

through March 2020. The upstream receiving water pH ranged from 6.55 to 8.02 based on 148 samples collected from April 2017 through March 2020. The pH for the Facility's influent varies due to the nature of olive processing wastewater, which provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's numeric objective for pH in the receiving water.

- (c) **WQBEL's.** An instantaneous minimum effluent limitation of 6.5 is included in this Order based on the Basin Plan objective for pH. The receiving water contains assimilative capacity for the maximum pH. As described in section IV.C.2.c.iii of the Fact Sheet, the Discharger completed a 2014 mixing zone study that demonstrated that the maximum Basin Plan objective of 8.5 is met at the edge of the mixing zone; therefore, no instantaneous maximum effluent limitation is required to meet the Basin Plan objective of 8.5.
- (d) **Plant Performance and Attainability.** The effluent pH range was above the instantaneous minimum established in this Order based on 806 samples. Therefore, the Central Valley Water Board concludes that the Discharger can consistently comply with this effluent limitations.

vii. **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." The existing permit included an AMEL of 0.1 ml/L and an MDEL of 0.2 ml/L for settleable solids to implement the narrative settleable solids objective.
- (b) **RPA Results.** Olive processing wastewater inherently contains settleable solids which, if not properly controlled, would violate the Basin Plan's narrative objective for settleable solids in the receiving water. Therefore, reasonable potential exists for settleable solids and WQBEL's are required.

Federal regulations at 40 C.F.R. section 122.44(d)(1)(i) requires that, "Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." For priority pollutants, the SIP dictates the procedures for conducting the RPA. Settleable solids is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-

specific conditions of the discharge, the Central Valley Water Board has used its judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

U.S. EPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available...A permitting authority might also determine that WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters)." U.S. EPA's TSD also recommends that factors other than effluent data should be considered in the RPA, "When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data."

The Facility is an industrial wastewater treatment plant that treats olive processing wastewater. The maximum observed effluent settleable solids concentration was non-detect with an MDL of 0.02 ml/L, based on 145 samples collected from April 2017 through March 2020. The settleable solids for the Facility's influent varies due to the nature of olive processing wastewater, which provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative objective for settleable solids in the receiving water.

- (c) **WQBEL's.** This Order contains average monthly and daily maximum effluent limitations for settleable solids of 0.1 ml/L and 0.2 ml/L, respectively, based on the Basin Plan's narrative objective. 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.** The effluent settleable solids range was below the effluent limitations established in

this Order based on 145 samples. Therefore, the Central Valley Water Board concludes that the Discharger can consistently comply with these effluent limitations.

viii. **Zinc**

- (a) **WQO.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for zinc. These criteria for zinc are presented in dissolved concentrations, as 1-hour acute criteria and 4-day chronic criteria. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. Default U.S. EPA translators were used for the receiving water and effluent. As described in section IV.C.2.e of this Fact Sheet, the applicable chronic criteria for zinc in the effluent is 54 µg/L, as total recoverable.

The Basin Plan includes a hardness-dependent, site-specific objective for zinc for the Sacramento River and its tributaries above the State Highway 32 Bridge at Hamilton City. As described in section IV.C.2.e of this Fact Sheet, the applicable Basin Plan objective for zinc in the effluent is 16 µg/L, as total recoverable, applied as the acute criteria.

Footnote 4, page 3 of the Introduction of the SIP states, "If a water quality objective and a CTR criterion are in effect for the same priority pollutant, the more stringent of the two applies." The Basin Plan objective cannot be directly compared to the CTR criteria to determine the most stringent objective because they have different averaging periods. In this situation, the RPA has been conducted considering both the CTR criteria and the Basin Plan site-specific objective.

- (b) **RPA Results.** Section IV.C.2 of this Fact Sheet includes procedures for conducting the RPA for hardness-dependent CTR metals, such as zinc. The CTR and Basin Plan include hardness-dependent criteria for zinc for the receiving water. The maximum observed upstream receiving water zinc concentration used in the RPA was 9.0 µg/L, based on 37 samples collected from April 2017 through March 2020. The RPA was conducted using the upstream receiving water hardness to calculate the criteria for comparison to the maximum ambient background concentration, and likewise using the reasonable worst-case downstream hardness to compare the maximum effluent concentration. The table below shows the specific criteria used for the RPA:

**Table F-16. Reasonable Potential Analysis for Zinc**

<b>Water Type</b>	<b>Basin Plan Objective</b>	<b>CTR Chronic Criterion</b>	<b>Maximum Concentration</b>	<b>Reasonable Potential?</b>
Receiving Water	16 µg/L	53 µg/L	9.0 µg/L	No
Effluent	16 µg/L	54 µg/L	420 µg/L	Yes

**Table F-16 Notes:**

1. All zinc concentrations are given as total recoverable
2. **Receiving Water.** The Basin Plan objective and CTR Chronic Criterion for the receiving water are based on lowest observed upstream hardness of 38 mg/L (as CaCO<sub>3</sub>). Reasonable potential for the receiving water is per section 1.3, step 4 of the SIP.
3. **Effluent.** The Basin Plan objective and CTR Chronic Criterion for the effluent is based on reasonable worst-case downstream hardness of 39 mg/L (as CaCO<sub>3</sub>). Reasonable potential for the Effluent is per section 1.3, step 6 of the SIP.

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

- (c) **WQBEL's.** The receiving water contains assimilative capacity for zinc, therefore, an acute aquatic life dilution credit of 27.5 and a chronic aquatic life dilution credit of 2 were allowed in the development of the WQBEL's for zinc. This Order contains a final average monthly effluent limitation (AMEL) and maximum daily effluent limitation (MDEL) for zinc of 67 µg/L and 209 µg/L, respectively, based on the Basin Plan objective and the CTR criterion for protection of freshwater aquatic life.
- (d) **Plant Performance and Attainability.** Effluent zinc concentrations exceeded the applicable AMEL once and the MDEL twice during the previous permit term. However, the Central Valley Water Board contends that immediate compliance with these effluent limitations is feasible.

