

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

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**ORDER R5-2019-0021
NPDES NO. CA0085235**

**WASTE DISCHARGE REQUIREMENTS AND MASTER RECYCLING PERMIT FOR THE
CITY OF CLOVIS
SEWAGE TREATMENT AND WATER REUSE FACILITY
FRESNO COUNTY**

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

Table 1. Discharger Information

Discharger	City of Clovis
Name of Facility	Sewage Treatment and Water Reuse Facility
Facility Address	9700 East Ashlan Avenue
	Clovis, CA 93619
	Fresno County

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Disinfected Tertiary-Treated Effluent	36° 45' 39" N	119° 37' 40.4" W	Fancher Creek
002	Disinfected Tertiary-Treated Effluent	36° 53' 24" N	119° 39' 56.3" W	Diversion Channel from Big Dry Creek Reservoir to Little Dry Creek
REC-001	Disinfected Tertiary-Treated Effluent	--	--	Groundwater underlying recycled water use sites

Table 3. Administrative Information

This Order was adopted on:	4 April 2019
This Order shall become effective on:	1 June 2019
This Order shall expire on:	31 May 2024
The Discharger shall file a Report of Waste Discharge as an application for reissuance of WDR's in accordance with title 23, California Code of Regulations, and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than:	31 May 2023
The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, Central Valley Region have classified this discharge as follows:	Major

I, Patrick Pulupa, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **4 April 2019**.

Original signed by

PATRICK PULUPA, Executive Officer

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I. FACILITY INFORMATION

Information describing the City of Clovis, Sewage Treatment and Water Reuse Facility (Facility) is summarized in Table 1 and in sections I and II of the Fact Sheet (Attachment F). Section I of the Fact Sheet also includes information regarding the Facility's permit application.

II. FINDINGS

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

- A. Legal Authorities.** This Order serves as waste discharge requirements (WDR's) pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as a National Pollutant Discharge Elimination System (NPDES) permit authorizing the Discharger to discharge into waters of the United States at the discharge location described in Table 2 subject to the WDR's in this Order. This Order also serves as a Master Recycling Permit pursuant to article 4, chapter 7, division 7 of the Water Code (commencing with section 13500).
- B. Background and Rationale for Requirements.** The Central Valley Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for the requirements in this Order, is hereby incorporated into and constitutes Findings for this Order. Attachments A through E and G through I are also incorporated into this Order.
- C. Provisions and Requirements Implementing State Law.** The provisions/requirements in subsections IV.C, V.B, VI.C.4, and VI.C.6.a are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.
- D. Monitoring and Reporting.** 40 C.F.R. section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Central Valley Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (MRP) establishes monitoring and reporting requirements to implement federal and state requirements. The MRP 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 the Facility subject to this Order. The monitoring reports required by this Order are necessary to determine compliance with this Order. The need for the monitoring reports is discussed in the Fact Sheet.

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

THEREFORE, IT IS HEREBY ORDERED that Order R5-2014-0005 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 bypass 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 (CCR), Title 22, section 66261.1 et seq., is prohibited.
- E. Average Monthly and Average Annual Discharge Flows:**
 - 1. Effective immediately and until compliance with Special Provision VI.C.6.b,** discharges to the steel storage tanks exceeding an average monthly flow of 3.1 million gallons per day (MGD) and an average annual flow of 2.8 MGD are prohibited.
 - 2. Effective upon compliance with Special Provision VI.C.6.b,** discharges to the steel storage tanks exceeding an average monthly flow of 6.2 MGD and an average annual flow of 5.6 MGD are prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Points 001 and 002

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-A, as described in the MRP, Attachment E:

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

Table 4. Effluent Limitations – Discharge Point 001

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	--	--	--
pH ¹	standard units	--	--	--	6.5	8.2
Total Suspended Solids	mg/L	10	15	--	--	--
Priority Pollutants						
Copper, Total Recoverable	µg/L	2.8	--	4.8	--	--
Cyanide, Total (as CN)	µg/L	4.3	--	8.5	--	--
Zinc, Total Recoverable	µg/L	23	--	46	--	--
Non-Conventional Pollutants						
Ammonia Nitrogen, Total (as N)	mg/L	1.6	3.5	--	--	--
	lbs/day ²	37	82	--	--	--
	lbs/day ³	75	160	--	--	--
Nitrite Plus Nitrate (as N)	mg/L	10	16	--	--	--

¹ Compliance shall be measured at Monitoring Location EFF-001, as described in the MRP, Attachment E.

² Based on a design average annual discharge flow of 2.8 MGD. Effective immediately and until compliance with Special Provision VI.C.6.b.

³ Based on a design average annual discharge flow of 5.6 MGD. Effective upon compliance with Special Provision VI.C.6.b.

- b. **Percent Removal.** The average monthly percent removal of 5-day biochemical oxygen demand (BOD₅) and total suspended solids (TSS) shall not be less than 90 percent.
- c. **Acute Whole Effluent Toxicity (WET).** Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
 - i. 70 percent, minimum for any one bioassay
 - ii. 90 percent, median for any three consecutive bioassays.
- d. **Chronic Whole Effluent Toxicity (WET).** The effluent chronic toxicity shall not exceed 1 chronic toxicity unit (TUc) (as 100/NOEC) AND a percent effect of 25 percent at 100 percent effluent, for any endpoint as the median of up to three consecutive chronic toxicity tests within a 6-week period.
- e. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed the following, with compliance measured at Monitoring Location UVS-001 as described in the MRP, Attachment E:
 - i. 2.2 most probable number (MPN) per 100 mL, as a 7-day median
 - ii. 23 MPN/100 mL, more than once in any 30-day period
 - iii. 240 MPN/100 mL, at any time.
- f. **Electrical Conductivity @ 25°C.** The 12-month rolling average electrical conductivity of the discharge shall not exceed the 12-month rolling average electrical conductivity of the source water plus 500 µmhos/cm, or a maximum of 1,000 µmhos/cm, whichever is more stringent. When source water is from more than one source, the electrical conductivity shall be a flow-weighted average of all sources.

2. Final Effluent Limitations – Discharge Point 002

The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 002. Unless otherwise specified, compliance shall be measured at Monitoring Location EFF-A, as described in the MRP, Attachment E:

- a. The Discharger shall maintain compliance with the effluent limitations specified in Table 5:

Table 5. Effluent Limitations – Discharge Point 002

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	--	--	--
pH ¹	standard units	--	--	--	6.5	8.1
Total Suspended Solids	mg/L	10	15	--	--	--
Priority Pollutants						
Copper, Total Recoverable	µg/L	2.8	--	4.8	--	--
Cyanide, Total (as CN)	µg/L	4.3	--	8.5	--	--
Zinc, Total Recoverable	µg/L	23	--	46	--	--
Non-Conventional Pollutants						
Ammonia Nitrogen, Total (as N)	mg/L	1.3	2.8	--	--	--
	lbs/day ²	30	65	--	--	--
	lbs/day ³	61	130	--	--	--
Nitrite Plus Nitrate (as N)	mg/L	10	16	--	--	--

¹ Compliance shall be measured at Monitoring Location EFF-002, as described in the MRP, Attachment E.

² Based on a design average annual discharge flow of 2.8 MGD. Effective immediately and until compliance with Special Provision VI.C.6.b.

³ Based on a design average annual discharge flow of 5.6 MGD. Effective upon compliance with Special Provision VI.C.6.b.

- b. **Percent Removal.** The average monthly percent removal of BOD₅ and TSS shall not be less than 90 percent.
- c. **Acute Whole Effluent Toxicity (WET).** Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
 - i. 70 percent, minimum for any one bioassay
 - ii. 90 percent, median for any three consecutive bioassays.
- d. **Chronic Whole Effluent Toxicity (WET).** The effluent chronic toxicity shall not exceed 1 TUc (as 100/NOEC) AND a percent effect of 25 percent at 100 percent effluent, for any endpoint as the median of up to three consecutive chronic toxicity tests within a 6-week period.
- e. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed the following, with compliance measured at Monitoring Location UVS-001 as described in the MRP, Attachment E:
 - i. 2.2 MPN/100 mL, as a 7-day median
 - ii. 23 MPN/100 mL, more than once in any 30-day period
 - iii. 240 MPN/100 mL, at any time.

- f. **Electrical Conductivity @ 25°C.** The 12-month rolling average electrical conductivity of the discharge shall not exceed the 12-month rolling average electrical conductivity of the source water plus 500 $\mu\text{mhos/cm}$, or a maximum of 1,000 $\mu\text{mhos/cm}$, whichever is more stringent. When source water is from more than one source, the electrical conductivity shall be a flow-weighted average of all sources.

3. Interim Effluent Limitations – Discharge Points 001 and 002

The Discharger shall maintain compliance with the following interim effluent limitations at Discharge Points 001 and 002, with compliance measured at Monitoring Location EFF-A, as described in the MRP, Attachment E.

- a. **Chronic Whole Effluent Toxicity (WET). Effective immediately and until 31 May 2024,** the effluent chronic toxicity shall not exceed **16 TUc** (as 100/NOEC) AND a percent effect of 25 percent at 6.25 percent effluent, for any endpoint as the median of up to three consecutive chronic toxicity tests within a 6-week period. This interim effluent limitation shall apply in lieu of the final effluent limitations for chronic WET in sections IV.A.1.d and IV.A.2.d.

B. Land Discharge Specifications – Not Applicable

C. Recycling Specifications – Discharge Point REC-001

1. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations of this Order.
2. Notwithstanding the requirements herein, the production, distribution, and use of recycled water shall comply with the terms and conditions of the most current regulations contained in CCR, Title 22, division 4, chapter 3 (Title 22).
3. All recycling equipment, pumps, piping, valves, and outlets shall be appropriately marked to differentiate them from potable facilities. All recycling distribution system piping shall be purple or distinctively wrapped in purple tape.
4. Recycled water controllers, valves, and similar appurtenances shall be affixed with recycled water warning signs and shall be equipped with removable handles, locking mechanisms, or some other means to prevent public access or tampering. The contents of the signs shall conform to CCR, Title 22, section 60310. Quick couplers and sprinkler heads, if used, shall be of a type, or secured in a manner, that permits operation only by authorized personnel. Hose bibs that the public could use shall be eliminated, except for use in a cemetery that complies with the requirements of section 8118 of the Health and Safety Code.
5. All use areas where recycled water is used that are accessible to the public shall be posted with signs that are visible to the public, in a size no less than 4 inches high by 8 inches wide and include the following wording: **“RECYCLED WATER – DO NOT DRINK, AGUA DE DESPERDICIO RECLAMADA – NO TOME.”** Each sign shall display an international symbol similar to that shown in Attachment I.
6. Recycled water shall not be allowed to escape from the authorized use areas by airborne spray or by surface flow except in minor amounts, such as that associated with good irrigation practices.
7. Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities.

8. Drinking water fountains shall be protected against contact with recycled water spray, mist, or runoff.
9. Workers shall be educated regarding proper hygienic procedures to ensure personal and public safety.
10. Horizontal and vertical separation between pipelines transporting recycled water and those transporting potable water shall comply with Title 22, section 64572, except to the extent that the Division of Drinking Water has specifically approved a variance.
11. Potable water supply piping and recycled water piping shall not have any cross-connections. Supplementing recycled water with potable water shall not be allowed except through an air-gap separation or, if approved by DDW, a reduced pressure principle backflow device.
12. Application of recycled water to recycled water use areas shall not exceed the nitrogen or hydraulic loading reasonably necessary to satisfy the nitrogen or water uptake needs of the use area considering the plant, soil, climate, and irrigation management system (i.e., general accepted agronomic rates). All tail water shall be returned to the use areas or treatment facilities.
13. No spray irrigation with recycled water shall occur when wind velocities exceed 30 mph.
14. Areas irrigated with recycled water shall be managed to prevent breeding of mosquitoes. More specifically:
 - a. All applied irrigation water must infiltrate completely within 24 hours;
 - b. Ditches not serving as wildlife habitat should be maintained free of emergent, marginal, and floating vegetation; and
 - c. Low-pressure and un-pressurized pipelines and ditches, which are accessible to mosquitoes, shall not be used to store recycled water.
15. Discharges to the recycled water use areas shall be managed to minimize erosion.
16. No irrigation with recycled water shall take place within 50 feet of any domestic water supply well.
17. No impoundment of recycled water shall occur within 100 feet of any domestic water supply well.
18. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point REC-001. Unless otherwise specified, compliance shall be measured at Monitoring Location EFF-A, as described in the MRP, Attachment E:
 - a. The Discharger shall maintain compliance with the recycling specifications in Table 6:

Table 6. Recycling Specifications

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	--	--	--
pH ¹	standard units	--	--	--	6.5	8.5
Total Suspended Solids	mg/L	10	15	--	--	--
Non-Conventional Pollutants						
Nitrite Plus Nitrate (as N)	mg/L	10	16	--	--	--

¹ Compliance shall be measured at Monitoring Location REC-001, as described in the MRP, Attachment E.

- b. **Percent Removal.** The average monthly percent removal of BOD₅ and TSS shall not be less than 90 percent.
- c. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed the following, with compliance measured at Monitoring Location UVS-001 as described in the MRP, Attachment E:
 - i. 2.2 MPN/100 mL, as a 7-day median
 - ii. 23 MPN/100 mL, more than once in any 30-day period
 - iii. 240 MPN/100 mL, at any time.
- d. **Electrical Conductivity @ 25°C.** The 12-month rolling average electrical conductivity of the discharge shall not exceed the 12-month rolling average electrical conductivity of the source water plus 500 µmhos/cm, or a maximum of 1,000 µmhos/cm, whichever is more stringent. When source water is from more than one source, the electrical conductivity shall be a flow-weighted average of all sources.

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

- 1. Receiving water limitations for Fancher Creek and the Diversion Channel are based on water quality objectives contained in the *Water Quality Control Plan, Third Edition* (Revised May 2018), for the Tulare Lake Basin (Tulare Lake Basin Plan) and are a required part of this Order. The discharge shall not cause the following in Fancher Creek and/or the Diversion Channel:
 - a. **Un-ionized Ammonia.** Un-ionized ammonia to be present in amounts that adversely affect beneficial uses nor to be present in excess of 0.025 mg/L (as N).
 - b. **Bacteria.** The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mL, nor more than 10 percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.
 - c. **Biostimulatory Substances.** Water to contain biostimulatory substances that promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.
 - d. **Chemical Constituents.** Chemical constituents to be present in concentrations that adversely affect beneficial uses.

- e. **Color.** Discoloration that causes nuisance or adversely affects beneficial uses.
- f. **Dissolved Oxygen:**
 - i. The monthly median of the mean daily dissolved oxygen concentration to fall below 85 percent of saturation in the main water mass at centroid of flow;
 - ii. The 95th percentile dissolved oxygen concentration to fall below 75 percent of saturation; nor
 - iii. The dissolved oxygen concentration to be reduced below 5.0 mg/L at any time.
- g. **Floating Material.** Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.
- h. **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.
- i. **pH.** The pH to be depressed below 6.5 nor raised above 8.3.
- j. **Pesticides:**
 - i. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses; nor
 - ii. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses.
- k. **Radioactivity.** Radionuclides to be present in concentrations that are deleterious 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.
- l. **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.
- m. **Settleable Substances.** Substances to be present in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.
- n. **Suspended Material.** Suspended material to be present in concentrations that cause nuisance or adversely affect beneficial uses.
- o. **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 to domestic or municipal water supplies.
- p. **Temperature.** The natural temperature to be increased by more than 5°F. Compliance shall be determined based on the difference in temperature at Monitoring Locations RSW-001U and RSW-001D for Fancher Creek and Monitoring Locations RSW-003U and RSW-003D for the Diversion Channel.
- q. **Toxicity.** Toxic substances to be present, individually or in combination, in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.
- r. **Turbidity.** Turbidity to increase more than:
 - i. 1 Nephelometric Turbidity Units (NTU) where natural turbidity is between 0 and 5 NTU;

- ii. 20 percent where natural turbidity is between 5 and 50 NTU;
 - iii. 10 NTU where natural turbidity is between 50 and 100 NTU; nor
 - iv. 10 percent where natural turbidity is greater than 100 NTU.
2. Receiving water limitations for Little Dry Creek are based on water quality objectives contained in the *Water Quality Control Plan, Fifth Edition* (Revised May 2018), for the Sacramento and San Joaquin River Basins (San Joaquin Basin Plan) and are a required part of this Order. The discharge shall not cause the following in Little Dry Creek:
- a. **Bacteria.** The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mL, nor more than 10 percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.
 - b. **Biostimulatory Substances.** Water to contain biostimulatory substances that promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.
 - c. **Chemical Constituents.** Chemical constituents to be present in concentrations that adversely affect beneficial uses.
 - d. **Color.** Discoloration that causes nuisance or adversely affects beneficial uses.
 - e. **Dissolved Oxygen:**
 - i. The monthly median of the mean daily dissolved oxygen concentration to fall below 85 percent of saturation in the main water mass;
 - ii. The 95th percentile dissolved oxygen concentration to fall below 75 percent of saturation; nor
 - iii. The dissolved oxygen concentration to be reduced below 7.0 mg/L at any time.
 - f. **Floating Material.** Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.
 - g. **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.
 - h. **pH.** The pH to be depressed below 6.5 nor raised above 8.5.
 - i. **Pesticides:**
 - i. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses;
 - ii. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses;
 - iii. 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;
 - iv. Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Board Resolution 68-16 and 40 C.F.R. section 131.12);
 - v. Pesticide concentrations to exceed the lowest levels technically and economically achievable;

- vi. Pesticides to be present in concentrations in excess of the maximum contaminant levels (MCL's) set forth in Title 22; nor
- vii. Thiobencarb to be present in excess of 1.0 µg/L.

j. **Radioactivity:**

- i. 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.
- ii. 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 CCR.

k. **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.

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

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

n. **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.

o. **Temperature.** The natural temperature to be increased by more than 5°F. Compliance to be determined based on the difference in temperature at Monitoring Locations RSW-002U and RSW-002D.

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

q. **Turbidity.** Turbidity to:

- i. Exceed 2 Nephelometric Turbidity Units (NTUs) where natural turbidity is less than 1 NTU;
- ii. Increase more than 1 NTU where natural turbidity is between 1 and 5 NTU;
- iii. Increase more than 20 percent where natural turbidity is between 5 and 50 NTU;
- iv. Increase more than 10 NTU where natural turbidity is between 50 and 100 NTU; nor
- v. Increase more than 10 percent where natural turbidity is greater than 100 NTU.

B. Groundwater Limitations

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

1. Total coliform organism densities equal to or greater than 2.2 MPN/100 mL;
2. Constituents in concentrations greater than the appropriate MCL's specified in Title 22; nor

3. Taste or odor-producing constituents, toxic substances, or any other constituent to be present in concentrations that create a nuisance or adversely affect beneficial uses.

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions included in Attachment D.
2. The Discharger shall comply with the following provisions. In the event that there is any conflict, duplication, or overlap between provisions specified by this Order, the more stringent provision shall apply:
 - a. If the Discharger's wastewater treatment plant is publicly owned or subject to regulation by California Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to CCR, Title 23, division 3, chapter 26.
 - b. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:
 - i. Violation of any term or condition contained in this Order;
 - ii. Obtaining this Order by misrepresentation or by failing to disclose fully all relevant facts;
 - iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and
 - iv. A material change in the character, location, or volume of discharge.

The causes for modification include:

- i. *New regulations.* New regulations have been promulgated under section 405(d) of the CWA, or the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued.
- ii. *Land application plans.* When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.
- iii. *Change in sludge use or disposal practice.* Under 40 C.F.R. section 122.62(a)(1), a change in the Discharger's sludge use or disposal practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

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

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

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

- d. This Order shall be modified, or alternately revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:
 - i. Contains different conditions or is otherwise more stringent than any effluent limitation in the Order; or
 - ii. Controls any pollutant limited in the Order.

The Order, as modified or reissued under this paragraph, shall also contain any other requirements of the CWA then applicable.
- e. The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.
- f. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the state or users of those waters resulting from any discharge or sludge use or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge or sludge use or disposal.
- g. The Discharger shall ensure compliance with any existing or future pretreatment standard promulgated by U.S. EPA under section 307 of the CWA, or amendment thereto, for any discharge to the municipal system.
- h. A copy of this Order shall be maintained at the 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 bypass, 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 that 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 (POTW) 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 CCR, Title 16, sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.
- m. The Central Valley Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13268, 13350, 13385, 13386, and 13387.
- n. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Central Valley Water Board and a statement. The statement shall comply with the signatory and certification requirements in the Federal Standard Provisions (Attachment D, section V.B) and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

- o. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from the Facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.
- p. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, effluent limitation, or receiving water limitation of this Order, the Discharger shall notify the Central Valley Water Board by telephone (559) 455-5116 within 24 hours of having knowledge of such non-compliance, and shall confirm this notification in writing within 5 days, unless the Central Valley Water Board waives confirmation. The written notification shall state the nature, time, duration, and cause of non-compliance, and shall describe the measures being taken to remedy the current non-compliance and prevent recurrence including, where applicable, a schedule of implementation. Other non-compliance requires written notification as above at the time of the normal monitoring report.

B. Monitoring and Reporting Program (MRP) Requirements

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

C. Special Provisions

1. Reopener Provisions

- a. Conditions that necessitate a major modification of a permit are described in 40 C.F.R. section 122.62, including, but not limited to:
 - i. If new or amended applicable water quality standards are promulgated or approved pursuant to section 303 of the CWA, or amendments thereto, this permit may be reopened and modified in accordance with the new or amended standards.
 - ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.
- b. This Order may be reopened for modification, or revocation and reissuance, as a result of the detection of a reportable priority pollutant generated by special conditions included in this Order. These special conditions may be, but are not limited to, fish tissue sampling, WET, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.

- c. **Mercury.** If mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted, this Order shall be reopened and an effluent limitation shall be 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 need for a mercury offset program for the Discharger.
- d. **Whole Effluent Toxicity (WET).** As a result of a Toxicity Reduction Evaluation (TRE) or Toxicity Evaluation Study (TES), this Order may be reopened to include revised chronic toxicity effluent limitations, revised acute toxicity effluent limitations, and/or effluent limitations for a specific toxicant identified in a TRE. Additionally, the State Water Board is developing new Statewide toxicity provisions through the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California that will be applicable to the Discharger. Upon the effective date of the Water Quality Control Plan, the Central Valley Water Board intends to reopen this Order to incorporate new toxicity provisions. It is expected the new Statewide toxicity provisions will be effective prior to implementation of the final effluent limitations for chronic WET in this Order, which become effective 1 June 2024.
- e. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable. If the Discharger performs studies to determine site-specific WER's and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.
- f. **Drinking Water Policy.** On 26 July 2013 the Central Valley Water Board adopted Resolution R5-2013-0098 amending the Basin Plan and establishing a Drinking Water Policy. The State Water Board approved the Drinking Water Policy on 3 December 2013. This Order may be reopened to incorporate monitoring of drinking water constituents to implement the Drinking Water Policy.
- g. **Ultraviolet Light (UV) Disinfection Operating Specifications.** The UV operating specifications in this Order are based on the UV guidelines developed by the National Water Research Institute (NWRI) and American Water Works Association Research Foundation (AWWRF) titled, "*Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse*" (NWRI Guidelines) and the Discharger's site-specific Title 22 engineering reports. If the Discharger conducts additional site-specific UV engineering studies that identify alternative UV operating specifications that will achieve the virus inactivation equivalent to Title 22 disinfected tertiary recycled water, this Order may be reopened to modify the UV operating specifications.
- h. **Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS).** On 31 May 2018, as part of the CV-SALTS initiative, the Central Valley Water Board approved Basin Plan Amendments to incorporate new strategies for addressing ongoing salt and nitrate accumulation in the Central Valley. If approved by the State Water Board, the Office of Administrative Law, and U.S. EPA, the Amendments would impose certain new requirements on salt and nitrate discharges. More information regarding these Amendments can be found at the following link:
https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/

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

- i. **Groundwater Recharge.** The Discharger is considering the development of a groundwater recharge project for use of the Facility's effluent for groundwater recharge. If the Discharger submits a complete Report of Water Discharge that includes antidegradation analysis and a revised Title 22 Engineering Report, this Order may be amended or modified to authorize the application of the Facility's effluent for groundwater recharge.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

- a. **Toxicity Reduction Evaluation (TRE) 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 Special Provision, the Discharger is required to initiate a 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 step-wise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TRE's are designed to identify the causative agents and sources of WET, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. Alternatively, under certain conditions, as described below, the Discharger may participate in an approved TES in lieu of conducting a site-specific TRE.
 - i. **Numeric Toxicity Monitoring Trigger.** The numeric toxicity monitoring trigger is 1 TUc (where TUc = 100/NOEC). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to initiate additional actions to evaluate effluent toxicity as specified in subsection ii, below.
 - ii. **Chronic Toxicity Monitoring Trigger Exceeded.** When a chronic WET result during routine monitoring exceeds the monitoring trigger, the Discharger shall proceed as follows:
 - (a) **Initial Toxicity Check.** If the result is less than or equal to 1.3 TUc (as 100/EC₂₅) AND/OR the percent effect is less than 25 percent at 100 percent effluent, check for any operation or sample collection issues and return to routine chronic toxicity monitoring.¹ Otherwise, proceed to step (b).
 - (b) **Evaluate 6-Week Median.** The Discharger may take two additional samples within 6 weeks of the initial routine sampling event exceeding the chronic toxicity monitoring trigger to evaluate compliance using a 6-week median. If the 6-week median is greater than 1.3 TUc (as 100/EC₂₅) and the percent effect is greater than 25 percent at 100 percent effluent, proceed with subsection (c). Otherwise, the Discharger shall check for any operation or sample collection issues and return to routine chronic toxicity monitoring.
 - (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

¹ The Discharger may participate in an approved TES if the chronic toxicity effluent limitation is exceeded twice or more in the past 12-month period and the cause is not identified and/or addressed.

toxicity monitoring. If the source of toxicity is not easily identified, the Discharger shall conduct a site-specific TRE or participate in an approved TES as described in the following subsections.

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

3. Best Management Practices and Pollution Prevention

- a. **Updated Salinity Evaluation and Minimization Plan.** The Discharger shall evaluate the effectiveness of the current salinity evaluation and minimization plan and provide an updated plan to identify and address sources of salinity discharged from the Facility. The plan shall be completed and submitted to the Central Valley Water Board by the due date in the Technical Reports Table of this Order.

The Discharger shall then evaluate the effectiveness of the updated salinity evaluation and minimization plan and provide a summary with the ROWD.

4. Construction, Operation and Maintenance Specifications

- a. **Filtration System Operating Specifications.** To ensure the filtration system is operating properly to provide adequate disinfection of the wastewater, the turbidity of the filter effluent measured at Monitoring Location FIL-001 shall not exceed:
- i. 0.2 NTU more than 5 percent of the time within a 24-hour period; or
 - ii. 0.5 NTU at any time.
- b. **Ultraviolet Light (UV) Disinfection System Operating Specifications.** The UV disinfection system must be operated in accordance with an operations and maintenance program that assures adequate disinfection and shall meet the

following minimum specifications to provide virus inactivation equivalent to Title 22 disinfected tertiary recycled water:

- i. **UV Dose.** The minimum hourly average UV dose in the UV reactor shall be 80 millijoules per square centimeter (mJ/cm^2).
- ii. **UV Transmittance.** The minimum hourly average UV transmittance (at 254 nanometers) in the wastewater measured at Monitoring Location UVS-001 shall not fall below 54 percent.
- iii. The lamp sleeves and cleaning system components must be visually inspected per the manufacturer's operations manual for physical wear (scoring, solarization, seal leaks, cleaning fluid levels, etc.) and to check the efficacy of the cleaning system.
- iv. The lamp sleeves must be cleaned periodically as necessary to meet the UV dose requirements.
- v. Lamps must be replaced per the manufacturer's operations manual, or sooner, if there are indications the lamps are failing to provide adequate disinfection. Lamp age and lamp replacement records must be maintained.
- vi. The Facility's UV system must be operated in accordance with an approved operation and maintenance plan that assures adequate disinfection. A copy of the approved plan must be maintained at the Facility and be readily available to operations personnel and regulatory agencies.

c. Facility Operating Requirements

- i. The Facility shall be designed, constructed, operated, and maintained to prevent inundation or washout due to flows with a 100-year return frequency.
- ii. Public contact with wastewater, sludge, biosolids, and other wastes shall be precluded through such means as fences, signs, or acceptable alternatives.
- iii. Objectionable odors originating at the Facility shall not be perceivable beyond the limits of the waste treatment areas at an intensity that creates or threatens to create nuisance conditions.

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

a. Pretreatment Requirements

- i. The Discharger shall continue to authorize the City of Fresno to implement the Control Authority pretreatment requirements contained in 40 C.F.R. part 403 within the City of Clovis, including any subsequent regulatory revisions to 40 C.F.R. part 403. Where 40 C.F.R. part 403 or subsequent revision places mandatory actions upon the Control Authority but does not specify a timetable for completion of the actions, the Discharger shall complete the required actions within 6 months from the issuance date of this permit or the effective date of the 40 C.F.R. part 403 revisions, whichever comes later. For violations of pretreatment requirements, the Discharger shall be subject to enforcement actions, penalties, fines, and other remedies by U.S. EPA or other appropriate parties, as provided in the CWA. U.S. EPA may initiate enforcement action against a nondomestic user for noncompliance with applicable standards and requirements as provided in the CWA.
- ii. The Discharger shall continue to authorize the City of Fresno to enforce the requirements promulgated under sections 307(b), 307(c), 307(d), and 402(b) of

the CWA with timely, appropriate and effective enforcement actions. The Discharger shall cause all non-domestic users subject to federal categorical standards to achieve compliance no later than the date specified in those requirements or, in the case of a new nondomestic user, upon commencement of the discharge.

- iii. The Discharger shall continue to authorize the City of Fresno to perform the pretreatment functions as required in 40 C.F.R. part 403 including, but not limited to:
 - (a) Implement the necessary legal authorities as provided in 40 C.F.R. section 403.8(f)(1);
 - (b) Enforce the pretreatment requirements under 40 C.F.R. section 403.5 and 403.6;
 - (c) Implement the programmatic functions as provided in 40 C.F.R. section 403.8(f)(2); and
 - (d) Provide the requisite funding and personnel to implement the pretreatment program as provided in 40 C.F.R. section 403.8(f)(3).
- iv. **Pretreatment Reporting Requirements.** Pretreatment reporting requirements are included in the MRP, section X.D.2 of Attachment E.

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

- i. Collected screenings, residual sludge, biosolids, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer and consistent with Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste, as set forth in Title 27, CCR, division 2, subdivision 1, section 20005, et seq. Removal for further treatment, storage, disposal, or reuse at sites (e.g., landfill, composting sites, soil amendment sites) that are operated in accordance with valid WDR's issued by a Regional Water Board will satisfy these specifications.
- ii. Sludge and solid waste shall be removed from screens, sumps, ponds, clarifiers, etc. as needed to ensure optimal plant performance.
- iii. The treatment of sludge generated at the Facility shall be confined to the Facility property and conducted in a manner that precludes infiltration of waste constituents into soils in a mass or concentration that will violate groundwater limitations in section V.B of this Order. In addition, the storage of residual sludge, solid waste, and biosolids on Facility property shall be temporary and controlled, and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate groundwater limitations included in section V.B of this Order.

- iv. The use, disposal, storage, and transportation of biosolids shall comply with existing federal and state laws and regulations, including permitting requirements and technical standards included in 40 C.F.R. part 503. If the State Water Board and the Central Valley Water Board are given the authority to implement regulations contained in 40 C.F.R. part 503, this Order may be reopened to incorporate appropriate time schedules and technical standards. The Discharger must comply with the standards and time schedules contained in 40 C.F.R. part 503 whether or not they have been incorporated into this Order.
- v. The Discharger shall comply with section IX.A Biosolids of the MRP, Attachment E.
- vi. The on-site sludge/biosolids treatment, processing, and storage for the Facility is described in the Fact Sheet (Attachment F, section II.A). Any proposed change in the on-site treatment, processing, or storage of sludge/biosolids shall be reported to the Executive Officer at least **90 days** in advance of the change and shall not be implemented until written approval by the Executive Officer.

