

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2018-_____

WASTE DISCHARGE REQUIREMENTS

FOR
KERN COUNTY SHERIFF'S OFFICE
KERN COUNTY LERDO CAMPUS
WASTEWATER TREATMENT FACILITY
KERN COUNTY

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

1. On 12 August 2016, the Provost and Pritchard Consulting Group ([Provost & Pritchard](#)) submitted, on behalf of Kern County Sheriff's Office (hereafter "County" or "Discharger"), a Report of Waste Discharge ([RWD](#)), describing upgrades to the Kern County Lerdo Campus ([Lerdo Campus](#)). The upgrades are to include construction of a new Kern County Justice Facility ([KCJF](#)) and upgrades to the existing wastewater treatment facility ([WWTF](#)) at the Lerdo Campus.
2. The current discharge from the WWTF is regulated by Waste Discharge Requirements ([WDRs](#)) Order 84-148, adopted by the Central Valley Water Board on 28 November 1984. Order 84-148 allows an average dry weather flow of up to 0.50 million gallons per day ([mgd](#)) with a discharge to land located south of the WWTF for the irrigation of fodder, fiber, and see crops. The County owns and operates the WWTF and is responsible for compliance with these WDRs.
3. The WWTF is at 17824 Quality Road in Kern County, about 10 miles northwest of the City of Bakersfield, northeast of the intersection of Lerdo Highway and Quality Road as shown on Attachment A, which is attached hereto and made part of this Order by reference. The WWTF is on about 297 acres and the land application areas contains about 94 acres of land (about 90 acres is available for the recycling of effluent) as shown on Attachment B, which is attached hereto and made part of this Order by reference.. The Assessor's Parcel Numbers ([APN](#)) for the WWTF and the land application areas are listed in Table 1.

Table 1 Assessor Parcel Numbers

<u>Assessor Parcel Numbers</u>	<u>Area¹</u>	<u>Acreage</u>
481-030-74	WWTF	65
481-030-24	WWTF	36
481-030-71	WWTF	69
481-030-72	WWTF	65
481-030-27	WWTF	30
481-030-73	WWTF	32
481-09-008	LAA	32
481-09-001	LAA	62

1. WWTF = Wastewater treatment facility, LAA = land application area.

The WWTF is in the eastern half of northwest quarter of Section 7, T28S, R27E, MDB&M, of the United States Geological Service ([USGS](#)) North of Oildale 7.5 minute topographic map. The land application area is in the northwest quarter of Section 18, T28S, R27E,

MDB&M, of the United States Geological Service (USGS) Oildale 7.5 minute topographic map.

- The Lerdo Campus currently includes Pre-Trial, Max-Med, and Juvenile Treatment Facilities that discharge to the WWTF. The WWTF currently serves a population of about 2,500 inmates and about 600 staff. The new KCJF will add another 822 inmates and staff to the population. The Discharger has upgraded the WWTF due to its age and to increase the capacity to accommodate the new KCJF jail facility that will be completed in the near future. Therefore, Order 84-148 will be rescinded and replaced with this Order.

Former WWTF and Discharge

- Wastewater treatment and disposal has been conducted on the property since at least 1967 (Reclamation Order 67-105), with the former WWTF constructed in 1978 and improved in 1984 and 1989. The former WWTF in 1984 consisted of a headworks (with grinding and screening), a flow meter, two-aerated facultative ponds operated in parallel, a treatment pond, an effluent pump station, two unlined effluent holding ponds, one lined (high density polyethylene) effluent storage pond, and an effluent irrigation pump station.
- Source water, influent, and effluent results from January through December of 2015 for the former WWTF are summarized in Table 2. The average result is the first number shown, and the range of results are listed in parentheses below.

Table 2 – Old WWTF 2015 Influent/Effluent Data

Influent		Effluent			Source	EC ¹ Limit
EC ¹ umhos/cm ⁴	BOD ² mg/L ⁵	BOD ² mg/L ⁵	SS ³ mL/L mg/L ⁶	EC ¹ umhos/cm ⁴	EC ¹ umhos/cm ⁴	umhos/cm ⁴
853	151	43	0.12	810	600	500 plus source
(740 - 952)	(116 - 175)	(26 - 70)	(0.10 - 0.20)	(658 - 947)	(438 - 763)	(938 - 1,263)

- EC = Electrical conductivity.
- BOD = Biochemical oxygen demand.
- SS = Settleable solids.
- umhos/cm = micromhos per centimeter.
- mg/L = milligrams per liter.
- mL/L = milliliter per liter.

- Effluent quality was typical for a domestic WWTF, but biochemical oxygen demand (BOD) levels typically exceeded the 40 mg/L 30-day average typical for secondary-treated wastewater. However, the upgraded WWTF lowers the BOD and nitrogen content of the discharge as shown in Table 3.
- Effluent disposal is to 94 acres of land south of Lerdo Highway and the WWTF that is owned by the County. When access roads and berms are omitted, the area contains a total of about 90 acres of land for the reclamation of wastewater. While WDRs Order 84-148 indicated the discharge was to irrigate fodder, fiber, and seed crops on property owned by the County, the discharge is pumped or gravity flows from the holding ponds at the WWTF through a 10-inch pipeline to a series of four-valved distribution lines that feed a series of small diameter seepage pits. Unfortunately, the RWD notes that the

capacity of the seepage pits is quickly exceeded and the effluent often flows overland. Additional disposal occurs as the effluent percolates into the underlying vadose zone from the unlined effluent storage ponds. The seepage pits have been used for years and allow the effluent to be concentrated in a smaller area. The area around the seepage pits is proposed as part of the land application area. The discharge may have concentrated constituents such as nitrates in the soils underlying the seepage pits. This Order includes Provision H.15 that requires the Discharger to submit a work plan to close the seepage pits and evaluate the soil conditions underlying the seepage pits.

Upgraded WWTF and Discharge

9. The upgraded WWTF provides secondary treatment with nitrification and denitrification of the effluent, and has an annual average daily treatment capacity of 0.68 mgd (maximum monthly average daily flow of 0.86 mgd, maximum daily flow of 1.09 mgd). The upgraded WWTF has a new headworks with a mechanical bar screen that removes debris and solids more than 6 mm in size. A washer compactor dewateres and compresses the screened solids. A Parshall flume measures influent flow. Secondary treatment is an extended aeration activated sludge process using the proprietary Biolac Wave Ox system. A pump station returns biosolids from the clarifier to the aeration basin. Waste activated sludge is discharged as needed to the aerobic digester. Effluent can be pumped and stored in one of seven (six unlined, one lined) effluent storage ponds.
10. The upgraded WWTF has been online since April 2017 and there is limited monitoring data (April through November 2017) available for review.