**4. WQBEL Calculations**

- a. This Order includes WQBEL's for ammonia, chlorine residual, copper, methylene chloride, pH, settleable solids, and zinc. The general methodology for calculating WQBEL's based on the different criteria/objectives is described in subsections IV.C.5.b through e, below. See Attachment H for the WQBEL calculations.



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

$$\begin{aligned} \text{ECA} &= C + D(C - B) \text{ where } C > B, \text{ and} \\ \text{ECA} &= C \text{ where } C \leq B \end{aligned}$$

where:

ECA = effluent concentration allowance  
D = dilution credit  
C = the priority pollutant criterion/objective  
B = the ambient background concentration.

According to the SIP, the ambient background concentration (B) in the equation above shall be the observed maximum with the exception that an ECA calculated from a priority pollutant criterion/objective that is intended to protect human health from carcinogenic effects shall use the arithmetic mean concentration of the ambient background samples.

- c. **Primary and Secondary MCLs.** For non-priority pollutants with primary MCL's to protect human health (e.g., nitrate plus nitrite), the AMEL is set equal to the primary MCL and the MDEL is calculated using the MDEL/AMEL multiplier from Table 2 of the SIP.

For non-priority pollutants with secondary MCL's that protect public welfare (e.g., taste, odor, and staining), WQBEL's were calculated by setting the LTA equal to the secondary MCL and using the AMEL multiplier to set the AMEL. The 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 WQBEL's are calculated in accordance with section 1.4 of the SIP. The ECAs are converted to equivalent long-term averages (i.e. LTAacute and LTAchronic) 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 WQBEL's are calculated in accordance with section 1.4 of the SIP. The AMEL is set equal to the ECA and the MDEL is calculated using the MDEL/AMEL multiplier from Table 2 of the SIP.

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

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

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

where:

- mult<sub>AMEL</sub> = statistical multiplier converting minimum LTA to AMEL
- mult<sub>MDEL</sub> = statistical multiplier converting minimum LTA to MDEL
- M<sub>A</sub> = statistical multiplier converting acute ECA to LTA<sub>acute</sub>
- M<sub>C</sub> = statistical multiplier converting chronic ECA to LTA<sub>chronic</sub>

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

**Table F-17. Summary of Water Quality-Based Effluent Limitations**

Parameter	Units	Average Monthly Effluent Limitations	Maximum Daily Effluent Limitations	Average Annual
Ammonia Nitrogen, Total (as N)	mg/L	15	38	--
Ammonia Nitrogen, Total (as N)	lbs/day	120	440	--
BOD <sub>5</sub>	mg/L	100	150	
Chlorine, Total Residual	mg/L	0.011	0.019	--
Chloride	lbs/day	--	27,900	20,900
Copper, Total Recoverable	µg/L	16	37	--
Diazinon and Chlorpyrifos	µg/L			--
Electrical Conductivity @ 25°C	µmhos/cm	--	--	9,370
Iron, Total Recoverable	µg/L	--	--	4,200
Methylene Chloride	µg/L	91	182	--

Parameter	Units	Average Monthly Effluent Limitations	Maximum Daily Effluent Limitations	Average Annual
pH	Standard units	--	--	6.5 – 9.5
Settleable Solids	ml/L	0.1	0.2	--
Total Dissolved Solids	lbs/day	--	79,800	59,800
TSS	mg/L	100	200	
Zinc, Total Recoverable	µg/L	67	209	--

**Table F-17 Notes:**

1. **Chlorine, Total Residual Average Monthly Effluent Limitation.** Applied as a 4-day average effluent limitation
2. **Chlorine, Total Residual Maximum Daily Effluent Limitation.** Applied as a 1-hour average effluent limitation
3. **Diazinon and Chlorpyrifos Average Monthly Effluent Limitation.**

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

4. **Diazinon and Chlorpyrifos Maximum Daily Effluent Limitation.**

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

5. **pH Average Annual Limitation.** Applied as range from instantaneous minimum to instantaneous maximum

**5. Whole Effluent Toxicity (WET)**

For compliance with the Basin Plan’s narrative toxicity objective, this Order requires the Discharger to conduct whole effluent toxicity testing for acute and chronic toxicity, as specified in the Monitoring and Reporting Program (Attachment E section V.). This Order also contains effluent limitations for acute toxicity and 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)." 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 October 2015 through December 2019. 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-18. 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 Growth (TUc)	Green Algae Pseudokirchneriella subcapitata Growth (TUc)
10/19/2015	1	1	4	16	8
10/03/2016	1	1	4	8	4
9/11/2017	1	1	4	4	4
10/08/2018	1	1	4	64	4
10/29/2018	Not Tested	Not Tested	2	32	Not Tested
11/12/2018	Not Tested	Not Tested	2	>64	Not Tested
3/11/2019	Not Tested	Not Tested	2	2	Not Tested
3/27/2019	Not Tested	Not Tested	2	8	Not Tested
4/15/2019	Not Tested	Not Tested	2	8	Not Tested
4/29/2019	Not Tested	Not Tested	2	4	Not Tested
12/9/2019	1	1	4	16	4

**Table F-18 Notes:**

1. Accelerated monitoring occurred with 10/29/2018 and 11/12/2018 samples per Order No. R5-2015-0030
2. Confirmation testing occurred with 3/11/2019, 3/27/2019, 4/15/2019, and 4/29/2019 samples as part of the Toxicity Reduction Evaluation
  - i. **RPA.** Dilution has been granted for the chronic aquatic toxicity in conducting the RPA. The previous Order R5-2015-0030 granted dilution for chronic toxicity and included a toxicity trigger of 20 chronic toxicity units (TUc) and no effluent limitations. Chronic toxicity testing results exceeding 20 TUc would demonstrate the discharge has a reasonable potential to cause or contribute to an exceedance of the Basin Plan’s narrative toxicity objective.