6. Other Special Provisions

- a. **Title 22, or Equivalent, Disinfection Requirements.** Wastewater shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to DDW reclamation criteria, Title 22, or equivalent.
- b. **Phase II Improvements.** The Discharger is permitted to discharge up to 5.6 MGD (annual average) to Fancher Creek and/or the Diversion Channel upon compliance with the following requirements:
 - i. **Facility Improvements.** The Discharger shall have completed construction and start-up of its Phase II improvements, as identified in section II.E of the Fact Sheet and shall provide certification of completion by the design engineer.
 - ii. **Effluent and Receiving Water Limitation Compliance.** The Discharger shall demonstrate compliance with the effluent limitations and discharge specifications in section IV and receiving water limitations in section V.A of this Order. The Discharger shall provide evidence, certified by a licensed professional engineer, that the Facility is operating properly.
 - iii. **Request for Flow Increase.** The Discharger shall submit a request for an increase in the permitted discharge flow rates that demonstrates compliance with items i and ii, above. The increase in the permitted discharge flow rate shall not be effective until the Executive Officer verifies compliance with Special Provision VI.C.6.b and approves the request.
 - iv. **Implementation of the San Joaquin River Agreement.** The Discharger shall demonstrate that the 2006 San Joaquin River Agreement (NRDC v. Rodgers); or some other subsequent agreement, has been implemented that increased the minimum 1Q10 and 7Q10 flows of the San Joaquin River to 100 cubic feet per second.
- c. The Discharger shall not discharge disinfected tertiary-treated wastewater to Discharge Point 002 until the necessary agreements to flow disinfected tertiary-treated wastewater through the Diversion Channel are obtained. **Prior to discharge to Discharge Point 002**, the Discharger shall submit, to the Central Valley Water Board, confirmation that the necessary agreements have been obtained.

7. Compliance Schedules

- a. **Compliance Schedule for Final Effluent Limitations for Chronic Whole Effluent Toxicity (WET).** This Order requires compliance with the final effluent limitations for chronic WET applicable to discharges at Discharge Points 001 and 002 by 31 May 2024. The Discharger shall comply with the time schedule shown in the Technical Reports Table to ensure compliance with the final effluent limitations.

8. Master Recycling Permit Provisions

- a. The Discharger shall be responsible for ensuring that recycled water meets the quality standards of this order and for the operation and maintenance of transport facilities and associated appurtenances. The Discharger shall hold the users responsible for the application and use of recycled water on their designated use areas, and associated operations and maintenance in accordance with all applicable requirements CCR, Title 22 and this Order.
- b. The Discharger shall establish and enforce rules and regulations governing the design, construction, and use of the recycled water distribution and disposal system by its reuse customers.
- c. The Discharger shall conduct periodic inspections of the users' facilities and operations to monitor and ensure compliance with conditions of the user agreement and this Order. The Discharger shall take whatever actions are necessary, including termination of delivery of recycled water to the user, to correct any user violations.
- d. The Discharger, Central Valley Water Board, DDW, or an authorized representative of these parties, upon presentation of proper credentials, shall have the right to enter upon the recycled water use site during reasonable hours to verify that the user of recycled water is complying with the Master Recycling Permit provisions in this Order and the Discharger's rules and regulations.
- e. The Discharger shall submit New Recycled Water Use Site Reports to the Central Valley Water Board and DDW in accordance with the requirements in the Technical Reports Table within the MRP, Attachment E. The New Recycled Water Use Site Report shall include the following:
 - i. The site location, including a map showing the specific boundaries, of the use site and the County Assessor Parcel Number(s) (if Parcel Number(s) are not appropriate to accurately describe the site location, the Discharger shall provide the Central Valley Water Board with enough information for the Central Valley Water Board to accurately determine the location of the proposed recycling activities);
 - ii. The name of the use site property owner and contact information;
 - iii. The name of the user and contact information;
 - iv. The specific use to be made of the recycled water, the use site acreage, the type of vegetation/crops to which the recycled water will be applied, and the anticipated volume of recycled water to be used;
 - v. Identification of the on-site supervisor who is responsible for operation of the recycled water system;
 - vi. Description of the recycled water management facilities and operations plan;
 - vii. Plans and specifications that include the following:

- (a) Pipe locations of the recycled, potable, and auxiliary non-potable water systems;
 - (b) Type and location of the outlets and plumbing fixtures that will be accessible to the public;
 - (c) The methods and devices to be used to prevent backflow of recycled water in the public water system; and
 - (d) Plan notes relating to recycled water-specific installation and use requirements.
- viii. Certification that the new use site conforms to the Discharger's rules and regulations;
 - ix. A copy of the signed user agreement; and
 - x. The results of the cross-connection control test performed in accordance with the American Water Works Association and DDW guidelines. The results shall include a certification that DDW was notified of the initial cross-connection control test and was provided an opportunity to be present.
- f. A copy of the User Agreement and the Discharger's rules and regulations governing the distribution and use of recycled water shall be maintained at the user's facilities and be available at all times for inspection by Central Valley Water Board staff, the Discharger, and DDW staff.
 - g. If, in the opinion of the Executive Officer, recycling at a proposed new use site cannot be adequately regulated under the Master Recycling Permit, a ROWD may be requested and individual Water Recycling Requirements may be adopted.

VII. COMPLIANCE DETERMINATION

- A. BOD₅ and TSS Effluent Limitations and Recycling Specifications (Sections IV.A.1.a, IV.A.1.b, IV.A.2.a, IV.A.2.b, IV.C.18.a, and IV.C.18.b).** Compliance with the final effluent limitations for BOD₅ and TSS required in Waste Discharge Requirements sections IV.A.1.a and IV.A.2.a and recycling specifications for BOD₅ and TSS required in Waste Discharge Requirements section IV.C.18.a shall be ascertained by 24-hour composite samples. Compliance with effluent limitations required in Waste Discharge Requirements sections IV.A.1.b and IV.A.2.b and recycling specifications required in Waste Discharge Requirements section IV.C.18.b for percent removal shall be calculated using the arithmetic mean of BOD₅ and TSS in effluent samples collected over a monthly period as a percentage of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period.
- B. Average Monthly and Average Annual Flow Discharge Prohibition (Section III.E).** The average monthly flow represents the daily average flow (in MGD) as determined over a calendar month. The average annual flow represents the daily average flow (in MGD) as determined over a calendar year.
- C. Total Coliform Organisms Effluent Limitations and Recycling Specifications (Sections IV.A.1.e, IV.A.2.e, and IV.C.18.c).** For each day that an effluent sample is collected and analyzed for total coliform organisms, the 7-day median shall be determined by calculating the median concentration of total coliform bacteria in the effluent utilizing the bacteriological results of the last 7 days. For example, if a sample is collected on a Wednesday, the result from that sampling event and all results from the previous 6 days (i.e., Tuesday, Monday, Sunday, Saturday, Friday, and Thursday) are used to calculate the 7-day

median. If the 7-day median of total coliform organisms exceeds a most probable number (MPN) of 2.2 per 100 milliliters, the Discharger will be considered out of compliance.

- D. Mass Effluent Limitations.** The mass effluent limitations contained in sections IV.A.1.a and IV.A.2.a are based on the permitted average annual discharge flow and calculated as follows:

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

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

1. Dischargers shall be deemed out of compliance with an effluent limitation if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).
2. Dischargers shall be required to conduct a Pollutant Minimization Program (PMP) in accordance with section 2.4.5.1 of the SIP when there is evidence that the priority pollutant is present in the effluent above an effluent limitation and either:
 - a. A sample result is reported as detected, but not quantified (DNQ) and the effluent limitation is less than the RL; or
 - b. A sample result is reported as 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 or with an average weekly effluent limitation (AWEL) and more than one sample result is available in a week, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or ND. In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
 - a. The data set shall be ranked from low to high, reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
 - b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.
4. If a sample result, or the arithmetic mean or median of multiple sample results, is below the RL, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the Discharger conducts a PMP (as described in section 2.4.5.1), the Discharger shall not be deemed out of compliance.

- F. Dissolved Oxygen Receiving Water Limitations (Sections V.A.1.f.i-iii and V.A.2.e.i-iii).** The Facility provides a high level of treatment including tertiary filtration and nitrification, which results in minimal dissolved oxygen impacts in the receiving water. Weekly receiving water monitoring in Fancher Creek and Little Dry Creek and semi-annual monitoring in the Diversion Channel are required in the MRP (Attachment E) and are sufficient to evaluate the impacts of the discharge and compliance with this Order. Weekly receiving water monitoring data measured at Monitoring Locations RSW-001U, RSW-001D, RSW-002U and RSW-002D, and semi-annual receiving water monitoring data measured at Monitoring Locations RSW-003U and RSW-003D will be used to determine compliance with part "iii" of the dissolved oxygen receiving water limitations to ensure the discharge does not cause the dissolved

oxygen concentrations in Fancher Creek and the Diversion Channel to be reduced below 5.0 mg/L at any time, or the dissolved oxygen concentrations in Little Dry Creek 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 “i” and “ii”.

- G. Temperature Receiving Water Limitations (Sections V.A.1.p and V.A.2.o).** Compliance with the temperature receiving water limitations applicable to Fancher Creek will be determined based on the difference in the temperature measured at Monitoring Location RSW-001U compared to the downstream temperature measured at Monitoring Location RSW-001D for discharges at Discharge Point 001. Compliance with the temperature receiving water limitations applicable to Little Dry Creek will be determined based on the difference in the temperature measured at Monitoring Location RSW-002U compared to the downstream temperature measured at Monitoring Location RSW-002D for discharges at Discharge Point 002. Compliance with the temperature receiving water limitations applicable to the Diversion Channel will be determined based on the difference in the temperature measured at Monitoring Location RSW-003U compared to the downstream temperature measured at Monitoring Location RSW-003D for discharges at Discharge Point 002.
- H. Turbidity Receiving Water Limitations (Sections V.A.1.r.i-iv and V.A.2.q.i-v).** Compliance with the turbidity receiving water limitations applicable to Fancher Creek will be determined based on the change in turbidity measured at Monitoring Location RSW-001U compared to the downstream turbidity measured at Monitoring Location RSW-001D for discharges at Discharge Point 001. Compliance with the turbidity receiving water limitations applicable to Little Dry Creek will be determined based on the change in turbidity measured at Monitoring Location RSW-002U compared to the downstream turbidity measured at Monitoring Location RSW-002D for discharges at Discharge Point 002. Compliance with the turbidity receiving water limitations applicable to the Diversion Channel will be determined based on the change in turbidity measured at Monitoring Location RSW-003U compared to the downstream turbidity measured at Monitoring Location RSW-003D for discharges at Discharge Point 002.
- I. Chronic Whole Effluent Toxicity (WET) Effluent Limitations (Sections IV.A.1.d, IV.A.2.d, and IV.A.3.a).** To evaluate compliance with the chronic WET effluent limitations, the median TUc shall be the median of up to three consecutive chronic toxicity bioassays during a 6-week period. This includes a routine chronic toxicity monitoring event and two subsequent optional compliance monitoring events.

In determining compliance with the final effluent limitations in sections IV.A.1.d and IV.A.2.d (**effective 1 June 2024**), where the median chronic toxicity units exceed 1 TUc (as 100/NOEC), the Discharger will be deemed out of compliance with the final chronic toxicity effluent limitation if the median chronic toxicity units for any endpoint also exceed a reporting level of 1.3 TUc (as 100/EC₂₅) AND the percent effect at 100 percent effluent exceeds 25 percent. The percent effect used to evaluate compliance with the final chronic toxicity effluent limitation 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 final chronic toxicity effluent limitation.

In determining compliance with the interim effluent limitation in section IV.A.3.a (**effective until 31 May 2024**), where the median chronic toxicity units exceed 16 TUc (as 100/NOEC) for any endpoint, the Discharger will be deemed out of compliance with the interim chronic toxicity effluent limitation if the median percent effect at 6.25 percent effluent for the same endpoint also exceeds 25 percent. The percent effect used to evaluate compliance with the interim chronic toxicity effluent limitation 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 interim chronic toxicity effluent limitation.

A.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)

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

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

Average Monthly Effluent Limitation (AMEL)

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

Average Weekly Effluent Limitation (AWEL)

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

Bioaccumulative

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

Carcinogenic

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

Coefficient of Variation (CV)

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

Daily Discharge

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

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

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

Detected, but Not Quantified (DNQ)

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

Dilution Credit

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

Effect Concentration (EC)

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

Effluent Concentration Allowance (ECA)

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

Enclosed Bays

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

Endpoint

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

Estimated Chemical Concentration

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

Estuaries

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

Inhibition Concentration

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

Inland Surface Waters

All surface waters of the state that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation

The highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation

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

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 concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 C.F.R. part 136, Attachment B, revised as of July 3, 1999.

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.

Pollutant Minimization Program (PMP)

PMP means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Central Valley Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

Pollution Prevention

Pollution Prevention means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State Water Resources Control Board (State Water Board) or Central Valley Water Board.

Satellite Collection System

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

Source of Drinking Water

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

Standard Deviation (σ)

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

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

where:

x is the observed value;

μ is the arithmetic mean of the observed values; and

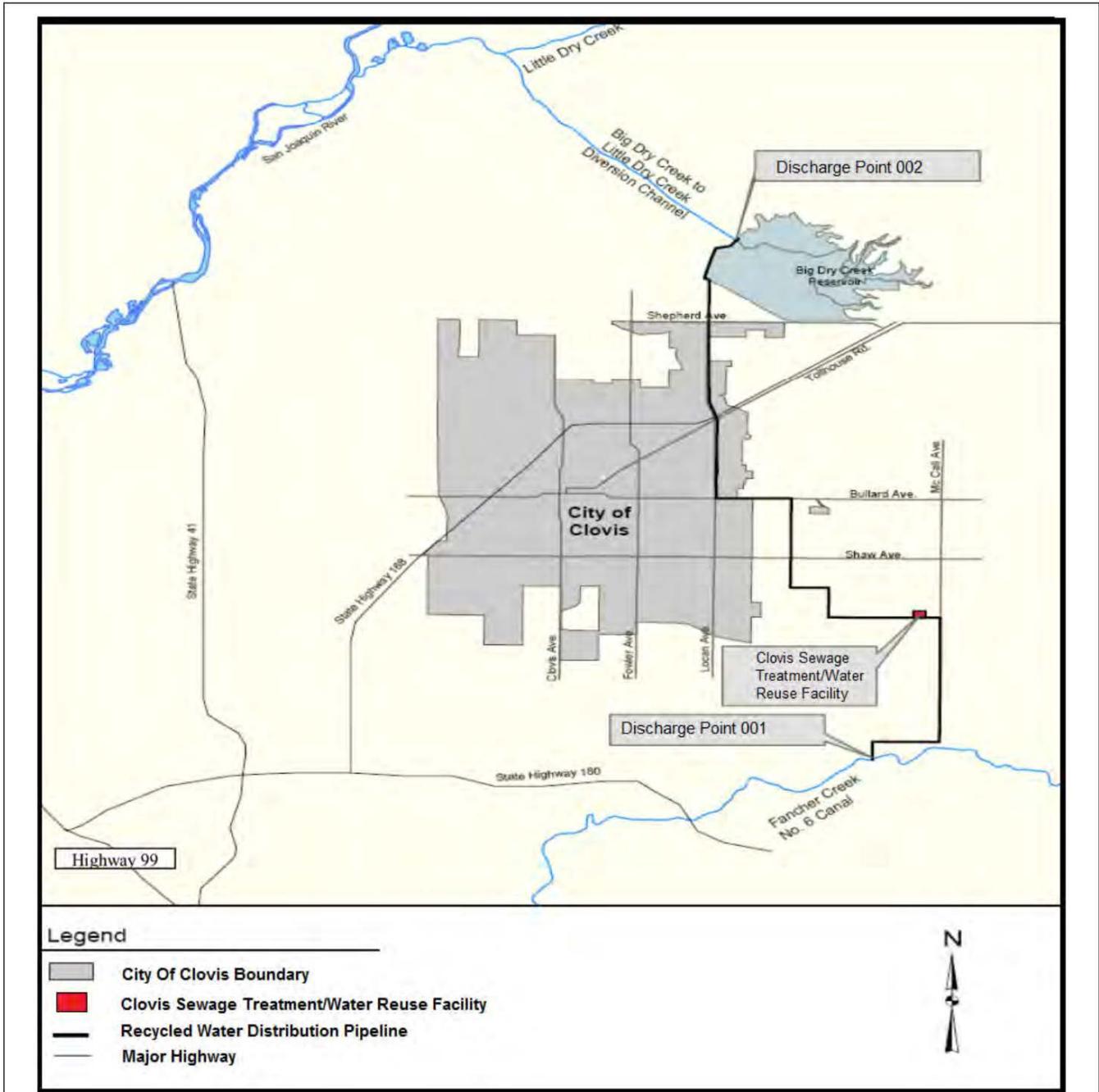
n is the number of samples.

Toxicity Reduction Evaluation (TRE)

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

B.

ATTACHMENT B – MAP



Drawing Reference:

Malcom Pirnie, Inc.
Not to Scale

SITE LOCATION MAP

CITY OF CLOVIS
 CLOVIS SEWAGE TREATMENT/WATER REUSE FACILITY
 FRESNO COUNTY

D.

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 non-compliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof. (40 C.F.R. § 122.41(a); Wat. Code, §§ 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385)
2. The Discharger shall comply with effluent standards or prohibitions established under section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1))

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g))
2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c))

F. Inspection and Entry

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

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (33 U.S.C § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(1); Wat. Code, §§ 13267, 13383);
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(2); Wat. Code, §§ 13267, 13383);
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(3); Wat. Code, § 13267, 13383); and
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (33 U.S.C § 1318(a)(4)(B); 40 C.F.R. § 122.41(i)(4); Wat. Code, §§ 13267, 13383)

G. Bypass

1. Definitions
 - a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i))
 - b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. § 122.41(m)(1)(ii))
2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. § 122.41(m)(2))
3. Prohibition of bypass. Bypass is prohibited, and the Central Valley Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));
 - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and
 - c. The Discharger submitted notice to the Central Valley Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C))
4. The Central Valley Water Board may approve an anticipated bypass, after considering its adverse effects, if the Central Valley Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii))

5. Notice

- a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass. The notice shall be sent to the Central Valley Water Board. As of 21 December 2020, all notices shall be submitted electronically to the initial recipient (State Water Board), defined in Standard Provisions – Reporting V.J below. Notices shall comply with 40 C.F.R. part 3, section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(m)(3)(i))
- b. Unanticipated bypass. The Discharger shall submit a notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). The notice shall be sent to the Central Valley Water Board. As of 21 December 2020, all notices shall be submitted electronically to the initial recipient (State Water Board), defined in Standard Provisions – Reporting V.J below. Notices shall comply with 40 C.F.R. part 3, section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(m)(3)(ii))

H. Upset

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

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2))
2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):
 - a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));
 - b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));
 - c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and
 - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv))
3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4))

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

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

III. STANDARD PROVISIONS – MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1))

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

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

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

IV. STANDARD PROVISIONS – RECORDS

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

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

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

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Central Valley Water Board, State Water Board, and/or U.S. EPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, V.B.5, and V.B.6 below. (40 C.F.R. § 122.41(k))
2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA). (40 C.F.R. § 122.22(a)(3))

3. All reports required by this Order and other information requested by the Central Valley Water Board, State Water Board, or U.S. EPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and
 - c. The written authorization is submitted to the Central Valley Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3))
4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Central Valley Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c))
5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

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

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. § 122.41(l)(4))
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Central Valley Water Board or State Water Board for reporting the results of monitoring, sludge use, or disposal practices. As of 21 December 2016, all reports and forms must be submitted electronically to the initial recipient, defined in Standard Provisions – Reporting V.J, and comply with 40 C.F.R. part 3, section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(l)(4)(i))

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Central Valley Water Board. (40 C.F.R. § 122.41(l)(4)(ii))
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii))

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

The Discharger shall report any non-compliance 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 non-compliance and its cause; the period of non-compliance, including exact dates and times, and if the non-compliance 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 non-compliance.

For non-compliance 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 non-compliance 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. The Discharger may also be required to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section if required to do so by state law. (40 C.F.R. § 122.41(l)(6)(i))

F. Planned Changes

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

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 C.F.R. § 122.41(l)(1)(ii))

The alteration or addition 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. § 122.41(l)(1)(iii))

G. Anticipated Non-compliance

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 non-compliance with this Order's requirements. (40 C.F.R. § 122.41(l)(2))

H. Other Non-compliance

The Discharger shall report all instances of non-compliance 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 non-compliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in Standard Provision – Reporting V.E and the applicable required data in appendix A to 40 C.F.R. part 127. The Central Valley Water Board may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 122.41(l)(7))

I. Other Information

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

J. Initial Recipient for Electronic Reporting Data

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

VI. STANDARD PROVISIONS – ENFORCEMENT

- A. The Central Valley Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13350, 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

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

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

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to sections 301 or 306 of the CWA if it were directly discharging those pollutants (40 C.F.R. § 122.42(b)(1)); and
2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order. (40 C.F.R. § 122.42(b)(2))

3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.
(40 C.F.R. § 122.42(b)(3))

E.

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. § 122.48) requires that all National Pollutant Discharge Elimination System (NPDES) permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Central Valley Water Board to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement federal and California regulations.

I. GENERAL MONITORING PROVISIONS

- A.** Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of the Central Valley Water Board.
- B.** Final effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.
- C.** Chemical, bacteriological, and bioassay analyses of any material required by this Order shall be conducted by a laboratory accredited for such analyses by the State Water Resources Control Board (State Water Board), Division of Drinking Water (DDW; formerly the Department of Public Health). Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Central Valley Water Board. In the event an accredited laboratory is not available to the Discharger for any on-site field measurements such as pH, dissolved oxygen, turbidity, temperature, and residual chlorine, such analyses performed by a non-accredited laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program for any on-site field measurements such as pH, dissolved oxygen, turbidity, temperature, and residual chlorine must be kept on-site in the 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 non-compliance, shall be reported at intervals and in a manner specified in this MRP.
- F.** Laboratories analyzing monitoring samples shall be accredited by DDW, in accordance with the provision of Water Code section 13176 and must include quality assurance/quality control data with their reports.
- G.** The Discharger shall ensure that the results of the Discharge Monitoring Report-Quality Assurance (DMR-QA) Study or the most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water 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 MRP.
- I. The results of all monitoring required by this Order shall be reported to the Central Valley Water Board and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order. Unless otherwise specified, discharge flows shall be reported in terms of the monthly average and the daily maximum discharge flows.

II. MONITORING LOCATIONS

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

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	A location where a representative sample of the influent into the Facility can be collected prior to any plant return flows and prior to entering into any treatment process.
001, 002, REC-001	EFF-A	A location where a representative sample of disinfected tertiary-treated effluent can be collected prior to storage in the steel tank.
001	EFF-001	A location where a representative sample of the disinfected tertiary-treated effluent can be collected following the steel storage tank and prior to discharge to Fancher Creek.
002	EFF-002	A location where a representative sample of the disinfected tertiary-treated effluent can be collected following the steel storage tank and prior to discharge to the Diversion Channel.
REC-001	REC-001	A location where a representative sample of the disinfected tertiary-treated effluent can be collected following the steel storage tank and prior to discharge to the recycled water use sites.
--	RSW-001U	Fresno No. 3 Canal, approximately 100 feet upstream of Discharge Point 001 (Fresno No. 3 Canal splits to become Mill Ditch and Fancher Creek).
--	RSW-001D	Fancher Creek, approximately 100 feet downstream of Discharge Point 001.
--	RSW-002U	Little Dry Creek, approximately 7,250 feet upstream of the confluence of Little Dry Creek and the Diversion Channel, where there is bridge access over Little Dry Creek.
--	RSW-002D	Little Dry Creek, approximately 4,550 feet downstream of the confluence of Little Dry Creek and the Diversion Channel, east of Friant Road at a flow measurement weir within Little Dry Creek.
--	RSW-003U	With Central Valley Water Board staff concurrence, a location representative of the water quality immediately upstream of the Discharge Point 002 outfall to the Diversion Channel and not influenced by the Facility's discharge.
--	RSW-003D	With Central Valley Water Board staff concurrence, a location within the Diversion Channel downstream of Discharge Point 002 most likely to capture any influence of the Facility's discharge.
--	FIL-001	A location where a representative sample of the effluent from the membrane filtration units can be collected immediately downstream of the filters and prior to the ultraviolet light (UV) disinfection system.

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	UVS-001	A location where a representative sample of wastewater can be collected immediately downstream of the UV disinfection system.
--	BIO-001	A location where a representative sample of dewatered biosolids to be shipped offsite for disposal and/or composting can be obtained.
--	SPL-001	A location where a representative sample of the municipal water supply can be obtained for the area served by the Facility.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

- The Discharger shall monitor influent to the Facility at Monitoring Location INF-001 as follows:

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	Continuous	--
Conventional Pollutants				
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	24-hr Composite ¹	2/Week	2
Total Suspended Solids	mg/L	24-hr Composite ¹	2/Week	2
Non-Conventional Pollutants				
Electrical Conductivity @ 25°C	µmhos/cm	Grab or 24-hr Composite ¹	3/Week ^{3,4}	2

¹ 24-hour flow proportional composite.

² Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods requested by the Discharger that have been approved by the Central Valley Water Board or the State Water Board.

³ Grab samples shall not be collected at the same time each day in order to get a complete representation of variations in the influent.

⁴ A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer’s instructions. A calibration and maintenance log for each meter used for monitoring required by this MRP shall be maintained at the Facility.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-A

- The Discharger shall monitor tertiary-treated effluent discharged to the steel storage tank at Monitoring Location EFF-A as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level (ML):

Table E-3. Effluent Monitoring – Monitoring Location EFF-A

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	Continuous	--
Conventional Pollutants				
Biochemical Oxygen Demand (5-day @ 20° C)	mg/L	24-hr Composite ¹	2/Week ²	3
Total Suspended Solids	mg/L	24-hr Composite ¹	2/Week ²	3
Priority Pollutants				
Copper, Total Recoverable	µg/L	Grab	1/Month	3,4
Cyanide, Total (as CN)	µg/L	Grab	1/Month	3,4
Zinc, Total Recoverable	µg/L	Grab	1/Month	3,4
Non-Conventional Pollutants				
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Week ^{5,6}	3
	lbs/day	Calculate	1/Week	--
Chlorine, Total Residual	mg/L	Grab	1/Day ⁷	3
Dissolved Oxygen	mg/L	Meter	Continuous	3
Electrical Conductivity @ 25°C	µmhos/cm	Grab or 24-hr Composite ¹	3/Week	3
Hardness, Total (as CaCO ₃)	mg/L	Grab or 24-hr Composite ¹	1/Month ⁸	3
Nitrate Nitrogen, Total (as N)	mg/L	Grab or 24-hr Composite ¹	1/Week ⁹	3
Nitrite Nitrogen, Total (as N)	mg/L	Grab or 24-hr Composite ¹	1/Week ⁹	3
Nitrite plus Nitrate (as N)	mg/L	Calculate	1/Week	3
Total Kjeldahl Nitrogen (as N)	mg/L	Grab or 24-hr Composite ¹	1/Week ⁹	3
Standard Minerals ¹⁰	mg/L	Grab or 24-hr Composite ¹	1/Year	3
Total Dissolved Solids	mg/L	Grab or 24-hr Composite ¹	1/Month	3

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
1 24-hour flow proportional composite.				
2 Samples shall be collected on non-consecutive days.				
3 Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods requested by the Discharger that have been approved by the Central Valley Water Board or the State Water Board.				
4 For priority pollutant constituents, the reporting level (RL) shall be consistent with sections 2.4.2 and 2.4.3 of the <i>Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California</i> (See Attachment E, section IX.D).				
5 pH and temperature shall be recorded at the time of ammonia sample collection.				
6 Concurrent with whole effluent toxicity (WET) monitoring.				
7 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 only required when chlorine or chlorine-containing products are used in the treatment process for maintenance purposes (monitoring is not required for the use of chlorinated potable water for filter backwashing). When chlorine or chlorine-containing products are not in use in the treatment process, the Discharger shall so state in the monthly SMR.				
8 Hardness samples shall be collected concurrently with metals samples.				
9 Monitoring for nitrate (as N), nitrite (as N), and total kjeldahl nitrogen (as N) shall be conducted concurrently.				
10 Standard minerals shall include the following: boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus, total alkalinity (including alkalinity series), and hardness, and include verification that the analysis is complete (i.e., cation/anion balance).				

B. Monitoring Locations EFF-001 and EFF-002

1. The Discharger shall monitor tertiary-treated effluent discharged to Fancher Creek and the Diversion Channel at Monitoring Locations EFF-001 and EFF-002, respectively, as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding ML:

Table E-4. Effluent Monitoring – Monitoring Locations EFF-001 and EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	Continuous	--
Conventional Pollutants				
pH	standard units	Grab	1/Day ¹	2
Non-Conventional Pollutants				
Temperature ³	°F or °C	Meter	Continuous	2

- 1 A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer’s instructions. A calibration and maintenance log for each meter used for monitoring required by this MRP shall be maintained at the Facility.
- 2 Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods requested by the Discharger that have been approved by the Central Valley Water Board or the State Water Board.
- 3 Monitoring shall occur at the outfall to Fancher Creek when discharging at Discharge Point 001 and at the outfall to the Diversion Channel when discharging at Discharge Point 002.

V. WHOLE EFFLUENT TOXICITY (WET) TESTING REQUIREMENTS

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

1. Monitoring Frequency – The Discharger shall perform **annual** acute toxicity testing, concurrent with effluent ammonia sampling, when discharging at Discharge Point 001 and/or Discharge Point 002.
2. Sample Types – The Discharger may use flow-through or static renewal testing. For static renewal testing, the samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-A.
3. Test Species – Test species shall be fathead minnows (*Pimephales promelas*).
4. Methods – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. 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 following chronic toxicity testing requirements:

1. Monitoring Frequency – The Discharger shall perform routine **quarterly** chronic toxicity testing. If the result of the routine chronic toxicity testing event exhibits toxicity, demonstrated by a result greater than 1.3 TUc (as 100/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 performing chronic toxicity testing using the species that exhibited toxicity in order to calculate a median. The optional compliance monitoring events shall occur at least 1 week apart, and the final monitoring event shall be initiated no later than 6 weeks from the routine monitoring event that exhibited toxicity.
2. Sample Types – Effluent samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-A.
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 (Method Manual).
6. Reference Toxicant – As required by the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or 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 Toxicity Reduction Evaluation (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. Laboratory water control shall be used as the diluent.

Table E-5. Chronic Toxicity Testing Dilution Series

Sample	Dilutions ¹ (%)					Control
	100	75	50	25	6.25	
% Effluent	100	75	50	25	6.25	0
% Control Water	0	25	50	75	93.75	100

¹ Laboratory water control shall be used as the diluent.

8. **Test Failure** – The Discharger must re-sample and re-test as soon as possible, but no later than 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 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 interim chronic toxicity effluent limitation established in section IV.A.3.a of the Order, the chronic toxicity effluent numeric trigger established in section VI.C.2.a.i of the Order, or an exceedance of the acute toxicity effluent limitation established in section IV.A.1.c and IV.A.2.c of the Order.
- 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, WET monitoring shall be reported as follows:
1. **Chronic WET Reporting.** Routine and compliance chronic toxicity monitoring results shall be reported to the Central Valley Water Board with the quarterly SMR, and shall contain, at minimum:
 - a. The results expressed in TUC, measured as 100/NOEC, and also measured as 100/LC50, 100/EC25, 100/IC25, and 100/IC50, as appropriate;
 - b. The statistical methods used to calculate endpoints;
 - c. The statistical output page, which includes the calculation of the PMSD;
 - d. The dates of sample collection and initiation of each toxicity test; and
 - e. The results compared to the numeric toxicity monitoring trigger.

