

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2016-XXXX

WASTE DISCHARGE REQUIREMENTS

FOR
CALIFORNIA DEPARTMENT OF CORRECTIONS AND
CALIFORNIA PRISON INDUSTRY AUTHORITY
CORCORAN STATE PRISON AND
CALIFORNIA SUBSTANCE ABUSE TREATMENT FACILITY
WASTEWATER TREATMENT FACILITY AND DAIRY
KINGS COUNTY

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

1. In September 2004, the State of California Department of Corrections (CDC or Discharger) submitted a technical report *Wastewater Treatment Plant Improvements* to propose improvements (installation of a mechanical bar screens and the paving of eight sludge drying beds, and upgrade of the treatment system pumps) to the existing wastewater treatment facility (WWTF) serving the Corcoran State Prison (Prison) and the California Substance Abuse Treatment Facility (Treatment Facility).
2. The Prison is at 4001 King Avenue south/southeast of the community of Corcoran, as shown on Attachment A, which is attached hereto and made part of this Order by reference. The Treatment Facility is at 900 Quebec Avenue and is south of the Prison. The WWTF is west of both the Prison and the Treatment Facility and secondary treated wastewater from the WWTF is discharged to a land application area comprised of about 331 acres of farmland that are directly south of the Prison and Treatment Facility, as shown on Attachment B, which is attached hereto and made part of this Order by reference.
3. The California Prison Industry Authority (PIA or Discharger) operates a dairy that provides milk for other California Department of Correction facilities. The Dairy is at the northeast corner of the Prison property as shown on Attachment B. Dairy wastewater is stored in ponds, and discharged to the same 331-acre land application area used by the WWTF. In addition, under an agreement between the California Department of Corrections and the City of Corcoran, the WWTF also accepts up to 335 acre-feet annually of secondary treated wastewater from the nearby City of Corcoran.
4. The California Department of Corrections owns and operates the Prison and Treatment Facility that are serviced by the WWTF, and the PIA owns and operates the Dairy and both are responsible for compliance with these Waste Discharge Requirements (WDRs).
5. Both the Prison and the Treatment Facility are primarily in Section 36, T21S, R22E, Mount Diablo Baseline and Meridian (MDB&M), with the western portion of the

Treatment Facility also within the southeastern quarter of Section 35, T21S, R22E. The WWTF is to the west of the Prison in the approximate eastern half of Section 35, T21S, R22E. The Dairy is in the approximate northeastern quarter of Section 36, T21S, R22E. The land application area is in the northern half of Section 1, T22S, R22E.

6. The WWTF was commissioned in 1988 to serve the Prison and contained at the time a headworks, two clarifiers, one oxidation ditch, four unlined sludge drying beds, two effluent storage ponds, and a 268-acre land application area. The WWTF was expanded in 1997, with the construction of the Treatment Facility. The expansion activities included the construction of a second headworks, a third clarifier, and second oxidation ditch, four more unlined sludge drying beds, and increasing the land application area to the current 331 acres. The eight sludge drying beds were paved in 2004.
7. WDRs Order 95-267, adopted by the Central Valley Water Board on 8 December 1995, prescribes requirements for the WWTF and the Dairy. While the WWTF continues to operate within the parameters of Order 95-267, the Order is outdated and is not reflective of the current configuration and/or operations of the WWTF and the discharge of wastewaters to the current land application area. Therefore, Order 95-267 will be rescinded and replaced with this Order.

Existing WWTF and Discharge

8. The WWTF contains two separate headworks with self-cleaning bar screens, two oxidation ditches, three secondary clarifiers, eight paved sludge drying beds, three wastewater storage ponds, and a 331-acre land application area. Solids removed during the screening process are disposed of at an offsite landfill. The WWTF provides undisinfected secondary treatment of the wastewater.
9. WDR order 95-267 initially approved a discharge of up to 1.2 million gallons per day (mgd) from the WWTF, but allowed for an increase to 1.9 mgd following facility expansion. The discharge from the WWTF, the Dairy, and additional effluent received from the City of Corcoran have a combined flow limit of 2.01 mgd.
10. The Discharger measures the flow to the WWTF continuously and the flows since January 2014 through June 2015 are summarized in Table 1. The first value shown is the average with the range of the recorded flows shown in parentheses.

Table 1 - WWTF Flow Data

<u>Date</u>	<u>Monthly Flow</u> (millions of gallons per month [mgm])	<u>Daily Flow</u> (million gallons per day [mgd])
2014	47.5 (42.9 – 55.3)	1.58 (1.43 - 1.78)
2015	41.2 (36.6 – 43.3)	1.35 (1.28 – 1.44)
Average since 2014	44.5	1.47

11. Effluent results since January 2013 through November 2015 (35 sampling events) are summarized in Table 2.

Table 2 - WWTF Effluent Results

<u>Year</u>	<u>Electrical</u> <u>Conductivity</u> <u>umhos/cm¹</u>	<u>Biochemical</u> <u>Oxygen</u> <u>Demand</u> <u>mg/L²</u>	<u>Total</u> <u>Suspended</u> <u>Solids</u> <u>mg/L²</u>	<u>Settleable</u> <u>Solids</u> <u>mg/L²</u>	<u>pH</u> <u>mg/L²</u>	<u>Nitrate</u> <u>mg/L²</u>
2013	604	3.9	6.6	0.1	7.7	8.9
2014	594	39	77	13.8	7.6	0.6
2015	689	142	285	1.4	7.2	0.1
Average	614	47	77	5.8	7.6	2.5
<u>Effluent Limits</u>	500 + source	40/80	40/80	0.2/0.5	6-5 to 9.5	'---

1. umhos/cm = micromhos per centimeter.