Based on annual routine chronic toxicity testing conducted from October 2015 through December 2019, the maximum chronic toxicity result was 64 TUc with a 53 percent effect for Ceriodaphnia Dubia reproduction based on samples collected beginning on 8 October 2018.

Based on the results of the 8 October 2018 test, the Discharger initiated accelerated monitoring for the Ceriodaphnia Dubia species. The following tests on 29 October 2018 and 12 November 2018 both exceeded the monitoring trigger, and the Discharger initiated a Toxicity Reduction Evaluation (TRE) to take actions to mitigate the impact of the discharge to prevent recurrence of toxicity.

As part of the TRE, the Discharger identified a new cleaning chemical used at the processing facility from January 2018 through November 2018. After use of this cleaning chemical was discontinued, the Discharger took samples on 11 March, 27 March, 15 April, and 29 April, 2019, that all demonstrated that the toxicity for Ceriodaphnia Dubia reproduction was reduced below the 20 TUc monitoring trigger. In a letter dated 29 May 2020 from the Central Valley Water Board titled "Response to toxicity reduction evaluation progress update and request for termination of toxicity reduction evaluation", the Discharger concluded, with Central Valley Water Board's concurrence, that the new cleaning chemical identified in the TRE was likely the source of elevated toxicity in Ceriodaphnia Dubia reproduction that caused an exceedance of the 20 TUc monitoring trigger. Additionally, based on the 29 May 2020 response letter, the Central Valley Water Board also concluded that "based on modeling of the major ions alone, the Discharger cannot confirm that salinity is the only source of toxicity when considering the [No Observable Effect Concentration (NOEC)]"

Therefore, the discharge does not have reasonable potential to cause or contribute to an instream exceedance of the Basin Plan's narrative toxicity objective. However, in order to account for potential seasonal fluctuation in effluent salinity and/or toxicity, this Order contains increased frequency of chronic WET testing.

#### **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 C.F.R. section 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g., CTR criteria and MCL's) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

Mass-based effluent limitations were calculated by multiplying the concentration limitation by the Facility's reasonable measure of actual

production of the Facility. As described in section IV.B.2 of this Fact Sheet, mass-based annual average effluent limitations for BOD5 and TSS were calculated by multiplying the effluent limitations established in by the ELG's and a reasonable measure of the Facility's actual production. The mass-based MDEL for ammonia and AMEL's for ammonia, BOD5, and TSS were calculated by multiplying the concentration limitations by the permitted maximum daily and average monthly flow limitations, respectively, and appropriate unit conversion factor. Mass-based limitations for total dissolved solids and chloride were retained from Order R5-2015-0030.

Mass-based MDELs for BOD5 and TSS were retained from Order R5-2015-0030 and calculated by multiplying the average monthly concentration limitations by the permitted maximum daily flow limitations. Average monthly concentration limitations were retained in the calculation based on information gathered in the treatability study that demonstrated that the Discharger can consistently meet these mass loading limits using the average monthly concentration limitations but at a higher discharge flow.

## 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 POTW's unless impracticable. The rationale for using alternative averaging periods for chloride, chlorine residual, electrical conductivity, iron, pH, and total dissolved solids 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).

All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order.

- a. **Flow.** Order R5-2015-0030 included flow as an effluent limitation based on the Facility design flow. Compliance with the effluent limits for flow in Order R5-2015-0030 was calculated based on maximum daily, average monthly, and average annual 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. Flow as a discharge prohibition adequately regulates the Facility, does not allow for an increase in the discharge of pollutants, and does not constitute backsliding.

**4. Antidegradation Policies**

This Order does not allow for an increase in flow or mass of pollutants to the receiving water. Therefore, a complete antidegradation analysis is not necessary. The Order requires compliance with applicable federal technology-based standards and with WQBEL’s where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards. The permitted discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Anti-Degradation Policy. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

**5. Stringency of Requirements for Individual Pollutants**

This Order contains both technology-based effluent limitations and WQBEL’s for individual pollutants. The technology-based effluent limitations consist of restrictions on BOD5, TSS, and pH. Restrictions on BOD5, TSS, and pH are discussed in Att F.IV.B.2. This Order’s technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order contains effluent limitations more stringent than the minimum, federal technology-based requirements that are necessary to meet water quality standards. For BOD5, TSS, and pH, both technology-based effluent limitations and water quality-based effluent limitations are applicable. The more stringent of these effluent limitations are implemented by this Order. These requirements include some limitations that are more stringent than required by the CWA.

This Order contains pollutant restrictions that are more stringent than applicable federal requirements and standards. Specifically, this Order includes effluent limitations for BOD, TSS, and pH that are more stringent than applicable federal standards, but that are nonetheless necessary to meet numeric objectives or protect beneficial uses. The rationale for including these limitations is explained in Att F.IV.C.3.d.

**Summary of Final Effluent Limitations  
 Discharge Point No. 001**

**Table F-19. Summary of Final Effluent Limitations**

<b>Parameter</b>	<b>Units</b>	<b>Effluent Limitations</b>	<b>Basis</b>
Biochemical Oxygen Demand	mg/L	AMEL 100 mg/L MDEL 150 mg/L	PJ
Biochemical Oxygen Demand	lbs/day	AMEL 792 MDEL 1,170	PJ
Biochemical Oxygen Demand	lbs/year	Average Annual 231,000	ELG