Additionally, the quarterly SMR’s shall contain an updated chronology of chronic toxicity test results expressed in TUC, and organized by test species, type of test (survival,

- growth or reproduction), and monitoring type, i.e., routine, compliance, Toxicity Evaluation Study (TES), or TRE monitoring.
2. **Acute WET Reporting.** Acute toxicity test results shall be submitted with the quarterly SMR's and reported as percent survival.
 3. **TRE Reporting.** Reports for TRE's shall be submitted in accordance with the schedule contained in the Discharger's approved TRE Work Plan, 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 re-screening 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 re-screening must be performed prior to permit re-issuance and results submitted with the Report of Waste Discharge (ROWD).
1. **Frequency of Testing for Species Sensitivity Screening.** Species sensitivity screening for chronic toxicity shall include, at a minimum, chronic WET testing for four consecutive calendar quarters using the water flea (*Ceriodaphnia dubia*), fathead minnow (*Pimephales promelas*), and green alga (*Pseudokirchneriella subcapitata*). The tests shall be performed using 100 percent effluent and one control. If the first two species sensitivity re-screening events result in no change in the most sensitive species, the Discharger may cease the species sensitivity re-screening testing and the most sensitive species will remain unchanged.
 2. **Determination of Most Sensitive Species.** If a single test in the species sensitivity screening testing exceeds 1 TUc (as 100/NOEC), then the species used in that test shall be established as the most sensitive species. If there is more than a single test that exceeds 1 TUc (as 100/NOEC), then the species exceeding 1 TUc (as 100/NOEC) that exhibits the highest percent effect shall be established as the most sensitive species. If none of the tests in the species sensitivity screening exceeds 1 TUc (as 100/NOEC), but at least one of the species exhibits a percent effect greater than 10 percent, then the single species that exhibits the highest percent effect shall be established as the most sensitive species. In all other circumstances, the Executive Officer shall have discretion to determine which single species is the most sensitive considering the test results from the species sensitivity screening.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECYCLING MONITORING REQUIREMENTS

A. Monitoring Location REC-001

1. The Discharger shall monitor tertiary-treated effluent discharged to the recycled water use sites at Monitoring Location REC-001 as follows. If more than one analytical test

method is listed for a given parameter, the Discharger must select from the listed methods and corresponding ML:

Table E-6. Recycling Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	Continuous	--
Conventional Pollutants				
pH	standard units	Grab	1/Day ¹	²

- ¹ A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer’s instructions. A calibration and maintenance log for each meter used for monitoring required by this MRP shall be maintained at the Facility.
- ² Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods requested by the Discharger that have been approved by the Central Valley Water Board or the State Water Board.

B. Recycled Water Users Summary Report

1. The Discharger shall submit a **quarterly** recycled water users summary report to the Executive Officer as specified in the Technical Reports Table containing the following information:
 - a. Total volume of recycled water supplied to all recycled water users during the quarter;
 - b. Total number of recycled water use sites; and
 - c. Map showing the locations of the recycled water use sites.

A copy of each summary report shall also be sent to DDW.

2. The Discharger shall submit an **annual** recycled water users compliance report as specified in the Technical Reports Table containing the following information for each recycled water use site:
 - a. Name of the recycled water use site;
 - b. Owner of the recycled water use site;
 - c. Address of the recycled water use site (if available);
 - d. Name of the on-site recycled water use site supervisor;
 - e. Phone number of the on-site recycled water use site supervisor;
 - f. Number of acres that received recycled water;
 - g. Type of vegetation/crops to which the recycled water was applied;
 - h. Total volume of recycled water delivered to the recycled water use site during the calendar year;
 - i. Nitrite plus nitrate loading rate (lbs/acre), on an annual basis. Loading rates shall be calculated using the applied volume of recycled water and the results of nitrite plus nitrate monitoring required in section IV.A.1 of this MRP. Application rates (lbs/acre/month) of supplemental nitrogen shall also be reported;

- j. A list of recycled water use site inspections conducted by the Discharger during the calendar year; and
- k. Violations of the Discharger’s rules and regulations for recycled water users. The Discharger shall include a description of the non-compliance and its cause, including the period of non-compliance, and if the non-compliance has not been corrected; the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent recurrence of the non-compliance.

VIII. RECEIVING WATER MONITORING REQUIREMENTS

A. Monitoring Locations RSW-001U, RSW-001D, RSW-002U, and RSW-002D

- 1. The Discharger shall monitor Fancher Creek at Monitoring Locations RSW-001U and RSW-001D during periods of discharge at Discharge Point 001, when there is a measurable flow at Monitoring Location RSW-001U, as follows. The Discharger shall monitor Little Dry Creek at Monitoring Locations RSW-002U and RSW-002D during periods of discharge at Discharge Point 002, when there is a measurable flow at Monitoring Location RSW-002U, as follows:

Table E-7. Receiving Water Monitoring – Monitoring Locations RSW-001U, RSW-001D, RSW-002U, and RSW-002D

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Estimate	5/Week	--
Conventional Pollutants				
pH	standard units	Grab	1/Week ^{1,2}	3
Non-Conventional Pollutants				
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Week ¹	3
Ammonia Nitrogen, Un-ionized (as N)	mg/L	Calculate	1/Week ¹	--
Dissolved Oxygen	mg/L	Grab	1/Week ²	3
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Week ^{2,4}	3
Hardness, Total (as CaCO ₃)	mg/L	Grab	1/Quarter ^{4,5}	3
Temperature	°F or °C	Grab	1/Week ^{1,2}	3
Turbidity	NTU	Grab	1/Week ²	3

- ¹ pH and temperature shall be recorded at the time of ammonia sample collection.
- ² A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer’s instructions. A calibration and maintenance log for each meter used for monitoring required by this MRP shall be maintained at the Facility.
- ³ Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods requested by the Discharger that have been approved by the Central Valley Water Board or the State Water Board.
- ⁴ Monitoring required at Monitoring Locations RSW-001U and RSW-002U only.
- ⁵ Hardness samples shall be collected concurrently with metals samples.

- 2. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Monitoring Locations RSW-001U and RSW-001D for Fancher Creek, when discharging at Discharge Point 001, and Monitoring Locations RSW-002U and RSW-002D for Little Dry Creek, when discharging at Discharge Point 002. 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.

- 3. The Discharger shall submit an **annual (1/year)** report that specifies the volume (in acre-feet) of water released from the Fresno Canal into the Fancher Creek systems between 1 January and 31 December. The report shall also include the volume (in acre-feet) of Facility effluent discharged via Discharge Point 001 between 1 January and 31 December. The annual report shall be combined with the Annual Operations Report required by Section X.D.1 of this Monitoring and Reporting Program.

B. Monitoring Locations RSW-003U and RSW-003D

- 1. The Discharger shall monitor the Diversion Channel at Monitoring Locations RSW-003U and RSW-003D (unless otherwise specified) during periods of discharge at Discharge Point 002 and when water is being released from Big Dry Creek Reservoir, as follows:

Table E-8. Receiving Water Monitoring – Monitoring Locations RSW-003U and RSW-003D

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Conventional Pollutants				
pH	standard units	Grab	2/Year ^{1,2}	3
Non-Conventional Pollutants				
Ammonia Nitrogen, Total (as N)	mg/L	Grab	2/Year ¹	3
Ammonia Nitrogen, Un-ionized (as N)	mg/L	Calculate	2/Year ¹	--
Dissolved Oxygen	mg/L	Grab	2/Year ²	3
Electrical Conductivity @ 25°C	µmhos/cm	Grab	2/Year ^{2,4}	3
Hardness, Total (as CaCO ₃)	mg/L	Grab	2/Year ⁴	3
Temperature	°F or °C	Grab	2/Year ^{1,2}	3
Turbidity	NTU	Grab	2/Year ²	3

- ¹ pH and temperature shall be recorded at the time of ammonia sample collection.
- ² A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer’s instructions. A calibration and maintenance log for each meter used for monitoring required by this MRP shall be maintained at the Facility.
- ³ Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods requested by the Discharger that have been approved by the Central Valley Water Board or the State Water Board.
- ⁴ Monitoring required at Monitoring Location RSW-003U only.

- 2. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Monitoring Locations RSW-003U and RSW-003D for the Diversion Channel, during periods of discharge at Discharge Point 002 when water is being released from Big Dry Creek Reservoir. Attention shall be given to the presence or absence of:

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

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

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids

1. Monitoring Location BIO-001

- a. A composite sample of sludge shall be collected annually at Monitoring Location BIO-001 in accordance with EPA's *POTW Sludge Sampling and Analysis Guidance Document*, August 1989, and tested for priority pollutants listed in 40 C.F.R. part 122, Appendix D, Tables II and III (excluding total phenols).
- b. Biosolids monitoring shall be conducted using the methods in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (U.S. EPA publication SW-846), as required in 40 C.F.R. section 503.8(b)(4). All results must be reported on a 100 percent dry weight basis. Records of all analyses must state on each page of the laboratory report whether the results are expressed in "100 percent dry weight" or "as is."

B. Municipal Water Supply

1. Monitoring Location SPL-001

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

Table E-9. Water Supply Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Electrical Conductivity @ 25°C ¹	µmhos/cm	Grab	1/Year	2
Standard Minerals ³	mg/L	Grab	1/Year	2
Total Dissolved Solids ¹	mg/L	Grab	1/Year	2

¹ If the water supply is from more than one source, electrical conductivity and total dissolved solids shall be reported as a weighted average and copies of supporting calculations shall be included.

² Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods requested by the Discharger that have been approved by the Central Valley Water Board or the State Water Board.

³ Standard minerals shall include the following: boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus, total alkalinity (including alkalinity series), and hardness, and include verification that the analysis is complete (i.e., cation/anion balance).

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

1. Monitoring Locations UVS-001 and FIL-001

- a. The Discharger shall monitor the filtration system at Monitoring Location FIL-001 and the UV disinfection system at Monitoring Location UVS-001 as follows:

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

Parameter	Units	Sample Type	Monitoring Location	Minimum Sampling Frequency
Flow	MGD	Meter	UVS-001	Continuous ¹
Turbidity ²	NTU	Meter	FIL-001	Continuous ^{1,3}
Number of UV banks in operation	Number	Observation	N/A	Continuous
UV Transmittance	Percent (%)	Meter	UVS-001	Continuous ¹
UV Dose ⁴	mJ/cm ²	Calculate	N/A	Continuous ¹
Total Coliform Organisms ²	MPN/100 mL	Grab	UVS-001	5/Week ⁵

- ¹ For continuous analyzers, the Discharger shall report documented routine meter maintenance activities including date, time of day, and duration, in which the analyzer(s) is not in operation. If analyzer(s) fail to provide continuous monitoring for more than 2 hours and influent and/or effluent from the disinfection process is not diverted for retreatment, the Discharger shall obtain and report hourly manual and/or grab sample results. The Discharger shall not decrease power settings or reduce the number of UV lamp banks in operation while the continuous analyzers are out of service and water is being disinfected.
- ² Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
- ³ Report daily average and maximum turbidity.
- ⁴ Report daily minimum hourly average UV dose and daily average UV dose. The minimum hourly average dose shall consist of lowest hourly average dose provided in any channel that had at least one bank of lamps operating during the hour interval. For channels that did not operate for the entire hour interval, the dose will be averaged based on the actual operation time.
- ⁵ Samples shall be collected daily when discharging to the recycled water use sites at Discharge Point REC-001.

D. Effluent and Receiving Water Characterization

1. **Quarterly Monitoring.** Samples shall be collected from the effluent and upstream receiving water monitoring locations within Fancher Creek (Fresno No. 3 Canal) and Little Dry Creek (Monitoring Locations EFF-A, RSW-001U, and RSW-002U) and analyzed for the constituents listed in Table E-11, below. Quarterly monitoring at Monitoring Locations EFF-A, RSW-001U, and RSW-002U shall be conducted for one year beginning the second quarter of 2020 (four consecutive samples, evenly distributed throughout the year). If there is no measurable flow at Monitoring Locations RSW-001U or RSW-002U, the Discharger shall conduct the required upstream receiving water monitoring the next time upstream flow is observed at the previously dry monitoring location. Samples shall be collected from the upstream receiving water monitoring location within the Diversion Channel (Monitoring Location RSW-003U) once during either the second or third quarter of 2020 and once during either the fourth quarter of 2020 or the first quarter of 2021 and analyzed for the constituents listed in Table E-11, below. If there is no measurable flow at Monitoring Location RSW-003U during either of the specified sampling date ranges, the Discharger shall conduct the required upstream receiving water monitoring the next time water is released from Big Dry Creek Reservoir to the Diversion Channel. The results of all effluent and receiving water characterization monitoring shall be submitted to the Central Valley Water Board with the monthly SMR's. Each individual monitoring event shall provide representative sample results for the effluent and upstream receiving waters.
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-11, below.
4. **Analytical Methods Report.** The Discharger shall submit a report electronically via the State Water Board's California Integrated Water Quality System (CIWQS) Program website outlining RL's, method detection limits (MDL's), and analytical methods for the constituents listed in Tables E-2, E-3, E-4, E-6, E-7, E-8, E-9, and E-10 by the due date shown in the Technical Reports Table. The Discharger shall comply with the monitoring and reporting requirements for CTR constituents as outlined in sections 2.3 and 2.4 of the SIP. The maximum required RL's for priority pollutant constituents shall be based on the ML's contained in Appendix 4 of the SIP, determined in accordance with sections 2.4.2 and 2.4.3 of the SIP. In accordance with section 2.4.2 of the SIP, when there is more than one ML value for a given substance, the Central Valley Water Board shall include as RL's in the permit, all ML values and their associated analytical methods listed in Appendix 4 that are below the calculated effluent limitation. The Discharger may select any one of those cited analytical methods for compliance determination. If no ML value is below the effluent limitation, the Central Valley Water Board shall select as the RL, the lowest ML value and its associated analytical method listed in Appendix 4 of the SIP for inclusion in the permit. Table E-11, below, provides required maximum RL's in accordance with the SIP.

Table E-11. Effluent and Receiving Water Characterization Monitoring

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

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

Parameter	Units	Effluent Sample Type	Maximum Reporting Level ¹
Fluoranthene	µg/L	Grab	10
Fluorene	µg/L	Grab	10
Hexachlorocyclopentadiene	µg/L	Grab	5
Indeno(1,2,3-c,d)pyrene	µg/L	Grab	0.05
Isophorone	µg/L	Grab	1
N-Nitrosodiphenylamine	µg/L	Grab	1
N-Nitrosodimethylamine	µg/L	Grab	5
N-Nitrosodi-n-propylamine	µg/L	Grab	5
Nitrobenzene	µg/L	Grab	10
Pentachlorophenol	µg/L	Grab	1
Phenanthrene	µg/L	Grab	5
Phenol	µg/L	Grab	1
Pyrene	µg/L	Grab	10
Aluminum	µg/L	24-hr Composite ³	--
Antimony	µg/L	24-hr Composite ³	5
Arsenic	µg/L	24-hr Composite ³	10
Asbestos	MFL	24-hr Composite ³	--
Beryllium	µg/L	24-hr Composite ³	2
Cadmium	µg/L	24-hr Composite ³	0.25
Chromium (Total)	µg/L	24-hr Composite ³	10
Chromium (VI)	µg/L	24-hr Composite ³	10
Copper ⁴	µg/L	24-hr Composite ³	0.5
Cyanide ⁴	µg/L	24-hr Composite ³	5
Fluoride	µg/L	24-hr Composite ³	--
Iron	µg/L	24-hr Composite ³	--
Lead	µg/L	24-hr Composite ³	0.5
Mercury ⁴	ng/L	Grab	0.5
Manganese	µg/L	24-hr Composite ³	--
Nickel	µg/L	24-hr Composite ³	5
Selenium	µg/L	24-hr Composite ³	5
Silver	µg/L	24-hr Composite ³	0.25
Thallium	µg/L	24-hr Composite ³	1
Tributyltin	µg/L	24-hr Composite ³	--
Zinc ⁴	µg/L	24-hr Composite ³	10
4,4'-DDD	µg/L	24-hr Composite ³	0.05
4,4'-DDE	µg/L	24-hr Composite ³	0.05
4,4'-DDT	µg/L	24-hr Composite ³	0.01
alpha-Endosulfan	µg/L	24-hr Composite ³	0.02
alpha-Hexachlorocyclohexane (BHC)	µg/L	24-hr Composite ³	0.01
Aldrin	µg/L	24-hr Composite ³	0.005
beta-Endosulfan	µg/L	24-hr Composite ³	0.01
beta-Hexachlorocyclohexane	µg/L	24-hr Composite ³	0.005
Chlordane	µg/L	24-hr Composite ³	0.1
delta-Hexachlorocyclohexane	µg/L	24-hr Composite ³	0.005
Dieldrin	µg/L	24-hr Composite ³	0.01
Endosulfan sulfate	µg/L	24-hr Composite ³	0.05
Endrin	µg/L	24-hr Composite ³	0.01
Endrin Aldehyde	µg/L	24-hr Composite ³	0.01

Parameter	Units	Effluent Sample Type	Maximum Reporting Level ¹
Heptachlor	µg/L	24-hr Composite ³	0.01
Heptachlor Epoxide	µg/L	24-hr Composite ³	0.01
Lindane (gamma-Hexachlorocyclohexane)	µg/L	24-hr Composite ³	0.02
PCB-1016	µg/L	24-hr Composite ³	0.5
PCB-1221	µg/L	24-hr Composite ³	0.5
PCB-1232	µg/L	24-hr Composite ³	0.5
PCB-1242	µg/L	24-hr Composite ³	0.5
PCB-1248	µg/L	24-hr Composite ³	0.5
PCB-1254	µg/L	24-hr Composite ³	0.5
PCB-1260	µg/L	24-hr Composite ³	0.5
Toxaphene	µg/L	24-hr Composite ³	0.5
2,3,7,8-TCDD (Dioxin)	µg/L	24-hr Composite ³	--
Ammonia (as N) ⁴	mg/L	24-hr Composite ³	--
Boron	µg/L	24-hr Composite ³	--
Chloride	mg/L	24-hr Composite ³	--
Dissolved Organic Carbon	mg/L	24-hr Composite ³	--
Flow ⁴	MGD	Meter	--
Hardness (as CaCO ₃) ⁴	mg/L	Grab	--
Foaming Agents (MBAS)	µg/L	24-hr Composite ³	--
Mercury, Methyl	ng/L	Grab	--
Nitrate (as N) ⁴	mg/L	24-hr Composite ³	--
Nitrite (as N) ⁴	mg/L	24-hr Composite ³	--
pH ⁴	Std Units	Grab	--
Phosphorus, Total (as P)	mg/L	24-hr Composite ³	--
Specific conductance (EC) ⁴	µmhos/cm	24-hr Composite ³	--
Sulfate	mg/L	24-hr Composite ³	--
Sulfide (as S)	mg/L	24-hr Composite ³	--
Sulfite (as SO ₃)	mg/L	24-hr Composite ³	--
Temperature ⁴	°C	Grab	--
Total Dissolved Solids ⁴	mg/L	24-hr Composite ³	--

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

² 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.

³ 24-hour flow proportional composite.

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

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. Upon written request of the Central Valley Water Board, the Discharger shall submit a summary monitoring report. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).

3. **Compliance Time Schedules.** For compliance time schedules included in the Order, the Discharger shall submit to the Central Valley Water Board, on or before each compliance due date, the specified document or a written report detailing compliance or non-compliance with the specific date and task. If non-compliance is reported, the Discharger shall state the reasons for non-compliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board by letter when it returns to compliance with the compliance time schedule.
4. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "*Emergency Planning and Community Right to Know Act*" of 1986.

B. Self-Monitoring Reports (SMR's)

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

Table E-12. Monitoring Periods and Reporting Schedule

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

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

4. **Reporting Protocols.** The Discharger shall report with each sample result the applicable RL and the current laboratory’s 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 ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.
5. **Multiple Sample Data.** When determining compliance with an average monthly effluent limitation (AMEL), average weekly effluent limitation (AWEL), or maximum daily effluent limitation (MDEL) 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 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, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
 - b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.
6. The Discharger shall submit SMR's in accordance with the following requirements:
- a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the Facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.
 - b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the waste discharge requirements (WDR's), 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 analysis reports from all contracted commercial laboratories, including quality assurance/quality control information, with all SMR's for which sample analyses were performed.
7. The Discharger shall submit in the SMR's calculations and reports in accordance with the following requirements:
- a. **Annual Average Discharge Prohibitions.** In order to determine compliance with the average annual discharge flow prohibition in section III.E of the Waste Discharge Requirements, the Discharger shall report the annual average flow in the December SMR. The annual average shall be calculated as the average of all samples/measurements gathered for the calendar year.
 - b. **12-Month Rolling Average Limitations.** For constituents with effluent limitations specified as "12-month rolling averages" (electrical conductivity), the Discharger shall report the 12-month rolling average in each monthly SMR. The 12-month rolling average shall be calculated as the average of all samples gathered over the previous 12 months.
 - c. **Mass Loading Limitations.** For ammonia, the Discharger shall calculate and report the mass loading (lbs/day) in the SMR's. 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 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.

- d. **Removal Efficiency (BOD₅ and TSS).** The Discharger shall calculate and report the percent removal of BOD₅ and TSS in the SMR's. The percent removal shall be calculated as specified in section VII.A of the Waste Discharge Requirements.
- e. **Total Coliform Organisms Effluent Limitations.** The Discharger shall calculate and report the 7-day median of total coliform organisms for the effluent. The 7-day median of total coliform organisms shall be calculated as specified in section VII.C of the Waste Discharge Requirements.
- f. **Dissolved Oxygen Receiving Water Limitations.** The Discharger shall report monthly in the SMR the dissolved oxygen concentrations in the effluent (Monitoring Location EFF-A) and the receiving waters (Monitoring Locations RSW-001U, RSW-001D, RSW-002U, RSW-002D, RSW-003U, and RSW-003D, as applicable).
- g. **Turbidity Receiving Water Limitations.** The Discharger shall calculate and report the turbidity change in the receiving waters applicable to the natural turbidity conditions specified in sections V.A.1.r.i-v and V.A.2.q.i-v of the Waste Discharge Requirements.
- h. **Temperature Receiving Water Limitations.** The Discharger shall calculate and report the temperature change in the receiving waters based on the difference in temperature at Monitoring Locations RSW-001U and RSW-001D, RSW-002U and RSW-002D, or RSW-003U and RSW-003D, as applicable.

C. Discharge Monitoring Reports (DMR's)

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

D. Other Reports

1. **Annual Operations Report.** The Discharger shall submit a written report to the Central Valley Water Board, electronically via CIWQS submittal, containing the following by the due date in the Technical Reports Table:
 - a. The names, certificate grades, and general responsibilities of all persons employed at the Facility.
 - b. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.
 - c. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.
 - d. A statement certifying whether the current operation and maintenance manual and contingency plan reflect the Facility 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 WDR's.

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

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

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

Sludge shall be sampled during the same 24-hour period and analyzed for the same pollutants as the influent and effluent sampling and analysis. The sludge analyzed shall be a composite sample of a minimum of 12 discrete samples taken at equal time intervals over the 24-hour period. Wastewater and sludge sampling and analysis shall be performed at least annually. The Discharger shall also provide any influent, effluent, or sludge monitoring data for non-priority pollutants that may be causing or contributing to Interference, Pass-Through or adversely impacting sludge quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 C.F.R. part 136 and amendments thereto.

- b. A discussion of Upset, Interference, or Pass-Through incidents, if any, at the treatment plant, which the Discharger knows or suspects were caused by non-domestic users of the POTW. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of the non-domestic user(s) responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent Pass-Through, Interference, or non-compliance with sludge disposal requirements.
- c. The cumulative number of non-domestic users that the Discharger has notified regarding Baseline Monitoring Reports and the cumulative number of non-domestic user responses.
- d. An updated list of the Discharger's significant industrial users (SIU's) including their names and addresses, or a list of deletions, additions and SIU name changes keyed to a previously submitted list. The Discharger shall provide a brief explanation for each change. The list shall identify the SIU's subject to federal categorical standards by specifying which set(s) of standards are applicable to each SIU. The list shall indicate which SIU's, or specific pollutants from each industry, are subject to local limitations. Local limitations that are more stringent than the federal categorical standards shall also be identified.

- e. The Discharger shall characterize the compliance status through the year of record of each SIU by employing the following descriptions:
 - i. Complied with baseline monitoring report requirements (where applicable);
 - ii. Consistently achieved compliance;
 - iii. Inconsistently achieved compliance;
 - iv. Significantly violated applicable pretreatment requirements as defined by 40 C.F.R. section 403.8(f)(2)(vii);
 - v. Complied with schedule to achieve compliance (include the date final compliance is required);
 - vi. Did not achieve compliance and not on a compliance schedule; and
 - vii. Compliance status unknown.
- f. A summary of the inspection and sampling activities conducted by the Discharger during the past year to gather information and data regarding the SIU's. The summary shall include:
 - i. The names and addresses of the SIU's subjected to surveillance and an explanation of whether they were inspected, sampled, or both and the frequency of these activities at each user; and
 - ii. The conclusions or results from the inspection or sampling of each industrial user.
- g. The Discharger shall characterize the compliance status of each SIU by providing a list or table that includes the following information:
 - i. Name of SIU;
 - ii. Category, if subject to federal categorical standards;
 - iii. The type of wastewater treatment or control processes in place;
 - iv. The number of samples taken by the POTW during the year;
 - v. The number of samples taken by the SIU during the year;
 - vi. For an SIU subject to discharge requirements for total toxic organics, whether all required certifications were provided;
 - vii. A list of the standards violated during the year. Identify whether the violations were for categorical standards or local limits;
 - viii. Whether the facility is in significant non-compliance (SNC) as defined at 40 C.F.R. section 403.8(f)(2)(viii) at any time during the year;
 - ix. A summary of enforcement or other actions taken during the year to return the SIU to compliance. Describe the type of action (e.g., warning letters or notices of violation, administrative orders, civil actions, and criminal actions), final compliance date, and the amount of fines and penalties collected, if any. Describe any proposed actions for bringing the SIU into compliance;
 - x. Restriction of flow to the POTW; and
 - xi. Disconnection from discharge to the POTW.
- h. A brief description of any programs the POTW implements to reduce pollutants from non-domestic users that are not classified as SIU's;

- i. A brief description of any significant changes in operating the pretreatment program which differ from the previous year including, but not limited to, changes concerning: the program's administrative structure, local limits, monitoring program or monitoring frequencies, legal authority, enforcement policy, funding levels, or staffing levels;
- j. A summary of the annual pretreatment budget, including the cost of pretreatment program functions and equipment purchases; and
- k. A summary of activities to involve and inform the public of the program including a copy of the newspaper notice, if any, required under 40 C.F.R. section 403.8(f)(2)(viii).

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

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

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

Table E-13. Technical Reports

Report #	Technical Report	Due Date	CIWQS Report Name
Standard Reporting Requirements			
1	Report of Waste Discharge	31 May 2023	ROWD
2	Analytical Methods Report	4 June 2019	MRP IX.D.3
3	Annual Operations Report	1 February 2020	MRP X.D.1
4		1 February 2021	MRP X.D.1
5		1 February 2022	MRP X.D.1
6		1 February 2023	MRP X.D.1
7		1 February 2024	MRP X.D.1
Compliance Schedule for Final Effluent Limitations for Chronic WET (WDR Section VI.C.7.a)			
8	Final Compliance. Submit report demonstrating compliance with the final effluent limits for chronic toxicity.	1 June 2024	WDR VI.C.7.a
9	Annual Progress Reports. The progress reports shall detail what steps have been implemented towards achieving compliance with waste discharge requirements, including studies, construction progress, evaluation of measures implemented, and recommendations for additional measures	1 February 2020	WDR VI.C.7.a
10		1 February 2021	WDR VI.C.7.a
11		1 February 2022	WDR VI.C.7.a
12		1 February 2023	WDR VI.C.7.a
13		1 February 2024	WDR VI.C.7.a

Report #	Technical Report	Due Date	CIWQS Report Name
	as necessary to achieve full compliance by the final compliance date.		
Other Reports			
14	Salinity Evaluation and Minimization Plan	5 January 2020	WDR VI.C.3.a
15	Salinity Evaluation and Minimization Plan Summary of Effectiveness	31 May 2023	WDR VI.C.3.a
16	Chronic WET Re-Screening of Most Sensitive Species	31 May 2023	MRP V.E
17	New Recycled Water Use Site Report	At least 30 days prior to conveying recycled water to a new use site	WDR VI.C.8.e
18	Quarterly Recycled Water User Summary Reports	1 August 2019	MRP VII.B.1
19		1 November 2019	MRP VII.B.1
20		1 February 2020	MRP VII.B.1
21		1 May 2020	MRP VII.B.1
22		1 August 2020	MRP VII.B.1
23		1 November 2020	MRP VII.B.1
24		1 February 2021	MRP VII.B.1
25		1 May 2021	MRP VII.B.1
26		1 August 2021	MRP VII.B.1
27		1 November 2021	MRP VII.B.1
28		1 February 2022	MRP VII.B.1
29		1 May 2022	MRP VII.B.1
30		1 August 2022	MRP VII.B.1
31		1 November 2022	MRP VII.B.1
32		1 February 2023	MRP VII.B.1
33		1 May 2023	MRP VII.B.1
34		1 August 2023	MRP VII.B.1
35		1 November 2023	MRP VII.B.1
36		1 February 2024	MRP VII.B.1
37	Annual Recycled Water Users Compliance Report	30 January 2020	MRP VII.B.2
38		30 January 2021	MRP VII.B.2
39		30 January 2022	MRP VII.B.2
40		30 January 2023	MRP VII.B.2
41		30 January 2024	MRP VII.B.2
42	Annual Pretreatment Report	28 February 2020	MRP X.D.2
43		28 February 2021	MRP X.D.2
44		28 February 2022	MRP X.D.2
45		28 February 2023	MRP X.D.2
46		28 February 2024	MRP X.D.2

F.

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

WDID	5C10NP00012
CIWQS Facility Place ID	214899
Discharger	City of Clovis
Name of Facility	Sewage Treatment and Water Reuse Facility
Facility Address	9700 East Ashlan Avenue
	Clovis, CA 93619
	Fresno County
Facility Contact, Title and Phone	Paul Armendariz, Assistant Public Utilities Director, (559) 324-2649
Authorized Person to Sign and Submit Reports	Paul Armendariz, Assistant Public Utilities Director, (559) 324-2649
Mailing Address	155 North Sunnyside Avenue, Clovis, CA 93611
Billing Address	Same as Mailing Address
Type of Facility	Publicly Owned Treatment Works (POTW)
Major or Minor Facility	Major
Threat to Water Quality	2
Complexity	B
Pretreatment Program	Yes
Recycling Requirements	Producer and User
Facility Permitted Flow	<u>Existing Phase I Plant:</u> 2.8 million gallons per day (MGD), average annual flow 3.1 MGD, average monthly flow
	<u>Phase II Expanded Plant:</u> 5.6 MGD, average annual flow 6.2 MGD, average monthly flow
Facility Design Flow	<u>Existing Phase I Plant:</u> 2.8 MGD, average annual flow 3.1 MGD, average monthly flow
	<u>Phase II Expanded Plant:</u> 5.6 MGD, average annual flow 6.2 MGD, average monthly flow
Watershed	Fresno Hydrologic Area (551.30) and Berenda Creek Hydrologic Area (545.30)
Receiving Water	Fancher Creek, Diversion Channel from Big Dry Creek Reservoir to Little Dry Creek, and Groundwater in Detailed Analysis Unit (DAU) #233 and #234 of the Kings Basin
Receiving Water Type	Inland Surface Water and Groundwater

- A. The City of Clovis (hereinafter Discharger) is the owner of the City of Clovis Sewage Treatment and Water Reuse Facility (hereinafter Facility), a POTW. The Discharger contracts Jacobs Engineering Group, Inc. to operate the Facility.

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 Fancher Creek at Discharge Point 001; the Diversion Channel from Big Dry Creek Reservoir to Little Dry Creek (hereinafter Diversion Channel) at Discharge Point 002; and reuse sites at Discharge Point REC-001. Fancher Creek is a water of the United States within the Fresno Hydrologic Area. The Diversion Channel and Little Dry Creek downstream of Discharge Point 002 are waters of the United States and hydrologically connected to the San Joaquin River within the Berenda Creek Hydrologic Area. The Discharger was previously regulated by Order R5-2014-0005 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0085235 adopted on 6 February 2014 with an expiration date of 1 March 2019. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.
- C. When applicable, state law requires dischargers to file a petition with the State Water Resources Control Board (State Water Board), Division of Water Rights and receive approval for any change in the point of discharge, place of use, or purpose of use of treated wastewater that decreases the flow in any portion of a watercourse. The State Water Board retains separate jurisdictional authority to enforce any applicable requirements under Water Code section 1211. This is not an NPDES permit requirement.
- D. The Discharger filed a report of waste discharge (ROWD) and submitted an application for reissuance of its waste discharge requirements (WDR's) and NPDES permit on 30 August 2018. The application was deemed complete on 4 September 2018.
- E. Regulations at 40 C.F.R. section 122.46 limit the duration of NPDES permits to a fixed term not to exceed 5 years. Accordingly, Table 3 of this Order limits the duration of the discharge authorization. Under 40 C.F.R. section 122.6(d), states authorized to administer the NPDES program may administratively continue state-issued permits beyond their expiration dates until the effective date of the new permits, if state law allows it. Pursuant to California Code of Regulations (CCR), Title 23, section 2235.4, the terms and conditions of an expired permit are automatically continued pending reissuance of the permit if the Discharger complies with all federal NPDES requirements for continuation of expired permits.