Table 3 – Upgraded WWTF Influent and Effluent Quality

<u>Constituent</u>	<u>Units</u> ¹	<u>Influent</u>	<u>Effluent</u>
Biochemical Oxygen Demand	mg/L	148	10
Total Suspended Solids	mg/L	131	12
Electrical Conductivity	umhos/cm	na ²	753
Total Kjeldahl Nitrogen	mg/L	na ²	2.1
Nitrate as Nitrogen	mg/L	na ²	18
Total Nitrogen	mg/L	na ²	20

1. mg/L = milligram per liter; umhos/cm = micromhos per centimeter.
 2. na = not analyzed.

11. Biochemical oxygen demand (BOD) and total suspended solids (TSS) in the effluent are below the daily average limit of 40 milligrams per liter (mg/L) and the WWTF removed from 94 to 89 percent of the influent BOD and TSS concentrations. The electrical conductivity (EC) of the effluent complies with the EC effluent limit of the EC of the source water plus 500 micromhos per centimeter (umhos/cm).
12. Total nitrogen at 20 mg/L is higher than the 10 mg/L designed treatment efficiency of the upgraded WWTF. Part of the problem is that now that new WWTF is online, the recorded flows are only about 0.30 mgd, not the 0.49 mgd previously reported or anticipated. The low flows and low BOD influent levels are making it difficult to denitrify the discharge at this time, but total nitrogen in the effluent is anticipated to decrease once the new KCJF facility is housed and operational and the flows increase. Historically, effluent with no

denitrification has been discharged in this location since at least 1967 (Order 67-105) and effluent nitrogen values were likely much higher than the current discharge from the upgraded WWTF. The discharge from the upgraded WWTF improves upon the effluent total nitrogen quality, even though the upgraded WWTF it is not currently operating as designed. To ensure that the effluent is being discharged at agronomic rates, this Order includes Provision H.13 that requires the Discharger to conduct an effluent nitrogen evaluation.

13. The RWD indicates the treated effluent will be recycled on about 94 acres of land directly south of the WWTF (Attachment B). The area proposed as a land application area currently contains the seepage pits that are used for disposal of the WWTF effluent.
14. The RWD included a water balance showing the proposed discharge rates (0.68 mgd annual average and 0.86 mgd maximum monthly average) would produce 0.21 acre-feet and 0.26 acre-feet per day, respectively. The water balance included in the RWD evaluates the storage capacity of the WWTF under normal conditions and under the 100-year rainfall design, and concludes that the storage capacity of the WWTF exceeds the volume produced by the WWTF by greater than 33 acre-feet in the 100-year rainfall event scenario, and greater than 55-acre feet under the normal rainfall scenario.

Site-Specific Conditions

15. There are four source water wells for the Lerdo Campus. Currently, wells No.2 and No.3 provide source water to the Lerdo Campus. Two new groundwater wells, Well No. 4 and Well No. 5, were drilled in 2015, but were not operational as of November 2017. The Discharger has indicated that the new wells will go online by the end of 2017, and wells No. 2 and No.3 will remain for use as emergency standby wells. Water quality results from sampling the supply wells was included in the RWD and is summarized in Table 4.

Table 4– Supply Well Data

<u>Constituent</u>	<u>Units¹</u>	<u>Well No.2</u>	<u>Well No. 3</u>	<u>Well No. 4</u>	<u>Well No. 5</u>
Electrical Conductivity	umhos/cm	300	350	280	330
Total Dissolved Solids	mg/L	160	200	180	190
Chloride	mg/L	34	70	42	43
Sulfate	mg/L	4	7	2.3	5.8
Nitrate as Nitrogen	mg/L	nd ²	nd ²	nd ²	nd ²
Hydrogen Sulfide	mg/L	5 to 30	5 to 30	na ³	na ³

1. umhos/cm = micromhos per centimeter; mg/L = milligrams per liter.

2. nd = not detected by the laboratory.

3. na = not analyzed.

16. The Discharger submits monthly monitoring reports that include the latest EC result from the source water wells. The average EC of the source water since April 2017 is 558 umhos/cm. The source water EC reported in the monthly monitoring reports is less than what was reported in the RWD, because the supply water is treated with chlorine and bisulfate to remove hydrogen sulfide that cause the increase in the EC of the source water.

17. The topography in the vicinity of the WWTF is generally flat with a very slight slope to the west/southwest. The elevation at the WWTF is about 560 feet above mean sea level at the northeastern corner of the property, and about 500 feet at the southwestern corner.
18. The nearest natural surface water is Poso Creek which is about 2.5 miles north of the WWTF as shown on Attachment A, which is attached hereto and made part of this Order by reference. The Cawelo Canal is about a half a mile east of the WWTF and the Lerdo Canal is about 1.75 miles west of the WWTF.
19. The current Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Number 06029C1325E, revised 26 September 2008, indicates the WWTF, the treatment ponds, and the evaporation/percolation ponds are not within a 100-year return flood area.
20. Soils in the area of the WWTF and the unlined effluent storage ponds consists almost entirely of the Zerker sandy clay loam according to the Web Soil Survey published by the United States Department of Agriculture Natural Resources Conservation Service. The Zerker sandy clay loam is described as well drained and has a land capability classification of 1. Soils with a Class 1 rating have few limitations that restrict their use.
21. Soils in the area of the land application area are comprised predominantly of Delano sandy loam (~65 percent) and the Wasco sandy loam (~30 percent) according to the Web Soil Survey published by the United States Department of Agriculture Natural Resources Conservation Service. The Delano sandy loam and the Wasco sandy loam are both described as well drained and have land capability classifications of 1. Soils with a Class 1 rating have few limitations that restrict their use.
22. The area is characterized by hot dry summers and cooler, humid winters. The rainy season generally extends from November through March. Average annual precipitation is about 6.5 inches and annual evapotranspiration data is 54.6 inches with monthly averages ranging from 1.3 inches in January and December to 8.1 inches in July (California Irrigation Management Information System, Shafter Station # 5). The 100-year, 24-hour maximum precipitation is about 2.9 inches, based on maps obtained from the Kern County Resource Management Agency, Engineering, Survey and Permit Services, Floodplain Management Section.
23. Land uses in the vicinity of the WWTF are primarily agricultural, with some industrial/commercial properties in the vicinity of the WWTF and oil field activity to the east. The RWD indicates the WWTF is within the Poso Creek Oil Field and just west of the Kern Front Oil Field. A review of Munger Map Book, 1999, page 67 shows the WWTF is right along the western edge of the Poso Creek Oil Field. The North Kern Golf Course is present directly north of the WWTF and a cattle feed lot (3 Brand Cattle) is present to the southeast of the WWTF. Several industrial facilities, including the food processors Sun Pacific Shippers and Califia Farms, are about two-miles east of the WWTF near the intersection of Zerker Road and Lerdo Highway. The primary crops grown in the area are alfalfa, pasture, onions, garlic, corn, dry beans and tree crops including almonds, figs, peaches, pistachios, and walnuts, according to data published by the Department of Water Resources (DWR).