Parameter	Units	Effluent Limitations	Basis
Total Suspended Solids	mg/L	AMEL 100 mg/L MDEL 200 mg/L	PJ
Total Suspended Solids	lbs/day	AMEL 792 MDEL 1,170	PJ
Total Suspended Solids	lbs/year	Average Annual 429,000	ELG
Ammonia Nitrogen, Total (as N)	mg/L	AMEL 15 MDEL 38	NAWQC
Ammonia Nitrogen, Total (as N)	lbs/day	AMEL 120 MDEL 440	NAWQC
Chlorine, Total Residual	mg/L	0.011 0.019	NAWQC
Chloride	lbs/day	MDEL 27,900 Average Annual 20,900	EIR
Copper, Total Recoverable	µg/L	AMEL 16 MDEL 37	CTR
Diazinon and Chlorpyrifos	µg/L	AMEL MDEL	TMDL
Electrical Conductivity @ 25°C	µmhos/cm	Average Annual 9,370	PER
Iron, Total Recoverable	µg/L	Average Annual 4,200	SEC MCL
Methylene Chloride	µg/L	AMEL 91 MDEL 182	CTR
pH	Standard Units	Instantaneous Max 9.5 Instantaneous Min 6.5	BP, ELG
Settleable Solids	ml/L	AMEL 0.1 MDEL 0.2	BP
Total Dissolved Solids	lbs/day	MDEL 79,800 Average Annual 59,800	EIR
Zinc, Total Recoverable	µg/L	AMEL 67 MDEL 209	BP

**Table F-19 Notes:**

1. **Basis:**

**DC.** Based on the design capacity of the Facility.

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

**PJ.** Based on professional judgement

**CTR.** Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.

**EIR.** The 1993 Environmental Impact Report for the Bell-Carter Plant Expansion

**ELG.** Based on Effluent Limitations Guidelines and Standards for the Canned and Preserved Fruits Subcategory of the Canned and Preserved Fruits and Vegetables Processing Point Source Category.

**NAWQC.** Based on U.S. EPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.

**PER.** Performance-based limit

**SEC MCL.** Based on the Secondary Maximum Contaminant Level.

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

2. **Chlorine, Total Residual.** 4-day average effluent limitation is 0.011 mg/L and 1-hour average effluent limitation is 0.019 mg/L

3.. **Diazinon and Chlorpyrifos Average Monthly Effluent Limitation**

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

4. **Diazinon and Chlorpyrifos Maximum Daily Effluent Limitation**

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

**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, color, chemical constituents, dissolved oxygen, floating material, oil and grease, pH,

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

- a. **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. Groundwater – Not Applicable**

# **VI. RATIONALE FOR PROVISIONS**

## **A. Standard Provisions**

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

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

more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

## B. Special Provisions

### 1. Reopener Provisions

- a. **Mercury.** This provision allows the Central Valley Water Board to reopen this Order in the event mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted. In addition, this Order may be reopened if the Central Valley Water Board determines that a mercury offset program is feasible for dischargers subject to NPDES permits.
- b. **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.
- c. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when developing effluent limitations for copper and zinc. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.
- d. **Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS).** On 17 January 2020, certain Basin Plan Amendments to incorporate new strategies for addressing ongoing salt and nitrate accumulation in the Central Valley became effective. Other provisions subject to U.S. EPA approval became effective on 2 November 2020, when approved by U.S. EPA. As the Central Valley Water Board moves forward to implement those provisions that are now in effect, this Order may be amended or modified to incorporate new or modified requirements necessary for implementation of the Basin Plan Amendments. More information regarding these Amendments can be found on the Central Valley Salinity Alternatives for Long-Term Sustainability [\(CV-SALTS\) web page:](https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/)  
([https://www.waterboards.ca.gov/centralvalley/water\\_issues/salinity/](https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/))
- e. **Effluent and Receiving Water Discoloration Conditions Study.** This Order allows the Discharger to complete a study to determine receiving water conditions that minimize and/or eliminate the discoloration nuisance

at different effluent flows. This Order may be reopened to incorporate results of that study.

- f. **Filtered Iron Study.** There are indications that iron in the discharge may have a reasonable potential to cause or contribute to an exceedance of water quality objectives. This Order requires the Discharger to complete a study of iron's potential effect in the receiving water. This reopener provision allows the Central Valley Water Board to reopen this Order for addition of effluent limitations and requirements for iron if after the review of the study results it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective.
- g. **Dilution Credits.** This provision allows the Central Valley Water Board to reopen this Order, as appropriate, to modify dilution credits, should the Facility performance, treatment, or characteristics of the discharge or receiving water change. Modification for the dilution credit may include increasing the allowed dilution credit, if appropriate.