II. FACILITY DESCRIPTION

The Discharger provides sewerage service for the City of Clovis. The Facility serves a portion of the City's population. The Facility's current design annual average flow capacity is 2.8 MGD, with plans to expand the capacity to 5.6 MGD.

A. Description of Wastewater and Biosolids Treatment and Controls

Operations at the Facility commenced in July 2009. The Facility treats domestic wastewater generated by three main service areas within the City of Clovis – the Northwest, Northeast, and Southwest service areas. Raw wastewater from the Fowler wastewater trunk line is diverted at Pump Station B and pumped to Pump Station E. Additional wastewater is gravity-fed to Pump Station E, which pumps the combined flow to the Facility.

The treatment system at the Facility consists of primary, secondary, and tertiary units. Primary treatment consists of 2-millimeter (mm) drum screens with a bypass channel/bar with screens and a vortex grit removal mechanism. Wastewater flows from the primary treatment units into two main bioreactor trains used for secondary treatment. Each bioreactor train

consists of two anoxic zones followed by one aerobic zone with two aeration grids. Flow from the aerobic zone is pumped to the membrane filtration units, which provide tertiary treatment. The tertiary-treated effluent is disinfected using an ultraviolet light (UV) disinfection system. Currently, disinfected tertiary-treated wastewater is stored in one 3.08 million gallon (MG) bolted-steel tank. A second 3.08 MG bolted-steel tank will be added with the completion of Phase II, as described in section II.E of this Fact Sheet. The tertiary-treated effluent is either used as recycled water for landscape irrigation or discharged to one of two surface water locations (Fancher Creek at Discharge Point 001 or the Diversion Channel at Discharge Point 002).

Solids are passed through a solids reduction process utilizing interchange tanks. The return activated sludge (RAS) is held in the interchange tanks for approximately 10 days, under specific environmental conditions, to break down the solids. Following the interchange tanks, the reduced solids are purged into the digester, which holds the solids for 10 to 15 days. After detainment in the digester, the solids are sent to dewatering equipment, which includes a centrifuge. The dewatered biosolids are hauled off-site to the Clovis Municipal Solid Waste Landfill. As a backup option, the biosolids could be hauled to a Class B Solids land application facility or a composting facility. The Facility produces approximately 385 dry metric tons of biosolids, annually. Transportation and disposal/reuse of the biosolids are regulated by U.S. EPA under 40 C.F.R. part 503.

B. Discharge Points and Receiving Waters

1. The Facility is located in Section 18, T13S, R22E, MDB&M, as shown in Attachment B, a part of this Order.
2. Treated municipal wastewater is discharged at Discharge Point 001 to Fancher Creek, a water of the United States, at a point latitude 36° 45' 39" N and longitude 119° 37' 40.4" W.
3. Treated municipal wastewater is discharged at Discharge Point 002 to the Diversion Channel, a water of the United States and hydrologically connected to Little Dry Creek and the San Joaquin River, at a point latitude 36° 53' 21.7" N and longitude 119° 39' 52.9" W.

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

1. Effluent limitations contained in Order R5-2014-0005 for discharges from Discharge Point 001 (Monitoring Location EFF-A) and representative monitoring data from the term of Order R5-2014-0005 are as follows.

Table F-2. Historic Effluent Limitations and Monitoring Data – Discharge Point 001

Parameter	Units	Effluent Limitation			Monitoring Data (March 2015 – February 2018) ¹		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Flow	MGD	2.8 ^{2,3}	--	3.1 ^{2,4}	--	--	2.8 ⁵
	MGD	5.6 ^{3,6}	--	6.2 ^{4,6}	--	--	--
Conventional Pollutants							
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	3.0	8.0	16
	lbs/day	234 ⁷	350 ⁷	467 ⁷	64	126	254
	lbs/day	467 ⁸	701 ⁸	935 ⁸	--	--	--
	% Removal	90	--	--	95 ⁹	--	--
pH	standard units	--	--	6.5 – 8.2	--	--	6.21 – 9.35
Total Suspended Solids	mg/L	10	15	20	1.0	1.5	1.7
	lbs/day	234 ⁷	350 ⁷	467 ⁷	21	22	44
	lbs/day	467 ⁸	701 ⁸	935 ⁸	--	--	--
	% Removal	90	--	--	98 ⁹	--	--
Non-Conventional Pollutants							
Ammonia, Total (as N)	mg/L	1.0	--	5.4	1.9	--	22
	lbs/day	23 ⁷	--	126 ⁷	35	--	394
	lbs/day	47 ⁸	--	252 ⁸	--	--	--
Electrical Conductivity @ 25°C	µmhos/cm	1,000 ¹⁰	--	--	524 ¹¹	--	--
Nitrogen, Total (as N)	mg/L	10	--	--	8.64	--	--
Total Coliform Organisms	MPN/100 mL	2.2 ¹²	23 ¹³	240 ¹⁴	--	--	34
Acute Toxicity	% Survival	--	--	70 ¹⁵ /90 ¹⁶	--	--	95 ¹⁷

- ¹ Effluent characterization monitoring data collected prior to March 2015 is also referenced by this table.
- ² Effluent flow limitations applicable to discharges from the existing Phase I Facility.
- ³ Applied as an average annual discharge flow limitation.
- ⁴ Applied as an average monthly discharge flow limitation.
- ⁵ Represents the maximum observed daily discharge.
- ⁶ Effluent flow limitations applicable to discharges from the expanded Phase II Facility.
- ⁷ Based on an average annual discharge flow of 2.8 MGD to coincide with Phase I of the Facility expansion project.
- ⁸ Based on an average annual discharge flow of 5.6 MGD to coincide with Phase II of the Facility expansion project.
- ⁹ Represents the minimum reported percent removal.
- ¹⁰ The 12-month rolling average electrical conductivity of the discharge shall not exceed the 12-month rolling average electrical conductivity of the source water plus 500 µmhos/cm, or a maximum of 1,000 µmhos/cm, whichever is more stringent.
- ¹¹ Represents the maximum total calendar annual average electrical conductivity observed in the discharge.
- ¹² Applied as a 7-day median effluent limitation.
- ¹³ Not to be exceeded more than once in any 30-day period.
- ¹⁴ Applied as an instantaneous maximum effluent limitation.
- ¹⁵ Minimum percent survival for any one bioassay.
- ¹⁶ Median percent survival of three consecutive acute bioassays.
- ¹⁷ Represents the minimum observed percent survival.

2. Effluent limitations contained in Order R5-2014-0005 for discharges from Discharge Point 002 (Monitoring Location EFF-A) and representative monitoring data from the term of Order R5-2014-0005 are as follows. To date, no wastewater has been discharged at Discharge Point 002.

Table F-3. Historic Effluent Limitations and Monitoring Data – Discharge Point 002

Parameter	Units	Effluent Limitation		
		Average Monthly	Average Weekly	Maximum Daily
Flow	MGD	2.8 ^{1,2}	--	3.1 ^{1,3}
	MGD	5.6 ^{2,4}	--	6.2 ^{3,4}
Conventional Pollutants				
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20
	lbs/day	234 ⁵	350 ⁵	467 ⁵
	lbs/day	467 ⁶	701 ⁶	935 ⁶
	% Removal	90	--	--
pH	standard units	--	--	6.5 – 8.1
Total Suspended Solids	mg/L	10	15	20
	lbs/day	234 ⁵	350 ⁵	467 ⁵
	lbs/day	467 ⁶	701 ⁶	935 ⁶
	% Removal	90	--	--
Non-Conventional Pollutants				
Ammonia, Total (as N)	mg/L	1.0	--	4.6
	lbs/day	23 ⁵	--	107 ⁵
	lbs/day	47 ⁶	--	215 ⁶
Electrical Conductivity @ 25°C	µmhos/cm	1,000 ⁷	--	--
Nitrogen, Total (as N)	mg/L	10	--	--
Total Coliform Organisms	MPN/100 mL	2.2 ⁸	23 ⁹	240 ¹⁰
Acute Toxicity	% Survival	--	--	70 ¹¹ /90 ¹²

- 1 Effluent flow limitations applicable to discharges from the existing Phase I Facility.
- 2 Applied as an average annual discharge flow limitation.
- 3 Applied as an average monthly discharge flow limitation.
- 4 Effluent flow limitations applicable to discharges from the expanded Phase II Facility.
- 5 Based on an average annual discharge flow of 2.8 MGD to coincide with Phase I of the Facility expansion project.
- 6 Based on an average annual discharge flow of 5.6 MGD to coincide with Phase II of the Facility expansion project.
- 7 The 12-month rolling average electrical conductivity of the discharge shall not exceed the 12-month rolling average electrical conductivity of the source water plus 500 µmhos/cm, or a maximum of 1,000 µmhos/cm, whichever is more stringent.
- 8 Applied as a 7-day median effluent limitation.
- 9 Not to be exceeded more than once in any 30-day period.
- 10 Applied as an instantaneous maximum effluent limitation.
- 11 Minimum percent survival for any one bioassay.
- 12 Median percent survival of three consecutive acute bioassays.

D. Compliance Summary

The Discharger was issued a Notice of Violation on 18 May 2017 following a Compliance Evaluation Inspection of the Facility, which mainly identified monitoring and reporting errors and effluent limitation exceedances. The Discharger exceeded pH, ammonia, and total coliform effluent limitations multiple times throughout the term of Order R5-2014-0005, including 20 pH exceedances, 18 ammonia exceedances, and three total coliform exceedances logged in CIWQS.

E. Planned Changes

The Discharger intends to build the Facility in a series of phases. The Facility is currently in Phase I and this permit addresses effluent limitations and discharge prohibitions associated with Phases I and II, at the Discharger's request. Phase II of the Facility expansion project includes installation of a second 3.08 MG bolted-steel tank, increasing the design average annual discharge flow from 2.8 MGD to 5.6 MGD and the design average monthly discharge flow from 3.1 MGD to 6.2 MGD. Effluent limitations and discharge prohibitions for the Phase II Facility are only applicable following compliance with the special provisions in section VI.C.6.b of the Order.

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. This Order also serves as a Master Recycling Permit pursuant to article 4, chapter 7, division 7 of the Water Code (commencing with section 13500).

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

- a. **Basin Plan.** The Central Valley Water Board adopted the *Water Quality Control Plan, Fifth Edition* (Revised May 2018), for the Sacramento and San Joaquin River Basins (hereinafter San Joaquin Basin Plan) and the *Water Quality Control Plan, Third Edition* (Revised May 2018), for the Tulare Lake Basin (hereinafter Tulare Lake Basin Plan) (collectively hereinafter Basin Plans) that designate beneficial uses, establish water quality objectives, and contain implementation programs and policies to achieve those objectives for all waters addressed through the plans. Requirements in this Order implement the Basin Plans.

The Tulare Lake Basin Plan at section 2 states that the beneficial uses of any specifically identified water body generally apply to its tributary streams. The Tulare Lake Basin Plan in Table 2-1, section 2, does not specifically identify beneficial uses for Fancher Creek, but does identify present uses for Valley Floor Waters. Fancher

Creek is a Valley Floor Water and thus has designated beneficial uses as listed in Table F-4, below.

The Tulare Lake Basin Plan in Table 2-1, section 2, does not specifically identify beneficial uses for the Diversion Channel. The Diversion Channel is a constructed conveyance that is periodically used to divert water from Big Dry Creek Reservoir to Little Dry Creek. As the source of the water being diverted, it is reasonable to apply beneficial uses for the Diversion Channel consistent with those identified for Big Dry Creek in the Tulare Lake Basin Plan. Thus, designated beneficial uses listed for Big Dry Creek, as a Valley Floor Water, in the Tulare Lake Basin Plan have been applied to the Diversion Channel, as listed in Table F-4, below.

The Diversion Channel feeds into Little Dry Creek. The San Joaquin Basin Plan at II-2.00 states that the beneficial uses of any specifically identified water body generally apply to its tributary streams. The San Joaquin Basin Plan in Table 2-1, section 2, does not specifically identify beneficial uses for Little Dry Creek, but does identify present and potential beneficial uses for the San Joaquin River from Friant Dam to the Mendota Pool, to which Little Dry Creek is tributary. Consequently, discharges to the Diversion Channel at Discharge Point 002 must also be protective of the beneficial uses applicable to Little Dry Creek, which are listed in Table F-4, below.

In addition, the Basin Plans 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 (MUN). Resolution No. 88-63 also states, “*Any body of water which has current specific designation previously assigned to it by a Regional Board in Water Quality Control Plans may retain that designation at the Regional Board’s discretion.*” The Tulare Lake Basin Plan does not specifically assign municipal and domestic supply as a beneficial use to Valley Floor Waters. Therefore, this Order does not apply the municipal and domestic water supply beneficial use to discharges to Fancher Creek.

The Tulare Lake Basin Plan identifies beneficial uses for groundwater underlying Discharge Points 001, 002, and REC-001. Groundwater underlying Discharge Point 001 and sections of Discharge Point REC-001 is in DAU #233 of the Kings Basin. Groundwater underlying Discharge Point 002 and sections of Discharge Point REC-001 is in DAU #234 of the Kings Basin. The beneficial uses of groundwater for these DAU’s are listed in Table F-4, below.

Table F-4. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Fancher Creek (Valley Floor Water)	<u>Existing:</u> Agricultural supply, including irrigation and stock watering (AGR); industrial service supply (IND); industrial process supply (PRO); water contact recreation, including canoeing and rafting (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); wildlife habitat (WILD); rare, threatened, or endangered species (RARE); and groundwater recharge (GWR).

Discharge Point	Receiving Water Name	Beneficial Use(s)
002	Diversion Channel from Big Dry Creek Reservoir to Little Dry Creek (Valley Floor Water)	<u>Existing:</u> Agricultural supply, including irrigation and stock watering (AGR); industrial service supply (IND); industrial process supply (PRO); water contact recreation, including canoeing and rafting (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); wildlife habitat (WILD); rare, threatened, or endangered species (RARE); and groundwater recharge (GWR).
	Little Dry Creek	<u>Existing:</u> Municipal and domestic water supply (MUN); agricultural supply, including irrigation and stock watering (AGR); industrial process supply (PRO); water contact recreation, including canoeing and rafting (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); migration of aquatic organisms, warm and cold (MIGR); warm spawning, reproduction, and/or early development (SPWN); and wildlife habitat (WILD). <u>Potential:</u> Cold spawning, reproduction, and/or early development (SPWN)
001 and REC-001	Groundwater (DAU #233)	Municipal and domestic water supply (MUN); agricultural supply, including irrigation and stock watering (AGR); industrial service supply (IND); industrial process supply (PRO); water contact recreation (REC-1); non-contact water recreation (REC-2); and wildlife habitat (WILD).
002 and REC-001	Groundwater (DAU #234)	Municipal and domestic water supply (MUN); agricultural supply, including irrigation and stock watering (AGR); industrial service supply (IND); industrial process supply (PRO); water contact recreation (REC-1); and wildlife habitat (WILD).

2. **Water Reuse Policy and Master Recycling Permits.** The Tulare Lake Basin Plan states that “Dischargers will be required to reclaim and reuse wastewater whenever reclamation is feasible.” (Tulare Lake Basin Plan at section 4.1.11) It also states, “Discharges to surface water and evaporation of reclaimable wastewater will not be acceptable permanent disposal methods where opportunity exists to replace an existing use or proposed use of freshwater with reclaimed water; a timetable for reclamation or reuse may be set by the Regional Water Board.” (Tulare Lake Basin Plan at section 4.1.11.6)

The State Water Board adopted Resolution 2009-0011, *Policy for Water Quality Control for Recycled Water* (Recycled Water Policy) in February 2009, and later amended it in January 2013. Section 4 of the Recycled Water Policy, *Mandate for the Use of Recycled Water*, paragraph a(2) states, “Agencies producing recycled water that is available for reuse and not being put to beneficial use shall make that recycled water available to water purveyors for reuse on reasonable terms and conditions. Such terms and conditions may include payment by the water purveyor of a fair and reasonable share of the cost of the recycled water supply and facilities.” On 23 April 2009, the Central Valley Water Board adopted a similar resolution, Resolution R5-2009-0028, *Resolution in Support of Regionalization, Reclamation, Recycling, and Conservation of Wastewater*

Treatment Plants (Regionalization Resolution). Recycling of effluent by the Discharger is consistent with the intent of the Recycled Water Policy and Regionalization Resolution.

The Discharger shall treat wastewater to disinfected tertiary treatment standards and shall reclaim and reuse wastewater to the maximum extent feasible as opportunities for use of recycled water become available. With this Order, the Central Valley Water Board is adopting a Master Recycling Permit that will allow the Discharger to produce, distribute, and use recycled water throughout the City of Clovis, as recycled water opportunities become available.

Pursuant to Water Code section 13523.1, the Central Valley Water Board, after consulting with and receiving the recommendations of the State Water Board Division of Drinking Water (DDW) and any party who has requested in writing to be consulted, and with the consent of the Discharger, may issue a Master Recycling Permit to the Discharger as the recycled water supplier in lieu of issuing individual WDR's or water recycling requirements to every recycled water user. As required by Water Code section 13523.1, a Master Recycling Permit must include, and this Order does include, the following:

- a. WDR's adopted pursuant to article 4, division 7 of the Water Code (commencing with section 13260);
 - b. Requirements that the Discharger comply with the uniform statewide criteria established by DDW pursuant to section 13521 and other applicable permit conditions for the use of recycled water;
 - c. Requirements for the Discharger to establish and enforce rules and regulations for recycled water users in accordance with statewide recycling criteria;
 - d. Requirements for the submittal of quarterly recycled water use summary reports;
 - e. Requirements for the recycled water agency to conduct periodic inspections of the recycled water use sites; and
 - f. Other requirements determined to be appropriate by the Central Valley Water Board.
3. **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.
4. **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, which 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.

5. **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 Antidegradation Policy). The State Antidegradation Policy is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. The State Antidegradation Policy requires that existing water quality be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Antidegradation Policy. The Central Valley Water Board finds this Order is consistent with the federal and State Water Board antidegradation regulations and policy.
6. **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.
7. **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 (MCL's) designed to protect human health and ensure that water is safe for domestic use.
8. **Endangered Species Act Requirements.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code, §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.
9. **Emergency Planning and Community Right to Know Act.** Section 13263.6(a) of the Water Code requires that "*the Regional Water Board shall prescribe effluent limitations as part of the waste discharge requirements of a POTW for all substances that the most recent toxic chemical release data reported to the state emergency response commission pursuant to section 313 of the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. sec. 11023) (EPCRA) indicate as discharged into the POTW, for which the State Water Board or the Regional Water Board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective*".

The most recent toxic chemical data report does not indicate any reportable off-site releases or discharges to the collection system for this Facility. Therefore, a reasonable potential analysis (RPA) based on information from EPCRA cannot be conducted. Based on information from EPCRA, there is no reasonable potential to cause or contribute to an excursion above any numeric water quality objectives included within the Basin Plan or in any State Water Board plan, so no effluent limitations are included in this permit pursuant to Water Code section 13263.6(a).

However, as detailed elsewhere in this Order, available effluent data indicate that there are constituents present in the effluent that have a reasonable potential to cause or contribute to exceedances of water quality standards and require inclusion of effluent limitations based on federal and state laws and regulations.

10. **Storm Water Requirements.** U.S. EPA promulgated federal regulations for storm water on 16 November 1990 in 40 C.F.R. parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from wastewater treatment facilities. Wastewater treatment plants are applicable industries under the storm water program and are obligated to comply with the federal regulations. The State Water Board Water Quality Order 2014-0057-DWQ, General Permit for Storm Water Discharges Associated with Industrial Activities (NPDES General Permit No. CAS000001) (General Storm Water Permit) does not require facilities to obtain coverage if discharges of storm water do not enter waters of the United States (General Storm Water Permit, Fact Sheet, Section II.A.2.d). All storm water at the Facility is captured in an onsite basin where it percolates and evaporates. Therefore, coverage under the General Storm Water Permit is not required.
11. **Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.** The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order 2006-0003-DWQ (General Order) on 2 May 2006. The State Water Board amended the MRP for the General Order through Order WQ 2013-0058-EXEC on 6 August 2013. The General Order requires public agencies that own or operate sanitary sewer systems with greater than 1 mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMP's) and report all sanitary sewer overflows (SSO's), among other requirements and prohibitions.

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

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

1. Under section 303(d) of the 1972 CWA, states, territories and authorized tribes are required to develop lists of water quality limited segments (WQLS's). 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 and 2016 section 303(d) List of Water Quality Limited Segments. The San Joaquin Basin Plan references this list of WQLS's, 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 San Joaquin Basin Plan also states, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLS's]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment.*" Fancher Creek, the Diversion Channel, and Little Dry Creek are not listed as impaired water bodies on the 2014 and 2016 303(d) list; however, the listing for the San Joaquin River (from Friant Dam to Mendota Pool), to which the Diversion Channel and Little Dry Creek are hydraulically connected, includes invasive species and pH.

2. **Total Maximum Daily Loads (TMDL's).** Table F-5, below, identifies the 303(d) listings and any applicable TMDL's for the San Joaquin River (from Friant Dam to Mendota Pool). At the time of this permit renewal, there are no approved TMDL's with waste load allocations (WLA's) that apply to this Facility.

Table F-5. 303 (d) List for the San Joaquin River (Friant Dam to Mendota Pool)

Pollutant	Potential Sources	TMDL Status
Invasive Species	Source Unknown	Planned for Completion
pH	Source Unknown	Planned for Completion

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

E. Other Plans, Policies and Regulations

1. **Title 27.** The discharge authorized herein and the treatment and storage facilities associated with the discharge of treated municipal wastewater, except for discharges of residual sludge and solid waste, are exempt from the requirements of CCR, Title 27, section 20005 *et seq* (hereafter Title 27). The exemption, pursuant to CCR, Title 27 section 20090(a), is based on the following:
 - a. The waste consists primarily of domestic sewage and treated effluent;
 - b. The waste discharge requirements are consistent with water quality objectives; and
 - c. The treatment and storage facilities described herein are associated with a municipal wastewater treatment plant.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

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

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

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal

Regulations: 40 C.F.R. section 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 C.F.R. section 122.44(d) requires that permits include WQBEL's to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established. The San Joaquin Basin Plan at section 4.2.2.1.9 and the Tulare Lake Basin Plan at section 4.2.2 contain an implementation policy, "*Policy for Application of Water Quality Objectives*" and "*Application of Water Quality Objectives*," respectively, which 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*" or "*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 Plans include 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.*" (San Joaquin Basin Plan at section 3.1.20 and Tulare Lake Basin Plan at section 3.1.18) The Basin Plans state 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 (MCL's)*" in Title 22 of CCR. The Basin Plans further state that, to protect all beneficial uses, the Central Valley Water Board may apply limits more stringent than MCL's. The narrative tastes and odors objective states: "*Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.*"

A. Discharge Prohibitions

- 1. Prohibition III.A (No discharge or application of waste other than that described in this Order).** This prohibition is based on Water Code section 13260 that requires filing of a ROWD before discharges can occur. The Discharger submitted a ROWD for the discharges described in this Order; therefore, discharges not described in this Order are prohibited.
- 2. Prohibition III.B (No bypasses or overflow of untreated wastewater, except under the conditions at 40 C.F.R. section 122.41(m)(4)).** As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the 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 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 be established for the prevention of nuisance within a specific area. The Basin Plans prohibit conditions that create a nuisance.
4. **Prohibition III.D (No discharge of hazardous waste).** This prohibition is based on CCR, Title 22, section 66261.1 et seq. that prohibits discharge of hazardous waste.
5. **Prohibition III.E (Average Monthly and Average Annual Discharge Flow).** This prohibition is based on the design average monthly and average annual flow treatment capacity ratings for the Facility and ensures the Facility is operated within its treatment capacity. This prohibition also accounts for the permitted increase in the design average monthly and average annual flow treatment capacity ratings following completion of Facility upgrades to provide the treatment capacity for an average monthly discharge flow of 6.2 MGD and an average annual discharge flow of 5.6 MGD following compliance with Special Provision IV.C.6.b of the Order. Previous Order R5-2014-0005 included flow as an effluent limit based on the Facility design flows. Flow is not a pollutant and therefore has been changed from an effluent limit to a discharge prohibition in this Order, which is an equivalent level of regulation. This Order is not less stringent because compliance with flow as a discharge prohibition will be calculated the same way as the previous Order.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing U.S. EPA permit regulations at 40 C.F.R. section 122.44 require that permits include conditions meeting applicable technology-based requirements, at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 C.F.R. part 133.

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

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTW's [defined in section 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment, as defined by the U.S. EPA Administrator.

Based on this statutory requirement, U.S. EPA developed secondary treatment regulations, which are specified in 40 C.F.R. part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of biochemical oxygen demand (BOD₅), total suspended solids (TSS), and pH.

2. Applicable Technology-Based Effluent Limitations

- a. **BOD₅ and TSS.** Federal regulations at 40 C.F.R. part 133 establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD₅ and TSS. In addition, 40 C.F.R. section 133.102, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal shall not be less than 85 percent. This Order requires WQBEL's that are equal to or more stringent than the secondary

technology-based treatment described in 40 C.F.R. part 133 (see section IV.C.3.c of the Fact Sheet for a discussion on pathogens, which includes WQBEL's for BOD₅, TSS, and percent removal of BOD₅ and TSS).

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

**Summary of Technology-Based Effluent Limitations
 Discharge Points 001 and 002**

Table F-6. Summary of Technology-Based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	30 ¹	45 ¹	--	--	--
	% Removal	85 ¹	--	--	--	--
pH	standard units	--	--	--	6.0 ¹	9.0 ¹
Total Suspended Solids	mg/L	30 ¹	45 ¹	--	--	--
	% Removal	85 ¹	--	--	--	--

¹ More stringent WQBEL's are applicable to the discharge and are included in this Order, as described further in section IV.C.3 of this Fact Sheet.

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

1. Scope and Authority

CWA section 301(b) and 40 C.F.R. section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements, expressed as technology equivalence requirements, more stringent than secondary treatment requirements that are necessary to meet applicable water quality standards. The rationale for these requirements, which consist of tertiary treatment or equivalent requirements, is discussed in section IV.C.3 of this Fact Sheet.

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

contained in other state plans and policies, or any applicable water quality criteria contained in the CTR and NTR.

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

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

The Basin Plans designate beneficial uses, establish water quality objectives, and contain implementation programs and policies to achieve those objectives for all waters addressed through the plans. In addition, the Basin Plans implement State Water Board Resolution 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for MUN. As discussed in section III.C of this Fact Sheet, the municipal and domestic supply beneficial use is not applicable to discharges at Discharge Point 001 to Fancher Creek.

The Tulare Lake Basin Plan in section 2 states: "*Protection and enhancement of beneficial uses of water against quality degradation is a basic requirement of water quality planning under the Porter-Cologne Water Quality Control Act. In setting water quality objectives, the Regional Water Board must consider past, present, and probable future beneficial uses of water.*" With respect to disposal of wastewaters, the Tulare Lake Basin Plan also states that "*...use of waters for disposal of wastewaters is not included as a beneficial use...and are subject to regulation as activities that may harm protected uses.*" The San Joaquin Basin Plan includes the same requirement.

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

- a. **Receiving Water and Beneficial Uses.** Fancher Creek at Discharge Point 001 is a modified natural creek (i.e., canal) used and managed by the Fresno Irrigation District (FID) to deliver irrigation water to approximately 32,600 acres of irrigated agriculture. Water is diverted from the Kings River to Fancher Creek via the Fresno No. 3 Canal. The Fresno No. 3 Canal splits into Mill Ditch and Fancher Creek immediately upstream of Discharge Point 001. The irrigation season typically starts in March and ends in September/October. From 1996 to 2012, FID delivered an average of 123,943 acre-feet per year (AF/year) (range 85,431 – 232,201 AF/year) from Fresno No. 3 Canal into Fancher Creek. During the non-irrigation season, Fancher Creek flow is limited to storm water and excess Kings River water that is routed through the Fancher Creek system for groundwater recharge. At times, flow in Fancher Creek is immeasurably small or nonexistent. Therefore, discharges from the Facility to Discharge Point 001 are, at times, expected to provide the majority of the flow in Fancher Creek during the winter months.

The Diversion Channel is a man-made, unlined channel constructed to convey flow from Big Dry Creek Reservoir to Little Dry Creek that is operated and maintained by the Fresno Metropolitan Flood Control District. The approximately 4.5-mile Diversion Channel predominantly traverses rural residential areas and areas of non-irrigated native vegetation. Records show that flows are not necessarily diverted through the Diversion Channel every year and when flows are diverted through the Diversion Channel, the diversion typically occurs during the winter and spring months. Discharges at Discharge Point 002 will often provide the majority of the flow in the Diversion Channel, with little or no dilution from natural flow. The Diversion Channel remains dry the majority of the time. The Discharger proposes to discharge to the Diversion Channel only when it is unable to discharge to Fancher Creek (e.g., when Fancher Creek is closed for maintenance). To date, no discharges from the Facility to the Diversion Channel at Discharge Point 002 have occurred.

The Diversion Channel flows into Little Dry Creek, which is an ephemeral watercourse that eventually flows into the San Joaquin River. The 2.0 – 2.5-mile stretch of Little Dry Creek between its confluence with the Diversion Channel and its confluence with the San Joaquin River lies within a rural, undeveloped area that is surrounded by native vegetation. Little Dry Creek is not managed to provide irrigation supply, as the flow duration and magnitude are not predictable. Much of the land surrounding Little Dry Creek is used for cattle grazing, with cattle having access to the riparian areas.

Refer to section III.C.1, above, for a complete description of the receiving waters and associated beneficial uses.

- b. **Effluent and Ambient Background Data.** The RPA, as described in section IV.C.3 of this Fact Sheet, was based on data from March 2015 through February 2018, which includes effluent and ambient background data submitted in SMR's. As required by Order R5-2014-0005, the Discharger conducted five effluent characterization sampling events, five receiving water characterization sampling events within Fancher Creek, four receiving water characterization sampling events within Little Dry Creek, and two receiving water characterization sampling events within the Diversion Channel over the term of Order R5-2014-0005. For the purposes of the RPA, all effluent and receiving water characterization sampling events collected over the term of Order R5-2014-0005, from March 2014 through February 2018, were considered. Where data were necessary to calculate pH- and hardness-dependent criteria (i.e., ammonia and CTR metals), only pH and hardness data collected from March 2015 through February 2018 were considered.
- c. **Assimilative Capacity/Mixing Zone.** Current flow data indicate that, at times, Fancher Creek is dominated by effluent from the Facility downstream of Discharge Point 001. Although discharges from the Facility to the Diversion Channel and Little Dry Creek at Discharge Point 002 have not yet occurred, available flow data indicate that the Diversion Channel and Little Dry Creek are ephemeral water bodies. The ephemeral nature of Fancher Creek, the Diversion Channel, and Little Dry Creek means that the designated beneficial uses must be protected, but that no credit for receiving water dilution is available at Discharge Points 001 or 002. Although the discharge, at times, maintains the aquatic habitat within the receiving waters, constituents may not be discharged that may cause harm to aquatic life.

The Discharger has not submitted mixing zone/dilution studies requesting dilution credits. Thus, consistent with the assumptions used for Order R5-2014-0005, the worst-case dilution for Fancher Creek, the Diversion Channel, and Little Dry Creek

is assumed to be zero to provide protection of the beneficial uses of these receiving waters. The impact of assuming zero assimilative capacity within the receiving waters is that effluent limitations are applied end-of-pipe, with no allowance for dilution within the receiving waters.

- d. **Conversion Factors.** The 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 SIP¹ and the CTR.² 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.³ Design flows for aquatic life criteria include the lowest 1-day flow with an average reoccurrence frequency of once in 10 years (1Q10) and the lowest average 7 consecutive day flow with an average reoccurrence frequency of once in 10 years (7Q10).⁴ This section of the CTR also indicates that the design conditions should be established such that the appropriate criteria are not exceeded more than once in a 3-year period, on average.⁵ 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.⁶ 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 comply with the CTR and SIP.

i. **Summary Findings**

At design discharge conditions, Fancher Creek, the Diversion Channel, and Little Dry Creek are effluent-dominated. Under these regularly occurring critical conditions, the effluent is the receiving water that is used to define the ambient receiving water conditions to define the appropriate water quality criteria in accordance with the CTR and SIP; otherwise, if ambient downstream hardness was collected on the same day as effluent hardness, the downstream ambient hardness value is used. The Sacramento Superior Court has previously upheld

¹ 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.