2. mg/L = milligrams per liter;

12. Typically, the WWTF meets all of the effluent limits as illustrated by the 2013 results where there are no exceedances observed. However, biochemical oxygen demand (BOD), total suspended solids (TSS), and suspended solids (SS) have been exceeding the applicable limits since mid-2014 due to a failure of a Return Activated Sludge (RAS) pump. The Discharger received a new RAS pump in September 2015 and has difficulties in getting the correct parts installed. With the replacement of the RAS pump, it is anticipated that the BOD, TSS, and SS values will return the previous levels and meet the effluent limits for BOD, TSS, and SS. The electrical conductivity (EC) of the source water ranges from about 300 to 400 micromhos per centimeter (umhos/cm), and the result is the discharge is lower than the current source plus 500 umhos/cm limit.
13. Monitoring and Reporting Program 95-267 requires the analysis of the six constituents in Table 2 as well as recording the flow or discharge from the WWTF. Total nitrogen for loading purposes cannot be calculated using only nitrate as nitrate results. Central Valley Water Board staff requested the effluent be sampled for total Kjeldahl nitrogen (TKN) and nitrate as nitrogen and the Discharge provided the results in August 2015.

Total nitrogen in the effluent was 22 milligrams per liter (mg/L). Using the average flow in 2015 of 1.34 mgd, the nitrogen load was about 205 lbs/ac/yr.

Existing Dairy and Discharge

14. The dairy tracks its discharge to the land application area. In 2014, the Dairy reported that 36.1 million gallons or 98,797 gpd of dairy wastewater was discharged to six individual fields within the land application area, as shown on Attachment C, which is attached hereto and made part of this Order by reference. The six fields identified are identified as C1 through C6 as listed in Table 3. Fields C1 and C4 were double cropped combined with the flow from the WWTF in 2014, the combined flow from the Dairy and the WWTF in 2014 was 1.7 mgd, well within the 2.01 mgd limit.

Table 3 - Dairy Nitrogen Loading Results

<u>Land Application Area</u>	<u>Acres</u>	<u>Crop</u>	<u>Pounds of Nitrogen Applied</u>	<u>Pounds per acre per year (lbs/ac/yr¹)</u>
C1 ²	54	Wheat	5,642	104
C1 ²	55	Corn	9,722	181
C2	55	Alfalfa	5,746	104
C3	52	Alfalfa	4,705	90
C4 ²	55	Wheat	5,746	104
C4 ²	55	Corn	9,953	181
C5	58	Corn	11,308	194
C6	57	Corn	11,113	194

1. lbs/ac/yr = pounds per acre per year.

2. Land Application Area fields C1 and C4 were double cropped in 2014

15. The 2014 Annual Dairy Report indicated loading from the discharge of dairy wastewater and the application of manure to the individual parcels ranged from 90 to 194 pounds per acre per year (lbs/ac/yr). For fields C2 and C4 cropped with alfalfa, the nitrogen utilized by the crop (~480 lbs/ac/yr) is greater than the combined nitrogen load from the WWTF (about 205 lbs/ac/yr) and the Dairy (90 to 104 lbs/ac/yr). However, for parcels C1 and C4 double cropped with wheat and corn, the amount of nitrogen applied (205 lbs/ac/yr from the WWTF, and 285 lbs/ac/yr from the dairy for a total of 490 lbs/ac/yr) exceeds the typical uptake for the crops of corn and wheat combined, which can utilize about 375 lbs/ac/yr. Additionally, the nitrogen load to fields C5 and C6 cropped only in corn (~400 lbs/ac/yr) also exceeds the potential nitrogen uptake of 250 lbs/ac/yr. This Order contains Provision H.15 that requires the Discharger to prepare a Nutrient Management Plan and Land Application Area Specification F.14 that requires nitrogen be applied to the land application areas at agronomic rates. The application of wastewater and fertilizers at reasonable agronomic rates for nitrogen will preclude further degradation/pollution of groundwater for nitrate as nitrogen.

Sanitary System Overflow

16. The sanitary sewer system collects wastewater and consists of sewer pipes, manholes, and/or other conveyance system elements that direct raw sewage to the treatment facility. A “sanitary sewer overflow” (SSO) is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the treatment facility. Temporary storage and conveyance facilities (such as wet wells, regulated impoundments, tanks, highlines, etc.) may be part of a sanitary sewer system and discharges to these facilities are not considered SSOs, provided that the waste is fully contained within these temporary storage/conveyance facilities.
17. On 2 May 2006, the State Water Resources Control Board (hereafter State Water Board) adopted a General Sanitary Sewer System Order (State Water Resources Control Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems) (the “General Order”). The General Order requires that all public agencies that own or operate sanitary sewer systems greater than one mile in length comply with the General Order. The Discharger’s collection system is greater than one mile in length. The Discharger has applied for, and is covered by, the General Order.

Site-Specific Conditions

18. The Discharger receives its water supply from the City of Corcoran groundwater supply wells. Results of sampling from 2013 through 2015 are shown in Table 4. Drinking water limits of maximum contaminant levels (MCL) for nitrate (as nitrate) is a Primary MCL and the value shown is the limit. The MCLs shown for the remaining constituents are Secondary MCLs developed as limits for the taste and odor (aesthetics) of drinking water. The two values listed display the “Consumer Acceptance Contaminant Level Ranges.” The first value listed is the “Recommended” Secondary MCL and the second value listed is the “Upper” Secondary MCL.

Table 4 - Supply Water Results

Date Sampled	Electrical Conductivity umhos/cm¹	Total Dissolved Solids mg/L²	Nitrate mg/L²	Chloride mg/L²	Sulfate mg/L²	Sodium mg/L²
Feb-13	354	192	21.2	27.5	34.1	62.6
Oct-13	389	230	11.2	31	20	60
Jun-14	362	200	7.3	30	27	67
Sep-15	420	250	2.7	30	27	67
MCLs	900/1600	500/900	45	250/500	250/500	

1. umhos/cm = micromhos per centimeter.
 2. mg/L = milligram per liter.