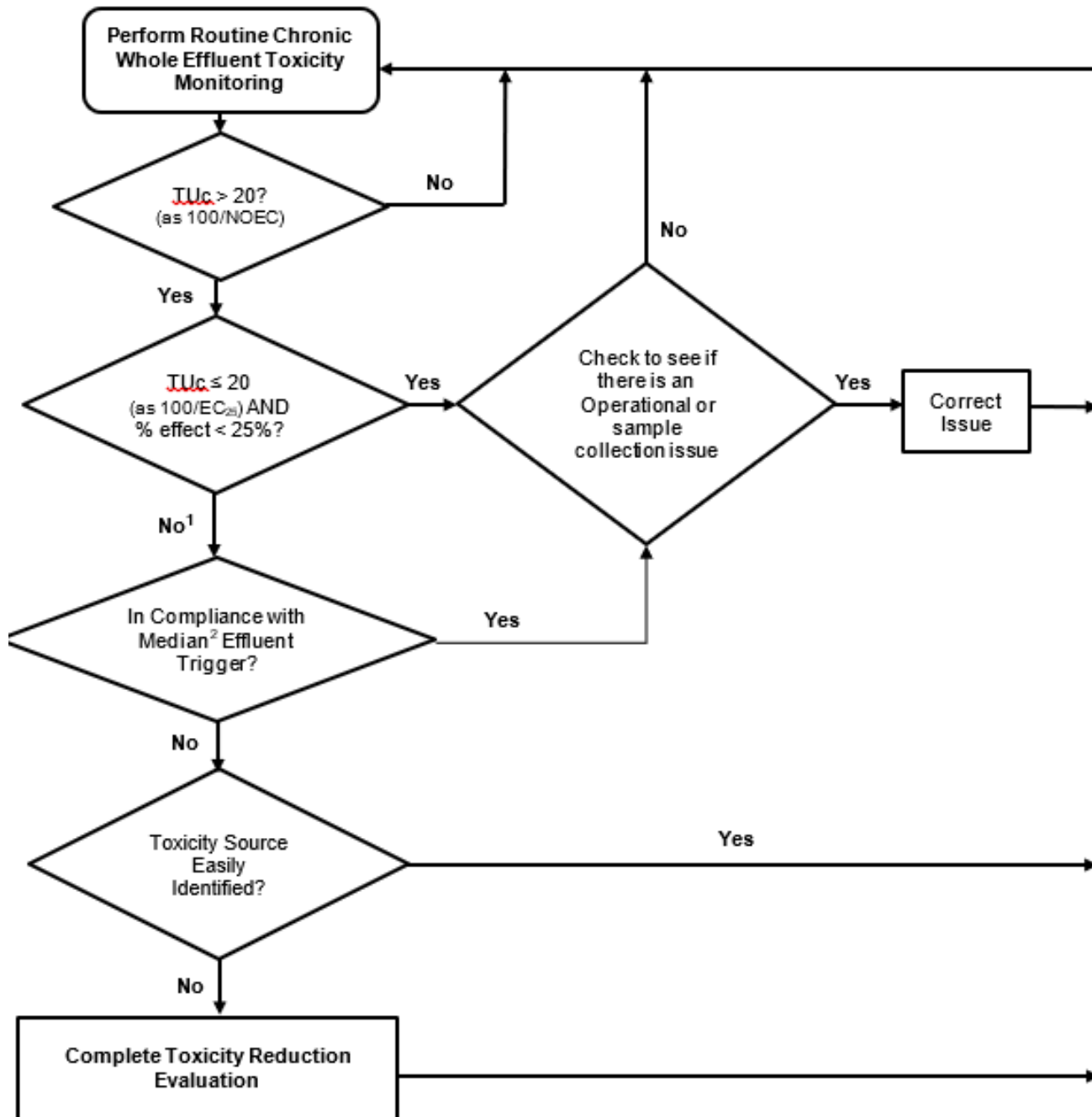
## 2. **Special Studies and Additional Monitoring Requirements**

- a. **Chronic Whole Effluent Toxicity Requirements.** The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at section 3.1.20 .) Based on whole effluent chronic toxicity testing performed by the Discharger from October 2015 through December 2019, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

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

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

Figure F-3. WET Accelerated Monitoring Flow Chart



**Figure F-3 Notes:**

1. The Discharger may elect to take additional samples to determine the 3-sample median. The samples shall be collected at least one week apart and the final sample shall be within 6 weeks of the initial sample exhibiting toxicity.
2. See Compliance Determination section for procedures for calculating 6-week median.

- b. **Effluent and Receiving Water Discoloration Conditions Study.** The Basin Plan contains a narrative toxicity objective that states, “Water shall be free of discoloration that causes nuisance or adversely affects beneficial uses” (Basin Plan at section 3.1.5.). The Central Valley Water Board has received complaints regarding the color of the Sacramento River in the vicinity of the discharge and it was determined that the color of the Discharger’s effluent causes these nuisance conditions. The Discharger has made operational changes to discharge at night when the discoloration cannot be observed. Additionally, the Discharger demonstrated to the Central Valley Water Board in November 2020 that there was no observable discoloration in the river when discharging effluent at approximately 50 gallons per minute during low river stage and daylight hours. Therefore, this Order contains a discharge prohibition for effluent flow above 50 gallons per minute during daylight hours in order to meet the receiving water limitations and prevent a discoloration nuisance in the Sacramento River. However, the Discharger may elect to collect additional data, including visual observation, to determine receiving water conditions that minimize and/or eliminate the discoloration nuisance at different effluent flows and complete a study to recommend effluent and receiving water conditions that minimize and/or eliminate the discoloration nuisance in the Sacramento River during daylight hours.
- c. **Filtered Iron Study.** There are indications that iron in the discharge may have a reasonable potential to cause or contribute to an exceedance of water quality objectives. This Order requires the Discharger to complete a study of iron’s potential effect in the receiving water.

### 3. Best Management Practices and Pollution Prevention

- a. **Salinity Evaluation and Minimization Plan.** A Salinity Evaluation and Minimization Plan is required to be maintained and updated in this Order to ensure adequate measures are developed and implemented by the Discharger to reduce the discharge of salinity to the Sacramento River.

### 4. Construction, Operation, and Maintenance Specifications

- a. **Membrane Filtration.** As discussed in Section II, the Zenon membrane unit was installed to improve effluent quality and enable an increase in effluent discharge directly from the Facility in the early 2000’s (rather than relying on the City of Corning’s WWTP for additional treatment). In addition, when the Zenon membrane unit was installed, the DAF unit was removed from use at the Facility ponds, which originally aided TSS removal. Furthermore, the Discharger completed a Treatability Study Report in February 2016 that demonstrates that the Zenon membrane unit produces higher quality effluent for TSS, copper, iron, and zinc compared to wastewater only treated at the Facility’s ponds. In order to allow for increased removal efficiency of certain constituents and to satisfy antidegradation policies (as discussed in Section IV.D.4), the Zenon

membrane unit shall be operated year-round and to the fullest extent practicable.