² The CTR requires that, for waters with a hardness of 400 mg/L (as CaCO₃), or less, the actual ambient hardness of the surface water must be used (40 C.F.R. § 131.38(c)(4)).

³ 40 C.F.R. §131.38(c)(4)(ii)

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

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

⁶ 40 C.F.R. §131.38(c)(2)(i)

the Central Valley Water Board's use of effluent hardness levels in effluent-dominated streams when developing effluent limitations for hardness-dependent metals. (*California Sportfishing Protection Alliance v. California Regional Water Quality Control Board, Central Valley Region*, Super. Ct. Sacramento County, 2012, No. 34-2009-80000309) (Order Denying Petitioners' Motion to Strike Respondent's Return of Writ of Mandate and Granting Discharge of the Writ).

The ambient hardness for Fancher Creek is represented by the data in Figure F-1, below, which shows ambient hardness ranging from 6.6 mg/L to 150 mg/L based on applicable ambient data collected from 28 March 2014 through February 2018.

The ambient hardness for the Diversion Channel and Little Dry Creek is represented by the data in Figure F-2, below, which shows ambient hardness ranging from 32 mg/L to 230 mg/L based on applicable ambient data collected from 28 March 2014 through February 2018.

Given the high variability in ambient hardness values, there is no single hardness value that describes the ambient receiving waters 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 waters, the Central Valley Water Board has discretion to select ambient hardness values within the ranges of 6.6 mg/L (minimum) up to 150 mg/L (maximum) for discharges at Discharge Point 001 and 32 mg/L (minimum) up to 230 mg/L (maximum) for discharges at Discharge Point 002. Staff recommends that the Central Valley Water Board use the ambient hardness values shown in Tables F-7 and F-8 for the following reasons.

- (a) The ambient receiving water hardness values shown in Tables F-7 and F-8 are consistent with design discharge conditions and will result in criteria and effluent limitations that ensure protection of beneficial uses under all ambient receiving water conditions.
- (b) The Water Code mandates that the Central Valley Water Board establish permit terms that will ensure the reasonable protection of beneficial uses. In this case, using the lowest measured ambient hardness values to calculate effluent limitations is not required to protect beneficial uses. Calculating effluent limitations based on the lowest measured ambient hardness values 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, Central Valley Water Board staff have used the ambient hardness values shown in Tables F-7 and F-8 to calculate the proposed effluent limitations for hardness-dependent metals. The proposed effluent limitations are protective of beneficial uses under all flow conditions.
- (c) Using ambient hardness values that are higher than the minimum observed ambient hardness values will result in limits that may allow increased metals to be discharged to Fancher Creek, the Diversion Channel, and Little Dry Creek, 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 State Antidegradation Policy requires the Discharger to meet WDR's that will result in the best practicable treatment or control (BPTC) of the discharge necessary to assure that: a) a pollution or nuisance will not occur, and b) the highest water quality consistent with maximum benefit to the people of the state will be maintained.

- (d) Using the ambient hardness values shown in Tables F-7 and F-8 is consistent with the CTR and SIP's requirements for developing metals criteria.

Table F-7. Summary of CTR Criteria for Hardness-Dependent Metals – Discharge Point 001

CTR Metals	Ambient Hardness (mg/L) ²	CTR Criteria (µg/L, total recoverable) ¹	
		acute	chronic
Copper	32	4.8	3.5
Chromium III	32	680	81
Cadmium	25 (acute) 32 (chronic)	0.95	1.0
Lead	25	14	0.54
Nickel	32	180	20
Silver	21	0.28	--
Zinc	32	46	46

- ¹ Metal criteria rounded to two significant figures in accordance with the CTR (40 C.F.R. section 131.38(b)(2)).
- ² The ambient hardness values in this table represent actual observed receiving water hardness measurements from the dataset shown in Figure F-1.

Table F-8. Summary of CTR Criteria for Hardness-Dependent Metals – Discharge Point 002

CTR Metals	Ambient Hardness (mg/L) ²	CTR Criteria (µg/L, total recoverable) ¹	
		acute	chronic
Copper	32	4.8	3.5
Chromium III	32	680	81
Cadmium	32 (acute) 32 (chronic)	1.2	1.0
Lead	32	19	0.75
Nickel	32	180	20
Silver	32	0.57	--
Zinc	32	46	46

- ¹ Metal criteria rounded to two significant figures in accordance with the CTR (40 C.F.R. section 131.38(b)(2)).
- ² The ambient hardness values in this table represent actual observed receiving water hardness measurements from the dataset shown in Figure F-2.

ii. **Background**

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

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

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

Where:

H = ambient hardness (as CaCO₃)¹

WER = water-effect ratio

m, b = metal- and criterion-specific constants

The direction in the CTR regarding hardness selection is that it must be based on ambient hardness and consistent with design discharge conditions for design flows and mixing zones. Consistent with design discharge conditions and design flows means that the selected "design" hardness must result in effluent limitations under design discharge conditions that do not result in more than one exceedance of the applicable criteria in a 3-year period.² Design flows for aquatic life criteria include the 1Q10 and the 7Q10. Since Fancher Creek, the Diversion Channel, and Little Dry Creek are considered effluent-dominated water bodies, the critical design flows are zero.

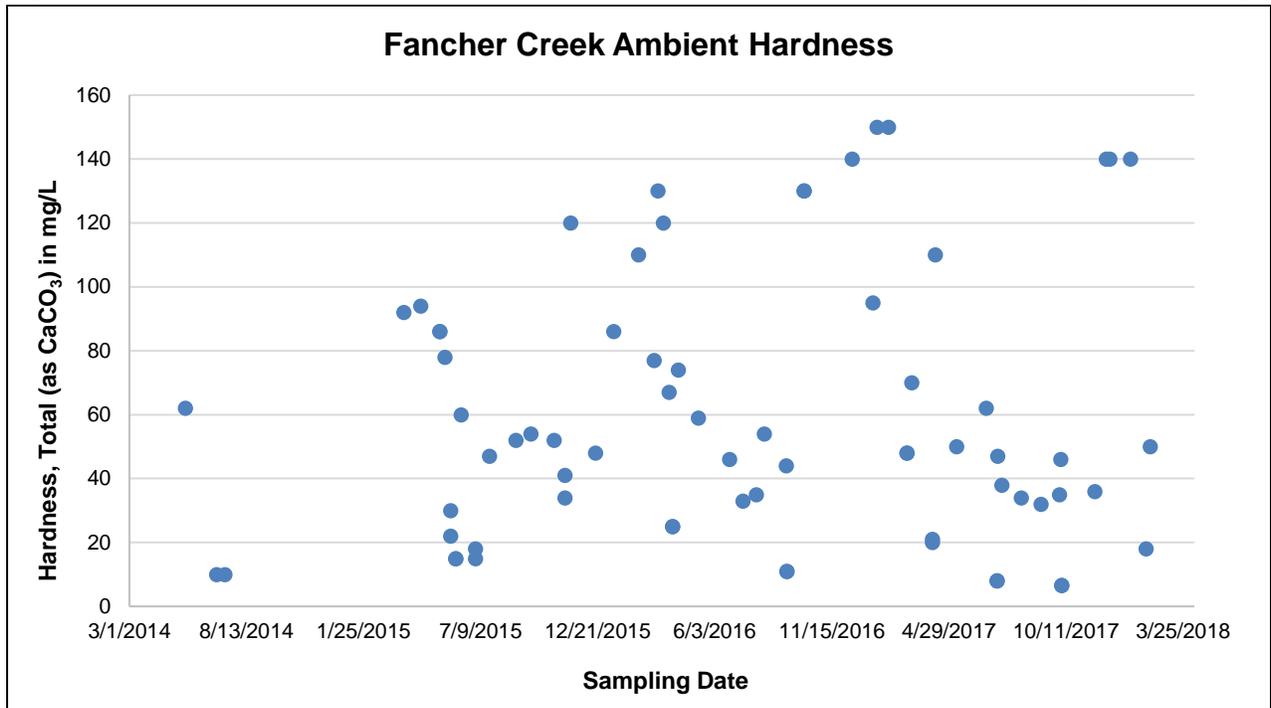
iii. **Ambient Conditions**

The ambient receiving water hardness within Fancher Creek varied from 6.6 mg/L to 150 mg/L based on 70 samples from 28 March 2014 through February 2018 (see Figure F-1).

¹ For this discussion, all hardness values are expressed in mg/L as CaCO₃.

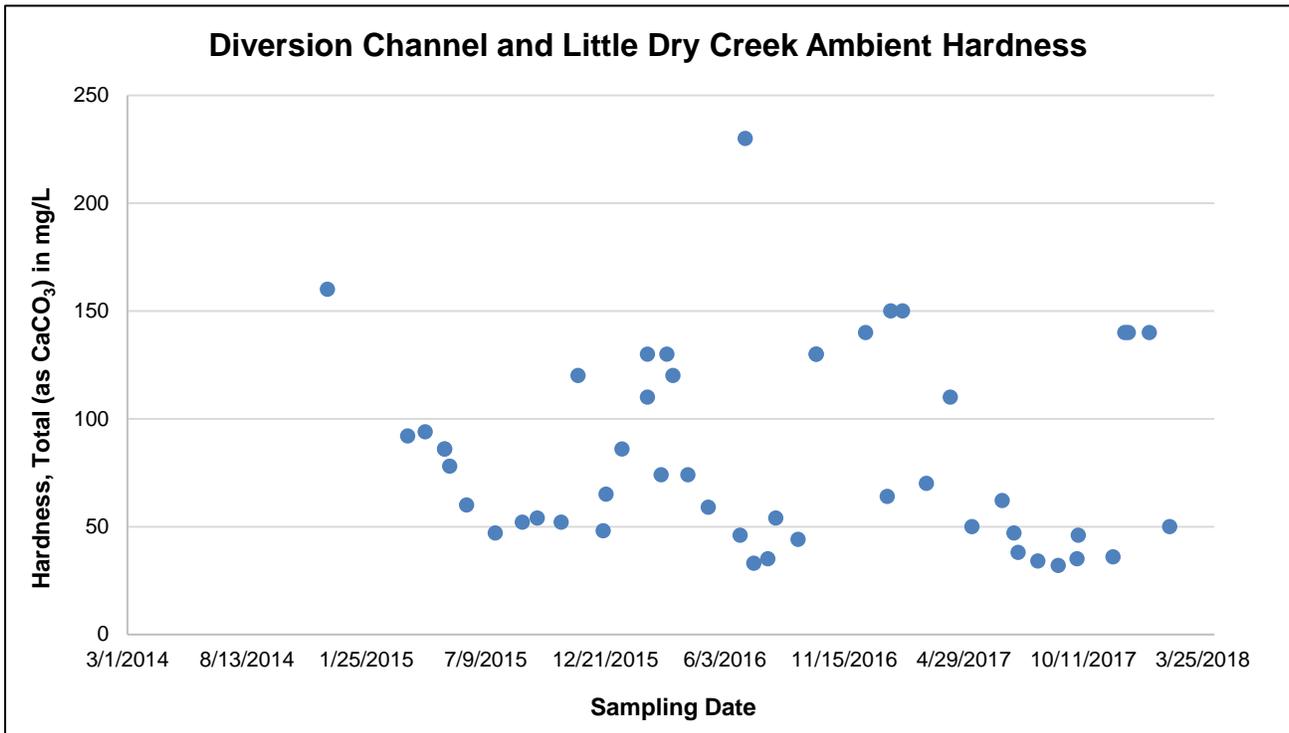
² 40 C.F.R. §131.38(c)(2)(iii) Table 4, notes 1 and 2

Figure F-1. Observed Fancher Creek Ambient Hardness Concentrations 6.6 mg/L – 150 mg/L



The ambient receiving water hardness within the Diversion Channel and Little Dry Creek varied from 32 mg/L to 230 mg/L based on 49 samples from 28 March 2014 through February 2018 (see Figure F-2).

Figure F-1. Observed Diversion Channel and Little Dry Creek Ambient Hardness Concentrations 32 mg/L – 230 mg/L



In this analysis, the entire range of ambient hardness concentrations shown in Figures F-1 and F-2 were considered to determine the appropriate ambient hardness values to calculate CTR criteria and effluent limitations applicable to Discharge Points 001 and 002 that are protective under all discharge conditions.

iv. **Approach to Derivation of Criteria**

As shown above, ambient hardness is variable. 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 may not be representative considering the wide range of ambient conditions.

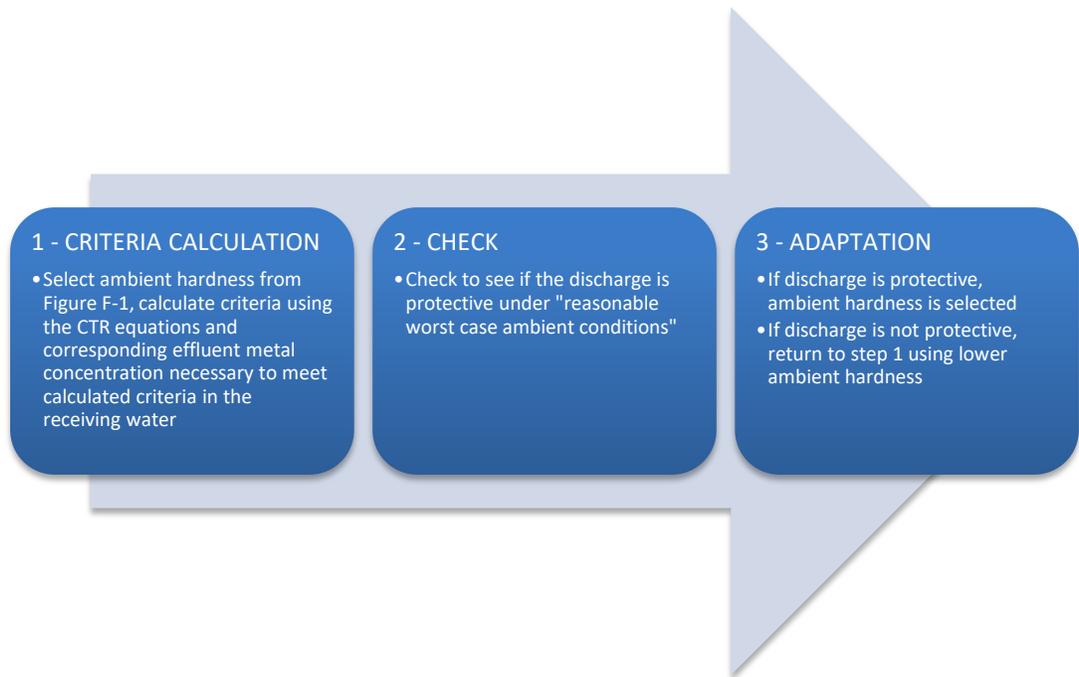
Reasonable worst-case ambient conditions. To determine whether a selected ambient hardness value results in effluent limitations that are fully protective while complying with federal regulations and state policy, staff have conducted an analysis considering varying ambient hardness and flow conditions.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

Reasonable worst-case ambient conditions:

- (a) “Low receiving water flow.” CTR design discharge conditions (1Q10 and 7Q10) have been selected to represent reasonable worst-case receiving water flow conditions.
- (b) “High receiving water flow (maximum receiving water flow).” This additional flow condition has been selected consistent with the Davis Order, which required that the hardness selected be protective of water quality criteria under all flow conditions.
- (c) “Low receiving water hardness.” The minimum ambient receiving water hardness conditions for Fancher Creek applicable to Discharge Point 001 and the Diversion Channel and Little Dry Creek applicable to Discharge Point 002 of 6.6 mg/L and 32 mg/L, respectively, were selected to represent the reasonable worst-case receiving water hardness values.
- (d) “Background ambient metal concentration at criteria.” This condition assumes that the metal concentrations in the background receiving waters are 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 waters 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 values to calculate the criteria that will result in effluent limitations that protect beneficial uses under all flow conditions.

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



- (a) **CRITERIA CALCULATION.** CTR criteria are calculated using the CTR equations based on actual measured ambient hardness sample results, starting with the maximum observed Fancher Creek ambient hardness of 150 mg/L and the maximum observed Diversion Channel and Little Dry Creek ambient hardness of 230 mg/L. Effluent metal concentrations necessary to meet the above calculated CTR criteria in the receiving waters are calculated in accordance with the SIP.¹ This should not be confused with an effluent limit. Rather, it is the ECA, which is synonymous with the WLA 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.”² If effluent limits are found to be needed, the limits are calculated to enforce the ECA considering effluent variability and the probability basis of the limit.
- (b) **CHECK.** U.S. EPA’s simple mass balance equation³ is used to evaluate if discharge at the computed ECA is protective. Resultant downstream metal concentrations are compared with downstream calculated CTR criteria under reasonable worst-case ambient conditions.
- (c) **ADAPT.** If step b results in:
- (1) Receiving water metal concentration that complies with CTR criteria under reasonable worst-case ambient conditions, then the hardness value is selected.

¹ SIP section 1.4.B, Step 2, provides direction for calculating the Effluent Concentration Allowance.

² U.S. EPA Technical Support Document for Water Quality-based Toxics Control (TSD), pg. 96.

³ U.S. EPA NPDES Permit Writers’ Handbook (EPA 833-K-10-001 September 2010, pg. 6-24)

- (2) Receiving water metal concentration greater than CTR criteria, then return to step a, 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 a through c must be repeated separately for each metal until ambient hardness values are determined that will result in criteria and effluent limitations that comply with the CTR and protect beneficial uses for all metals.

v. Results of Iterative Analysis

The above iterative analysis for each CTR hardness-dependent metal results in the selected ambient hardness values shown in Tables F-7 and F-8, above. Using these hardness values, which are actual ambient sample results, to calculate criteria applicable to discharges at Discharge Points 001 and 002 will result in effluent limitations that are protective under all ambient flow conditions. Copper and zinc are used as examples below to illustrate the results of the analysis for discharges at Discharge Points 001 and 002. Tables F-9 and F-10, below, summarize the numeric results of the three-step iterative approach for copper and zinc for discharges at Discharge Point 001. Tables F-11 and F-12, below, summarize the numeric results of the three-step iterative approach for copper and zinc for discharges at Discharge Point 002. As shown in the example tables, an ambient hardness value of 32 mg/L is used in the CTR equations to derive criteria and effluent limitations for copper and zinc at both Discharge Points 001 and 002. Then, under the “check” step, worst-case ambient receiving water conditions are used to test whether the discharge results in compliance with CTR criteria and protection of beneficial uses.

The results of the above analysis, summarized in the tables below, show that the ambient hardness values selected using the three-step iterative process result in protective effluent limitations that achieve CTR criteria under all flow conditions. Tables F-9, F-10, F-11, and F-12 summarize the critical flow conditions within Fancher Creek, the Diversion Channel, and Little Dry Creek; however, the analysis evaluated all flow conditions within Fancher Creek, the Diversion Channel, and Little Dry Creek to ensure compliance with the CTR criteria at all times.

Table F-9. Verification of CTR Compliance for Copper – Discharge Point 001

Receiving water hardness used to compute effluent limitations				32 mg/L
Effluent Concentration Allowance (ECA) for Copper ¹				3.5 µg/L
	Downstream Ambient Concentrations Under Worst-Case Ambient Receiving Water Conditions			Complies with CTR Criteria?
	Hardness	CTR Criteria (µg/L)	Ambient Copper Concentration ² (µg/L)	
1Q10	32	3.5	3.5	Yes
7Q10	32	3.5	3.5	Yes
Max receiving water flow	6.7	0.92	0.92	Yes

¹ The ECA defines effluent quality necessary to meet the CTR criteria in the receiving water.

² This concentration is derived using worst-case ambient conditions. These conservative assumptions will ensure that the receiving water always complies with CTR criteria.

Table F-10. Verification of CTR Compliance for Zinc – Discharge Point 001

Receiving water hardness used to compute effluent limitations				32 mg/L
Effluent Concentration Allowance (ECA) for Zinc ¹				46 µg/L
	Downstream Ambient Concentrations Under Worst-Case Ambient Receiving Water Conditions			Complies with CTR Criteria?
	Hardness	CTR Criteria (µg/L)	Ambient Zinc Concentration ² (µg/L)	
1Q10	32	46	46	Yes
7Q10	32	46	46	Yes
Max receiving water flow	6.7	12	12	Yes

¹ The ECA defines effluent quality necessary to meet the CTR criteria in the receiving water.

² This concentration is derived using worst-case ambient conditions. These conservative assumptions will ensure that the receiving water always complies with CTR criteria.

Table F-11. Verification of CTR Compliance for Copper – Discharge Point 002

Receiving water hardness used to compute effluent limitations				32 mg/L
Effluent Concentration Allowance (ECA) for Copper ¹				3.5 µg/L
	Downstream Ambient Concentrations Under Worst-Case Ambient Receiving Water Conditions			Complies with CTR Criteria?
	Hardness	CTR Criteria (µg/L)	Ambient Copper Concentration ² (µg/L)	
1Q10	32	3.5	3.5	Yes
7Q10	32	3.5	3.5	Yes
Max receiving water flow	64	6.4	6.4	Yes

¹ The ECA defines effluent quality necessary to meet the CTR criteria in the receiving water.

² This concentration is derived using worst-case ambient conditions. These conservative assumptions will ensure that the receiving water always complies with CTR criteria.

Table F-12. Verification of CTR Compliance for Zinc – Discharge Point 002

Receiving water hardness used to compute effluent limitations				32 mg/L
Effluent Concentration Allowance (ECA) for Zinc ¹				46 µg/L
	Downstream Ambient Concentrations Under Worst-Case Ambient Receiving Water Conditions			Complies with CTR Criteria?
	Hardness	CTR Criteria (µg/L)	Ambient Zinc Concentration ² (µg/L)	
1Q10	32	46	46	Yes
7Q10	32	46	46	Yes
Max receiving water flow	64	82	82	Yes

- ¹ The ECA defines effluent quality necessary to meet the CTR criteria in the receiving water.
- ² This concentration is 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. section 122.44(d)(1)(i) state, “*Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.*” Additionally, 40 C.F.R. section 122.44(d)(1)(vii) requires effluent limits to be developed consistent with any available WLA’s 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 an 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 U.S. EPA guidance considering multiple lines of evidence and the site-specific conditions of the discharge.

- a. **Constituents with No Reasonable Potential.** WQBEL’s are not included in this Order for constituents that do not demonstrate reasonable potential to cause or contribute to an in-stream excursion above an applicable water quality objective; however, monitoring for those pollutants is established in this Order as required by the SIP. If the results of effluent monitoring demonstrate reasonable potential, this Order may be reopened and modified by adding an appropriate effluent limitation.

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

i. **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 (applicable to Discharge Point 002) and a criterion of 0.051 µg/L for waters from which aquatic organisms are consumed (applicable to Discharge Point 001). 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), marine habitat (MAR), or endangered species (RARE). 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-4, the beneficial uses of Fancher Creek and the Diversion Channel include WILD and RARE; therefore, the Sport Fish Water Quality Objective is applicable.

- (b) **RPA Results.** The Discharger used multiple test methods to evaluate mercury in the effluent and the receiving waters. As discussed in section III.B of the Standard Provisions, Attachment D, 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. Of the test methods used by the Discharger to evaluate mercury in the effluent and receiving waters, only U.S. EPA Methods 1631 Revision E and 245.7 are approved test methods under 40 C.F.R. part 136. Furthermore, according to 40 C.F.R. sections 122.21(e)(3) and 122.44(i)(1)(iv), a U.S. EPA-approved analytical method is sufficiently sensitive where:
- (1) The minimum level (ML) is at or below both the level of the applicable water quality criterion/objective and the permit limitation for the measured pollutant or pollutant parameter; or
 - (2) In permit applications, the ML is above the applicable water quality criterion/objective, but the amount of the pollutant or pollutant parameter in a facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge; or

- (3) The method has the lowest ML of the U.S. EPA-approved analytical methods where none of the U.S. EPA-approved analytical methods for a pollutant can achieve the ML's necessary to assess the need for effluent limitations or to monitor compliance with a permit limitation.

Required ML's are listed in Appendix 4 of the SIP. Where more than one ML is listed in Appendix 4, the Discharger may select any one of the cited analytical methods for compliance determination. The selected ML used for compliance determination is referred to as the reporting level (RL). There are also situations when analytical methods are published with ML's that are more sensitive than the ML's for analytical methods listed in the SIP. For instance, U.S. EPA Method 1631 Revision E is not currently listed in Appendix 4 of the SIP, but it is published with an ML of 0.50 ng/L, which makes it a sufficiently sensitive analytical method. Similarly, U.S. EPA Method 245.7 for mercury is published with an ML of 5.0 ng/L. As shown in Table F-13, below, only the effluent and receiving water mercury samples evaluated using U.S. EPA Method 1631 Revision E were reported with RL's that were sufficiently sensitive, as defined in 40 C.F.R sections 122.21(e)(3) and 122.44(i)(1)(iv). Therefore, only samples evaluated using U.S. EPA Method 1631 Revision E were considered to be sufficiently sensitive test methods approved under 40 C.F.R. part 136 and were used to evaluate whether the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the applicable CTR criteria and the Statewide Mercury Provisions.

Table F-13. Data Summary for Mercury

Monitoring Location	Sampling Date	Result (ng/L)	RL (ng/L)	U.S. EPA Test Method
EFF-A	1 July 2014	<62	200	7470A
EFF-A	13 May 2014	<35	200	7470A
EFF-A	1 August 2016	0.88	0.50	1631 Revision E ¹
EFF-A	1 August 2016	54 (DNQ)	200	7470A
EFF-A	13 July 2017	76 (DNQ)	200	7470A
EFF-A	13 July 2017	1.13	0.50	1631 Revision E ¹
EFF-A	2 October 2017	<91	200	245.7 ¹
RSW-001U	2 July 2014	<35	200	7470A
RSW-001U	2 July 2014	1.0	0.50	1631 Revision E ¹
RSW-001U	4 June 2015	<91	200	7470A
RSW-001U	5 April 2016	<91	200	7470A
RSW-001U	5 April 2016	0.96	0.50	1631 Revision E ¹
RSW-001U	13 September 2016	<91	200	245.7 ¹
RSW-001U	1 March 2017	35 (DNQ)	200	245.7 ¹
RSW-002U	2 December 2014	<33	200	7470A
RSW-002U	22 December 2015	280 (DNQ)	1,200	7470A

Monitoring Location	Sampling Date	Result (ng/L)	RL (ng/L)	U.S. EPA Test Method
RSW-002U	7 March 2016	10	0.50	1631 Revision E ¹
RSW-002U	13 January 2017	<91	200	245.7 ¹
RSW-003U	17 February 2016	8.7	0.50	1631 Revision E ¹
RSW-003U	1 July 2016	45 (DNQ)	200	7470A
RSW-003U	1 July 2016	2.2	0.50	1631 Revision E ¹

¹ U.S. EPA-approved test method under 40 C.F.R. part 136.

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. Based on effluent samples analyzed using sufficiently sensitive test methods approved under 40 C.F.R. part 136, the maximum observed annual average mercury concentration was 1.13 ng/L based on two samples collected from 28 March 2014 through February 2018. The maximum annual average mercury concentration observed within Fancher Creek was 1.0 ng/L based on two samples collected at Monitoring Location RSW-001U between 28 March 2014 and February 2018 and evaluated using sufficiently sensitive test methods approved under 40 C.F.R. part 136. The maximum annual average mercury concentration observed within the Diversion Channel and Little Dry Creek was 6.97 ng/L based on three samples collected at Monitoring Locations RSW-002U and RSW-003U between 28 March 2014 and February 2018 and evaluated using sufficiently sensitive test methods approved under 40 C.F.R. part 136. Therefore, mercury in the discharge does not exhibit reasonable potential to cause or contribute to an in-stream excursion above the Statewide Mercury Provisions at Discharge Points 001 or 002.

ii. **Salinity**

- (a) **WQO.** The Basin Plans contain a chemical constituent objective that incorporates state MCL's, 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 National Ambient Water Quality Criteria (NAWQC) 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. Through the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative, the Central Valley Water Board approved Basin Plan Amendments to establish a salt and nitrate Management Plan for the Central Valley. If the Basin Plan Amendments are approved by the State Water Board, Office of Administrative Law, and

U.S. EPA, the Basin Plans will be amended to define how the narrative water quality objective is to be interpreted for the protection of agricultural use. All studies conducted through this Order to establish an agricultural limit to implement the narrative objective will be reviewed by and consistent with the efforts currently underway by CV-SALTS.

Table F-14. Salinity Water Quality Criteria/Objectives

Parameter	Agricultural WQ Objective ¹	Secondary MCL ²	U.S. EPA NAWQC	Tulare Lake Basin Plan	Effluent	
					Average ³	Maximum
Boron (mg/L)	Varies	N/A	N/A	1.0	0.28	0.30
Chloride (mg/L)	Varies	250, 500, 600	860 1-hr 230 4-day	175	69	97
Electrical Conductivity (µmhos/cm) or Total Dissolved Solids (mg/L)	Varies	900, 1,600, 2,200 or 500, 1,000, 1,500	N/A	1,000 ⁴ or N/A	524 or 326	820 or 490
Sulfate (mg/L)	Varies	250, 500, 600	N/A	N/A	19	23

- ¹ Narrative chemical constituent objective of the Basin Plan. Procedures for establishing the applicable numeric limitation to implement the narrative objective can be found in the Policy for Application of Water Quality, chapter IV, section 8 of the Basin Plan. However, the Basin Plan does not require improvement over naturally occurring background concentrations. In cases where the natural background concentration of a particular constituent exceeds an applicable water quality objective, the natural background concentration will be considered to comply with the objective.
- ² The Secondary MCL's are for protection of public welfare and are stated as a recommended level, upper level, and a short-term maximum level.
- ³ Maximum calendar annual average.
- ⁴ In addition to the Tulare Lake Basin Plan objective, the San Joaquin Basin Plan contains a numeric water quality objective for electrical conductivity of 150 µmhos/cm for the San Joaquin River from Friant Dam to Gravelly Ford.

- (1) **Boron.** The Tulare Lake Basin Plan includes an effluent boron limitation of 1.0 mg/L for discharges to surface waters.
- (2) **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. The NAWQC acute criterion for the protection of freshwater aquatic life for chloride is 860 mg/L and the chronic criterion is 230 mg/L. In addition, the Tulare Lake Basin Plan includes an effluent chloride limitation of 175 mg/L for discharges to surface waters.
- (3) **Electrical Conductivity.** The Secondary MCL for electrical conductivity is 900 µmhos/cm as a recommended level, 1,600 µmhos/cm as an upper level, and 2,200 µmhos/cm as a short-term maximum. The Tulare Lake Basin Plan includes an effluent electrical conductivity objective stating that the maximum electrical conductivity of a discharge shall not exceed the quality of the source water plus 500 µmhos/cm or 1,000 µmhos/cm, whichever is more stringent.

The San Joaquin Basin Plan contains an electrical conductivity objective of 150 $\mu\text{mhos/cm}$ (90th percentile) for the San Joaquin River from Friant Dam to Gravelly Ford. As established in previous Orders R5-2008-0036 and R5-2014-0005, the San Joaquin Basin Plan electrical conductivity objective of 150 $\mu\text{mhos/cm}$ does not apply to the discharge from the Facility to Little Dry Creek, via the Diversion Channel. The Discharger submitted an Antidegradation Analysis Report prior to the adoption of previous Order R5-2008-0036, which show that under worst-case conditions, the discharge would not cause an exceedance of the San Joaquin River electrical conductivity objective. Discharges from the Phase I Facility will utilize up to approximately 50-53 percent of the assimilative capacity and discharges from the Phase II Facility will utilize up to approximately 16-19 percent of the assimilative capacity. Phase II discharges are expected to utilize less of the available assimilative capacity due restoration flows in the San Joaquin River required by the 2006 settlement agreement between the Natural Resources Defense Council and the U.S. Bureau of Reclamation, which began on 1 January 2014.

When expressed as total dissolved solids, the secondary MCL is 500 mg/L as a recommended level, 1,000 mg/L as an upper level, and 1,500 mg/L as a short-term maximum.