19. The geography at the Corcoran State Prison and the nearby site vicinity is generally flat with a slight drop to the southwest. The ground elevation at the WWTF and the land application area is about 200 feet above mean sea level.
20. According to the Federal Emergency Management Agency map number 06031C0525C; the southwest corner of the WWTF and the western half of the land application area are within a 100-year flood plain. However, levees have been constructed by the Army Corps of Engineers along Cross Creek and the Tule River to protect the community of Corcoran, and by default the Prison as well, from flooding.
21. According to the Web Soil Survey published by the United States Department of Agriculture Natural Resources Conservation Service, soils in the land application areas consist primarily of the Homeland fine sandy loam (~45 percent), Armona loam (~29 percent) and the Grangeville fine sandy loam (~9 percent). The Homeland fine sandy loam and the Armona loam are described as poorly drained, while the Grangeville fine sandy loam is described as "somewhat poorly drained." The irrigated capability of the Homeland fine sandy loam and the Armona loam is listed as a Class 3 soil with a "w" designation. The Class 3 designation indicates the soil has "severe limitations that reduce the choice of plants or that require special conservation practices or both," and the w designation indicates that "water in or on the soil interferes with plant growth or cultivation." The irrigated capability of the Grangeville fine sandy loam is listed as 2w, with the Class 2 designation indicating the soils have moderate limitations that restrict the choice of plants or require moderate conservation practices. The Homeland fine sandy loam is further described as slightly to strongly saline, the Armona loam as moderately to strongly saline, and the Grangeville fine sandy loam as slightly to moderately saline.
22. The WWTF and land application areas are in an arid climate characterized by hot dry summers and mild winters. The rainy season generally extends from November through April. Occasional rains occur during the spring and fall months, but summer months are dry. Based on publications from the Department of Water Resources and the Western Regional Climate Center, the average annual rainfall for the Hanford area is about 9.5 inches, with a 100-year-return-period wet year rainfall of about 20.65 inches. The mean reference evapotranspiration rate (ET_o) is about 65.6 inches per year for nearby Stratford.
23. As illustrated on both Attachments A and B, the land use in the vicinity of the Prison and the Treatment Facility is primarily agricultural, with the southern edge of the community of Corcoran about 1.5 miles northwest of the Prison and the Treatment Facility. Several confined animal units are present within five miles of the Prison, and the J.G. Boswell Company has a tomato processing facility a quarter of a mile west of the Prison and Treatment Facility.

Groundwater Conditions

24. Regional groundwater is contained generally in two aquifers, the Lower Confined Aquifer and the Upper Unconfined Aquifer. The two aquifers are separated by a confining layer (Corcoran Clay or E Clay) present beneath the land application area at about 450 to 500 feet bgs and is reported to be 80 to 100 feet thick in this area. Although hydraulic continuity between aquifers is restricted, some agricultural wells within the vicinity are likely screened within the upper and lower aquifers to maximize well production. The potential exists for hydraulic continuity between the two aquifers resulting in lower quality water from the uppermost aquifer to migrate into the higher quality aquifers just above and below the E-clay.

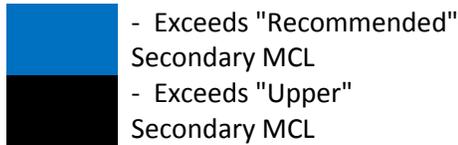
25. The depth to first encountered groundwater in the vicinity of the Prison and the Treatment Facility is shallow, historically ranging from the ground surface (zero) to 20 feet below the ground surface (bgs). The general flow direction of the shallow groundwater is to the west/southwest. To protect crops grown in the area, much of the farmlands have tile drains to keep shallow groundwater from the root zones of the intended crops. Tile drains underlie the land application area at depth of seven to nine feet bgs. The drainage water is pumped to a canal, owned and operated by the J.G. Boswell Company and the Tulare Lake Drainage District.

26. The Discharger has a nine well groundwater monitoring network in place around the Dairy. However, wells MW-1 through MW-4, shallow wells installed to depths of just 15 feet bgs, have been dry since 2007. Five additional wells (MW-5 through MW-9) were installed a depths ranging from 26 to 31 feet bgs in 2007 and first sampled in January 2008. MW-5, MW-6, and MW-9 were installed west and downgradient of the dairy ponds, while MW-7 and MW-8 were installed as upgradient groundwater monitoring wells. The results since 2008 are summarized in Table 5.

Table 5 - On-Site Shallow Groundwater Results

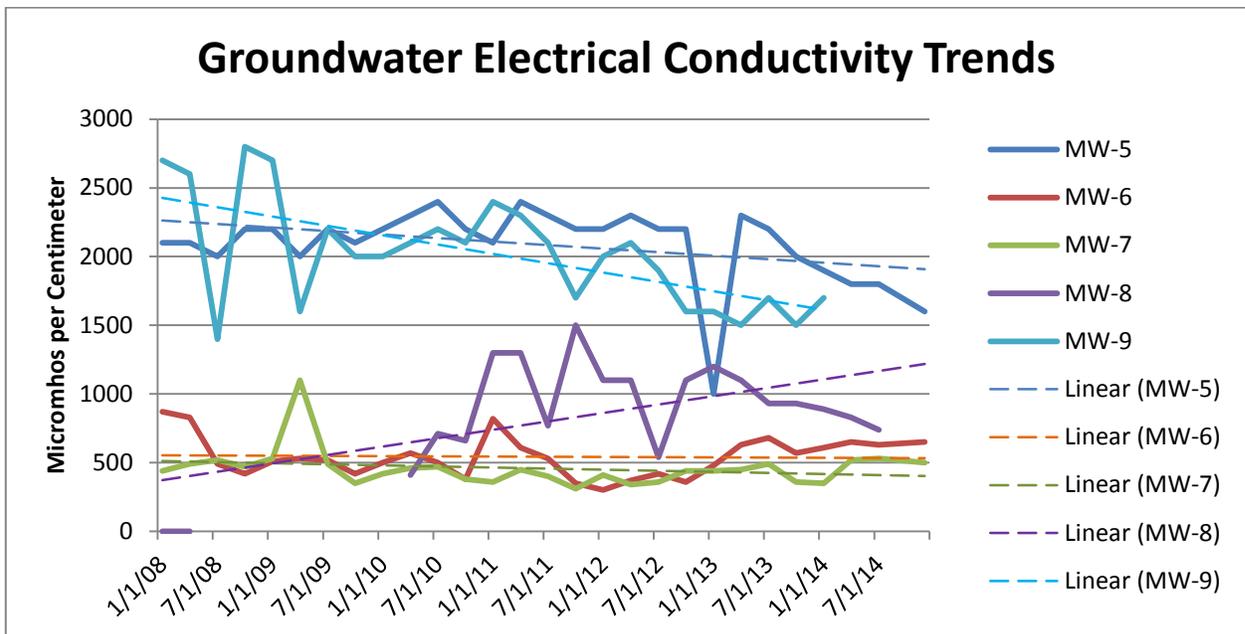
4/17/14	67.0	8.00	1,100	37.0	37.0	42.0	76	780
7/17/14	75.0	7.80	1,100	39.0	41.0	37.0	75	780
11/6/14	79.3	7.60	1,000	29.0	29.0	25.0	76	730
2/17/15	77.7	7.80	950	25.0	25.0	25.0	63	630
5/4/15	80.0	7.90	980	24.0	24.0	21.0	65	660
8/14/15	84.0	7.80	910	23.0	23.0	20.0	61	630
11/6/15	86.3	7.70	930	24.0	24.0	21.0	60	730
Averages	71.1	7.7	1008.3	31.5	32.0	35.8	75.4	680.4
since	79.9	7.9	990.0	31.3	32.0	31.3	70.8	686.7