- b. **Class II Surface Impoundments.** Construction, operations, and maintenance specifications related to the Class II Surface Impoundments is regulated by WDR Order No. R5-2018-0069.
- c. **Treatment Pond Operating Requirements.** The operation and maintenance specifications for the treatment ponds are necessary to avoid objectionable odors perceived beyond the limits of the WWTP property that creates or threatens to create nuisance conditions. Ongoing odor complaints from a neighboring resident were received in 2016 and Central Valley Water Board staff observed the continuing presence of odors. Therefore, the Discharger provided multiple technical reports detailing the necessary aeration practices required at the treatment ponds and to ensure the potential for future odor nuisance at the Facility is reduced, including the Pond DO Operations and Maintenance Report and the DO Follow-Up Report. These reports detailed standard operating procedures related to pond DO control, and the information provided is reflected herein as treatment pond operating requirements.

**5. Special Provisions for Publicly-Owned Treatment Works (POTWs) – Not Applicable**

**6. Compliance Schedules – Not Applicable**

**VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS**

CWA section 308 and 40 C.F.R. sections 122.41(h), (j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Central Valley Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements.

Water Code section 13176, subdivision (a)(1) requires that laboratory analyses shall be performed by laboratories accredited by the State Water Resources Control Board, Division of Drinking Water, which accredits laboratories through its Environmental Laboratory Accreditation Program (ELAP). Data generated using field tests are exempt from this requirement pursuant to Water Code Section 13176, subdivision (a)(2).

The Monitoring and Reporting Program (MRP), Attachment E of this Order establishes monitoring, reporting, and recordkeeping requirements that implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

**A. Influent Monitoring**

1. Influent monitoring is required to collect data on the characteristics of the wastewater. The monitoring frequencies for flow (continuous), BOD (twice a month), pH (weekly), TSS (twice a month), chemical oxygen demand (monthly),



chloride (monthly), electrical conductivity @ 25°C (weekly), iron, total recoverable (monthly), and total dissolved solids (monthly) have been retained from Order No. R5-2015-0030.

2. Influent monitoring frequencies for sodium and sulfate have been reduced from quarterly to yearly since these constituents did not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the Sacramento River and because a new effluent limitation for electrical conductivity was established in this Order that considers the presence of these constituents, among others in the wastewater.

## **B. Internal Flow Monitoring**

1. Internal flow monitoring is required to collect data on the ratio of effluent flow from the Zenon filter and the Facility's ponds. The monitoring frequency (continuous) has been retained from the previous Order.
2. Monitoring location INT-003 has not been retained from the previous Order. The Discharge Prohibition at Pond 6 was removed in this Order, therefore, it is sufficient to monitor the total combined flow from Pond 6 and Pond 7 as a percentage of the total effluent flow.

## **C. 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. This Order removes the monitoring requirement at EFF-001 that requires resampling for weekly and monthly constituents when the percentage of Zenon flow changes by 20% or more. In the 2016 Treatability Study Report, the Discharger demonstrated the removal efficiencies of constituents that contain effluent limits. Additionally, this Order contains the Construction, Operation, and Maintenance Specification requiring the "Zenon membrane filtration unit shall be operated year-round, to the maximum extent practicable". Therefore, additional effluent samples are not needed to characterize the effluent when the effluent flow ratio changes by 20% or more.
3. Effluent monitoring frequencies and sample types for flow (continuous), BOD (weekly), pH (daily), TSS (weekly), copper (monthly), zinc (monthly), electrical conductivity @ 25°C (weekly), chloride (weekly), total chlorine residual (daily), chlorpyrifos (yearly), diazinon (yearly), color (monthly), iron, total recoverable (monthly), settleable solids (monthly), and total dissolved solids (weekly) have been retained from Order R5-2015-0030 to determine compliance with effluent limitations and discharge prohibitions for these parameters.

4. This Order establishes new effluent limitations for methylene chloride. Therefore, this Order establishes monthly monitoring for these parameters to determine compliance with the applicable effluent limitations.
5. Monitoring data collected over the previous permit term for benzo(a)pyrene, bis (2-ethylhexyl) phthalate, and pentachlorophenol did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific monitoring requirements for these parameters have not been retained from Order No. R5-2015-0030.
6. Effluent monitoring data for filtered iron is not available to determine if there is a reasonable potential to cause or contribute to an exceedance of the secondary MCL in the Sacramento River. Therefore, this Order establishes monthly monitoring for iron filtered through a 1.5 micron filter for comparison to the Secondary MCL.
7. Effluent monitoring frequency for ammonia has been reduced from weekly to monthly and is adequate to assess compliance with effluent limitations.
8. Effluent monitoring frequency for aluminum has been reduced from quarterly to yearly and is adequate to determine reasonable potential for the following permit term.
9. The Sacramento River from Red Bluff to Knights Landing is listed as impaired on the 303(d) list for mercury. This Order retains annual monitoring from Order No. R5-2015-0030 to characterize the presence of mercury in the effluent.
10. This Order retains monthly monitoring for hardness to ensure that adequate data is available to properly adjust water quality criteria for hardness-dependent metals.
11. This Order also retains monitoring frequencies for nitrate nitrogen (quarterly), sulfate (monthly), temperature (weekly), and standard minerals (yearly).
12. In accordance with Section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order requires effluent monitoring for priority pollutants quarterly during the second year of the permit term. See Attachment E, Section X.D for more detailed requirements related to performing priority pollutant monitoring.

#### **D. 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. Quarterly chronic whole effluent toxicity testing is required in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

The most sensitive species to be used for chronic toxicity testing was determined in accordance with the process outlined in the MRP section V.E.2. Based on the Discharger's last 3 years of chronic toxicity data, the species that exhibited the highest TUC was the water flea (*Ceriodaphnia dubia*). Consequently, *Ceriodaphnia dubia* has been established as the most sensitive species for chronic WET testing. Additionally, the monitoring frequency has been changed from yearly to quarterly in order to determine if fluctuations in salinity loading to the Facility affects toxicity of the effluent.