Groundwater Conditions

24. Groundwater in the area of the Lerdo Campus WWTF is contained in an unconfined aquifer, and the depth to groundwater is reported in the RWD to be about 520 to 540 feet below the ground surface (bgs). The depth to groundwater data is from two supply wells (Nos. 4 and 5) completed in 2015. The RWD also noted that the historic high groundwater depth was recorded to be 325.5 feet bgs in State Well 28S26E12J002M, set at the southwest corner of the Facility. The depth to water is validated in the DWR's, *Lines of Equal Elevation of Water In Wells, Unconfined Aquifer, San Joaquin Valley Spring 2010* map that indicates the groundwater elevation is about 100 feet above mean sea level (MSL), which corresponds to a depth to groundwater of about 420 feet bgs. The general direction of groundwater flow in the unconfined aquifer is to the north/northwest due to pumping from a Cawelo Water District well cluster north of the WWTF.
25. The RWD indicates inter-bedded coarse and fine grained alluvial deposits are present to a depth of at least 1,500 feet beneath the facility. Deposits below a depth of about 100 feet are primarily blue or green in color, indicative of reduced conditions. Hydrogen sulfide is common in groundwater in reduced deposits and has been known for many decades to occur at high concentrations near oilfields in the San Joaquin Valley. The facility is in the Poso Creek Oil Field and west of the Kern Front Oil Field. Supply wells No. 2 and No.3 have had levels of hydrogen sulfide averaging from 5 mg/L to 14.5 mg/L, with spikes up to 100 mg/L.
26. Regional groundwater quality data can be found on the USGS Water Quality Portal web site. A search revealed 21 wells with data ranging in depth from 500 to 1,420 feet bgs within a three-mile radius of the WWTF. Three of the USGS wells are or were in close proximity to the WWTF. USGS well 353119119062501 is about three quarters of a mile north of the WWTF at the northeast corner of an adjacent golf course. It is downgradient to slightly cross gradient of the WWTF based on groundwater flow to the north. The USGS record contained results for USGS well 353119119062501 dating from 1986 to 2015. Table 3 summarizes the results available for USGS well 353119119062501.

Table 5- USGS Well 353119119062501

<u>Constituent</u>	<u>Units¹</u>	<u>1986</u>	<u>1995</u>	<u>2002</u>	<u>2015</u>
Electrical Conductivity	umhos/cm	241	231	222	217
Total Dissolved Solids	mg/L	143	150	130	135
Chloride	mg/L	19	22	23	16
Sodium	mg/L	49	47	46	47
Nitrate as Nitrogen	mg/L	nd ²	nd ²	nd ²	nd ²
Total Kjeldahl Nitrogen	mg/L	na ³	nd ²	nd ²	na ³
Ammonia	mg/L	na ³	0.02	nd ²	0.01

1. umhos/cm = micromhos per centimeter; mg/L = milligrams per liter.
2. nd = not detected by the laboratory.
3. na = not analyzed.

27. The data in Table 5 indicates good water quality that has met water quality objectives from 1986 through 2015. Nitrate and TKN were not detected in the samples and EC and TDS results are generally stable with a slight decreasing trends in concentration for EC.
28. USGS well 353048119072101 is or was immediately northwest of the WWTF in 1955. If the WWTF been present in 1955, the well would have been downgradient of the WWTF when groundwater flow was to the northwest. A sample was collected in 1955 and the results of the one-time sample are presented in Table 6.

Table 6 – USGS Well 353048119072101

<u>Constituent</u>	<u>Units¹</u>	<u>1955</u>
Electrical Conductivity	umhos/cm	290
Total Dissolved Solids	mg/L	181
Chloride	mg/L	30
Sodium	mg/L	62
<u>Nitrate as Nitrogen</u>	mg/L	0.2

1. umhos/cm = micromhos per centimeter; mg/L = milligrams per liter.

29. The results in Table 6 indicate good water quality in 1955 that is similar to although slightly higher in concentration to the results reported for upgradient USGS well 353119119062501 presented above in Table 5.
30. A third USGS well 353044119065301 is on the east side of the Lerdo Campus property and is cross gradient to upgradient of the WWTF. The USGS sample record indicates the well was sampled three times; once in 1955, again in 1958, and a third time in 1986. The results are presented in Table 7.

Table 7- USGS Well 353044119065301

<u>Constituent</u>	<u>Units¹</u>	<u>1955</u>	<u>1958</u>	<u>1986</u>
Electrical Conductivity	umhos/cm	262	246	312
Total Dissolved Solids	mg/L	163	168	186
Chloride	mg/L	34	44	50
Sodium	mg/L	56	58	63
<u>Nitrate as Nitrogen</u>	mg/L	na ²	na ²	0.02

1. umhos/cm = micromhos per centimeter; mg/L = milligrams per liter.
 2. Na = not analyzed.

31. All of the results in Table 7 meet water quality objectives. The results do show a slight increasing trend from 1958 to 1986 for all constituents but nitrate as nitrogen, but the location of the well upgradient of the WWTF would suggest the WWTF is not the cause of the increase. The WWTF is in the western half of Section 7 of T28S, R27E. The entire eastern half of Section 7 of T28S, R27E (~320 acres which is upgradient of the well) is currently cropped with a citrus orchard. Additionally, the Poso Creek oil field is present to the east and upgradient of the well and the WWTF.

32. The results from the USGS Water Quality Data Portal show that groundwater in the area is of good quality. Only 2 of the 21 wells identified on the USGS Water Quality Portal web site had nitrate as nitrogen results in excess of 10 mg/L. USGS well 353021119082601 was or is about 1.2 miles west/southwest of the WWTF and had a nitrate as nitrogen result of 17.8 mg/L in September 1955. USGS well 353146119093701 was or is about 2.9 miles northwest of the WWTF and had a nitrate as nitrogen result of 33.8 mg/L in September 1955.

Basin Plan, Beneficial Uses, and Regulatory Considerations

33. The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition, revised July 2016* (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Board. Pursuant to California Water Code section 13263(a), waste discharge requirements must implement the Basin Plan. . The Tulare Lake Basin Plan (Second Edition, July 2016) indicates that discharges to areas that may recharge to good quality ground waters shall not exceed and EC of 1,000 umhos/cm.
34. The WWTF and the land application area are in the North Kern Hydrologic Area (No. 558.80), which is part of the South Valley Floor hydrologic unit as depicted on hydrologic maps prepared by State Water Resources Control Board in August 1986. The beneficial uses of Valley Floor Waters, as stated in the Basin Plan for Hydrologic Area No. 558, are agricultural supply; industrial service supply; industrial process supply; groundwater recharge; water contact recreation; non-contact water recreation; warm freshwater habitat; wildlife habitat; and enhancement of rare, threatened, or endangered species. Poso Creek is about 2.5 miles north of the WWTF.
35. The WWTF and the land application area are in Detailed Analysis Unit (DAU) No 256 within the Kern County Basin hydrologic unit. The beneficial uses of underlying groundwater as set forth in the Basin Plan are municipal and domestic supply, agricultural supply, industrial service supply and industrial process supply.
36. Water in the Tulare Lake Basin is in short supply, requiring importation of surface water from other parts of the State. The Basin Plan encourages use of recycled water on irrigated crops wherever feasible and indicates that evaporation of recyclable wastewater is not an acceptable permanent disposal method where the opportunity exists to replace existing uses or proposed use of fresh water with recycled water.
37. The Basin Plan establishes narrative water quality objectives for chemical constituents, tastes and odors, and toxicity in groundwater. It also sets forth a numeric objective for total coliform organisms.
38. The Basin Plan's numeric water quality objective for bacteria requires that the most probable number (MPN) of coliform organisms over any seven-day period shall be less than 2.2 per 100 mL in MUN groundwater.