2013



1. mg/L = milligrams per liter.
2. umhos/cm = micromhos per centimeter.
3. s.u. = standard pH units.
4. nd = not detected above the laboratories detection reporting limit.

27. The results indicate EC and TDS are in excess of the Secondary "Upper" maximum contaminant levels (MCLs) in samples from downgradient MW-5 and MW-9, but EC and TDS also exceeded the "Recommended" MCL for both constituents in upgradient MW-8. The lowest EC, TDS, and total nitrogen results are observed in downgradient MW-6 as well as in upgradient MW-7, both set along the northern side of the dairy. The wells are adjacent the City of Corcoran WWTF ponds, but the average EC of the City of Corcoran effluent is about 800 umhos/cm, much higher than the EC results reported for MW-6 and MW-7. The two wells appear to demonstrate the variability in groundwater quality observed in the area, which is further demonstrated when one reviews the regional groundwater quality in the area.
28. Groundwater data from 2008 through 2014 shows the EC concentrations have remained relatively stable in all five of the wells as shown on the following graph. With the exception of MW-8 (an upgradient well), the data indicate decreasing EC trends as shown below.



29. Regional groundwater results indicate poor water quality of the shallow or first encountered groundwater. The J.G. Boswell Company operates a tomato processing facility one quarter mile to the west at the intersection of 6th and Paris Avenues and has a 540-acre land application area one quarter mile west and downgradient of the WWTF (Attachment B). The J.G. Boswell discharge is regulated by WDRs R5-2008-0015 and in 2007 J.G. Boswell collected groundwater samples from five soil borings and from the tile drain system underlying the J.G. Boswell land application area. The samples were collected prior to any tomato wastewater being discharged to the 540-acre land application area. The findings of that shallow groundwater investigation are summarized in Table 6.

Table 6 - J.G. Boswell, 2007 Shallow Groundwater Results

<u>Sample No.</u>	<u>pH su¹</u>	<u>Electrical Conductivity umhos/cm²</u>	<u>Total Dissolved Solids mg/L³</u>	<u>Total Nitrogen mg/L³</u>	<u>Sulfate mg/L³</u>	<u>Chloride mg/L³</u>	<u>Sodium mg/L³</u>
No. 1	7.5	1,041	883	10	330	16.9	38
No. 2	8.0	7,780	5,195	23.7	1,909	769	1,341
No. 3	7.5	2,732	2,123	3.1	967	88.2	252
No. 4	7.9	1,840	1,990	6.9	418	242	252
No. 5	7.7	3,754	3,043	18.6	1,599	202	252
Tile Drain	7.9	3,628	2,078	0.5	1,038	319	352

1. s.u. = Standard pH units.
2. umhos/cm = micromhos per centimeter.
3. mg/L = milligrams per liter.

30. The results demonstrate the poor groundwater quality in the region and show a wide range of values for each constituent. Additional regional groundwater quality data can be found on the Water Quality Portal web site, a cooperative service provided by the United States Geological Survey (USGS), the Environmental Protection Agency, and the National Water Quality Monitoring Council. A review of the USGS files indicates 13 wells are present within a five-mile radius of the land application area, five of which are within three miles of the Prison and four of which are shallow groundwater monitoring wells with well depths from about 19 to 22 feet bgs. The results of the USGS wells within three miles of the land application area are shown in Table 7.

Table 7 - USGS Regional Groundwater Data

<u>Well ID</u>	<u>Date</u>	<u>Electrical Conductivity umhos/c</u>	<u>Total Dissolved Solids mg/L²</u>	<u>Sulfate mg/L²</u>	<u>Nitrate as Nitrogen mg/L²</u>
35593811934160	1989	3,680	2,190	300	nd ³

1

Well Depth = 19.7

feet					
36011511934150	1989	1,500	950	220	nd ³
1					
Well Depth = 20.6					
feet					
36011811936240	1989	2,670	1,900	920	nd ³
1					
Well Depth = 22.8					
feet					
36044211934170	1989	1,340	846	150	7.45
1					
Well Depth = 21.2					
feet					
36050211935100	1958	1,110	616	nd ³	0.6
1					
Well Depth = 180 feet					

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

31. The results show that EC and TDS in shallow groundwater are elevated and similar to but even slightly higher than these observed in wells of similar depth at the Prison Dairy. The 1958 result from USGS well 360502119351001 is from a deeper well (180 feet as compared to around 25 feet), but the results were included to show that the underlying groundwater in 1958 exceeded the Secondary MCLs for EC and TDS. The results of the data from the nearby USGS wells and the shallow groundwater data from the J.G. Boswell site suggest that regional groundwater quality is of poor quality and the results in the Prisons groundwater monitoring wells around the dairy are similar to and lower than those observed in the site vicinity.

Basin Plan, Beneficial Uses, and Regulatory Considerations

32. *The Water Quality Control Plan for the Tulare Lake Basin, Second Edition, revised January 2015* (the "Basin Plan") designates beneficial uses, establishes narrative and numerical water quality objectives, contains implementation plans and policies for protecting all waters of the Basin, and incorporates, by reference, plans and policies of the State of California Water Resources Control Board. In accordance with Water Code section 13263(a), these waste discharge requirements implement the Basin Plan.
33. Surface drainage is to the south/southwest towards the Tule River, a Valley Floor Water. The WWTF and land application areas lie within the South Valley Floor Hydrologic Unit, specifically the Lake Sump Hydrologic Area (558.30). The Basin Plan designates the following beneficial uses for Valley Floor Waters: agricultural supply, industrial process supply, industrial service supply, water contact recreation, non-contact water recreation, warm freshwater habitat, wildlife habitat, rare and endangered species habitat, and groundwater recharge.