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

(b) **RPA Results**

- (1) **Boron.** Boron concentrations in the effluent ranged from 0.17 mg/L to 0.30 mg/L based on five samples collected at Monitoring Location EFF-A from 28 March 2014 through February 2018. The maximum effluent boron concentration of 0.30 mg/L does not exceed the Tulare Lake Basin Plan effluent limitation of 1.0 mg/L. No boron samples were collected in the receiving water bodies over the term of Order R5-2014-0005.
- (2) **Chloride.** Chloride concentrations in the effluent ranged from 53 mg/L to 97 mg/L, with a maximum annual average of 69 mg/L, based on eight samples collected at Monitoring Location EFF-A between 28 March 2014 and February 2018. The maximum annual average does not exceed the Secondary MCL recommended level and the maximum effluent chloride concentration of 97 mg/L does not exceed the NAWQC criteria for the protection of freshwater aquatic life or the Tulare Lake Basin Plan effluent limitation of 175 mg/L. The maximum chloride concentration observed within Fancher Creek was 3.8 mg/L based on three samples collected at Monitoring Location RSW-001U between 28 March 2014 and February 2018. The maximum chloride concentration observed within the Diversion Channel and Little Dry Creek was 29 mg/L based on six samples collected at Monitoring Locations RSW-002U and RSW-003U between 28 March 2014 and February 2018.

- (3) **Electrical Conductivity or Total Dissolved Solids.** A review of the Discharger's monitoring reports shows a maximum observed effluent annual average electrical conductivity of 524 $\mu\text{mhos/cm}$, with a range from 292 $\mu\text{mhos/cm}$ to 820 $\mu\text{mhos/cm}$. These levels do not exceed the Secondary MCL recommended level or the applicable Tulare Lake Basin Plan objective. The maximum electrical conductivity observed within Fancher Creek was 180 $\mu\text{mhos/cm}$ based on 88 samples collected at Monitoring Location RSW-001U between 28 March 2014 and February 2018. The maximum electrical conductivity observed within the Diversion Channel and Little Dry Creek was 530 $\mu\text{mhos/cm}$ based on six samples collected at Monitoring Locations RSW-002U and RSW-003U between 28 March 2014 and February 2018.

Total dissolved solids concentrations in the effluent ranged from 176 mg/L to 490 mg/L, with a maximum annual average of 326 mg/L, based on 42 samples collected between 28 March 2014 and February 2018. These levels do not exceed the Secondary MCL recommended level. No total dissolved solids samples were collected in the receiving water bodies over the term of Order R5-2014-0005.

- (4) **Sulfate.** Sulfate concentrations in the effluent ranged from 18 mg/L to 23 mg/L, with a maximum annual average of 19 mg/L, based on five samples collected between 28 March 2014 and February 2018. These levels do not exceed the Secondary MCL recommended level. The maximum sulfate concentration observed within Fancher Creek was 4.1 mg/L based on three samples collected at Monitoring Location RSW-001U between 28 March 2014 and February 2018. The maximum sulfate concentration observed within the Diversion Channel and Little Dry Creek was 63 mg/L based on six samples collected at Monitoring Locations RSW-002U and RSW-003U between 28 March 2014 and February 2018.

The discharge does not have reasonable potential to cause or contribute to an in-stream excursion above 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 retains the electrical conductivity effluent limitations at Discharge Points 001 and 002 from Order R5-2014-0005, which require the 12-month rolling average electrical conductivity of the discharge to not exceed the 12-month rolling average electrical conductivity of the source water plus 500 $\mu\text{mhos/cm}$, or a maximum of 1,000 $\mu\text{mhos/cm}$, whichever is more stringent. The average electrical conductivity of the Facility's source water is 214 $\mu\text{mhos/cm}$, making 714 $\mu\text{mhos/cm}$ the most stringent electrical conductivity effluent limitation. As shown in Table F-14, above, the maximum annual average electrical conductivity of the effluent observed from 28 March 2014 through February 2018 was 524 $\mu\text{mhos/cm}$. Therefore, the Central Valley Water Board concludes that the Discharger can consistently comply with the effluent limit. Section VI.C.1.h of this Order includes a reopener to amend or modify the permit as necessary if the Basin Plan Amendments associated with CV-SALTS are approved by the State Water Board, Office of Administrative Law, and U.S. EPA.

b. **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 becomes available, further analysis will be conducted to determine whether to add numeric effluent limitations or to continue monitoring.

i. **Lead**

(a) **WQO.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for lead. These criteria for lead are presented in dissolved concentrations, as 1-hour acute criteria and 4-day chronic criteria. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. Default U.S. EPA translators were used for the effluent and receiving water. As described in section IV.C.2.e of this Fact Sheet, the applicable acute and chronic criteria for lead in the effluent discharged at Discharge Point 001 are 14 µg/L and 0.54 µg/L, respectively, as total recoverable. As described in section IV.C.2.e of this Fact Sheet, the applicable acute and chronic criteria for lead in the effluent discharged at Discharge Point 002 are 19 µg/L and 0.75 µg/L, respectively, as total recoverable.

(b) **RPA Results.** As shown in the tables below, based on effluent data collected at Monitoring Location EFF-A from 28 March 2014 through February 2018, lead was detected but not quantified in the effluent at concentrations that exceed the applicable CTR criteria at Discharge Points 001 and 002. The maximum quantified lead concentration observed within Fancher Creek was 2.6 µg/L based on 26 samples collected at Monitoring Location RSW-001U between 28 March 2014 and February 2018. The maximum quantified lead concentration observed within the Diversion Channel and Little Dry Creek was 2.9 µg/L based on six samples collected at Monitoring Locations RSW-002U and RSW-003U between 28 March 2014 and February 2018.

Table F-15. Data Summary for Lead – Discharge Point 001

Effluent					Background (µg/L)	SIP ML (µg/L)
MEC (µg/L)	No. of Samples	No. of ND	No. of DNQ	RL Range (µg/L)		
3.7 (DNQ)	42	3	39	0.10 – 5	2.6 ¹	0.50

Table F-16. Data Summary for Lead – Discharge Point 002

Effluent					Background (µg/L)	SIP ML (µg/L)
MEC (µg/L)	No. of Samples	No. of ND	No. of DNQ	RL Range (µg/L)		
3.7 (DNQ)	42	3	39	0.10 – 5	2.9 ¹	0.50

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

- (1) Required ML's are listed in Appendix 4 of the SIP. Where more than one ML is listed in Appendix 4, the Discharger may select any one of the cited analytical methods for compliance determination. The selected ML used for compliance determination is referred to as the RL.
- (2) Section 1.2 of the SIP requires that the Regional Board use all available, valid, relevant, representative data and information, as determined by the Regional Board, to implement the SIP. Section 1.2 of the SIP further states that the Regional Board has the discretion to consider if any data are inappropriate or insufficient for use in implementing the SIP.
- (3) Data reported below the ML indicates the data may not be valid due to possible matrix interferences during the analytical procedure.
- (4) Further, section 2.4.5 of the SIP (Compliance Determination) supports the insufficiency of data reported below the ML or RL. In part, it states, "*Dischargers shall be deemed out of compliance with an effluent limitation, for reporting and administrative enforcement purposes, if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the RL.*" Thus, if submitted data is below the RL, that data cannot be used to determine compliance with effluent limitations.
- (5) Data reported below the ML is not considered valid data for use in determining reasonable potential. Therefore, in accordance with section 1.2 of the SIP, the Central Valley Water Board has determined that data reported below the ML is inappropriate and insufficient to be used to determine reasonable potential.
- (6) In implementing its discretion, the Central Valley Water Board is not finding that reasonable potential does not exist; rather the Central Valley Water Board cannot make such a determination given the invalid data. Therefore, the Central Valley Water Board will require additional monitoring for such constituents until such time a determination can be made in accordance with the SIP policy.

SIP Appendix 4 cites several ML's for lead. The lowest applicable ML cited for lead is 0.50 µg/L. The Discharger used an analytical method that was less sensitive than the ML required by the SIP. The effluent results were all non-detects (ND's) or estimated values (i.e., DNQ). Therefore, the submitted effluent lead data are inappropriate and insufficient to determine reasonable potential under the SIP.

The quantified upstream receiving water concentrations applicable to Discharge Points 001 and 002 of 2.6 µg/L and 2.9 µg/L, respectively, exceed the CTR chronic criteria. Section 1.3, step 6 of the SIP states that if the receiving water concentration exceeds the criteria and the pollutant is detected in the effluent, an effluent limitation is required. However, as discussed above, insufficient effluent data are available at this time to justify establishing effluent limitations for lead.

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, monitoring for lead will be required as part of the effluent and receiving water characterization at the frequencies described in section IX.D of the Monitoring and Reporting Program (MRP), Attachment E. 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 appropriate effluent limitations.

- c. **Constituents with Reasonable Potential.** The Central Valley Water Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for ammonia, BOD₅, copper, cyanide, nitrite plus nitrate, pH, total coliform organisms, TSS, 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 1999 U.S. EPA NAWQC for the protection of freshwater aquatic life for total ammonia (the "1999 Criteria"), recommends acute (1-hour average; criteria maximum concentration or CMC) standards based on pH and chronic (30-day average; criteria continuous concentration or CCC) standards based on pH and temperature. U.S. EPA also recommends that no 4-day average concentration should exceed 2.5 times the 30-day CCC.

U.S. EPA recently published national recommended water quality criteria for the protection of aquatic life from the toxic effects of ammonia in freshwater (the "2013 Criteria").¹ The 2013 Criteria is an update to U.S. EPA's 1999 Criteria and varies based on pH and temperature. Although the 2013 Criteria reflects the latest scientific knowledge on the toxicity of ammonia to certain freshwater aquatic life, including new toxicity data on sensitive freshwater mussels in the Family Unionidae, the species tested for development of the 2013 Criteria may not be present in some Central Valley waterways. The 2013 Criteria document therefore states that, "*unionid mussel species are not prevalent in some waters, such as the arid west ...*" and provides that, "*In the case of ammonia, where a state demonstrates that mussels are not present on a site-specific basis, the recalculation procedure may be used to remove the mussel species from the national criteria dataset to better represent the species present at the site.*"

The Central Valley Water Board issued a 3 April 2014 *California Water Code section 13267 Order for Information: 2013 Final Ammonia Criteria for Protection of Freshwater Aquatic Life* (13267 Order) requiring the Discharger to either participate in an individual or group study to determine the presence of mussels or submit a method of compliance for complying with effluent limitations calculated assuming mussels present using the 2013 Criteria. The Discharger submitted a letter to the Central Valley Water Board indicating their participation in the Central Valley Clean Water Association (CVCWA) Freshwater Collaborative Mussel

¹ Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater, published August 2013 [EPA 822-R-13-001]

Study. Studies are currently underway to determine how the latest scientific knowledge on the toxicity of ammonia reflected in the 2013 Criteria can be implemented in the Central Valley Region as part of a Basin Planning effort to adopt nutrient and ammonia objectives. Until the Basin Planning process is completed, the Central Valley Water Board will continue to implement the 1999 Criteria to interpret the Basin Plan's narrative toxicity objective. The 1999 Criteria recommends acute (1-hour average; criteria maximum concentration or CMC) standards based on pH and chronic (30-day average; criteria continuous concentration or CCC) standards based on pH and temperature. U.S. EPA also recommends that no 4-day average concentration should exceed 2.5 times the 30-day CCC. U.S. EPA found that as pH increased, both the acute and chronic toxicity of ammonia increased. Salmonids were more sensitive to acute toxicity effects than other species. However, while the acute toxicity of ammonia was not influenced by temperature, it was found that invertebrates and young fish experienced increasing chronic toxicity effects with increasing temperature. Because the San Joaquin River, to which Little Dry Creek is tributary, has a potential beneficial use of cold freshwater habitat and the presence of salmonids and early fish life stages in the San Joaquin River is well-documented, the recommended criteria for waters where salmonids and early life stages are present were used for discharges at Discharge Point 002. Because Fancher Creek does not have a beneficial use of cold freshwater habitat and any fish diverted into the FID canal system would be incidental, the recommended criteria for waters where salmonids and early life stages are not present were used for discharges at Discharge Point 001.

The maximum permitted effluent pH is 8.2 for discharges at Discharge Point 001 and 8.1 for discharges at Discharge Point 002, based on the Discharger's request for a more stringent maximum effluent pH limit to allow for less stringent ammonia effluent limitations. In order to protect against the worst-case short-term exposure of an organism, pH values of 8.2 for discharges at Discharge Point 001 and 8.1 for discharges at Discharge Point 002 were used to derive the applicable acute criteria. The resulting acute criteria applicable to discharges at Discharge Points 001 and 002 are 5.73 mg/L and 4.64 mg/L, respectively.

At Discharge Point 001 chronic criterion was calculated for each day when paired pH and temperature data were measured using downstream receiving water data for pH and temperature. At Discharge Point 002 chronic criterion was calculated for each day when paired pH and temperature data were measured using effluent data for pH and temperature. Rolling 30-day average criteria were calculated using the criteria calculated for each day and the minimum observed 30-day average criterion was established as the applicable 30-day average chronic criterion, or 30-day CCC. For discharges at Discharge Point 001, the most stringent 30-day CCC was 3.14 mg/L (as N) based on downstream receiving water pH and temperature data collected from March 2015 through February 2018. The 4-day average concentration is derived in accordance with the U.S. EPA criterion as 2.5 times the 30-day CCC. Based on the 30-day CCC of 3.14 mg/L (as N) at Discharge Point 001, the 4-day average concentration that should not be exceeded is 7.86 mg/L (as N). For discharges at Discharge Point 002, the most

stringent 30-day CCC was 1.71 mg/L (as N) based on effluent pH and temperature data collected from March 2015 through February 2018. Based on the 30-day CCC of 1.71 mg/L (as N) at Discharge Point 002, the 4-day average concentration that should not be exceeded is 4.26 mg/L (as N).

The Tulare Lake Basin Plan includes an objective that states “[w]aters shall not contain un-ionized ammonia in amounts that which adversely affect beneficial uses. In no case shall the discharge of wastes cause concentrations of un-ionized ammonia (NH₃) to exceed 0.025 mg/L (as N) in the receiving waters.”

- (b) **RPA Results.** The Facility is a POTW that treats domestic wastewater. Untreated domestic wastewater contains ammonia in concentrations that are harmful to aquatic life and exceed the Basin Plans’ narrative toxicity objective. Federal regulations at 40 C.F.R. section 122.44(d)(1)(i) require that, “*Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.*” For priority pollutants, the SIP dictates the procedures for conducting the RPA. Ammonia is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

U.S. EPA’s September 2010 NPDES Permit Writer’s Manual, page 6-30, states, “*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available...A permitting authority might also determine that WQBEL’s are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL’s for pathogens in all permits for POTW’s discharging to contact recreational waters).*” U.S. EPA’s TSD also recommends that factors other than effluent data should be considered in the RPA, “*When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data.*” With regard to POTW’s, U.S. EPA recommends that, “*POTW’s should also be characterized for the possibility of chlorine and ammonia problems.*” (TSD, p. 50)

Nitrification is a biological process that converts ammonia to nitrite and nitrite to nitrate. Denitrification is a process that converts nitrate to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas, which is then released to the atmosphere. The Discharger currently uses nitrification and partial denitrification to remove ammonia from the waste stream.

Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving stream. Ammonia is known to cause toxicity to aquatic organisms in surface waters. Discharges of ammonia in concentrations that produce detrimental physiological responses to human, plant, animal, or aquatic life would violate the Basin Plans' narrative toxicity objective. Although the Discharger nitrifies the discharge, inadequate or incomplete nitrification creates the potential for ammonia to be discharged and provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the NAWQC. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for ammonia and WQBEL's are required for discharges at Discharge Points 001 and 002.

- (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 and specifies that "...the value of 'n' (assumed monitoring frequency) used in the AML calculation should not be less than the averaging period upon which the criterion value is based".¹ Therefore, while the LTA's corresponding to the acute and 4-day chronic criteria were calculated according to SIP procedures, the LTA and AMEL multiplier corresponding to the 30-day CCC was calculated assuming a 30-day averaging period and a monthly sampling frequency (n) of 30. The lowest LTA representing the acute, 4-day CCC, and 30-day CCC is then selected for deriving the AMEL and the average weekly effluent limitation (AWEL). The remainder of the WQBEL calculation for ammonia was performed according to the SIP procedures. For discharges at Discharge Point 001, this Order contains a final AMEL and AWEL for ammonia of 1.6 mg/L and 3.5 mg/L, respectively, based on the NAWQC. For discharges at Discharge Point 002, this Order contains a final AMEL and AWEL for ammonia of 1.3 mg/L and 2.8 mg/L, respectively, based on the NAWQC.

This Order does not contain WQBEL's for un-ionized ammonia because the proposed WQBEL's for total ammonia are more protective of the beneficial uses, given the temperature and pH typically experienced in the receiving waters at Discharge Points 001 and 002.

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

ii. **Copper**

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

¹ 64 FR 71974

concentrations to total concentrations. Default U.S. EPA translators were used for the effluent and receiving waters. As described in section IV.C.2.e of this Fact Sheet, for discharges at both Discharge Points 001 and 002, the applicable acute and chronic criteria for copper in the effluent are 4.8 µg/L and 3.5 µg/L, respectively, as total recoverable.

- (b) **RPA Results.** The MEC for copper in the effluent was 5.1 µg/L (as total recoverable) based on 42 samples collected at Monitoring Location EFF-A from 28 March 2014 through February 2018. The maximum copper concentration observed within Fancher Creek was 4.8 µg/L¹ based on 25 samples collected at Monitoring Location RSW-001U between 28 March 2014 and February 2018. The maximum copper concentration observed within the Diversion Channel and Little Dry Creek was 15 µg/L based on six samples collected at Monitoring Locations RSW-002U and RSW-003U between 28 March 2014 and February 2018. Therefore, copper in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for the protection of freshwater aquatic life at both Discharge Points 001 and 002.
- (c) **WQBEL's.** This Order contains a final AMEL of 2.8 µg/L and a maximum daily effluent limitation (MDEL) of 4.8 µg/L for copper, which are applicable to discharges at both Discharge Points 001 and 002, based on the CTR criteria for the protection of freshwater aquatic life.
- (d) **Plant Performance and Attainability.** Analysis of the effluent data for copper shows that the MEC of 5.1 µg/L is greater than the applicable WQBEL's. The Discharger submitted a 24 October 2018 Infeasibility Analysis, which documented the compliance strategy for meeting final effluent limits for copper and provided information to support the request for a compliance schedule. Therefore, the Discharger is subject to Time Schedule Order (TSO) R5-2019-0022 and any subsequent amendment Order, which provides a compliance schedule to achieve compliance with the final effluent limitations for copper by 31 May 2024.

iii. **Cyanide**

- (a) **WQO.** The CTR includes a chronic criterion of 5.2 µg/L for cyanide for the protection of freshwater aquatic life.
- (b) **RPA Results.** The MEC for cyanide was 5.6 µg/L based on five samples collected at Monitoring Location EFF-A between 28 March 2014 and February 2018. The maximum cyanide concentration observed within Fancher Creek was 5.7 µg/L based on four samples collected at Monitoring Location RSW-001U between 28 March 2014 and February 2018. The maximum cyanide concentration observed within the Diversion Channel and Little Dry Creek was 4.6 µg/L based on six samples collected at Monitoring Locations RSW-002U and RSW-003U between 28 March 2014 and February 2018. Therefore, cyanide in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for the protection of freshwater aquatic life at both Discharge Points 001 and 002.

¹ A result of 72 µg/L was observed on 12 January 2017; however, the lab report included a "D2" flag with this result, indicating the sample was diluted due to high concentrations of non-targeted analytes.

- (c) **WQBEL's.** This Order contains a final AMEL of 4.3 µg/L and an MDEL of 8.5 µg/L, which are applicable to discharges at both Discharge Points 001 and 002, based on the CTR chronic criterion for the protection of freshwater aquatic life.
- (d) **Plant Performance and Attainability.** Analysis of the effluent data for cyanide shows that the MEC of 5.6 µg/L is greater than the applicable WQBEL's. The Discharger submitted a 30 October 2018 Infeasibility Analysis, which documented the compliance strategy for meeting final effluent limits for cyanide and provided information to support the request for a compliance schedule. Therefore, the Discharger is subject to Time Schedule Order (TSO) R5-2019-0022 and any subsequent amendment Order, which provides a compliance schedule to achieve compliance with the final effluent limitations for cyanide by 31 May 2024.

iv. **Nitrite and Nitrate**

- (a) **WQO.** DDW has adopted Primary MCL's for the protection of human health for nitrite and nitrate that are equal to 1.0 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 1.0 mg/L for nitrite (measured 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).

As discussed in section III.C.1.a of this Fact Sheet, the MUN beneficial use does not apply to Fancher Creek. However, the Tulare Lake Basin Plan designates groundwater recharge as a designated use of Fancher Creek, which is an unlined channel that is, at times, an effluent-dominated water body. Incidental groundwater recharge likely occurs along the creek, which is lined on both sides with domestic wells for miles downstream of Discharge Point 001. Therefore, the Central Valley Water Board has concluded that application of the Primary MCL for nitrate and nitrite is appropriate for discharges to Fancher Creek at Discharge Point 001 to protect underlying groundwater. The Primary MCL's for nitrate and nitrite are also applicable water quality objectives for discharges at Discharge Point 002, as the San Joaquin Basin Plan designates MUN as a beneficial use of Little Dry Creek.

- (b) **RPA Results.** The Facility is a POTW that treats domestic wastewater. Untreated domestic wastewater contains ammonia in concentrations that, if untreated, will be harmful to fish and will violate the Basin Plans' narrative toxicity objective. This Order, therefore, requires removal of ammonia (i.e., nitrification). Nitrification is a biological process that converts ammonia to nitrate and nitrite and will result in effluent nitrate and nitrite concentrations above the Primary MCL's. Nitrate and nitrite concentrations in a drinking water supply above the Primary MCL's threaten the health of human fetuses and newborn babies by reducing the oxygen-carrying capacity of the blood (methemoglobinemia).

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

determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.” For priority pollutants, the SIP dictates the procedures for conducting the RPA. Nitrate and nitrite are not priority pollutants. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for 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.”* With regard to POTW’S, U.S. EPA recommends that, *“POTW’s should also be characterized for the possibility of chlorine and ammonia problems.”* (TSD, p. 50)

The concentration of nitrogen in raw domestic wastewater is sufficiently high that the resultant treated wastewater has a reasonable potential to exceed or threaten to exceed the Primary MCL for nitrite plus nitrate unless the wastewater is treated for nitrogen removal, and therefore an effluent limit for nitrite plus nitrate is required at Discharge Points 001 and 002. Denitrification is a process that converts nitrate to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas, which is then released to the atmosphere. The Discharger currently uses nitrification/denitrification to remove ammonia, nitrite, and nitrate from the waste stream. Inadequate or incomplete denitrification may result in the discharge of nitrate and nitrite to the receiving water. Discharges of nitrate and nitrite at Discharge Points 001 and 002 in concentrations that exceed the applicable Primary MCL’s would violate the Basin Plans’ narrative chemical constituents objective and is not consistent with state and federal antidegradation policies. Although the Discharger denitrifies the discharge, inadequate or incomplete denitrification creates the potential for nitrate and nitrite to be discharged and provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the Primary MCL at Discharge Points 001 and 002. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for nitrite plus nitrate and WQBEL’s are required at Discharge Points 001 and 002.

- (c) **WQBEL's.** This Order contains an AMEL and AWEL for nitrite plus nitrate of 10 mg/L and 16 mg/L, respectively, for discharges at Discharge Points 001 and 002 based on the Basin Plans' narrative chemical constituents objective and state and federal antidegradation policies. The receiving water at Discharge Point 001 is a high quality water, and the Discharger has not submitted anti-degradation analysis, demonstrating that any change in water quality is consistent with maximum benefit to the people of the State. These effluent limitations are included in this Order to assure the treatment process adequately nitrifies and denitrifies the waste stream.
- (d) **Plant Performance and Attainability.** Analysis of the effluent data for nitrite plus nitrate collected over the term of Order R5-2014-0005 shows that the maximum monthly average concentration of 7.2 mg/L and the maximum weekly average concentration of 12.5 mg/L are below the applicable WQBEL's. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

v. **Pathogens**

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

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

- (b) **RPA Results.** Raw domestic wastewater inherently contains human pathogens that threaten human health and life and constitute a threatened pollution and nuisance under California Water Code section 13050 if discharged untreated to the receiving water. Reasonable potential for pathogens therefore exists for discharges at Discharge Points 001 and 002 and WQBEL's are required.

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

conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.” For priority pollutants, the SIP dictates the procedures for conducting the RPA. Pathogens are not priority pollutants. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for 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.”* (TSD, p. 50)

The beneficial uses of Fancher Creek and the Diversion Channel include water contact recreation and agricultural irrigation supply, and there is, at times, less than 20:1 dilution. Additionally, the beneficial uses of Little Dry Creek include MUN, water contact recreation, and agricultural irrigation supply and there is, at times, less than 20:1 dilution. To protect these beneficial uses, the Central Valley Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease. Although the Discharger provides disinfection, inadequate or incomplete disinfection creates the potential for pathogens to be discharged and provides the basis for the discharge to have a reasonable potential to cause or contribute to an exceedance of the Basin Plan’s narrative toxicity objective. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for pathogens and WQBEL’s are required at Discharge Points 001 and 002.

- (c) **WQBEL’s.** In accordance with the requirements of Title 22, this Order includes effluent limitations for total coliform organisms of 2.2 MPN/100 mL as a 7-day median; 23 MPN/100 mL, not to be exceeded more than once in a 30-day period; and 240 MPN/100 mL as an instantaneous maximum for discharges at Discharge Points 001 and 002.

The tertiary treatment process, or equivalent, which utilizes a membrane filtration system, is capable of reliably treating wastewater to a turbidity level of 0.2 nephelometric turbidity units (NTU) more than 5 percent of the

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

This Order contains effluent limitations for BOD₅, total coliform organisms, and TSS and requires a tertiary level of treatment, or equivalent, necessary to protect the beneficial uses of the receiving waters. The Central Valley Water Board has previously considered the factors in Water Code section 13241 in establishing these requirements.

Final WQBEL's for BOD₅ and TSS are based on the technical capability of the tertiary treatment process, which is necessary to protect the beneficial uses of the receiving waters. BOD₅ is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The tertiary treatment standards for BOD₅ and TSS are indicators of the effectiveness of the tertiary treatment process. The principal design parameter for wastewater treatment plants is the daily BOD₅ and TSS loading rates and the corresponding removal rate of the system. The application of tertiary treatment processes results in the ability to achieve lower levels for BOD₅ and TSS than the secondary standards currently prescribed. Therefore, this Order requires AMEL's and AWEL's for BOD₅ and TSS of 10 mg/L and 15 mg/L, respectively, which are technically based on the capability of a tertiary system. This Order also requires at least 90 percent removal of BOD₅ and TSS, as a monthly average, compared to influent concentrations.

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

vi. **pH**

- (a) **WQO.** The Tulare Lake Basin Plan includes a water quality objective for surface waters that states, "*The pH of water shall not be depressed below 6.5, raised above 8.3, or changed at any time more than 0.3 units from normal ambient pH.*" The San Joaquin Basin Plan includes a water quality objective for surface waters (except for Goose Lake) that the "*...pH shall not be depressed below 6.5 nor raised above 8.5.*"
- (b) **RPA Results.** Raw domestic wastewater inherently has variable pH. Additionally, some wastewater treatment processes can increase or decrease wastewater pH, which if not properly controlled, would violate the Basin Plan's numeric objective for pH in the receiving waters.

Therefore, reasonable potential exists for pH and WQBEL's are required at Discharge Points 001 and 002.

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

U.S. EPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available...A permitting authority might also determine that WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters).*" U.S. EPA's TSD also recommends that factors other than effluent data should be considered in the RPA, "*When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data.*" (TSD, p. 50)

The Facility is a POTW that treats domestic wastewater. Based on 1,125 samples taken at Monitoring Location EFF-A from March 2015 through February 2018, the maximum reported effluent pH was 9.35 and the minimum was 6.21. The Facility exceeded the instantaneous minimum effluent limitation 18 times and the instantaneous maximum effluent limitation twice at Monitoring Location EFF-A between March 2015 and February 2018. As stated in the applicable eSMR cover letters, the Discharger used chemical addition to return the pH of the wastewater in the effluent storage tank to compliant levels prior to discharge to the receiving waters. Although the Discharger has proper pH controls in place, the pH for the Facility's influent varies due to the nature of municipal sewage, which provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's numeric objective for pH in the receiving waters. Therefore, WQBEL's for pH at Discharge Points 001 and 002 are required in this Order.

- (c) **WQBEL's.** An effluent limitation for pH of 6.5 as an instantaneous minimum is included in this Order for discharges at Discharge Points 001 and 002 based on the protection of the Basin Plan objectives for pH.

Order R5-2014-0005 included more stringent instantaneous maximum pH limitations of 8.2 and 8.1 at Discharge Points 001 and 002, respectively, based on a request by the Discharger to allow for less stringent ammonia effluent limitations, which are calculated based on pH and temperature. This Order retains the instantaneous maximum effluent pH limitations from Order R5-2014-0005 of 8.2 and 8.1 at Discharge Points 001 and 002, respectively.

- (d) **Plant Performance and Attainability.** The Facility has the proper controls in place to comply with the effluent limitations if properly operated and maintained. Therefore, the Central Valley Water Board concludes that immediate compliance with the effluent limitations at Discharge Points 001 and 002 is feasible.

vii. **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 effluent and receiving waters. As described in section IV.C.2.e of this Fact Sheet, for discharges at both Discharge Points 001 and 002, the applicable acute and chronic criteria for zinc in the effluent are 46 µg/L, as total recoverable.
- (b) **RPA Results.** The MEC for zinc in the effluent was 77 µg/L (as total recoverable) based on five samples collected at Monitoring Location EFF-A from 28 March 2014 through February 2018. The maximum zinc concentration observed within Fancher Creek was 3.8 µg/L based on five samples collected at Monitoring Location RSW-001U between 28 March 2014 and February 2018. The maximum zinc concentration observed within the Diversion Channel and Little Dry Creek was 37 µg/L based on six samples collected at Monitoring Locations RSW-002U and RSW-003U between 28 March 2014 and February 2018. Therefore, zinc in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for the protection of freshwater aquatic life at both Discharge Points 001 and 002.
- (c) **WQBEL's.** This Order contains a final AMEL of 23 µg/L and an MDEL of 46 µg/L, which are applicable to discharges at both Discharge Points 001 and 002, based on the CTR criteria for the protection of freshwater aquatic life.
- (d) **Plant Performance and Attainability.** Analysis of the effluent data for zinc shows that the MEC of 77 µg/L is greater than the applicable WQBEL's. The Discharger submitted a 24 October 2018 Infeasibility Analysis, which documented the compliance strategy for meeting final effluent limits for zinc and provided information to support the request for a compliance schedule. Therefore, the Discharger is subject to Time Schedule Order (TSO) R5-2019-0022 and any subsequent amendment Order, which provides a compliance schedule to achieve compliance with the final effluent limitations for zinc by 31 May 2024.

4. WQBEL Calculations

- a. This Order includes WQBEL's for ammonia, BOD₅, copper, cyanide, electrical conductivity, nitrite plus nitrate, pH, total coliform organisms, TSS, and zinc. The general methodology for calculating WQBEL's based on the different criteria/objectives is described in subsections IV.C.4.b through e, below. See Attachment H for the WQBEL calculations.

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

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

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

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

- d. **Aquatic Toxicity Criteria.** For priority pollutants with acute and chronic aquatic toxicity criteria, the WQBEL's are calculated in accordance with section 1.4 of the SIP. The ECA's are converted to equivalent LTA's (i.e., LTA_{acute} and LTA_{chronic}) using statistical multipliers and the lowest LTA is used to calculate the AMEL and MDEL using additional statistical multipliers. For non-priority pollutants, WQBEL's are calculated using similar procedures, except that an AWEL is determined utilizing multipliers based on a 98th percentile occurrence probability.
- e. **Human Health Criteria.** For priority pollutants with human health criteria, the WQBEL's are calculated in accordance with section 1.4 of the SIP. The AMEL is set equal to the ECA and the MDEL is calculated using the MDEL/AMEL multiplier from Table 2 of the SIP. For non-priority pollutants with human health criteria, WQBEL's are calculated using similar procedures, except that an AWEL is established using the MDEL/AMEL multiplier from Table 2 of the SIP.