39. The Basin Plan's narrative water quality objectives for chemical constituents, at a minimum, require waters designated as domestic or municipal supply to meet the MCLs specified in Title 22 of the California Code of Regulations (hereafter Title 22). The Basin Plan recognizes that the Central Valley Water Board may apply limits more stringent than maximum contaminant levels (MCLs) to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
40. The narrative toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, animal, plant, or aquatic life associated with designated beneficial uses.
41. Quantifying a narrative water quality objective requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses. The Basin Plan states that when compliance with a narrative objective is required to protect specific beneficial uses, the Central Valley Water Board will, on a case-by-case basis, adopt numerical limitations in order to implement the narrative objective.
42. The Basin Plan identifies the greatest long-term problem facing the entire Tulare Lake Basin as the increase in salinity in groundwater, which has accelerated due to the intensive use of soil and water resources by irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until a mechanism to carry salts out of the basin is established. To limit the degradation, the Basin Plan establishes several salt management requirements, including:
 - a. The incremental increase in salt from use and treatment must be controlled to the extent possible. The Tulare Lake Basin Plan effluent limit for EC limits the increase from a point source discharge to a maximum of 500 $\mu\text{mhos/cm}$. When the source water is from more than one source, the EC shall be a weighted average of all sources.
 - b. Discharges to areas that may recharge good quality groundwater shall not exceed an EC of 1,000 $\mu\text{mhos/cm}$, a chloride content of 175 mg/L, or a boron content of 1.0 mg/L.
43. In the absence of specific numerical water quality limits, the Basin Plan methodology is to consider any relevant published criteria. General salt tolerance guidelines, such as *Water Quality for Agriculture* by Ayers and Westcot and similar references indicate that yield reductions in nearly all crops are not evident when irrigation water has an EC less than 700 $\mu\text{mhos/cm}$. There is, however, an eight- to ten-fold range in salt tolerance for agricultural crops, and the appropriate salinity values to protect agriculture in the Central Valley are considered on a case-by-case basis. It is possible to achieve full yield potential with waters having EC up to 3,000 $\mu\text{mhos/cm}$ if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop.
44. The list of crops in Finding 23 is not intended as a definitive inventory of crops that are or could be grown in the area where groundwater quality is potentially affected by the discharge, but it is representative of current and historical agricultural practices in the area.

Special Considerations for Salt and Nitrate Discharges

45. Many surface waters and local groundwater supplies have been degraded with salt. In some areas, the high salinity is naturally occurring, but in many areas it is due to the acts of man. In 2006, the Central Valley Water Board, the State Water Board, and stakeholders began a joint effort to address salinity and nitrate problems in the region and adopt long-term solutions that will lead to enhanced water quality and economic sustainability.
46. The Central Valley Water Board is developing amendments to the Basin Plan to incorporate new strategies for addressing ongoing salt and nitrate accumulation in the waters and soils of the Central Valley. Strategies currently under consideration may:
- Alter the way the Board calculates available assimilative capacity for nitrate, which could result in new or modified requirements for nitrate management;
 - Require dischargers to implement actions identified under an interim salinity permitting approach; and/or
 - Establish alternate compliance approaches that would allow dischargers to participate in efforts to provide drinking water to local communities in consideration for longer compliance time schedules.

Should the Board adopt amendments to the Basin Plan to effectuate such strategies, these waste discharge requirements may be amended or modified to incorporate any newly-applicable requirements.

47. The stakeholder-led Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative has been coordinating efforts to implement new salt and nitrate management strategies. The Board expects dischargers that may be affected by new salt and nitrate management policies to coordinate with the CV-SALTS initiative.

Antidegradation Analysis

48. The *Statement of Policy With Respect to Maintaining High Quality of Waters in California*, SWRCB Order WQ 68-16 (hereinafter "Antidegradation Policy") was adopted by the State Water Board in October 1968. The Antidegradation Policy limits the Board's discretion to authorize the degradation of "high-quality waters." This policy has been incorporated into the Board's Basin Plans. "High-quality waters" are defined as those waters where water quality is more than sufficient to support beneficial uses designated in the Board's Basin Plan. Whether or not a water is a high-quality water is established on a constituent- by-constituent basis, which means that an aquifer can be considered a high-quality water with respect to one constituent, but not for others (SWRCB Order No. WQ 91-10).
49. The Antidegradation Policy applies when an activity discharges to high-quality waters and will result in some degradation. When it applies, the Antidegradation Policy requires that WDRs reflect best practicable treatment or control (BPTC) of wastes and that any degradation of high-quality waters (a) will be consistent with the maximum benefit to the people of the state, and (b) will not result in an exceedance of water quality objectives. If

the activity will not result in the degradation of high-quality waters, the Antidegradation Policy does not apply, and the Discharger need only demonstrate that it will use "best efforts" to control the discharge.

50. The RWD included an Antidegradation Analysis and evaluated the discharge for selected constituents of concern. Constituents of concern that have the potential to degrade groundwater include salts (primarily EC), nitrogen, chloride, arsenic, boron, and coliform organisms as discussed below.
- a. **Salinity (EC).** The average EC concentration in the effluent since the startup of the upgraded WWTF in April 2017 is 773 umhos/cm. The average is less than the lower recommended Secondary MCL of 900 umhos/cm and would meet the EC limit proposed in Effluent Limitation C.3 which is the EC of the source water (~300 umhos/cm) plus 500 umhos/cm.. The Tulare Lake Basin Plan also indicates that discharges to areas that may recharge to good quality ground waters shall not exceed an EC of 1,000 µmhos/cm, a chloride content of 175 mg/l, or a boron content of 1.0 mg/l. The discharge could degrade the underlying groundwater, but the anticipated concentration would be less than the lower recommended MCL of 900 umhos/cm and meets Effluent Limitation C.3.
 - b. **Nitrate.** For nutrients such as nitrate, the potential for degradation depends not only on the quality of the treated effluent, but the ability of the vadose zone below the effluent disposal ponds to provide an environment conducive to nitrification and denitrification to convert the effluent nitrogen to nitrate and the nitrate to nitrogen gas before it reaches the water table. The depth to water was reported to be from 520 to 540 feet bgs in 2015, with a reported high water level of 325 feet bgs. The data indicates the vadose zone is over 400 feet thick and is described in Finding 24 as consisting of inter-bedded coarse and fine grained alluvial deposits that below a depth of about 100 feet are primarily blue or green in color and indicative of reduced conditions. The RWD indicates the effluent will undergo natural denitrification in anoxic zones below the pond bottoms providing an additional 30 percent nitrogen reduction. Additionally, the treated effluent is to be recycled to about 90-acres of land and a crop will be grown (alfalfa proposed) that can utilize the nitrogen in the discharge.