34. The WWTF, dairy, and land application areas are in Detailed Analysis Unit 241 within the Tulare Lake 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.
35. Shallow groundwater quality underlying and in the vicinity of the Prison and the Dairy is highly variable as discussed in the previous groundwater section. While the Tulare Lake Basin Plan designates the beneficial uses of groundwater in the region in part as municipal and domestic supply, the WWTF and Dairy are adjacent and within known areas of shallow perched groundwater with high EC and TDS values. A 2001 Department of Water Resources (DWR) map for the Lemoore/Corcoran area shows EC values for the shallow groundwater of the area. The current land application area is in an area shown with EC values up to 2,000 umhos/cm and areas about a mile west of the Dairy has EC values ranging from 4,000 to 10,000 umhos/cm. The groundwater quality presented on the DWR maps correlates with the results of the shallow groundwater monitoring wells that are present around the Dairy ponds. This indicates that background groundwater quality is poor and that the groundwater quality observed in the Dairy monitoring wells is similar to if not better than the results observed in nearby regional groundwater monitoring wells.
36. 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.
37. 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 establishes several salt management requirements, including:
 - a. The incremental increase in salts from use and treatment must be controlled to the extent possible. The maximum electrical conductivity (EC) in the discharge shall not exceed the EC of the source water plus 500 umhos/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 umhos/cm, a chloride content of 175 mg/L, or a boron content of 1.0 mg/L.
38. The Basin Plan includes a water quality objective for chemical constituents that, at a minimum, require waters designated as MUN to meet the State drinking water MCLs specified in Title 22 of the California Code of Regulations. The Basin Plan recognizes that the Central Valley Water Board may apply limits more stringent than MCLs to

ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.

39. 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.
40. 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.
41. 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 umhos/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 umhos/cm if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop.
42. Title 22 is discussed in Findings 23 and 24 of WDRs Order 95-267 and indicates a Title 22 Report was not prepared for the project. Rather Finding 24 of Order 95-267 indicates Central Valley Water Board staff consulted with the Department of Health Services (now Division of Drinking Water), Kings County Health Department, and the Mosquito Abatement District, and their recommendations were "considered" for the use of reclaimed water. This Order contains Provision H.17 that requires the Dischargers to submit a Title 22 Report for the recycling of wastewater to the land application areas or to demonstrate that the current practices comply with the requirements of Title 22.
43. The Basin Plan encourages the land application of wastewater and identifies crop irrigation as a land application option where the opportunity exists to replace an existing use or proposed use of fresh water with recycled water.
44. 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. Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) is a collaborative basin planning effort aimed at developing and implementing a comprehensive salinity and nitrate management program.

Antidegradation Analysis

45. State Water Resources Control Board Resolution 68-16 ("Policy with Respect to Maintaining High Quality Waters of the State") (hereafter Resolution 68-16) prohibits degradation of groundwater unless it has been shown that:
 - a. The degradation does not result in water quality less than that prescribed in State and regional policies, including violation of one or more water quality objectives,
 - b. The degradation will not unreasonably affect present and anticipated future beneficial uses,
 - c. The Discharger employs best practicable treatment or control (BPTC) to minimize degradation, and
 - d. The degradation is consistent with the maximum benefit to the people of the State.
46. The WWTF was upgraded in 1997 and 2004 to improve effluent quality and treatment capacity, enlarge the land application area, and improve the sludge drying beds. Source water is from City of Corcoran groundwater wells that are installed beneath the Corcoran Clay and is of good water quality.
47. The Discharger has been monitoring groundwater quality around the dairy ponds at the site since 1994. While the groundwater EC and TDS results from onsite groundwater wells MW-5, MW-8, and MW-9 routinely exceed Secondary MCLs, the EC and TDS values of first encountered groundwater in the region (Findings 29 through 31) are greater than the EC and TDS of the discharge, and the regional groundwater results are similar to or higher than the groundwater results observed around the Dairy.
48. This Order establishes effluent and groundwater limitations for the WWTF that will not unreasonably threaten present and anticipated beneficial uses or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan.
49. For organics, nutrients, and salts, current groundwater monitoring data from the wells around the Dairy indicate that groundwater quality is similar to or lower than that of first encountered shallow groundwater of the region. The Discharge of wastewater has not caused exceedances of water quality objectives and data back to 1958 indicates poor water quality with respect to organics and salts existed at that time.

For nitrate as nitrogen, current groundwater monitoring data indicates that the operation of the dairy ponds may have contributed to exceedances of the Primary MCL of 10 mg/L in MW-9. This Order contains Provision H.15, that requires the

Discharge to submit a Nutrient Management Plan to manage the nitrogen load to the land application areas and Land Application Specification F.14 that requires nitrogen loading from both the WWTF and the Dairy to the land application areas to be at reasonable agronomic rates.

50. The Discharger provides BPTC of the discharge that incorporates:
 - a. Screening to remove excess solids from the WWTF waste stream.
 - b. Hauling of screened solids offsite for disposal at an approved landfill.
 - c. Two wastewater retention ponds to collect sludge.
 - d. Sludge removal and drying in paved sludge drying beds equipped with underdrains to collect leachate.
 - e. Three secondary clarifiers.
 - f. Two oxidation ditches.
 - g. A 331-acre land application area broken down into six fields. Crops grown and rotated in the individual fields to maximize nutrient uptake.
 - h. Organic loading at rates unlikely to cause unacceptable groundwater degradation.
 - i. Implementation of a Waste Management Plan for the dairy production area.
 - j. Implementation of a Nutrient Management Plan for the land application areas;
 - k. Visual inspections of all dairy waste storage areas during and after each significant rainfall event.
 - l. Groundwater monitoring well and tile drain monitoring to monitor the potential impact of the discharge on groundwater.

Other Regulatory Considerations

51. 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.
52. 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."