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

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

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

where:

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

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

Table F-17. Summary of Water Quality-Based Effluent Limitations – Discharge Point 001

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	--	--	--
	% Removal	90	--	--	--	--
pH	standard units	--	--	--	6.5	8.2
Total Suspended Solids	mg/L	10	15	--	--	--
	% Removal	90	--	--	--	--
Priority Pollutants						
Copper, Total Recoverable	µg/L	2.8	--	4.8	--	--
Cyanide, Total (as CN)	µg/L	4.3	--	8.5	--	--
Zinc, Total Recoverable	µg/L	23	--	46	--	--
Non-Conventional Pollutants						
Ammonia Nitrogen, Total (as N)	mg/L	1.6	3.5	--	--	--
	lbs/day	37 ¹	82 ¹	--	--	--
	lbs/day	75 ²	160 ²	--	--	--
Electrical Conductivity @ 25°C	µmhos/cm	1,000 ³	--	--	--	--
Nitrite Plus Nitrate (as N)	mg/L	10	16	--	--	--
Total Coliform Organisms	MPN/100 mL	--	2.2 ⁴	23 ⁵	--	240

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum

- 1 Based on a design flow of 2.8 MGD. Effective immediately and until compliance with Special Provision IV.C.6.b.
- 2 Based on a design flow of 5.6 MGD. Effective upon compliance with Special Provision IV.C.6.b.
- 3 The 12-month average electrical conductivity of the discharge shall not exceed the 12-month rolling average electrical conductivity of the source water plus 500 µmhos/cm, or a maximum of 1,000 µmhos/cm, whichever is more stringent.
- 4 Applied as a 7-day median effluent limitation.
- 5 Not to be exceeded more than once in any 30-day period.

Table F-18. Summary of Water Quality-Based Effluent Limitations – Discharge Point 002

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	--	--	--
	% Removal	90	--	--	--	--
pH	standard units	--	--	--	6.5	8.1
Total Suspended Solids	mg/L	10	15	--	--	--
	% Removal	90	--	--	--	--
Priority Pollutants						
Copper, Total Recoverable	µg/L	2.8	--	4.8	--	--
Cyanide, Total (as CN)	µg/L	4.3	--	8.5	--	--
Zinc, Total Recoverable	µg/L	23	--	46	--	--
Non-Conventional Pollutants						
Ammonia Nitrogen, Total (as N)	mg/L	1.3	2.8	--	--	--
	lbs/day	30 ¹	65 ¹	--	--	--
	lbs/day	61 ²	130 ²	--	--	--
Electrical Conductivity @ 25°C	µmhos/cm	1,000 ³	--	--	--	--
Nitrite Plus Nitrate (as N)	mg/L	10	16	--	--	--
Total Coliform Organisms	MPN/100 mL	--	2.2 ⁴	23 ⁵	--	240

- 1 Based on a design flow of 2.8 MGD. Effective immediately and until compliance with Special Provision IV.C.6.b.
- 2 Based on a design flow of 5.6 MGD. Effective upon compliance with Special Provision IV.C.6.b.
- 3 The 12-month average electrical conductivity of the discharge shall not exceed the 12-month rolling average electrical conductivity of the source water plus 500 µmhos/cm, or a maximum of 1,000 µmhos/cm, whichever is more stringent.
- 4 Applied as a 7-day median effluent limitation.
- 5 Not to be exceeded more than once in any 30-day period.

5. Whole Effluent Toxicity (WET)

For compliance with the Basin Plan’s narrative toxicity objective, this Order requires the Discharger to conduct WET testing for acute and chronic toxicity, as specified in the MRP (Attachment E, section V). This Order also contains effluent limitations for acute and chronic toxicity and requires the Discharger to implement best management

practices to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity.

- a. **Acute Aquatic Toxicity.** The Basin Plans contain 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.*” (San Joaquin Basin Plan at section 3.1.20 and Tulare Lake Basin Plan at section 3.1.18) The Basin Plans also state 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 WET is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA. U.S. EPA’s September 2010 NPDES Permit Writer’s Manual, page 6-30, states, “*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available...A permitting authority might also determine that WQBEL’s are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL’s for pathogens in all permits for POTW’s discharging to contact recreational waters).*” Although the discharge has been consistently in compliance with the acute toxicity effluent limitations, the Facility is a POTW that treats domestic wastewater containing ammonia and other acutely toxic pollutants. Therefore, acute toxicity effluent limits are required to ensure compliance with the Basin Plan’s narrative toxicity objective.

U.S. EPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled “*Guidance for NPDES Permit Issuance,*” dated February 1994. In section B.2. “*Toxicity Requirements*” (pgs. 14-15) it states that, “*In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc.*” Consistent with Order R5-2014-0005, effluent limitations for acute toxicity at Discharge Points 001 and 002 have been included in this Order as follows:

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

Minimum for any one bioassay -----	70%
Median for any three consecutive bioassays -----	90%

- b. **Chronic Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, “*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*” (San Joaquin Basin Plan at section 3.1.20 and Tulare Lake Basin Plan at section 3.1.18) Table F-19, below, includes chronic WET testing performed by the Discharger from March 2015 through February 2018. These data were used to determine if the discharges at Discharge Points 001 and 002 have

reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan’s narrative toxicity objective.

Table F-19. Whole Effluent Chronic Toxicity Testing Results

Date	Fathead Minnow <i>Pimephales promelas</i>		Water Flea <i>Ceriodaphnia dubia</i>		Green Algae <i>Selenastrum capricornutum</i>
	Survival (TUc)	Growth (TUc)	Survival (TUc)	Reproduction (TUc)	Growth (TUc)
7 April 2015	1	1	1	1	1
21 July 2015 ¹	1	1	1	1	1
21 July 2015 ²	--	--	1	1	--
27 October 2015	1	1	1	>1	1
2 December 2015 ¹	--	--	1	1	--
2 December 2015 ²	--	--	1	1	--
14 December 2015	--	--	1	>1	--
28 December 2015	--	--	1	1	--
12 January 2016	--	--	1	>1	--
19 January 2016	--	--	1	1	--
9 February 2016	1	1	1	1.3	1
24 March 2016	--	--	1	1	--
6 April 2016	--	--	1	1	--
19 April 2016	--	--	1	1	--
10 May 2016	1	1	1	>1	1
7 July 2016 ¹	--	--	1	1	--
7 July 2016 ²	--	--	1	1	--
9 August 2016	--	--	1	>1	--
30 August 2016	--	--	1	1	--
15 September 2016	--	--	1	1	--
27 September 2016 ¹	--	--	1	4	--
27 September 2016 ²	--	--	1	>8	--
11 October 2016	--	--	1	1.3	--
11 October 2016 ³	--	--	1	2	--
1 November 2016 ¹	1	1	1	2	1
1 November 2016 ²	--	--	1	2	--
6 December 2016	1	1	1	>8	>1
6 December 2016 ^{1,4}	--	--	1	8	--
6 December 2016 ^{2,4}	--	--	1	8	--
10 January 2017	1	1	--	--	1
24 January 2017	--	--	--	--	1
9 February 2017	--	--	--	--	1
21 February 2017	--	--	--	--	1
4 April 2017 ¹	1	1	1	2	1
4 April 2017 ²	--	--	1	2	--
11 July 2017	1	1	1	1	1
10 October 2017 ¹	1	1	1	1	1
10 October 2017 ²	--	--	1	1	--
23 January 2018	1	1	1	>2	1
20 February 2018	--	--	1	>1	--
20 February 2018 ⁵	--	--	1	>1	--

¹ Analyses exclude outliers.
² Analyses include outliers.
³ Persistence testing conducted as part of Toxicity Reduction Evaluation (TRE) and Toxicity Identification Evaluation (TIE) on samples collected on 26, 28, and 30 September 2016.
⁴ Chronic WET tests conducted using pre-UV wastewater.
⁵ Chronic WET tests conducted using freezing treatment to remove microbial interferences.

- i. **RPA.** No dilution has been granted for chronic WET. Chronic toxicity testing results exceeding 1.3 chronic toxicity units (TUc) (as 100/NOEC) and a percent effect at 100 percent effluent exceeding 25 percent demonstrates the discharge has a reasonable potential to cause or contribute to an exceedance of the Basin Plans' narrative toxicity objective. Based on chronic toxicity testing conducted between March 2015 and February 2018, the maximum chronic toxicity result occurred with the 27 September 2016 analysis. An initial result of >8 TUc with a percent effect of 25.5 percent at 100 percent effluent concentration was calculated, but the laboratory identified two repetitions of the test as outliers. Removing the outliers, results indicate 4 TUc with a percent effect of 25.5 percent at 100 percent effluent concentration; therefore, the discharge does have reasonable potential to cause or contribute to an in-stream exceedance of the Basin Plans' narrative toxicity objective.
- ii. **WQBELs.** The effluent chronic toxicity shall not exceed 1 TUc (as 100/NOEC) AND a percent effect of 25 percent at 100 percent effluent, for any endpoint as the median of up to three consecutive chronic toxicity tests within a 6-week period. Per the compliance schedule described in section VI.C.7.a of the Waste Discharge Requirements, these final effluent limits are effective 1 June 2024. The State Water Board is developing new Statewide toxicity provisions through the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California that will be applicable to the Discharger. Upon the effective date of the Water Quality Control Plan the Central Valley Water Board intends to reopen this Order to incorporate the new toxicity provisions. It is expected the new Statewide toxicity provisions will be effective prior to implementation of the final WQBELs for chronic WET in this Order.

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 have been established in this Order for ammonia at Discharge Points 001 and 002 because it is an oxygen-demanding substance. Except for ammonia, mass-based effluent limitations are not included in this Order for pollutant parameters for which effluent limitations are based on water quality objectives and criteria that are concentration-based.

Mass-based effluent limitations were calculated based upon the design flows (average annual discharge flows) in Prohibition III.E of this Order.

2. Averaging Periods for Effluent Limitations

40 C.F.R. section 122.45(d) requires AMEL's and AWEL's for POTW's unless impracticable. For copper, cyanide, and zinc, AWEL's have been replaced with MDEL's in accordance with section 1.4 of the SIP. Furthermore, for pH and total coliform

organisms, AWEL's have been replaced or supplemented with effluent limitations utilizing shorter averaging periods. The rationale for using shorter averaging periods for these constituents is discussed in section IV.C.3 of this Fact Sheet.

3. Satisfaction of Anti-Backsliding Requirements

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

The effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order, with the exception of effluent limitations for ammonia, BOD₅ and TSS. The effluent limitations for these pollutants are less stringent than those in Order R5-2014-0005. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

- a. **CWA sections 402(o)(1) and 303(d)(4).** CWA section 402(o)(1) prohibits the establishment of less stringent WQBEL's "except in compliance with section 303(d)(4)." CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters.
 - i. For waters where standards are not attained, CWA section 304(d)(4)(A) specifies that any effluent limit based on a TMDL or other WLA may be revised only if the cumulative effect of all such revised effluent limits based on such TMDL's or WLA's will assure the attainment of such water quality standards.
 - ii. For attainment waters, CWA section 303(d)(4)(B) specifies that a limitation based on a water quality standard may be relaxed where the action is consistent with the antidegradation policy.

Fancher Creek, the Diversion Channel, and Little Dry Creek are considered attainment waters for ammonia, BOD₅ and TSS because the receiving waters are not listed as impaired on the 303(d) list for these constituents.¹ As discussed in section IV.D.4, below, removal and relaxation of the effluent limits complies with federal and state antidegradation requirements. Thus, relaxation of effluent limitations for ammonia and removal of the maximum daily and mass-based effluent limitations for BOD₅ and TSS from Order R5-2014-0005 meet the exception in CWA section 303(d)(4)(B).

- b. **Total Nitrogen.** Order R5-2014-0005 contained a technology-based AMEL for total nitrogen, which was solely based on performance criteria outlined in the Discharger's *City of Clovis ST/WRF Engineering Report for the Production, Distribution, and Use of Recycled Water* (27 July 2007). This Order replaces the technology-based AMEL for total nitrogen with WQBEL's for nitrite plus nitrate, which are applicable to discharges at Discharge Points 001 and 002. Compliance with the technology-based AMEL for total nitrogen implemented in Order R5-2014-0005 was calculated based on the sum of nitrate, nitrite, and total kjeldahl nitrogen measured in the effluent. This Order is not less stringent because effluent nitrate and nitrite concentrations, which were components of the previously implemented technology-based AMEL for total nitrogen, will continue to be

¹ "The exceptions in section 303(d)(4) address both waters in attainment with water quality standards and those not in attainment, i.e. waters on the section 303(d) impaired waters list." State Water Board Order WQ 2008-0006, Berry Petroleum Company, Poso Creek/McVan Facility.

regulated through the implementation of WQBEL's in this Order. Additionally, the WQBEL's for nitrite plus nitrate are based on BPTC of the discharge demonstrated by the Facility and other POTW's that utilize nitrification and denitrification in the treatment process. Therefore, WQBEL's for nitrite plus nitrate adequately regulate the Facility, do not allow for an increase in the discharge of nitrogen to the receiving waters, and do not constitute backsliding.

- c. **Flow.** Order R5-2014-0005 included flow as an effluent limit at Discharge Points 001 and 002 based on the Facility design flow. Compliance with the effluent limits for flow in Order R5-2014-0005 was calculated using the average daily flow over a calendar month, for the average monthly discharge flow limit, and the average daily flow over a calendar year, for the average annual discharge flow limit. 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

The permitted surface water discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Antidegradation Policy. This Order provides for an increase in the concentration and mass of pollutants discharged for ammonia. The increase will not have a significant impact on beneficial uses and will not cause a violation of water quality objectives. Compliance with these requirements will result in the use of BPTC of the discharge. The impact on existing water quality will be insignificant.

Previous Orders R5-2008-0036 and R5-2014-0005 included an AMEL for ammonia that was based on the treatment technology utilized at the Facility and findings from the Discharger's Antidegradation Analysis Report. As discussed in section IV.C.3.c of this Fact Sheet, this Order replaces the previous AMEL for ammonia with WQBEL's calculated based on the 1999 NAWQC for the protection of freshwater aquatic life for total ammonia. The 1999 NAWQC are derived based on the site-specific pH and temperature conditions within the applicable receiving waters. The Central Valley Water Board finds that any change to water quality as a result of the relaxation of effluent limitations for ammonia will not unreasonably affect the present and anticipated beneficial uses of the receiving waters and will not result in water quality less than prescribed in State Water Board policies or the Basin Plans. Further, the measures required by this Order will result in the implementation of BPTC of the discharge. Thus, the relaxation of effluent limitations for ammonia is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Antidegradation Policy.

As discussed in section II.E of this Fact Sheet, the Facility was planned in a series of phases. The Facility, currently under Phase I, discharges up to 3.1 MGD as a monthly average and 2.8 MGD as an annual average. Phase II of the Facility will discharge up to 6.2 MGD as a monthly average and 5.6 MGD as an annual average. Previous Orders R5-2008-0036 and R5-2014-0005 provided antidegradation findings and authorized an increase in the permitted flow to 6.2 MGD, as a monthly average, and 5.6 MGD as an annual average. This Order does not provide for an increase in flow or mass of pollutants to the receiving waters beyond levels authorized in Order R5-2014-0005. Therefore, a complete antidegradation analysis is not necessary in this Order. The Order requires compliance with applicable federal technology-based standards and with WQBEL's where the discharge could have 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 131.13 and the State Antidegradation Policy. Compliance with these requirements will result in the use of BPTC of the discharge. The impact on existing water quality will be insignificant.

This Order also removes MDEL's and mass-based effluent limitations for BOD₅ and TSS at Discharge Points 001 and 002 based on 40 C.F.R part 122.45(d) and (f), and as described further in section IV.D.3 of this Fact Sheet. The removal of MDEL's and mass-based effluent limits for BOD₅ and TSS will not result in a decrease in the level of treatment or control, or a reduction in water quality because the WQBEL's for BOD₅ and TSS are based on the technical capability of the tertiary process to meet Title 22, or equivalent, disinfection requirements required to protect the beneficial uses of the receiving waters. This is unchanged from the previous permit. Furthermore, both concentration-based AMEL's and AWEL's remain for BOD₅ and TSS at Discharge Points 001 and 002, as well a discharge flow prohibition that limits the amount of flow that can be discharged to the steel storage tank and, ultimately, at Discharge Points 001 and 002. The combination of concentration-based effluent limits and a flow prohibition in this Order are equivalent to mass-based effluent limitations, which were redundant limits contained in previous Orders by multiplying the concentration-based effluent limits and permitted annual average flow by a conversion factor to determine the mass-based effluent limitations. Therefore, the Central Valley Water Board finds that the removal of MDEL's and mass-based effluent limits for BOD₅ and TSS at Discharge Points 001 and 002 does not result in an allowed increase in pollutants or any additional degradation of the receiving waters. Thus, the relaxation of effluent limitations is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Antidegradation Policy.

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, pH, and TSS. Restrictions on these constituents are discussed in section IV.B.2 of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. For BOD₅, pH, and TSS, both technology-based effluent limitations and WQBEL's are applicable. The more stringent of these effluent limitations are implemented by this Order. These limitations are not more stringent than required by the CWA.

WQBEL's have been derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant WQBEL's were derived from the CTR, the CTR is the applicable standard pursuant to 40 C.F.R. section 131.38. The procedures for calculating the individual WQBEL's for priority pollutants are based on the CTR implemented by the SIP, which was approved by U.S. EPA on 18 May 2000. Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

**Summary of Final Effluent Limitations
Discharge Points 001 and 002**

Table F-20. Summary of Final Effluent Limitations – Discharge Point 001

Parameter	Units	Effluent Limitations					Basis ¹
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Conventional Pollutants							
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	--	--	--	TTC
	% Removal	90	--	--	--	--	
pH	standard units	--	--	--	6.5	8.2	BP
Total Suspended Solids	mg/L	10	15	--	--	--	TTC
	% Removal	90	--	--	--	--	
Priority Pollutants							
Copper, Total Recoverable	µg/L	2.8	--	4.8	--	--	CTR
Cyanide, Total (as CN)	µg/L	4.3	--	8.5	--	--	CTR
Zinc, Total Recoverable	µg/L	23	--	46	--	--	CTR
Non-Conventional Pollutants							
Ammonia Nitrogen, Total (as N)	mg/L	1.6	3.5	--	--	--	NAWQC
	lbs/day	37 ²	82 ²	--	--	--	
	lbs/day	75 ³	160 ³	--	--	--	
Electrical Conductivity @ 25°C	µmhos/cm	1,000 ⁴	--	--	--	--	BP
Nitrite Plus Nitrate (as N)	mg/L	10	16	--	--	--	MCL
Total Coliform Organisms	MPN/100 mL	--	2.2 ⁵	23 ⁶	--	240	Title 22
Acute Toxicity	% survival	--	--	70 ⁷ /90 ⁸	--	--	BP
Chronic Toxicity	TUc	--	--	1 ⁹	--	--	BP

¹ TTC – Based on tertiary treatment capability. These effluent limitations reflect the capability of a properly operated tertiary treatment plant.
 BP – Based on water quality objectives contained in the Basin Plan.
 CTR – Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.
 NAWQC – Based on U.S. EPA’s National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
 MCL – Based on the Primary Maximum Contaminant Level.
 Title 22 – Based on CA Division of Drinking Water Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22).
² Based on a design flow of 2.8 MGD. Effective immediately and until compliance with Special Provision IV.C.6.b.
³ Based on a design flow of 5.6 MGD. Effective upon compliance with Special Provision IV.C.6.b.
⁴ The 12-month average electrical conductivity of the discharge shall not exceed the 12-month rolling average electrical conductivity of the source water plus 500 µmhos/cm, or a maximum of 1,000 µmhos/cm, whichever is more stringent.
⁵ Applied as a 7-day median effluent limitation.
⁶ Not to be exceeded more than once in any 30-day period.
⁷ 70% minimum of any one bioassay.
⁸ 90% median for any three consecutive bioassays.
⁹ The effluent chronic toxicity shall not exceed 1 TUc (as 100/NOEC) AND a percent effect of 25 percent at 100 percent effluent, for any endpoint as the median of up to three consecutive chronic toxicity tests within a 6-week period.

Table F-21. Summary of Final Effluent Limitations – Discharge Point 002

Parameter	Units	Effluent Limitations					Basis ¹
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Conventional Pollutants							
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	--	--	--	TTC
	% Removal	90	--	--	--	--	
pH	standard units	--	--	--	6.5	8.1	BP
Total Suspended Solids	mg/L	10	15	--	--	--	TTC
	% Removal	90	--	--	--	--	
Priority Pollutants							
Copper, Total Recoverable	µg/L	2.8	--	4.8	--	--	CTR
Cyanide, Total (as CN)	µg/L	4.3	--	8.5	--	--	CTR
Zinc, Total Recoverable	µg/L	23	--	46	--	--	CTR
Non-Conventional Pollutants							
Ammonia Nitrogen, Total (as N)	mg/L	1.3	2.8	--	--	--	NAWQC
	lbs/day	30 ²	65 ²	--	--	--	
	lbs/day	61 ³	130 ³	--	--	--	
Electrical Conductivity @ 25°C	µmhos/cm	1,000 ⁴	--	--	--	--	BP
Nitrite Plus Nitrate (as N)	mg/L	10	16	--	--	--	MCL
Total Coliform Organisms	MPN/100 mL	--	2.2 ⁵	23 ⁶	--	240	Title 22
Acute Toxicity	% survival	--	--	70 ⁷ /90 ⁸	--	--	BP
Chronic Toxicity	TUc	--	--	1 ⁹	--	--	BP

¹ TTC – Based on tertiary treatment capability. These effluent limitations reflect the capability of a properly operated tertiary treatment plant.

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

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

NAWQC – Based on U.S. EPA’s NAWQC for the protection of freshwater aquatic life.

MCL – Based on the Primary Maximum Contaminant Level.

Title 22 – Based on CA Division of Drinking Water Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22).

² Based on a design flow of 2.8 MGD. Effective immediately and until compliance with Special Provision IV.C.6.b.

³ Based on a design flow of 5.6 MGD. Effective upon compliance with Special Provision IV.C.6.b.

⁴ The 12-month average electrical conductivity of the discharge shall not exceed the 12-month rolling average electrical conductivity of the source water plus 500 µmhos/cm, or a maximum of 1,000 µmhos/cm, whichever is more stringent.

⁵ Applied as a 7-day median effluent limitation.

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

⁷ 70% minimum of any one bioassay.

⁸ 90% median for any three consecutive bioassays.

⁹ The effluent chronic toxicity shall not exceed 1 TUc (as 100/NOEC) AND a percent effect of 25 percent at 100 percent effluent, for any endpoint as the median of up to three consecutive chronic toxicity tests within a 6-week period.

E. Interim Effluent Limitations

The State Water Board's Resolution 2008-0025 "*Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits*" (Compliance Schedule Policy) requires the Central Valley Water Board to establish interim numeric effluent limitations in this Order for compliance schedules longer than 1 year. As discussed in section VI.B.7 of this Fact Sheet, the Central Valley Water Board is approving a compliance schedule longer than 1 year for chronic WET. The Compliance Schedule Policy requires that interim effluent limitations be based on current Facility performance or existing permit limitations, whichever is more stringent. This Order includes interim effluent limitations for chronic WET based on Facility performance.

1. **Compliance Schedule for Chronic Whole Effluent Toxicity (WET).** The Discharger has complied with the application requirements in paragraph 4 of the State Water Board's Compliance Schedule Policy, and the Discharger's application demonstrates the need for additional time to implement actions to comply with the final effluent limitations for chronic WET, as described below. Therefore, a compliance schedule for compliance with the final effluent limitations for chronic WET is established in the Order.

A compliance schedule is necessary because the Discharger must implement actions to comply with the final effluent limitations for chronic WET.

The Discharger has made diligent efforts to quantify chronic WET in the discharge and the sources to chronic WET in the waste stream. The Discharger conducted quarterly chronic WET monitoring during the term of Order R5-2014-0005.

The compliance schedule is as short as possible. Interim performance-based limitations have been included in this Order and were determined as described in section IV.E.2, below. The interim effluent limitations for chronic WET are in effect until the final effluent limitations take effect on 1 June 2024. The interim numeric effluent limitations for chronic WET applicable to discharges at Discharge Points 001 and 002 and source control measures will result in the highest discharge quality that can reasonably be achieved until final compliance is attained.

2. **Interim Limits for Chronic Toxicity.** The Compliance Schedule Policy requires the Central Valley Water Board to establish interim requirements and dates for their achievement in the NPDES permit. Interim numeric effluent limitations are required for a compliance schedule longer than 1 year. Interim effluent limitations must be based on current treatment plant performance or previous final permit limitations, whichever is more stringent. When feasible, interim limitations must correspond with final permit effluent limitations with respect to averaging bases (e.g., AMEL, MDEL, AWEL, etc.) for effluent limitations for which compliance protection is intended.

The interim effluent limitations for chronic WET are based on Facility performance. Based on quarterly chronic WET testing conducted over the term of Order R5-2014-0005, the maximum observed result was 4 TUc (as 100/NOEC) and a percent effect of 25.5 percent at 100 percent effluent. The Central Valley Water Board has established an interim effluent limitation for chronic WET of 16 TUc (as 100/NOEC) and a percent effect of 25 percent at 6.25 percent effluent as the median of up to three consecutive chronic toxicity tests within a 6-week period.

The Central Valley Water Board finds that the Discharger can undertake source control and treatment plant measures to maintain compliance with the interim limitations included in this Order. Interim limitations are established when compliance with final effluent limitations cannot be achieved by the existing discharge. Discharge of constituents in concentrations in excess of the final effluent limitations, but in compliance

with the interim effluent limitations, can significantly degrade water quality and adversely affect the beneficial uses of the receiving stream on a long-term basis. The interim limitations, however, establish an enforceable ceiling concentration until compliance with the final effluent limitations can be achieved.

F. Land Discharge Specifications – Not Applicable

G. Recycling Specifications

The Discharger distributes and uses recycled water produced at the Facility throughout the City of Clovis as recycled water opportunities become available. This Order includes recycled water specifications as well as a Master Recycling Permit, which are necessary to ensure that the use of recycled water does not unreasonably affect present and anticipated uses of groundwater and surface water.

Title 22 of the CCR requires the use disinfected tertiary recycled water for spray irrigation of food crops, parks, playgrounds, unrestricted access golf courses, and other areas of similar public access. As the recycled water produced at the Facility will be used to irrigate unrestricted access public space, disinfected tertiary treatment is required pursuant to CCR, Title 22. This Order contains water recycling specifications pursuant to CCR, Title 22.

Section 60323(a) of Title 22 states that no person shall produce or supply recycled water for direct reuse from a proposed reclamation plant unless an engineering report is submitted for review and approval by DDW. The Discharger submitted two Title 22 engineering reports, *City of Clovis ST/WRF Engineering Report for the Production, Distribution, and Use of Recycled Water*, and *City-wide Engineering Report for the Production, Distribution, and Use of Recycled Water*, to DDW for review and approval. DDW conditionally approved the engineering reports on 28 November 2007. The recycling specifications also include various requirements for the recycled water use areas to protect public health. Included in the recycling specifications are criteria contained in CCR, Title 22, section 60310 and DDW's "*Guidelines for the Use of Reclaimed Water*" incorporated by reference in the Tulare Lake Basin Plan.

1. **BOD₅, TSS, and BOD₅ and TSS Percent Removal.** The recycling specifications for BOD₅, TSS, and BOD₅ and TSS percent removal are based on limitations that are achievable by a tertiary treatment system, consistent with requirements established for other tertiary treatment systems, and consistent with the "BPTC" provision of State Water Board Resolution 68-16. The recycled water specifications for BOD₅, TSS, and BOD₅ and TSS percent removal have been retained from Order R5-2014-0005.
2. **Total Coliform Organisms and Turbidity.** DDW promulgated water recycling criteria in CCR, Title 22, division 4, chapter 3 to ensure reuse of wastewater does not pose and unacceptable health risk in various use situations. Title 22 requires that for sprinkler irrigation of food crops, parks, playgrounds, schoolyards, and other areas of similar public access, recycled water must be adequately disinfected, oxidized, coagulated (under certain circumstances), clarified, and filtered, and that the effluent total coliform levels not exceed 2.2 MPN/100 mL as a 7-day median, not exceed 23 MPN/100 mL in more than one sample in any 30-day period, and never exceed 240 MPN/100 mL (disinfected tertiary treatment). This Order retains the recycled water specifications for total coliform organisms from Order R5-2014-0005, which are consistent with Title 22 recycled water criteria.

Section 60301.320 of Title 22 contains filtration requirements for membrane systems. These requirements specify the turbidity of the effluent, after it has passed through microfiltration, shall not exceed 0.2 NTU more than 5 percent of the time within a 24-hour

period and 0.5 NTU at any time. This Order incorporates filtration requirements consistent with Title 22 recycled water criteria.

3. **Nitrate and Nitrite.** DDW has adopted Primary MCL's for the protection of human health for nitrite and nitrate that are equal to 1.0 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 1.0 mg/L for nitrite (measured 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).

This Order replaces the recycled water specifications for total nitrogen from Order R5-2014-0005 with an AMEL and AWEL for nitrite plus nitrate of 10 mg/L and 16 mg/L, respectively, based on the Primary MCL. As discussed in section IV.D.3 of this Fact Sheet, the establishment of WQBEL's for nitrite plus nitrate in this Order adequately regulate the Facility, do not allow for an increase in the discharge of nitrogen, and do not constitute backsliding.

4. **pH.** It is expected that a portion of the recycled water applied to the recycled water use areas will percolate to the groundwater. The Tulare Lake Basin Plan includes a water quality objective for groundwater that “[g]round waters shall not contain taste or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses.” U.S. EPA has a Secondary MCL for drinking water pH of 6.5 to 8.5 units. A pH limitation range of 6.5 to 8.5 helps to ensure that the Discharger's wastewater treatment activities do not cause the groundwater taste and odor objective to be violated. Potential corrosion and deposits caused by a pH outside of the 6.5 to 8.5 range could adversely affect the beneficial use of industrial service supply and may disrupt the ability of bacteria to effectively break down certain wastewater constituents. In addition, low pH values cause metals to dissolve, allowing them to percolate into groundwater in concentrations that may affect beneficial uses.
5. **Salinity.** Order R5-2014-0005 contained a recycling specification for electrical conductivity, which required that the 12-month rolling average electrical conductivity of the discharge not exceed the 12-month rolling average electrical conductivity of the source water plus 500 µmhos/cm, or a maximum of 1,000 µmhos/cm, whichever is more stringent, based on the Tulare Lake Basin Plan. This Order retains the recycled water specifications for electrical conductivity from Order R5-2014-0005.

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 Plans. The Basin Plans state 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 Plans include numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains receiving surface water limitations based on the numerical and narrative water quality objectives contained in the Basin Plans for un-ionized ammonia, bacteria, biostimulatory substances, color, chemical constituents, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, suspended sediment, settleable substances, suspended material, tastes and odors, temperature, toxicity, and turbidity.

B. Groundwater

1. The beneficial uses of the groundwater underlying potential recycled water use areas are MUN, industrial service supply, industrial process supply, agricultural supply, contact and non-contact water recreation, and wildlife habitat.
2. Tulare Lake Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, and toxicity of groundwater. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use. The tastes and odors objective prohibits taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Tulare Lake Basin Plan also establishes numerical water quality objectives for chemical constituents and radioactivity in groundwaters designated as municipal supply. These include, at a minimum, compliance with MCL's in Title 22 of the CCR. The bacteria objective prohibits coliform organisms at or above 2.2 MPN/100 mL. The Tulare Lake Basin Plan requires the application of the most stringent objective necessary to ensure that waters do not contain chemical constituents, toxic substances, radionuclides, taste- or odor-producing substances, or bacteria in concentrations that adversely affect MUN, agricultural supply, industrial supply or some other beneficial use.
3. Groundwater limitations are required to protect the beneficial uses of the underlying groundwater.