The antidegradation analysis contained in the RWD indicates the WWTF was designed to treat total nitrogen in the effluent to less than 10 mg/L. Currently, nitrate as nitrogen is averaging about 20 mg/L in the upgraded WWTF, twice that of the design treatment limit. The effluent is temporarily stored in unlined effluent storage ponds and then discharged to a series of unlined seepage pits in the land application areas, not the entire land application area.

The current discharge to the unlined effluent storage ponds and seepage pits concentrates the discharge in small areas and creates a hydraulic head that could push the effluent downward through the vadose zone to the underlying groundwater. To ensure the nitrogen content of the discharge does not threaten the quality of the underlying groundwater, this Order contains a time schedule in Provision H.13 that requires the Discharger to submit a work plan that allows the Discharger to demonstrate:

- i. Discharge at the existing total nitrogen concentrations will not cause or contribute to violations of the Groundwater Limitations of this Order. **or**
 - ii. A technical report and time schedule describing the measures the Discharger will implement to meet a total nitrogen effluent limit of 10 mg/L. The time schedule is subject to Executive Officer approval.
- c. Chloride.** For chloride, the average chloride content of the source water from wells No. 4 and No. 5 is about 43 mg/L. Effluent data for chloride is not available, but the RWD estimates the resulting chloride concentration in the effluent range from about 60 to 75 mg/L. Those values are well below the Basin Plan effluent limit of 175 mg/L for discharges over high quality groundwater, are less than the agricultural water quality objective of 106 mg/L, and are well below the recommended Secondary MCL of 250 mg/L. Therefore, the discharge is not likely to degrade groundwater quality due to the chloride content of the discharge.
- d. Arsenic.** Arsenic currently averages about 3.4 ug/L in supply wells No. 4 and No.5. The effluent has not been analyzed for arsenic, but the RWD indicates the increase should be minimal and estimates the results will be less than 10 ug/l. The RWD concludes that the discharge will not increase the arsenic concentrations in the underlying groundwater and will not degrade the underlying groundwater quality.
- e. Boron.** The antidegradation review included in the RWD indicated that boron is of particular concern in the area because of the predominance of citrus crops and high level of boron in oil field discharges that occur regionally. The RWD states that "other than source water" there is no known source of boron for the effluent and the RWD does not provide any regional groundwater data for boron. The regional groundwater data obtained from the USGS Water Quality Portal contained boron data. Boron was an analyte in 17 of the 21 wells that had sampling records. The results are from 1951 through 2015, and indicate that boron was not detected above the agricultural limit of 700 ug/L in any of the wells. Therefore, the discharge is not likely to degrade groundwater quality due to the boron content of the discharge.
- f. Total coliform organisms.** Coliform bacteria will be present in the discharge because no disinfection is proposed. However, percolation through the underlying soils is effective at removing bacteria. The RWD indicates that movement through as little as 5 to 10 feet of fine-grained unsaturated soils is adequate to remove most bacteria. The thickness of the vadose zone is reported to be about 400 to 500 feet, and it is estimated the downward flow to the groundwater table would take years. Therefore, the RWD concludes the discharge is not likely to degrade the underlying groundwater with respect to coliform organisms.
51. The proposed WWTF will provide BPTC of the discharge that incorporates:
- a. A headworks with a mechanical bar screen to remove solids more than 6 millimeters in size;
 - b. A Parshall flume to measure the influent flow;
 - c. Secondary treatment of wastewater using an extended aeration activated sludge process;

- d. Aeration chains with submerged diffusers that create alternating aerobic and anoxic zones for simultaneous carbonaceous oxidation and biological nitrogen removal;
- e. Clarifiers for biosolids removal;
- f. Return activated sludge/waste activated sludge pump station to returns biosolids from the clarifier to the aeration basin;
- g. Certified operators to ensure proper operation and maintenance;
- h. An operation and maintenance manual;
- i. Source water, influent, and effluent monitoring; and
- j. Recycling of secondary treated effluent to a 90-acre land application area to irrigate fodder, fiber, or seed crops.

Antidegradation Conclusions

- 52. This Order establishes groundwater limitations that may allow some degradation, but that will not unreasonably threaten present and future anticipated beneficial uses of groundwater or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan.
- 53. The treatment and control measures described above in [Finding 51](#), in combination with the requirements of this Order, represent best practicable treatment or control (BPTC). Adoption of this Order will result in the implementation of BPTC. In addition, this Order requires monitoring to evaluate potential groundwater impacts from the discharge and confirm that BPTC is sufficiently protective of groundwater quality.
- 54. Generally, limited degradation of groundwater by some of the typical waste constituents of concern (e.g., EC and nitrate) released with discharge from a municipal wastewater utility after effective source control and treatment is consistent with maximum benefit to the people of the state. The technology, energy, water recycling, and waste management advantages of municipal utility service far exceed any benefits derived from a community otherwise reliant on numerous concentrated individual wastewater systems, and the impacts on water quality will be substantially less. Economic prosperity of valley communities and associated industry is of maximum benefit to the people of the state, and therefore sufficient reason to accommodate growth and some groundwater degradation provided terms of the Basin Plan are met. The degradation will not unreasonably affect present and anticipated beneficial uses of groundwater, or result in water quality less than water quality objectives.
- 55. This Order is consistent with the Antidegradation Policy since: (a) the Discharger has or will implement best management practices and BPTC to minimize degradation, (b) the limited degradation allowed by this Order will not unreasonably affect present or anticipated beneficial uses or result in water quality less than water quality objectives or background groundwater quality, and (c) the limited degradation is of maximum benefit to the people of the State.

Water Recycling Regulatory Considerations

56. Undisinfected domestic wastewater contains human pathogens that are typically measured using total or fecal coliform organism as indicator organisms. The State Water Resources Control Board Division of Drinking Water (formerly the California Department of Public Health Drinking Water Program), which has primary statewide responsibility for protecting water quality and the public health, has established statewide criteria in Title 22, section 60301 et seq. for the use of recycled water.
57. On 3 February 2009, the State Water Board adopted Resolution 2009-0011, *Adoption of a Policy for Water Quality Control for Recycled Water* (Recycled Water Policy). The Recycled Water Policy promotes the use of recycled water to achieve sustainable local water supplies and reduce greenhouse gases.
58. The County is proposing to recycle the treated effluent on the 90-acre land application area that will contain crops that will utilize the nitrogen in the effluent, but a Title 22 engineering report has not been prepared by the Discharger or reviewed and approved by the Division of Drinking Water (DDW). This Order contains Provision H.14 that contains a time schedule for the Discharger to submit a Title 22 engineering report that describes how it will recycle the secondary-treated undisinfected effluent to the land application area and includes a time schedule to prepare the land application area for the recycling of the secondary treated effluent. The Title 22 Engineering Report must be approved by the DDW and the Executive Officer of the Central Valley Water Board prior to the use of the secondary treated effluent for recycling.