53. Title 27 of the California Code of Regulations (hereafter Title 27) contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste. However, Title 27 exempts certain activities from its provisions. Discharges from the Prison WWTF regulated by this Order are exempt from Title 27 pursuant to provisions that exempt wastewater. Title 27, section 20090 states in part:

(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.

54. The discharge from the Prison WWTF authorized herein is exempt from the requirements of Title 27 in accordance with Title 27, section 20090(b) because:

- a. The Central Valley Water Board is issuing WDRs.
- b. The discharge is in compliance with the Basin Plan, and;
- c. The treated effluent discharged to the ponds and land application areas does not need to be managed as hazardous waste.

55. The State Water Board adopted Order 2014-0057-DWQ (NPDES General Permit CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial dischargers. The wastewater treatment facility has a design capacity of more than 1.0 MGD, but all storm water from the WWTF and Dairy is collected and disposed of in an on-site storm water basin. The Discharger is therefore not required to obtain coverage under NPDES General Permit CAS000001.

56. Water Code section 13267(b) 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

discharging, or who proposes to discharge 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.

57. The technical reports required by this Order and the attached Monitoring and Reporting Program R5-2016-XXXX 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.
58. 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.
59. The action to adopt waste discharge requirements for the existing WWTF and dairy is exempt from the provisions of the California Environmental Quality (CEQA), in accordance with the California Code of Regulations, title 14, section 15301.
60. The Discharger certified a final environmental impact report (EIR) on 12 August 1994 in accordance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). The EIR described the proposed expansion of the WWTF and the relocation of the land application area due to the construction of the Treatment Facility.
61. 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.
62. On 23 April 2009, the Central Valley Water Board adopted Resolution R5-2009-0028, *In Support of Regionalization, Reclamation, Recycling and Conservation for Wastewater Treatment Plant*. Resolution R5-2009-0028 encourages water recycling, water conservation, and regionalization of wastewater treatment facilities. It requires the municipal wastewater treatment agencies to document:
 - i. Efforts to promote new or expanded wastewater recycling opportunities and programs;

- ii. Water conservation measures; and
- iii. Regional wastewater management opportunities and solutions (e.g., regionalization).

The distribution of undisinfected secondary recycled water by the Discharger is consistent with the intent of State Board Resolution 2009-0011 and Central Valley Water Board Resolution R5-2009-0028.

- 63. 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.
- 64. 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.
- 65. 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

- 66. 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.
- 67. 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.
- 68. All comments pertaining to the discharge were heard and considered in a public hearing.

IT IS HEREBY ORDERED that WDRs Order 95-267 is rescinded, and pursuant to Water Code sections 13263 and 13267, the California Department of Corrections, who operates the Prison and the Treatment Facility, and the Prison Industry Authority (Dischargers), who operates the Dairy, their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted hereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Bypass of untreated or partially treated waste is prohibited, except as allowed by Standard Provision E.2 of the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*.
3. Discharge of waste classified as 'hazardous', as defined in the California Code of Regulations, title 23, section 2521(a), is prohibited.
4. Discharge of waste at a location or in a manner different from that described in the Findings is prohibited.
5. Discharge of toxic substances into the wastewater treatment system or land application areas such that biological treatment mechanisms are disrupted is prohibited.
6. All animals shall be prohibited from entering any surface water within the animal confinement area. (Title 27, § 22561.)
7. The disposal of dead animals in any liquid manure or wastewater retention ponds is prohibited. The disposal of dead animals at a dairy facility is prohibited except when federal, state or local officials declare a State of Emergency, and where all other options for disposal have been pursued and failed, and the onsite disposal complies with all state and local policies for disposal of dead animals.¹
8. The use of manure to construct containment structures or to repair, replace, improve, or raise existing containment structures is prohibited.
9. Under this General Order, the expansion of the existing milk cow dairy beyond the level as defined under the term "Expansion" is prohibited. "Expansion" is defined as, but not limited to, any increase in the existing herd size (i.e., by more than 15 percent of the maximum number of mature dairy cows) or an increase in the storage capacity of the retention ponds or acquisition of more acreage for reuse of nutrients from manure or process wastewater in order to accommodate an expansion of the existing herd size. "Expansion" does not include installation or modification of facilities or equipment to achieve compliance with the requirements of this Order so long as the modification or installation is sized to accommodate only the existing herd size.
10. The direct discharge of wastewater into groundwater via backflow through water supply or irrigation supply wells is prohibited.

¹ In an emergency, guidance is provided by the Conditional Waiver of Waste Discharge Requirements for Disaster Related Wastes during a State of Emergency within the Central Valley Order 2013-0026.

B. Effluent Limitations

1. **Effectively immediately (Compliance shall be determined at EFF-001¹ and EFF-002¹)**, effluent flows from the WWTF and the Prison Dairy shall not exceed the following limits:

<u>Flow Measurement</u>	<u>Flow Limit</u>
Average Flow from WWTF ¹	1.9 mgd
Flow from Dairy	0.11 mgd
Average Monthly Flow combined ²	2.01 mgd
<u>Daily Maximum Flow combined</u>	<u>2.7 mgd</u>

¹ As determined by the total flow for the calendar year.

² As determined by the total flow during the calendar month divided by the number of days in that month.

2. The effluent from the WWTF shall not exceed the following:

<u>Constituent</u>	<u>Units</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
BOD	Milligrams per liter	40	80
TSS	Milligrams per liter	40	80
Settleable Solids	Milliliter per liter	0.2	0.5

3. The arithmetic mean of BOD and TSS in effluent samples (EFF-001) collected over a monthly period from the WWTF 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).²
4. As determined by collecting samples from monitoring location EFF-001; the 12-month rolling average EC of the discharge shall not exceed the 12-month rolling average of the EC of the source water plus 500 umhos/cm. When the source water is from more than one source, the EC shall be a flow weighted average of all sources.