## **E. Receiving Water Monitoring**

### **1. Surface Water**

- a. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream.
- b. Monitoring frequencies and sample types at RSW-001 for copper, total recoverable (monthly), copper, dissolved (monthly), zinc, total recoverable (monthly), zinc, dissolved (monthly), chloride (monthly), dissolved oxygen (monthly), hardness (monthly), electrical conductivity @ 25°C (weekly), iron, total recoverable (monthly), pH (weekly), temperature (weekly), total dissolved solids (monthly), and turbidity (weekly) have been retained from Order No. R5-2015-0030.
- c. Receiving water monitoring data for filtered iron is not available to determine if there is a reasonable potential to cause or contribute to an exceedance of the secondary MCL in the Sacramento River. Therefore, this Order establishes monthly monitoring at RSW-001 for iron filtered through a 1.5 micron filter for comparison to the Secondary MCL.
- d. Monitoring frequencies and sample types at RSW-002 for chloride (monthly), dissolved oxygen (monthly), hardness (monthly), electrical conductivity @ 25°C (weekly), pH (weekly), temperature (weekly), total dissolved solids (monthly), and turbidity (weekly) have been retained from Order No. R5-2015-0030.
- e. Monitoring frequencies and sample types at RSW-002 for copper, total recoverable (monthly), zinc, total recoverable (monthly), and iron, total recoverable (monthly), have been removed from Order No. R5-2015-0030.
- f. This Order establishes new effluent limitations for methylene chloride that are calculated based on dilution credits. Therefore, this Order establishes

quarterly upstream receiving water monitoring to evaluate assimilative capacity.

- g. This Order includes effluent limitations for ammonia that are calculated based on dilution credits. Therefore, this Order establishes quarterly upstream receiving water monitoring to evaluate assimilative capacity.
- h. This Order establishes upstream receiving water quarterly monitoring for filtered iron to determine if there is assimilative capacity in the receiving water to meet water quality objectives.
- i. This Order establishes visual monitoring for color in the downstream receiving water to verify that the discharge does not produce a discoloration nuisance in the receiving water when discharging above 50 gpm during daylight hours.
- j. Upstream receiving water monitoring for sulfate has been reduced from monthly to yearly since there is no reasonable potential to cause or contribute to an exceedance of a water quality objective in the receiving water.
- k. 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 RSW-001 monitoring for priority pollutants quarterly during the second year of the permit term. See Attachment E, Section X.D for more detailed requirements related to performing priority pollutant monitoring.

## **2. Groundwater – Not Applicable**

### **F. Other Monitoring Requirements**

#### **1. Pond Monitoring**

Pond monitoring is required to evaluate compliance with the Treatment Pond Operating Requirements.

#### **2. Production Monitoring**

Production monitoring is required to evaluate the technology-based effluent limitations for BOD and TSS in accordance with 40 C.F.R. part 407, subpart F.

#### **3. Rainfall and Storm Water Monitoring**

Monitoring of the monthly amount of storm water generated and discharged to the Facility is required to ensure proper operation and capacity of the treatment ponds. In addition, the rainfall volume is subtracted from the total measured influent flow to determine compliance with Discharge Prohibition III.G (Olive Processing Wastewater Flow).

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

Under the authority of section 308 of the CWA (33 U.S.C. section 1318), U.S. EPA requires all dischargers under the NPDES Program to participate in the annual DMR-QA Study Program. The DMR-QA Study evaluates the analytical ability of laboratories that routinely perform or support self-monitoring analyses required by NPDES permits. There are two options to satisfy the requirements of the DMR-QA Study Program: (1) The Discharger can obtain and analyze a DMR-QA sample as part of the DMR-QA Study; or (2) Per the waiver issued by U.S.EPA to the State Water Board, the Discharger can submit the results of the most recent Water Pollution Performance Evaluation Study from their own laboratories or their contract laboratories. A Water Pollution Performance Evaluation Study is similar to the DMR-QA Study. Thus, it also evaluates a laboratory's ability to analyze wastewater samples to produce quality data that ensure the integrity of the NPDES Program. The Discharger shall submit annually the results of the DMR-QA Study or the results of the most recent Water Pollution Performance Evaluation Study to the State Water Board. The State Water Board's Quality Assurance Program Officer will send the DMR-QA Study results or the results of the most recent Water Pollution Performance Evaluation Study to U.S. EPA's DMR-QA Coordinator and Quality Assurance Manager.

**VIII. PUBLIC PARTICIPATION**

The Central Valley Water Board has considered the issuance of WDR's that will serve as an NPDES permit for the Bell-Carter Industrial Wastewater Treatment Plant. As a step in the WDR adoption process, the Central Valley Water Board staff has developed tentative WDR's and has encouraged public participation in the WDR adoption process.

**A. Notification of Interested Persons**

The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through posting the Notice of Public Hearing document on 3 March 2021 at the City of Corning City Hall, City of Corning Post Office, and at the public Facility entrance.

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/) ([http://www.waterboards.ca.gov/centralvalley/board\\_info/meetings/](http://www.waterboards.ca.gov/centralvalley/board_info/meetings/))

**B. Written Comments**

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

To be fully responded to by staff and considered by the Central Valley Water Board, the written comments were due at the Central Valley Water Board office by 5:00 p.m. on **19 March 2021**.

**C. Public Hearing**

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

Date: **22 April 2021**

Time: **8:30 a.m.**

Location: Regional Water Quality Control Board, Central Valley Region  
11020 Sun Center Dr., Suite #200  
Rancho Cordova, CA 95670

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

**D. Reconsideration of Waste Discharge Requirements**

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., within 30 calendar days of the date of adoption of this Order at the following address, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day:

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

Or by email at [waterqualitypetitions@waterboards.ca.gov](mailto:waterqualitypetitions@waterboards.ca.gov)

[Instructions on how to file a petition for review](http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instructions.shtml)

([http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality/wqpetition\\_instructions.shtml](http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instructions.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 WDR's and NPDES permit should contact the Central Valley Water Board, reference this facility, and provide a name, address, and phone number.

**G. Additional Information**

Requests for additional information or questions regarding this order should be directed to Mike Nilsen at 530-224-4853.

**ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS**

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Aluminum, Total Recoverable	µg/L	78.7	211	200	1,300	500	--	--	--	200	No
Ammonia Nitrogen, Total (as N)	mg/L	0.9	0.04	0.22	0.591	0.222	--	--	--	--	Yes
Cadmium, Total Recoverable	µg/L	ND <2.5	ND <0.05	0.35	--	1.6	--	--	0.35	5	Insufficient Data
Chloride	mg/L	1,880	7.2	230	8601	2302	--	--	--	250	No
Copper, Total Recoverable	µg/L	32.1	4.2	4.1	--	4.1	1,300	--	5.6	1,000	Yes
Electrical Conductivity	µmhos/cm	11,300	1513	230	--	--	--	--	230	900	No
Fluoride	mg/L	3.3 J	ND <0.08	2	--	--	--	--	--	2	Insufficient Data
Iron, Total Recoverable	µg/L	2,520	1,4593	300	--	1,000	--	--	--	300	Insufficient Data
Mercury, Total Recoverable	ng/L	0.75	1.2	124	--	--	50	51	--	--	No



BELL-CARTER OLIVE COMPANY, INC. AND CITY OF CORNING  
 BELL-CARTER INDUSTRIAL WASTEWATER TREATMENT PLANT

ORDER R5-2021-0021  
 NPDES NO. CA0083721

Methylene Chloride	µg/L	20.8	ND <0.4	4.7	--	--	4.7	1,600	--	5	Yes
Nitrate, Total (as N)	mg/L	10.8	0.09	10	--	--	--	--	--	10	No
Nitrite, Total (as N)	mg/L	0.226	ND <0.003	1.0	--	--	--	--	--	1.0	No
Sulfate	mg/L	965	4.33	250	--	--	--	--	--	250	No
Total Dissolved Solids	mg/L	6,570	943	500	--	--	--	--	--	500	No
Zinc, Total Recoverable	µg/L	420	9.0	16	--	54	--	--	16	5,000	Yes

**Attachment G Notes:**

1. **MEC.** Maximum Effluent Concentration
2. **B.** Maximum Receiving Water Concentration or lowest detection level, if non-detect
3. **C.** Criterion used for Reasonable Potential Analysis
4. **CMC.** Criterion Maximum Concentration (CTR or NTR)
5. **CCC.** Criterion Continuous Concentration (CTR or NTR)
6. **Water & Org.** Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)
7. **Org Only.** Human Health Criterion for Consumption of Organisms Only (CTR or NTR)
8. **Basin Plan.** Numeric Site-Specific Basin Plan Water Quality Objective
9. **MCL.** Drinking Water Standards Maximum Contaminant Level
10. **NA.** Not Available
11. **ND.** Non-detect
12. General Note: All inorganic concentrations are given as a total recoverable.

**ATTACHMENT H – CALCULATION OF WQBEL’S**

**Abbreviations used in this table:**

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

**HUMAN HEALTH WQBEL’S CALCULATIONS**

Parameter	Units	Criteria	Mean Background Concentration	Effluent CV	Dilution Factor	MDEL/AMEL Multiplier	AMEL	MDEL
Methylene Chloride	µg/L	4.7	0.4	0.60	20	2.01	91	182

**Attachment H – Human Health WQBEL’s Calculations Notes:**

**1. Effluent CV.** Coefficient of Variation (CV) was established in accordance with section 1.4 of the SIP.

**ATTACHMENT H – CALCULATION OF WQBEL’S**

**AQUATIC LIFE WQBEL’S CALCULATIONS**

Parameter	Units	CMC	CCC	B	Eff CV	CMC DF	CCC DF	ECA <sub>acute</sub>	ECA <sub>chronic</sub>	ECA <sub>Multacute</sub>	LTA <sub>acute</sub>	ECA <sub>Multchronic</sub>	LTA <sub>chronic</sub>	AMEL <sub>Mult95</sub>	MDEL <sub>Mult99</sub>	AMEL	MDEL
Ammonia Nitrogen, Total (as N)	mg/L	0.59	0.22	0.04	0.99	7	5	38.2	13.0	0.21	7.84	0.67	8.71	1.94	4.87	15	38
Copper, Total Recoverable	µg/L	5.6	4.1	3.9 <sup>1</sup>	0.82	18	80	37.5	20.7	0.24	9.2	0.43	8.98	1.77	4.09	16	37
Zinc, Total Recoverable	µg/L	16	54	9.0	2.17	27.5	2	209	144	0.11	23.1	0.19	27.3	2.89	9.02	67	209

**Attachment H – Aquatic Life WQBEL’s Calculations Notes:**

1. **B.** Maximum Receiving Water Concentration or lowest detection level, if non-detect
2. **CMC.** Criterion Maximum Concentration (CTR or NTR)
3. **CCC.** Criterion Continuous Concentration (CTR or NTR)
4. **CV.** Coefficient of Variation (established in accordance with section 1.4 of the SIP)
5. **DF.** Dilution Factor
6. **ECA.** Effluent Concentration Allowance
7. **Eff.** Effluent
8. **LTA.** Aquatic Life Calculations – Long-Term Average
9. **Mult.** Multiplier
10. **MDEL.** Maximum Daily Effluent Limitation. Maximum Daily Effluent Limitations are calculated according to section 1.4 of the SIP using a 99th percentile occurrence probability.
11. **AMEL.** Average Monthly Effluent Limitation. Average Monthly Effluent Limitations are calculated according to section 1.4 of the SIP using a 95th percentile occurrence probability.
12. **MDEL.** Maximum Daily Effluent Limitation

- 13. Copper, Total Recoverable (B).** Maximum dissolved background concentration converted to total recoverable concentration using default translators to evaluate assimilative capacity
- 14. Eff CV.** Coefficient of Variation (CV) was established in accordance with section 1.4 of the SIP.