Other Regulatory Considerations

59. In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.
60. Based on the threat and complexity of the discharge, the facility is determined to be classified as 2B as defined below:
 - a. Category 2 threat to water quality: "Those discharges of waste that could impair the designated beneficial uses of the receiving water, cause short-term violations of water quality objectives, cause secondary drinking water standards to be violated, or cause a nuisance."
 - b. Category B complexity, defined as: "Any discharger not included [as Category A] that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal) or any Class 2 or Class 3 waste management units."
61. California Code of Regulations, Title 27 ("Title 27") contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste, which includes designated waste, as defined by Water Code section 13173. However, Title 27 exempts certain activities from its provisions. Discharges regulated by this Order are exempt from Title 27 pursuant to provisions that exempt domestic sewage,

wastewater, and reuse. The exemption, found at Title 27, section 20090, states in part:

The following activities shall be exempt from the SWRCB-promulgated provisions of this subdivision, so long as the activity meets, and continues to meet, all preconditions listed:

(a) Sewage - Discharges of domestic sewage or treated effluent which are regulated by WDRs issued pursuant to Chapter 9, Division 3, Title 23 of this code, or for which WDRs have been waived, and which are consistent with applicable water quality objectives, and treatment or storage facilities associated with municipal wastewater treatment plants, provided that residual sludges or solid waste from wastewater treatment facilities shall be discharged only in accordance with the applicable SWRCB-promulgated provisions of this division.

(b) Wastewater - Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leachfields if the following conditions are met:

- (1) the applicable RWQCB has issued WDRs, reclamation requirements, or waived such issuance;
- (2) the discharge is in compliance with the applicable water quality control plan; and
- (3) the wastewater does not need to be managed according to Chapter 11, Division 4.5, Title 22 of this code as a hazardous waste.

62. The discharge authorized herein (except for the discharge of residual sludge and solid waste), and the treatment and storage facilities associated with the discharge, are exempt from the requirements of Title 27 as follows:
 - a. The wastewater treatment plant is exempt pursuant to Title 27, section 20090(a) because they are treatment and storage facilities associated with a municipal domestic wastewater treatment plant.
 - b. The effluent storage ponds are exempt pursuant to Title 27, section 20090(b) because they are wastewater storage ponds and:
 - i. The Central Valley Water Board is issuing WDRs.
 - ii. The discharge is in compliance with the Basin Plan, and;
 - iii. The treated effluent discharged to the ponds does not need to be managed as hazardous waste.
63. The Discharger is not required to obtain coverage under a National Pollutant Discharge Elimination System General Industrial Storm Water Permit for the WWTF because all storm water runoff is retained onsite and does not discharge to a water of the United States.
64. On 2 May 2006, the State Water Board adopted Statewide General Waste Discharge Requirements for Sanitary Sewer Systems General Order 2006-0003-DWQ (the General Order). The General Order requires all public agencies that own or operate sanitary sewer systems greater than one mile in length to comply with the Order. The

Discharger's collection system exceeds one mile in length and the Discharger is enrolled under the General Order.

65. Water Code section 13267(b)(1) states:

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 or discharging, or who proposes to discharge waste within its region ... shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports 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.

66. The technical reports required by this Order and the attached Monitoring and Reporting Program R5-2018-____ are necessary to ensure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.

67. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards), as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 74-81* (December 1981). These standards, and any more stringent standards adopted by the state or county pursuant to Water Code section 13801, apply to all monitoring wells used to monitor the impacts of wastewater storage or disposal governed by this Order.

68. The improvements to the WWTF were covered in an Environmental Impact Report (EIR) circulated by Kern County in July 2013 with State Clearing House number 2013021019. A Final EIR was certified on 13 November 2014. In general the project was found to have minimal environmental concerns due to the area already being developed and used as a WWTF and jail facility.

69. The United States Environmental Protection Agency (EPA) has promulgated biosolids reuse regulations in 40 CFR 503, *Standard for the Use or Disposal of Sewage Sludge*, which establishes management criteria for protection of ground and surface waters, sets application rates for heavy metals, and establishes stabilization and disinfection criteria.

70. The Central Valley Water Board is using the Standards in 40 CFR 503 as guidelines in establishing this Order, but the Central Valley Water Board is not the implementing agency for 40 CFR 503 regulations. The Discharger may have separate and/or additional compliance, reporting, and permitting responsibilities to the EPA.

71. Pursuant to Water Code section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

Public Notice

72. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.
73. The Discharger and interested agencies and persons have been notified of the Central Valley Water Board's intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity to submit written comments and an opportunity for a public hearing.
74. All comments pertaining to the discharge were heard and considered in a public hearing.

IT IS HEREBY ORDERED that Waste Discharge Requirements Order 84-148 is rescinded and, the Kern County Sheriff's Office, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Discharge of waste classified as 'hazardous', as defined in the California Code of Regulations, title 22, section 66261.1 et seq., is prohibited.
3. Bypass or overflow of untreated or partially treated wastes is prohibited, except as allowed by Standard Provisions E.2 of the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991.
4. Discharge of waste at a location or in a manner different from that described in the Findings is prohibited.
5. The Discharger shall not allow toxic substances to be discharged into the wastewater treatment system such that biological treatment mechanisms are disrupted.

B. Flow Limitations

1. The average daily discharge shall not exceed 0.68 mgd.
2. The monthly maximum average daily discharge shall not exceed 0.86 mgd.

C. Effluent Limitations

1. The effluent discharge to the effluent storage ponds measured at EFF-01¹ shall not exceed the following limitations:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
BOD	mg/L	40	80
TSS	mg/L	40	80

2. The arithmetic mean of BOD and TSS in effluent samples collected over a monthly period shall not exceed 20 percent of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (80 percent removal).
3. The 12-month rolling average EC of the discharge shall not exceed the 12-month flow-weighted rolling average EC of the source water plus 500 $\mu\text{mhos/cm}$ or 1,000 $\mu\text{mhos/cm}$, whichever is less. The flow-weighted average of the source water shall be a moving average for the most recent 12 months.
4. The monthly average concentration of total nitrogen in the discharge shall not exceed 10 mg/L. The Discharger shall achieve compliance with this limit in accordance with Provision H.13.

D. Discharge Specifications

1. No waste constituent shall be released, discharged, or placed where it will cause a violation of the Groundwater Limitations of this Order.
2. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.
3. The discharge shall remain within the permitted waste treatment/containment structures, storage, and land application areas at all times.
4. The Discharger shall operate all systems and equipment to optimize the quality of the discharge.
5. All conveyance, treatment, storage, and disposal systems shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
6. Public contact with wastewater at the WWTF shall be prevented through such means as fences, signs, or acceptable alternatives.