C. 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.

1 Monitoring location EFF-001 and EFF-002 are described in Monitoring and Reporting Program R5-2016-XXXX.

3. The discharge shall remain within the permitted waste treatment/containment structures 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 shall be prevented through such means as fences, signs, or acceptable alternatives.
7. 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.
8. All wastewater treatment, storage, and disposal ponds (for both the WWTF and the Dairy) or structures shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary inflow and infiltration during the winter while ensuring continuous 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.
9. In the Tulare Lake Basin, existing milk cow dairies in operation on or before 25 July 1975 shall be protected from inundation or washout from overflow from any stream channel during 20-year peak stream flows and existing milk cow dairies constructed after 25 July 1975 shall be protected from 100-year peak stream flows. Existing milk cow dairies that were expanded after 8 December 1984 shall be protected from 100-year peak stream flows.
10. On or about **1 October** of each year, available capacity shall at least equal the volume necessary to comply with Discharge Specifications C.7 and C.8.

11. All precipitation and surface drainage from outside of the existing milk cow dairy (i.e., "run on") shall be diverted away from any manured areas unless such drainage is fully contained. (Title 27, § 22562(b).)
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. Ponds designated to contain the 25-year, 24-hour storm event runoff must have a depth marker that clearly indicates the minimum capacity necessary to contain the runoff and direct precipitation from a 25-year, 24-hour storm event.
15. Objectionable odors shall not be perceivable beyond the limits of the WWTF at an intensity that creates or threatens to create nuisance conditions.
16. As a means of discerning compliance with Discharge Specification C.12, the dissolved oxygen (DO) content in the upper one foot of any wastewater treatment or storage pond at the WWTF 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 Regional Water Board in writing within 10 days and shall include a specific plan to resolve the low DO results within 30 days.
17. The effluent storage ponds at the WWTF shall not have a pH of less than 6.5 or greater than 9.5.
18. The Discharger shall monitor sludge accumulation in the wastewater treatment/storage ponds at least every five years beginning in 2016, 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.

D. Groundwater Limitations

Release of waste constituents from any treatment, reclamation or storage component associated with the discharge shall not cause or contribute to groundwater:

1. Containing constituent concentrations in excess of the concentrations specified below or natural background quality, whichever is greater:
 - (i) Nitrate (as N) of 10 mg/L.
 - (ii) For constituents identified in Title 22, the MCLs quantified therein.
2. Containing Total Coliform Organisms over any 7-day period equaling or exceeding 2.2 MPN/100 milliliters (mL).

E. Sludge and 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 compliance with this Order.
2. Any handling and storage of residual sludge, solid waste, and biosolids at the WWTF shall be temporary (i.e., no longer than two years) 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 2004-12-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 2004-12-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.

F. Land Application Area Specifications

The following specifications apply to use areas under the ownership or control of the Discharger:

1. Recycled water shall be managed in conformance with the regulations contained in Title 22, Division 4, Chapter 3, CCR.
2. 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.
3. 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.
4. Land application areas that are accessible to the public shall be posted with signs that are visible to the public and no less than four inches high by eight inches wide. Signs shall be placed at all areas of public access and around the perimeter of all land application areas and at above-ground portions of recycled water conveyances to alert the public of the use of recycled water. All signs shall display

an international symbol similar to that shown in Attachment D, which is attached hereto and made a part of this Order by reference, and forms part of this Order, and shall include the following wording.

“RECYCLED WATER – DO NOT DRINK”

“AGUA DE DESPERDICIO RECLAMADA – POR FAVOR NO TOME”

Alternative language will be considered by the Executive Officer if approved by Department of Drinking Water.

5. Title 22 § 60304 (d), in part, allows for the use of undisinfected secondary treated wastewater for the surface irrigation of:
 - fodder and fiber crops and pasture for animals not producing milk for human consumption; and
 - seed crops not eaten by humans.

Crops grown in the land application area are fodder and fiber crops (alfalfa, corn, Sudan grass, etc.) used only for the feeding of cattle. The dairy cattle are not allowed to graze on the land application area.

6. The Discharger shall maintain a setback distance of 150 feet from the edge of the land application area to any domestic supply well.
7. Tailwater runoff and spray of wastewater shall not be discharged outside of the land application areas.
8. Land application of wastewater shall be managed to minimize erosion.
9. 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.
10. Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities.
11. Drinking water fountains shall be protected against contact with recycled water spray, mist, or runoff.
12. Workers shall be educated regarding proper hygienic procedures to ensure personal and public safety.
13. 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.

14. Application of recycled water and dairy wastewater to the land application area shall not exceed the nitrogen or hydraulic loading reasonably necessary to satisfy the nitrogen or water uptake needs of the Use Areas considering the plant, soil, climate, and irrigation management system (i.e., generally accepted agronomic rates).
15. 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.
16. Process wastewater shall not be applied to land application areas during periods when the soil is at or above field moisture capacity unless consistent with a certified Nutrient Management Plan.
17. Land application areas shall be inspected as frequently as necessary to ensure continuous compliance with the requirements of this Order.
18. No physical connection shall exist between recycled wastewater piping (from the WWTF or the Dairy) and any potable water supply system (including domestic wells), or between recycled water piping and any irrigation well that does not have an approved air gap or reduced pressure principle device.
19. There shall be at least a ten-foot horizontal and a one-foot vertical separation between all pipelines transporting recycled water and those transporting domestic supply, and the domestic supply pipeline shall be located above the recycled water pipeline.
20. A public water supply shall not be used as backup or supplemental source of water for a recycled water system unless the connection between the two systems is protected by an air gap separation which complies with the requirements of California Code of Regulations, title 17, sections 7602(a) and 7603(a).
21. Any backflow prevention device installed to protect a public water system shall be inspected and maintained in accordance Title 17, section 7605.
22. Land application of wastes for nutrient recycling from existing milk cow dairies shall not cause the underlying groundwater to contain any waste constituent, degradation product, or any constituent of soil mobilized by the interactions between applied wastes and soil or soil biota, to exceed the groundwater limitations set forth in this Order.

G. Dairy Production Area Specifications

The Production area includes, but is not limited to, barns, milk houses, corrals, milk parlors, manure and feed storage areas, process water conveyances and any other area of the dairy facility that is not the land application area or the ponds.