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

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

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

B. Special Provisions

1. Reopener Provisions

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

- b. **Whole Effluent Toxicity (WET).** 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) or, under certain circumstances, through participation in an approved Toxicity Evaluation Study (TES) in lieu of conducting a site-specific TRE. This Order may be reopened to include revised chronic toxicity limitations, revised acute toxicity limitations, and/or limitations for a specific toxicant identified in the TRE and/or TES. In addition, the State Water Board is developing new Statewide toxicity provisions through the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California that will be applicable to the Discharger. Upon the effective date of the Water Quality Control Plan the Central Valley Water Board intends to reopen this Order to incorporate the new toxicity provisions. It is expected the new Statewide toxicity provisions will be effective prior to implementation of the final effluent limitations for chronic WET in this Order, which become effective 1 June 2024.
- c. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable. If the Discharger performs studies to determine site-specific WER's 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. **Drinking Water Policy.** On 26 July 2013, the Central Valley Water Board adopted Resolution R5-2013-0098, amending the Basin Plan and establishing a Drinking Water Policy. The State Water Board approved the Drinking Water Policy on 3 December 2013. This Order may be reopened to incorporate monitoring of drinking water constituents to implement the Drinking Water Policy.
- e. **Ultraviolet Light (UV) Disinfection Operating Specifications.** UV system operating specifications are required to ensure that the UV system is operated to achieve the required pathogen removal. UV disinfection system specifications and monitoring and reporting requirements are required to ensure that adequate UV dosage is applied to the wastewater to inactivate pathogens (e.g., viruses) in the wastewater. UV dosage is dependent on several factors, such as UV transmittance, UV power setting, wastewater turbidity, and wastewater flow through the UV disinfection system. The UV specifications in this Order are based on the National Water Research Institute (NWRI) and American Water Works Association Research Foundation (AWWRF) "*Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse*" first published in December 2000 and revised as a Third Edition dated August 2012 (NWRI Guidelines), and the Discharger's site-specific Title 22 engineering reports. If the Discharger conducts additional site-specific UV engineering studies that identify alternative UV operating specifications that will achieve the virus inactivation required by Title 22 for disinfected tertiary recycled water, this Order may be reopened to modify the UV operating specifications, in accordance with Reopener Provision VI.C.1.g.
- f. **Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS).** On 31 May 2018, as part of the CV-SALTS initiative, the Central Valley Water Board approved Basin Plan Amendments to incorporate new strategies for addressing ongoing salt and nitrate accumulation in the Central Valley. If approved by the State Water Board, the Office of Administrative Law, and U.S. EPA, the Amendments would impose certain new requirements on salt and nitrate discharges. If the

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

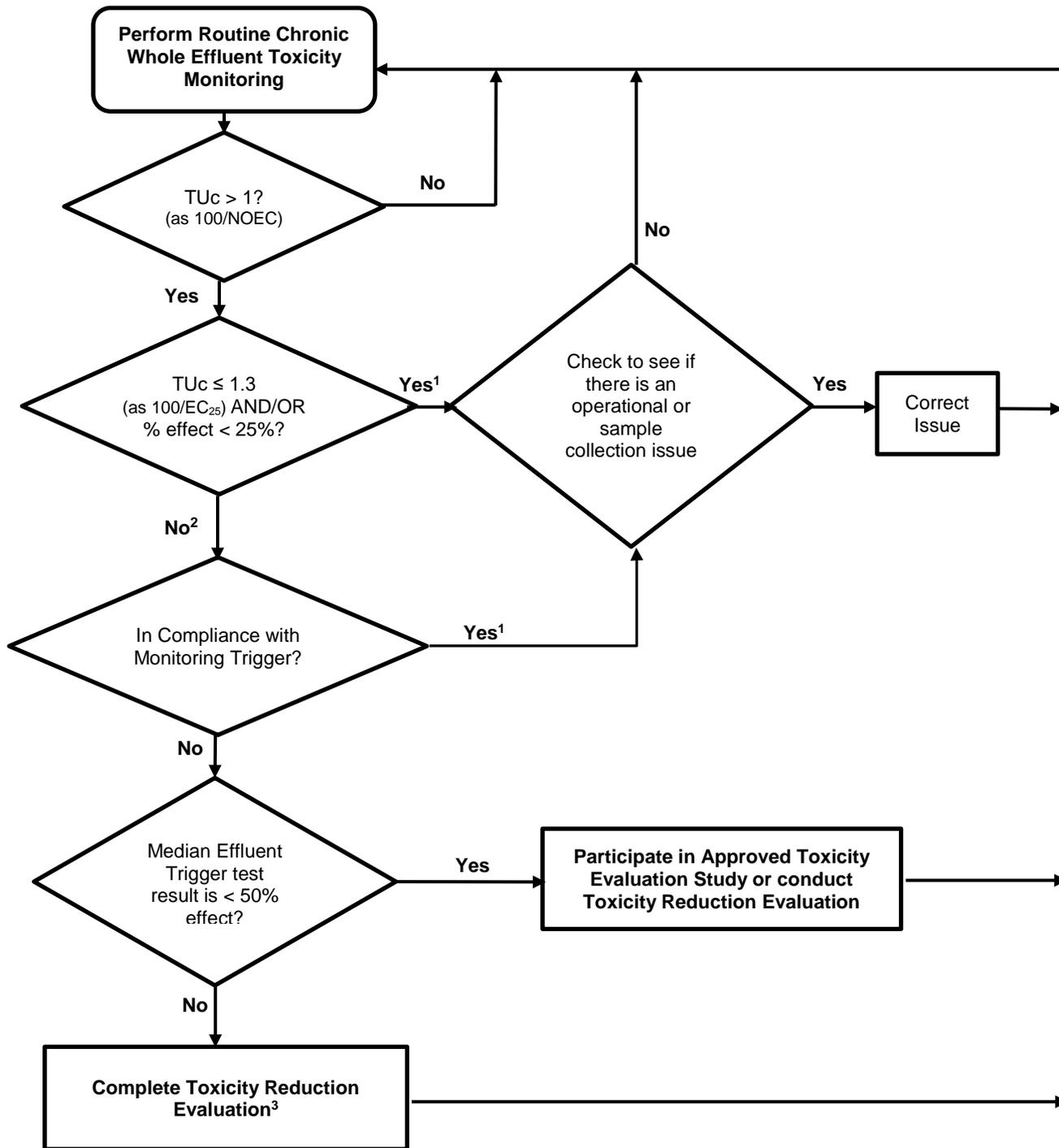
- g. **Groundwater Recharge.** The Discharger is considering the development of a Groundwater Recharge Project, through which the Facility's effluent would be applied to identified basins for groundwater recharge. If the Discharger submits a complete antidegradation analysis and a revised ROWD characterizing the Groundwater Recharge Project, this Order may be amended or modified to authorize the application of the Facility's effluent for groundwater recharge.
2. **Special Studies and Additional Monitoring Requirements**
- a. **Chronic Whole Effluent Toxicity (WET) Requirements.** The Basin Plans contain 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.*" (San Joaquin Basin Plan at section 3.1.20) and Tulare Lake Basin Plan at section 3.1.18) Based on whole effluent chronic toxicity testing performed by the Discharger from March 2015 through February 2018, discharges at Discharge Points 001 and 002 have a reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

The MRP of this Order requires chronic WET monitoring to demonstrate compliance with the numeric chronic toxicity effluent limitations. If the discharge exceeds the chronic toxicity monitoring trigger defined in section VI.C.2.a of the Order, this provision requires the Discharger either participate in an approved TES or conduct a site-specific TRE.

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

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

**Figure F-2
 WET Accelerated Monitoring Flow Chart**



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

3. Best Management Practices and Pollution Prevention

- a. **Salinity Evaluation and Minimization Plan.** An updated salinity evaluation and minimization plan is required in this Order to ensure adequate measures are developed and implemented by the Discharger to minimize the discharge of salinity to Fancher Creek, the Diversion Channel, and Little Dry Creek.

4. Construction, Operation, and Maintenance Specifications

- a. **Filtration System Operating Specifications.** Turbidity is included as an operational specification as an indicator of the effectiveness of the filtration system for providing adequate disinfection. Failure of the treatment system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure, and rapid corrective action. The operational specification requires that turbidity prior to disinfection shall not exceed 0.2 NTU more than 5 percent of the time and a daily maximum of 0.5 NTU.
- b. **Ultraviolet Light (UV) Disinfection System Operating Specifications.** This Order requires that wastewater be oxidized, coagulated, filtered, and adequately disinfected pursuant to DDW reclamation criteria, Title 22, or equivalent. To ensure that the UV disinfection system is operated to achieve the required pathogen removal, this Order includes effluent limits for total coliform organisms, filtration system operating specifications, and UV disinfection system operating specifications. Compliance with total coliform effluent limits alone does not ensure that pathogens in the municipal wastewater have been deactivated by the UV disinfection system. Compliance with the effluent limits and the filtration system and UV disinfection operating specifications demonstrates compliance with the equivalency to Title 22 disinfection requirement.

The NWRI Guidelines include UV operating specifications for compliance with Title 22. For water recycling in accordance with Title 22, the UV system shall be an approved system included in the *Treatment Technology Report for Recycled Water*, December 2009 (or a later version, as applicable) published by DDW. The UV system shall also conform to all requirements and operating specifications of the NWRI Guidelines. A memorandum dated 1 November 2004 issued by DDW to Regional Water Board Executive Officers recommended that provisions be included in permits for water recycling treatment plants employing UV disinfection requiring dischargers to establish a fixed cleaning frequency of lamp sleeves, as well as specifying a minimum delivered UV dose to be maintained by the Discharger (per the NWRI Guidelines).

The Discharger submitted two Title 22 engineering reports that demonstrate the UV disinfection system is equivalent to a Title 22-approved UV disinfection system. DDW conditionally approved the engineering reports on 28 November 2007. The engineering reports demonstrate that a minimum hourly average UV dose of 80 mJ/cm² and a UV transmittance of 54 percent will achieve the virus inactivation required by Title 22 for Disinfected Tertiary Recycled Water. Therefore, in lieu of the UV dose and transmittance requirements of the NWRI Guidelines, this Order includes an operating specification for a minimum hour average UV dosage of 80 mJ/cm² and a UV transmittance of 54 percent, in accordance with the Discharger's Title 22 engineering reports.

MGD and an average annual flow of 5.6 MGD in order to accommodate for planned growth and the associated increase in wastewater flows within the Facility's service area. The Discharger must comply with the provisions in section VI.C.6.b of this Order before the permitted effluent flow may be increased.

- c. **Discharges to the Diversion Channel.** This Order requires the Discharger to obtain all necessary agreements and/or authorization(s) to flow disinfected tertiary-treated wastewater through the Diversion Channel prior to discharging at Discharge Point 002.

7. Compliance Schedules

In general, an NPDES permit must include final effluent limitations that are consistent with CWA section 301 and with 40 C.F.R. section 122.44(d). There are exceptions to this general rule. The Compliance Schedule Policy allows compliance schedules for new, revised, or newly interpreted water quality objectives or criteria, or in accordance with a TMDL. All compliance schedules must be as short as possible and may not exceed 10 years from the effective date of the adoption, revision, or new interpretation of the applicable water quality objective or criterion, unless a TMDL allows a longer schedule. Where a compliance schedule for a final effluent limitation exceeds 1 year, the Order must include interim numeric effluent limitations for that constituent or parameter, interim requirements and dates toward achieving compliance, and compliance reporting within 14 days after each interim date. The Order may also include interim requirements to control the pollutant, such as pollutant minimization and source control measures.

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

- a. Diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream, and the results of those efforts;
- b. Source control efforts are currently underway or completed, including compliance with any pollution prevention programs that have been established;
- c. A proposed schedule for additional source control measures or waste treatment;
- d. Data demonstrating current Facility performance to compare against existing permit effluent limits, as necessary to determine which is the more stringent interim, permit effluent limit to apply if a schedule of compliance is granted;
- e. The highest discharge quality that can reasonably be achieved until final compliance is attained;
- f. The proposed compliance schedule is as short as possible, given the type of facilities being constructed or programs being implemented, and industry experience with the time typically required to construct similar facilities or implement similar programs; and
- g. Additional information and analyses to be determined by the Regional Water Board on a case-by-case basis.

Based on information submitted with the ROWD, SMR's, and other miscellaneous submittals, it has been demonstrated to the satisfaction of the Central Valley Water Board that the Discharger needs time to implement actions to comply with the final effluent limitations for chronic WET.

The Discharger submitted a request and justification, dated 30 October 2018, for a compliance schedule for chronic WET. The compliance schedule justification included all items specified in subsections (a) through (g), above. This Order establishes a compliance schedule for the new, final WQBEL's for chronic WET, with compliance required by 31 May 2024.

8. Master Recycling Permit Provisions

The Master Recycling Permit provisions are included in this Order to ensure compliance with Water Code section 13523.1 (see section III.C.2 of this Fact Sheet).

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

CWA section 308 and 40 C.F.R. sections 122.41(h), (j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Central Valley Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The MRP, Attachment E of this Order, establishes monitoring, reporting, and recordkeeping requirements that implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this Facility.

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., BOD₅ and TSS reduction requirements). The monitoring frequencies for flow (continuous) and electrical conductivity (three times per week) have been retained from Order R5-2014-0005.
2. Order R5-2014-0005 required influent monitoring for BOD₅ and TSS three times per week. This Order reduces the monitoring frequency for BOD₅ and TSS from three times per week to twice per week. The Central Valley Water Board finds that based on past facility performance this frequency is sufficient for characterizing the wastewater and assessing compliance with effluent limitations established in this Order.

B. Effluent Monitoring

1. Pursuant to the requirements of 40 C.F.R. section 122.44(i)(2), effluent monitoring is required for all constituents with effluent limitations or discharge prohibitions. Effluent monitoring is necessary to assess compliance with effluent limitations and discharge prohibitions, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream and groundwater.
2. Effluent monitoring frequencies and sample types for flow (continuous), copper (monthly), ammonia (weekly), dissolved oxygen (continuous), hardness (monthly), total kjeldahl nitrogen (weekly), total nitrate (weekly), total nitrite (weekly), total nitrite plus nitrate (weekly), total dissolved solids (monthly), and standard minerals (annually) have been retained from Order R5-2014-0005 at Monitoring Location EFF-A to determine compliance with effluent limitations and discharge prohibitions, where applicable, and characterize the effluent for these parameters.
3. Monitoring data collected over the term of Order R5-2014-0005 at Monitoring Location EFF-A for lead and aluminum did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific monitoring requirements for these parameters have not been retained from Order R5-2014-0005 at Monitoring Location EFF-A.
4. Monitoring data collected during the term of Order R5-2014-0005 indicates that cyanide and zinc in the discharge have a reasonable potential to cause or contribute to an in-

stream excursion above the applicable CTR criteria. Therefore, this Order establishes monthly effluent monitoring requirements for cyanide and zinc at Monitoring Location EFF-A.

5. Order R5-2014-0005 required effluent monitoring for BOD₅ and TSS three times per week at Monitoring Location EFF-A. This Order reduces the monitoring frequencies for BOD₅ and TSS from three times per week to twice per week. The Central Valley Water Board finds that based on past facility performance this frequency is sufficient for characterizing the wastewater and assessing compliance with effluent limitations established in this Order.
6. Order R5-2014-0005 required continuous effluent monitoring for chlorine residual at Monitoring Location EFF-A. Since the Facility does not utilize chlorine for disinfection, this Order requires the Discharger to only conduct effluent monitoring for chlorine residual when chlorine is being used in the treatment process for maintenance purposes. The Central Valley Water Board finds that this frequency is sufficient for characterizing the wastewater for this parameter.
7. Order R5-2014-0005 required effluent monitoring for electrical conductivity five times per week at Monitoring Location EFF-A. This Order reduces the monitoring frequency for electrical conductivity from five times per week to three times per week. The Central Valley Water Board finds that this frequency is sufficient for characterizing the wastewater and assessing compliance with effluent limitations established in this Order.
8. Order R5-2014-0005 required weekly monitoring for total nitrogen at Monitoring Location EFF-A based on the sum of nitrate, nitrite, and total kjeldahl nitrogen measured in the effluent. This Order replaces the technology-based effluent limitations for total nitrogen, which were applicable to discharges at Discharge Points 001, 002, and REC-001, with WQBEL's for nitrite plus nitrate. Thus, specific monitoring requirements for total nitrogen have not been retained from Order R5-2014-0005 at Monitoring Location EFF-A.
9. Order R5-2014-0005 required monitoring for total coliform organisms at Monitoring Location EFF-A five times per week when discharging at Discharge Point 001 or Discharge Point 002, or daily when discharging to Discharge Point REC-001. This Order moves the point of compliance from Monitoring Location EFF-A to Monitoring Location UVS-001, which is an internal compliance point following the UV disinfection system. The Central Valley Water Board finds that total coliform monitoring at Monitoring Location UVS-001 is sufficient for determining compliance with the applicable effluent limitations following the disinfection process.
10. Order R5-2014-0005 required daily monitoring for pH at Monitoring Location EFF-A. This Order establishes separate points of compliance for pH effluent limitations at Monitoring Locations EFF-001, EFF-002, and REC-001 for discharges at Discharge Points 001, 002, and REC-001, respectively. The Central Valley Water Board finds that pH monitoring at Monitoring Locations EFF-001, EFF-002, and REC-001 is sufficient for determining compliance with the effluent limitations established in this Order.
11. Effluent monitoring frequencies and sample types for flow (continuous) and temperature (continuous) have been retained from Order R5-2014-0005 at Monitoring Locations EFF-001 and EFF-002 to characterize the effluent for these parameters.
12. The effluent monitoring frequency and sample type for flow (continuous) has been retained from Order R5-2014-0005 at Monitoring Location REC-001 to characterize the effluent discharged to the recycled water system for this parameter.

13. In accordance with section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order requires effluent monitoring for priority pollutants and other constituents of concern quarterly for one year beginning the second quarter of 2020, at Monitoring Location EFF-A. This monitoring frequency has been retained from Order R5-2014-0005. See section IX.D of the MRP (Attachment E) for more detailed requirements related to performing priority pollutant monitoring.
14. Water Code section 13176, subdivision (a), states: “*The analysis of any material required by [Water Code sections 13000-16104] shall be performed by a laboratory that has accreditation or certification pursuant to Article 3 (commencing with section 100825) of chapter 4 of part 1 of division 101 of the Health and Safety Code.*” DDW accredits laboratories through its Environmental Laboratory Accreditation Program (ELAP).

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

C. Whole Effluent Toxicity (WET) Testing Requirements

1. **Acute Toxicity.** Order R5-2014-0005 required quarterly 96-hour bioassay testing at Monitoring Location EFF-A. This Order reduces the required testing frequency from quarterly to annually. The Central Valley Water Board finds that these testing requirements are sufficient for characterizing the wastewater and assessing compliance with the effluent limitations for acute toxicity at Discharge Points 001 and 002.
2. **Chronic Toxicity.** Consistent with Order R5-2014-0005, quarterly chronic WET testing is required at Monitoring Location EFF-A in order to demonstrate compliance with the applicable numeric chronic toxicity effluent limitations at Discharge Points 001 and 002.

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 chronic toxicity data collected at Monitoring Location EFF-A from March 2015 through February 2018, the species that exhibited the maximum chronic toxicity result was the water flea (*Ceriodaphnia dubia*), with a result of 4 TUc and a percent effect of 25.5 percent at 100 percent effluent concentration. Consequently, *Ceriodaphnia dubia* has been established as the most sensitive species for chronic WET testing.

D. Receiving Water Monitoring

1. Surface Water

- a. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream.
- b. Receiving water monitoring frequencies and sample types for flow (five times per week), pH (weekly), ammonia (weekly), unionized ammonia (weekly), dissolved oxygen (weekly), electrical conductivity (weekly), hardness (quarterly, at Monitoring Locations RSW-001U and RSW-002U only), temperature (weekly), and turbidity (weekly) at Monitoring Locations RSW-001U, RSW-001D, RSW-002U and

RSW-002D have been retained from Order R5-2014-0005 to characterize Fancher Creek and Little Dry Creek for these parameters.

- c. Monitoring data collected over the term of Order R5-2014-0005 for lead and aluminum did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific receiving water monitoring requirements for these parameters at Monitoring Locations RSW-001U and RSW-002U have not been retained from Order R5-2014-0005.
- d. Monitoring data collected over the term of Order R5-2014-0005 for copper is adequate to characterize the background concentrations of copper. Thus, specific receiving water monitoring requirements for copper at Monitoring Location RSW-001U has not been retained from Order R5-2014-0005.
- e. Order R5-2014-0005 required weekly receiving water monitoring for fecal coliform organisms at Monitoring Locations RSW-001U, RSW-001D, RSW-002U, and RSW-002D. As discussed in section IV.C.3 of this Fact Sheet, the Facility provides tertiary treatment and utilizes a UV disinfection system that is designed to achieve Title 22 criteria. Since the Facility is able to provide tertiary treatment and achieve Title 22 disinfection, the Central Valley Water Board finds that retaining receiving water monitoring requirements for fecal coliform organisms at Monitoring Locations RSW-001U, RSW-001D, RSW-002U, and RSW-002D is not necessary to evaluate the impacts of the effluent on Fancher Creek and Little Dry Creek. Thus, receiving water monitoring requirements for fecal coliform organisms at Monitoring Locations RSW-001U, RSW-001D, RSW-002U, and RSW-002D have not been retained from Order R5-2014-0005.
- f. Receiving water monitoring frequencies and sample types for pH (semi-annually), ammonia (semi-annually), unionized ammonia (semi-annually), dissolved oxygen (semi-annually), electrical conductivity (semi-annually), hardness (semi-annually), temperature (semi-annually), and turbidity (semi-annually) at Monitoring Locations RSW-003U, RSW-003D have been retained from Order R5-2014-0005 to characterize the Diversion Channel for these parameters.
- g. Order R5-2014-0005 required semi-annual receiving water monitoring for fecal coliform organisms at Monitoring Locations RSW-003U and RSW-003D. As discussed in section IV.C.3 of this Fact Sheet, the Facility provides tertiary treatment and utilizes a UV disinfection system, which is designed to achieve Title 22 criteria. Since the Facility is able to provide tertiary treatment and achieve Title 22 disinfection, the Central Valley Water Board finds that retaining receiving water monitoring requirements for fecal coliform organisms at Monitoring Locations RSW-003U and RSW-003D is not necessary to evaluate the impacts of the effluent on the Diversion Channel. Thus, receiving water monitoring requirements for fecal coliform organisms at Monitoring Locations RSW-003U and RSW-003D have not been retained from Order R5-2014-0005.
- h. 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 upstream receiving water monitoring for priority pollutants and other pollutants of concern at Monitoring Locations RSW-001U and RSW-002U quarterly for one year beginning the second quarter of 2020, concurrent with effluent monitoring, in order to collect data to conduct an RPA for the next permit renewal. Additionally, this Order requires upstream receiving water monitoring for priority pollutants and other pollutants of concern at Monitoring Location RSW-003U once during either the second or third quarter of 2020 and

once during either the fourth quarter of 2020 or the first quarter of 2021, in order to collect data to conduct an RPA for the next permit renewal. See section IX.D of the MRP (Attachment E) for more detailed requirements related to performing priority pollutant monitoring.

2. Groundwater – Not Applicable

E. Other Monitoring Requirements

1. Biosolids Monitoring

Biosolids monitoring is required to ensure compliance with the pretreatment requirements contained in 40 C.F.R. part 403 and implemented in section VI.C.5.b of this Order. Biosolids monitoring is required per U.S. EPA guidance to evaluate the effectiveness of the pretreatment program.

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

2. Water Supply Monitoring

Water supply monitoring is required to evaluate the source of constituents in the wastewater. Consistent with Order R5-2014-0005, this Order requires annual water supply monitoring for electrical conductivity, standard minerals, and total dissolved solids at Monitoring Location SPL-001.

3. Filtration System Monitoring

Filtration system monitoring and reporting are required to determine compliance with the operation specifications for turbidity in Special Provision VI.C.4.a. Consistent with Order R5-2014-0005, this Order requires continuous turbidity monitoring at a compliance point following the tertiary filters and prior to the UV disinfection system (Monitoring Location FIL-001) in order to ensure the operational specifications for turbidity are being met prior to the disinfection process.

4. Ultraviolet Light (UV) Disinfection System Monitoring

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

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

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

the most recent Water Pollution Performance Evaluation Study to U.S. EPA's DMR-QA Coordinator and Quality Assurance Manager.

VIII. PUBLIC PARTICIPATION

The Central Valley Water Board has considered the issuance of WDR's that will serve as an NPDES permit for the City of Clovis Sewage Treatment and Water Reuse Facility. As a step in the WDR adoption process, the Central Valley Water Board staff has developed tentative WDR's and has encouraged public participation in the WDR adoption process.

A. Notification of Interested Persons

The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through the following: direct mailing to agencies and known interested parties; posting of a Notice of Public Hearing at the Facility entrance, nearest city hall or county courthouse, and the Central Valley Regional Water Board's web site; and publication in the Fresno Bee on 5 February 2019.

The public had access to the agenda and any changes in dates and locations through the Central Valley Water Board's website at:

http://www.waterboards.ca.gov/centralvalley/board_info/meetings/

B. Written Comments

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

To be fully responded to by staff and considered by the Central Valley Water Board, the written comments were due at the Central Valley Water Board office by 5:00 p.m. on **4 March 2019**.

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: **4 April 2019**
Time: 8:30 a.m.
Location: Regional Water Quality Control Board, Central Valley Region
1685 "E" Street
Fresno, CA 93706

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 CCR, Title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., within 30 calendar days of the date of adoption of this Order at the following address, except that if the 30th day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day:

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

Or by email at waterqualitypetitions@waterboards.ca.gov

For instructions on how to file a petition for review, see
http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml

E. Information and Copying

The ROWD, other supporting documents, and comments received are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Central Valley Water Board by calling (559) 445-5116.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the 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 Nicolette Dentoni at (559) 444-2505.

G.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Table G-1. Summary of Reasonable Potential Analysis – Discharge Point 001

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Ammonia Nitrogen, Total (as N)	mg/L	22	0.69	3.14	5.73 ¹	3.14 ²	--	--	--	--	Yes
Chloride	mg/L	97	3.8	230	860 ¹	230 ³	--	--	--	250	No
Copper, Total Recoverable	µg/L	5.1	72 ⁴	3.5	4.8	3.5	1,300	--	--	1,000	Yes
Cyanide, Total Recoverable	µg/L	5.6	5.7	5.2	22	5.2	700	220,000	--	--	Yes
Electrical Conductivity @ 25°C	µmhos/cm	524 ⁵	49 ⁵	900	--	--	--	--	1,000 ⁶	900	No
Nitrite plus Nitrate (as N)	mg/L	18	0.55	10	--	--	--	--	--	10	Yes
Sulfate	mg/L	19 ⁵	4.1 ⁵	250	--	--	--	--	--	250	No
Total Dissolved Solids	mg/L	326 ⁵	NR	500	--	--	--	--	--	500	No
Zinc, Total Recoverable	µg/L	77	3.8	46	46	46	--	--	--	5,000	Yes

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

MEC = Maximum Effluent Concentration

B = Maximum Receiving Water Concentration or lowest detection level, if non-detect

C = Criterion used for Reasonable Potential Analysis

CMC = Criterion Maximum Concentration (CTR or NTR)

CCC = Criterion Continuous Concentration (CTR or NTR)

Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)

Org. Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)

Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective

MCL = Drinking Water Standards Maximum Contaminant Level

NR = Not Reported

Footnotes:

- (1) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 1-hour average.
- (2) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 30-day average.
- (3) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 4-day average.
- (4) Receiving water copper result observed on 12 January 2017 was flagged with "D2," indicating the sample was diluted due to high concentrations of non-target analytes.
- (5) Represents the maximum observed annual average concentration for comparison with the MCL.
- (6) The Tulare Lake Basin Plan includes an effluent electrical conductivity objective stating the maximum electrical conductivity of a discharge shall not exceed the quality of the source water plus 500 µmhos/cm or 1,000 µmhos/cm, whichever is more stringent.

Table G-2. Summary of Reasonable Potential Analysis – Discharge Point 002

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Ammonia Nitrogen, Total (as N)	mg/L	22	0.32	4.64	4.64 ¹	1.71 ²	--	--	--	--	Yes
Chloride	mg/L	97	29	230	860 ¹	230 ³	--	--	--	250	No
Copper, Total Recoverable	µg/L	5.1	15	3.5	4.8	3.5	1,300	--	--	1,000	Yes
Cyanide, Total Recoverable	µg/L	5.6	4.6	5.2	22	5.2	700	220,000	--	--	Yes
Electrical Conductivity @ 25°C	µmhos/cm	524 ⁴	356 ⁴	900	--	--	--	--	1,000 ⁵	900	No
Nitrite plus Nitrate (as N)	mg/L	18	3.3	10	--	--	--	--	--	10	Yes
Sulfate	mg/L	19 ⁴	16 ⁴	250	--	--	--	--	--	250	No
Total Dissolved Solids	mg/L	326 ⁴	NR	500	--	--	--	--	--	500	No
Zinc, Total Recoverable	µg/L	77	37	46	46	46	--	--	--	5,000	Yes

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

MEC = Maximum Effluent Concentration

B = Maximum Receiving Water Concentration or lowest detection level, if non-detect

C = Criterion used for Reasonable Potential Analysis

CMC = Criterion Maximum Concentration (CTR or NTR)

CCC = Criterion Continuous Concentration (CTR or NTR)

Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)

Org. Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)

Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective

MCL = Drinking Water Standards Maximum Contaminant Level

NR = Not Reported

Footnotes:

- (1) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 1-hour average.
- (2) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 30-day average.
- (3) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 4-day average.
- (4) Represents the maximum observed annual average concentration for comparison with the MCL.
- (5) The Tulare Lake Basin Plan includes an effluent electrical conductivity objective stating the maximum electrical conductivity of a discharge shall not exceed the quality of the source water plus 500 µmhos/cm or 1,000 µmhos/cm, whichever is more stringent.

H.

ATTACHMENT H – CALCULATION OF WQBEL'S

Human Health WQBEL's Calculations – Discharge Points 001 and 002										
Parameter	Units	Criteria	Maximum Background Concentration	CV Eff ¹	Dilution Factor	AWEL/AMEL Multiplier	AMEL Multiplier	AMEL	MDEL	AWEL
Nitrite Plus Nitrate Nitrogen, Total (as N)	mg/L	10	0.55 ² 3.3 ³	0.49	--	1.62	--	10	--	16

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

² Maximum background concentration reported within Fancher Creek at Monitoring Location RSW-001U.

³ Maximum background concentration reported within Little Dry Creek or the Diversion Channel at Monitoring Locations RSW-002U and RSW-003U, respectively.

Aquatic Life WQBEL's Calculations – Discharge Points 001 and 002																	
Parameter	Units	Criteria		B	CV Eff ¹	Dilution Factors		Aquatic Life Calculations							Final Effluent Limitations		
		CMC	CCC			CMC	CCC	ECA Multiplier ^{acute}	LTA ^{acute}	ECA Multiplier ^{chronic}	LTA ^{chronic}	AMEL Multiplier ⁹⁵	AWEL Multiplier	MDEL Multiplier ⁹⁹	AMEL ²	AWEL ³	MDEL ⁴
Ammonia Nitrogen, Total (as N)	mg/L	5.73 ⁵ 4.64 ⁶	3.14 ⁵ 1.71 ⁶	0.69 ⁵ 0.32 ⁶	5.23	--	--	0.076	0.43 ⁵ 0.35 ⁶	0.21	0.67 ^{5,7} 0.36 ^{6,7}	3.78	8.04	--	1.6 ⁵ 1.3 ⁶	3.5 ⁵ 2.8 ⁶	--
Copper, Total Recoverable	µg/L	4.8	3.5	72 ⁵ 15 ⁶	0.44	--	--	0.41	2.0	0.62	2.2	1.39	--	2.42	2.8	--	4.8
Cyanide, Total (as CN)	µg/L	22	5.2	5.7 ⁵ 4.6 ⁶	0.60	--	--	0.32	7.1	0.53	2.7	1.55	--	3.11	4.3	--	8.5
Zinc, Total Recoverable	µg/L	46	46	3.8 ⁵ 37 ⁶	0.60	--	--	0.32	15	0.53	24	1.55	--	3.11	23	--	46

¹ CV was established in accordance with section 1.4 of the SIP.

² Average Monthly Effluent Limitations are calculated according to section 1.4 of the SIP using a 95th percentile occurrence probability.

³ Average Weekly Effluent Limitations are calculated according to section 1.4 of the SIP using a 98th percentile occurrence probability.

⁴ Maximum Daily Effluent Limitations are calculated according to section 1.4 of the SIP using a 99th percentile occurrence probability.

⁵ Applicable to discharges to Fancher Creek at Discharge Point 001.

⁶ Applicable to discharges to the Diversion Channel at Discharge Point 002.

⁷ The LTA corresponding to the 30-day CCC was calculated assuming a 30-day averaging period and a monthly sampling frequency (n) of 30.

I.

ATTACHMENT I – RECYCLED WATER SIGNAGE



From Title 22, California Code of Regulations, Figure 60310-A