¹ EFF-01 is defined in the attached Monitoring and Reporting Program

7. Objectionable odors associated with the WWTF shall not be perceivable beyond the limits of the WWTF property at an intensity that creates or threatens to create nuisance conditions.
8. As a means of discerning compliance with Discharge Specification D.7, the dissolved oxygen (DO) content in the upper one foot of any wastewater treatment or storage pond shall not be less than 1.0 mg/L for three consecutive sampling events. If the DO in any single pond is below 1.0 mg/L for three consecutive sampling events, the Discharger shall report the findings to the Central Valley Water Board in writing within 10 days and shall include a specific plan to resolve the low DO results within 30 days.
9. The Discharger shall operate and maintain all ponds sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. Unless a California-registered civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that less freeboard is adequate, the operating freeboard in any pond shall never be less than two feet (measured vertically from the lowest possible point of overflow). As a means of management and to discern compliance with this requirement, the Discharger shall install and maintain in each pond a permanent staff gauge with calibration marks that clearly show the water level at design capacity and enable determination of available operational freeboard.
10. Wastewater treatment, storage, and disposal ponds or structures shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary inflow and infiltration during the winter while ensuring compliance with all requirements of this Order. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.
11. On or about **1 October** of each year, available capacity shall at least equal the volume necessary to comply with Discharge Specifications D.9 and D.10.
12. All ponds and open containment structures shall be managed to prevent breeding of mosquitoes. Specifically:
 - a. An erosion control program shall be implemented to ensure that small coves and irregularities are not created around the perimeter of the water surface.
 - b. Weeds shall be minimized through control of water depth, harvesting, or herbicides.
 - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.
 - d. The Discharger shall consult and coordinate with the local Mosquito Abatement District to minimize the potential for mosquito breeding as needed to supplement the above measures.
13. Newly constructed or rehabilitated berms or levees (excluding internal berms that separate ponds or control the flow of water within a pond) shall be designed and constructed under the supervision of a California Registered Civil Engineer.

14. The Discharger shall monitor sludge accumulation in the wastewater treatment/storage ponds at least every five years beginning in 2018, and shall periodically remove sludge as necessary to maintain adequate storage capacity. Specifically, if the estimated volume of sludge in the reservoir exceeds five percent of the permitted reservoir capacity, the Discharger shall complete sludge cleanout within 12 months after the date of the estimate.

E. Groundwater Limitations

Release of waste constituents from any portion of the WWTF shall not cause or contribute to groundwater:

- a. Containing constituent concentrations in excess of the concentrations specified below or natural background quality, whichever is greater:
 - (i) Nitrate as Nitrogen of 10 mg/L.
 - (ii) Total Coliform Organisms of 2.2 MPN/100 mL.
 - (iii) For constituents identified in Title 22, the primary and secondary MCLs quantified therein.
- b. Containing taste or odor-producing constituents, toxic substances, or any other constituent in concentrations that cause nuisance or adversely affect beneficial uses.

F. Recycling Specifications

The following specifications apply to land application areas under the ownership or control of the Discharger.

1. For the purposes of this Order, "land application areas" refers to the discharge areas. Recycled water shall be managed in conformance with the regulations contained in Title 22, Division 4, Chapter 3, CCR.
2. Use of Undisinfected Secondary Recycled Water shall be limited to flood irrigation of fodder, fiber, seed crops not eaten by humans or for grazing of non-milking cattle and shall comply with the provisions of Title 22.
3. All reclamation equipment, pumps, piping, valves, and outlets shall be appropriately marked to differentiate them from potable facilities. All reclamation distribution system piping shall be purple or adequately wrapped with 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 Title 22, CCR, 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.

5. Public contact with recycled water shall be controlled using signs and/or other appropriate means. All areas where recycled water is used that are accessible to the public shall be posted with signs that are visible to the public, in a size no less than 4 inches high by 8 inches wide, that include the following wording: "RECYCLED WATER – DO NOT DRINK, AGUA DE DESPERDICIO RECLAMADA – NO TOME" Each sign shall display an international symbol similar to that shown in [Attachment C](#) which is attached hereto and made part of this Order by reference.
6. Recycled water shall not be allowed to escape from the authorized land application 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. Potable water mains shall be separated by a clear horizontal distance of at least four feet from, and a clear vertical distance of at least one foot above, any parallel pipeline conveying disinfected tertiary recycled water, and shall be separated by a clear vertical distance of at least one foot above any crossing pipeline conveying disinfected tertiary recycled water, except as may be otherwise allowed or approved under DPH regulatory requirements or DPH design guidance documents. All separation distances shall be measured from the nearest outside edge of each pipe. Vertical separation distances shall apply wherever the horizontal separation distance is eleven feet or less.
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 the DPH, a reduced pressure principle backflow device.
12. Application of recycled water to recycled water land application areas shall not exceed the nitrogen or hydraulic loading reasonably necessary to satisfy the nitrogen or water uptake needs of the land application area considering the plant, soil, climate, and irrigation management system (i.e., generally accepted agronomic rates).
13. Areas irrigated with recycled water shall be managed to prevent breeding of mosquitoes. More specifically:
 - a. All applied irrigation water must infiltrate completely within 48 hours.
 - b. Ditches receiving irrigation runoff not serving as wildlife habitat should be maintained free of emergent, marginal, and floating vegetation.

- c. Low-pressure and un-pressurized pipelines and ditches, which are accessible to mosquitoes, shall not be used to store recycled water.
14. Excessive irrigation with recycled water that results in excessive runoff of recycled water, or continued irrigation of recycled water during periods of rain is prohibited. Overspray or runoff associated with normal sprinkler use shall be minimized.
15. The Discharger shall maintain the following setback distances from areas where Secondary Recycled Water is impounded or irrigated with:
- | <u>Setback Distance (feet)</u> | <u>To</u> |
|--------------------------------|------------------|
| 15 | Property Line |
| 20 | Public Roads |
| 50 | Drainage courses |
| 100 | Irrigation wells |
| 150 | Domestic wells |
16. Any irrigation runoff shall be confined to the recycled water land application area, and shall not enter any surface water drainage course or storm water drainage system unless the runoff does not pose a public health threat and is authorized by the regulatory agency.

G. Solids Disposal Specifications

Sludge, as used 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 screenings generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the WWTF. Biosolids refers to sludge that has been treated and tested and shown to be capable of being beneficially used as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities pursuant to federal and state regulations.

1. Sludge and solid waste shall be removed from screens, sumps, ponds, and clarifiers as needed to ensure optimal plant operation.
2. Any handling and storage of residual sludge, solid waste, and biosolids at the WWTF shall be temporary (i.e., no longer than six months) 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 the groundwater limitations of this Order.
3. Residual sludge, biosolids, and solid waste shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27, division 2. Removal for further treatment, disposal, or reuse at disposal sites (i.e., landfills, WWTFs, composting sites, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a Regional Water Board will satisfy this specification.