1. All dirt or unpaved corrals shall be graded to promote drainage. Cow washing areas shall be paved (concrete or equivalent) and sloped to a drain. Water troughs, permanent feed racks, and mangers shall have paved access, and water troughs shall have a drain to carry water away from the corrals.
(Cal Code Regs., title 3, § 646.1.)
2. All milk rooms and milk barns shall be floored with concrete or other low permeability suitable material and be properly drained.
(Cal Code Regs , title 3, §§ 648(c) & 649(a).) All drainage that comes in contact with waste shall be directed to the wastewater retention ponds.
3. All drainage that has contacted feed is a waste and shall be directed to the wastewater retention ponds.
4. All roofs, buildings, and non-manured areas located in the production area of the existing milk cow dairy shall be constructed or otherwise designed so that clean rainwater is diverted away from manured areas and waste containment facilities, unless such drainage is fully contained in the wastewater retention ponds.
(Title 27, § 22562(b).)
5. Roof drainage from barns, milk houses, or shelters shall not drain into the corrals unless the corrals are properly graded and drained.
(Cal Code Regs., title 3, § 661.)
6. The animal confinement area (including corrals), and manure and feed storage areas shall be designed and maintained to convey all water that has contacted animal wastes or feed to the wastewater retention ponds and to minimize standing water as of 72 hours after the last rainfall and the infiltration of water into the underlying soils.
7. For Dischargers conducting individual groundwater monitoring, if the monitoring data indicate that the Dischargers Production Area may have discharges that violate the Groundwater Limitations of this Order or that such discharges may cause degradation to high quality waters, the Dischargers are required to implement management practices/activities (BPTC for high quality waters or best efforts for waters that are not high quality) that will bring the facility into compliance with Groundwater Limitations on a time schedule that is as short as practicable.

H. Provisions

1. The Discharger shall comply with MRP R5-2016-XXXX, 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 (WWTF) 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. Additionally, The Discharger (Dairy) shall comply with the Standard Provisions and Reporting Requirements for Waste Discharge Requirements General Order R5-2013- 0122 for Existing Milk Cow Dairies (Standard Provisions) dated 3 May 2007, which is attached to and made part of this Order.
3. The Discharger shall comply with all applicable provisions of the California Water Code, Title 27, and the applicable Water Quality Control Plans.
4. The Discharger must at all times properly operate and maintain its WWTF and dairy systems of treatment and control (and related appurtenances) that are installed or used 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 only when the operation is necessary to achieve compliance with the conditions of the Order.
5. 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.
6. 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.
7. 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.

8. In the event of any change in control or ownership of land or waste treatment and storage 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.
9. 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, the 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 California 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.
10. The Discharger shall provide certified wastewater treatment plant operators in accordance with Title 23, division 3, chapter 26.
11. 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 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."
13. The Discharger shall not allow pollutant-free wastewater to be discharged into the wastewater collection, treatment, and disposal systems in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-

free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.

14. At least **90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or off-site reuse of effluent, used to justify the capacity authorized herein and assure compliance with this Order, the Discharger shall notify the Central Valley Water Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.
15. **By (6 months from the adoption of this order)**, the Dischargers shall submit a Nutrient Management Plan for the land application areas that receive effluent from the WWTF and dairy for Executive Officer approval. At a minimum the Plan must include procedures for monitoring the land application areas including daily records of wastewater applications and acreages, an action plan to deal with objectionable odors and/or nuisance conditions, a discussion on blending of wastewater and supplemental irrigation water, supporting data and calculations for monthly and annual water and nutrient balances, and management practices that will ensure wastewater, irrigation water, commercial fertilizers and soil amendments are applied at agronomic rates.
16. **By (6 months from the adoption of this order)**, the Dischargers shall submit a Salinity Management Plan for the land application areas that receive effluent from the WWTF and dairy, with salinity source reduction goals and an implementation time schedule for Executive Officer approval. The control plan shall identify any additional methods that could be used to further reduce the salinity of the discharge to the maximum extent feasible, include an estimate on load reductions that may be attained through the methods identified, and provide a description of the tasks, cost, and time required to investigate and implement various elements in the salinity control plan. The Discharger shall implement the plan in accordance with the approved schedule.
17. A Title 22 Report for the recycling of wastewater to the land application areas has not been prepared, but the recycling of the effluent from the WWTF and Dairy complies with the typical guidelines required of Title 22 reports. **By (1 year from the adoption of this order)**, the Dischargers shall prepare a Title 22 Report for the recycling of treated domestic wastewater to the land application areas, or alternatively, the Dischargers shall demonstrate that its current practices of recycling wastewater to the land application area comply with Title 22 Requirements. The Title 22 Report or the demonstration shall be submitted to the Department of Drinking Water for approval by the Department of Drinking Water and concurrence from the Central Valley Water Board Executive Officer.

18. **By (1 year from the adoption of this order)**, The Discharger shall submit a Waste Management Plan for the production area of the dairy facility, prepared in accordance with Attachment B of the Dairy General Permit R5-2013-0122. The Waste Management Plan shall provide an evaluation of the existing milk cow dairy's design, construction, operation, and maintenance for flood protection and waste containment and whether the facility complies with Discharge Prohibition A.10, Discharge Specifications C.7 through C.11, and Production Area Specifications G.1, G.4, and G.5. If the design, construction, operation, and/or maintenance of the dairy facility do not comply with these specifications and prohibition, the Waste Management Plan must propose modifications and a schedule for modifications that will bring the dairy facility into compliance. Certification that the modifications have been implemented shall be submitted in accordance with the Schedule of Tasks L.1 of the Dairy General Permit R5-2013-0122.
19. 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 2006-0002-EXEC, and any subsequent revisions thereto as adopted by the State Water Board. Water Quality Order 2006-0003 and Order 2008-0002-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.
20. If the Central Valley Water Board determines that waste constituents in the discharge have reasonable potential to cause or contribute to an exceedance of an objective for groundwater, this Order may be reopened for consideration of addition or revision of appropriate numerical effluent or groundwater limitations for the problem constituents.
21. A copy of this Order including the 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.
22. 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 or with the WDRs 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 XX April 2016.

PAMELA C. CREEDON, Executive Officer

Order Attachments:

- A Site Vicinity Map
- B Facility Map
- C Groundwater Monitoring Locations
- D Wastewater Signage

Monitoring and Reporting Program R5-2016-XXXX
Information Sheet
Standard Provisions (1 March 1991)