4. Use of biosolids as a soil amendment shall comply with valid waste discharge requirements issued by a regional water board or the State Water Board except in cases where a local (e.g., county) program has been authorized by a regional water board. In most cases, this will mean the General Biosolids Order (State Water Resources Control Board Water Quality Order 2004-0012-DWQ, "General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities"). For a biosolids use project to be covered by Order 2004-0012-DWQ, the Discharger must file a complete Notice of Intent and receive a Notice of Applicability for each project.
5. Use and disposal of biosolids shall comply with the self-implementing federal regulations of 40 Code of Federal Regulations part 503, which are subject to enforcement by the U.S. EPA, not the Central Valley Water Board. If during the life of this Order, the State accepts primacy for implementation of part 503, the Central Valley Water Board may also initiate enforcement where appropriate.
6. Any proposed change in sludge use or disposal practice shall be reported in writing to the Executive Officer at least 90 days in advance of the change.

H. Provisions

1. The Discharger shall comply with MRP R5-2018-____, which is part of this Order, and any revisions thereto as adopted by the Central Valley Water Board or approved by the Executive Officer.
2. The Discharger shall comply with the Standard Provisions and Reporting Requirements for Waste Discharge Requirements, dated 1 March 1991 (Standard Provisions), which are attached hereto and made part of this Order.
3. A copy of this Order, including its MRP, Information Sheet, Attachments, and Standard Provisions, shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.
4. The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also include adequate laboratory controls and appropriate quality assurance procedures. This Provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by the Discharger when the operation is necessary to achieve compliance with the conditions of this Order.
5. In accordance with California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports and work plans 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 a person registered to practice in California pursuant to California Business and Professions Code Sections 6735, 7835, and 7835.1. As required by these laws, completed technical reports and work plans 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. All reports required herein are required pursuant to Water Code section 13267.

6. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports. On or before each report due date, the Discharger shall submit the specified document to the Central Valley Water Board or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, then the Discharger shall state the reasons for such noncompliance and provide an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board in writing when it returns to compliance with the time schedule. Violations may result in enforcement action, including Central Valley Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
7. In the event of any change in control or ownership of the WWTF, the Discharger must 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.
8. To assume operation as Discharger 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, the name and 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 paragraph of Standard Provision B.3 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. If approved by the Executive Officer, the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.
9. The Discharger shall submit the technical reports and work plans required by this Order for consideration by the Executive Officer, and incorporate comments the Executive Officer may have in a timely manner, as appropriate. Unless expressly stated otherwise in this Order, the Discharger shall proceed with all work required by the foregoing provisions by the due dates specified.
10. The Discharger shall use the best practicable cost-effective control technique(s) including proper operation and maintenance, to comply with this Order.
11. As described in the Standard Provisions, the Discharger shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.

12. The Discharger shall provide certified wastewater treatment plant operators in accordance with CCR, Title 23, division 3, chapter 26.
13. The Discharger shall comply with Effluent Limitation C.4 and Discharge Specification D.2 in accordance with the following compliance schedule:

<u>Task</u>	<u>Task Description</u>	<u>Due date</u>
a.	Submit a work plan and implementation schedule to conduct an effluent nitrogen evaluation. The evaluation shall be designed to determine the effluent nitrogen level to ensure compliance with Groundwater Limitations of this Order and provide appropriate supporting technical evidence. The plan and implementation schedule shall be subject to the approval of the Executive Officer.	By (1 year from the adoption of this order)
b.	Implement the approved work plan and time schedule required by Task a.	By (18 months from the adoption of this order)
c.	Submit the results of the effluent nitrogen evaluation with either: (i) Appropriate technical information supporting a demonstration that discharge at existing total nitrogen concentrations will not cause or continue to contribute to violations of the Groundwater Limitations of this Order. Upon Executive Officer written concurrence with the demonstration, this provision shall be considered satisfied and the Order will be reopened to consider, as appropriate, modification or removal of Effluent Limitation C.4. Or (ii) A work plan and time schedule describing the measures the County will implement to meet a total nitrogen effluent limit of 10 mg/L as proposed in the RWD. The work plan and time schedule are subject to Executive Officer approval	By (2 years from the adoption of this order)

14. The Discharger shall submit a Title 22 Engineering Report for the discharge of effluent to the land application area in accordance with the following compliance schedule:

<u>Task</u>	<u>Task Description</u>	<u>Due date</u>
a.	Submit a Title 22 Engineering Report and implementation schedule to the Central Valley Water Board and the Division of Drinking Water pursuant to Title 22 for water recycling to about a 90-acre land application area to grow fodder, fiber, and seed crops not intended for human consumption. The Report and implementation schedule shall be subject to the approval of the Executive Officer.	By (12 months from the adoption of this order).
b.	Begin recycling treated effluent in accordance with Executive Officer and DDW approved Title 22 Engineering Report.	By (2 years from the adoption of this order)

15. Following completion/implementation of Provision H.14, the Discharger shall destroy the existing seepage pits in accordance with the following compliance schedule:

<u>Task</u>	<u>Task Description</u>	<u>Due date</u>
a.	Submit a work plan and implementation schedule to close/destroy the existing seepage pits and evaluate the soil conditions beneath the seepage pits. The plan and implementation schedule shall be subject to the approval of the Executive Officer.	By (6 months from the completion of Provision H.14)
b.	Implement the approved work plan and time schedule required by Task a.	By (12 months from the completion of Provision H.14)

16. At least **180 days** prior to any sludge removal and disposal, the Discharger shall submit a *Sludge Cleanout Plan*. The plan shall include a detailed plan for sludge removal, drying, and disposal. The plan shall specifically describe the phasing of the project, measures to be used to control runoff or percolate from the sludge as it is drying, and a schedule that shows how all dried biosolids will be removed from the site prior to the onset of the rainy season (**1 October**). If the Discharger proposes to land apply biosolids at the effluent recycling site, the report shall include a Report of Waste Discharge and filing fee to apply for separate waste discharge requirements.
17. 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."
18. The Discharger shall continue to maintain coverage under, and comply with *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems*, Water Quality Order 2006-0003-DWQ and the Revised General WDRs Monitoring and Reporting Program Order 2013-0058-EXEC, and any subsequent revisions thereto as adopted by the State Water Board. Water Quality Order 2006-0003 and Order 2013-0058-EXEC requires the Discharger to notify the Central Valley Water Board and take remedial action upon the reduction, loss, or failure of the sanitary sewer system resulting in a sanitary sewer overflow.
19. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order may result in the assessment of Administrative Civil Liability of up to \$10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California

Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that the foregoing is a full true, and correct copy of an Order adopted by the California Regional Water Quality Control Board on

PAMELA C. CREEDON, Executive Officer

Order Attachments:

- Monitoring and Reporting Program
- A. Site Vicinity Map
- B. Site Map
- C. Recycled Water Signage Information Sheet
- Standard Provisions (1 March 1991)