

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2011-0007

WASTE DISCHARGE REQUIREMENTS  
FOR  
CALIFORNIA DEPARTMENT OF CORRECTIONS AND REHABILITATION  
CALIFORNIA CORRECTIONAL INSTITUTION - TEHACHAPI  
WASTEWATER TREATMENT FACILITY  
KERN COUNTY

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

1. The California Department of Corrections and Rehabilitation ([hereafter Discharger](#)), owns and operates a Wastewater Treatment Facility ([WWTF](#)), an existing plant which serves the California Correctional Institution in Tehachapi ([Prison](#)). The Prison is in the Cummings Valley, approximately 7.5 miles west of the City of Tehachapi in eastern Kern County. The WWTF and the existing disposal area are in Section 30, Township 32 S, Range 32 E, Mount Diablo Base & Meridian, as shown on [Attachment A](#), which is attached hereto and made part of this Order by reference.
2. The Discharger submitted an April 1998 *Wastewater Treatment Plant and New Potable Water Source Study* and a February 2000 *Wastewater Treatment Plant Effluent Reclamation, Title 22 Report*, in support of expansion and upgrade of the existing WWTF; expansion of the effluent storage capacity of the WWTF; and delivery of disinfected tertiary recycled water to nearby farmland used for the growing of turf grass or sod.
3. In November 2010, the Discharger submitted a Report of Waste Discharge to address the upgraded WWTF and an Updated Title 22 Report in part to address the delivery of the disinfected tertiary recycled water to its Use Areas and offsite Reclamation Areas (sod farms and/or golf course).
4. The Discharger will recycle/dispose the tertiary effluent on a 181-acre [Use Area](#) as shown on Attachment A. This property is owned and controlled by the Discharger. The Use Area is comprised of two distinct areas: an existing 85-acre spray field upon which treated effluent is disposed of; and an approximate 96-acre recycling area upon which effluent will be recycled for crop irrigation. The existing spray field is fallow, containing native vegetation and grasses. Crops are currently not grown in the spray field and the resulting vegetation is plowed into the soil or grazed by livestock. The Discharger indicates it will grow crops in the remaining 96 acres, but has not provided information regarding the types of crops and where they are to be grown. A Use Area Management Plan and a Nutrient Management Plan are required per [Provisions G.20 and G.21](#), respectively.
5. The Discharger has entered into an agreement with the Tehachapi-Cummings County Water District to recycle effluent on a nearby golf course and potentially to adjacent

sod/turf farms referred to as the “[Reclamation Areas](#).” The Tehachapi-Cummings County Water District will be responsible for the distribution of the effluent to the Reclamation Areas. A Master Reclamation Permit will be prepared for consideration at a future board meeting.

6. The Prison opened in 1933 as a minimum security women’s prison, but was later converted to a men’s correctional institution. The WWTF currently serves a population of about 8,000 consisting of about 6,000 inmates and about 2,000 employees.
7. The earliest Waste Discharge Requirements ([WDRs](#)) for the Prison were WDRs Orders 63-158 and 72-280. Initially, the WWTF provided primary treatment of wastewater with discharge to oxidation/percolation ponds. WDRs Order 74-282 replaced Order 72-280 and permitted an average daily flow of 0.25 million gallons per day ([mgd](#)). After 1974, the WWTF provided secondary treatment of the wastewater and effluent was spray disposed of on nearby rangeland. The WWTF is currently regulated by WDR Order 88-035 that allows for the discharge of up to 1.1 mgd of secondary treated wastewater to an approximately 114-acre spray field consisting of fallow land.
8. Order 88-035 is no longer adequate because it does not reflect the current treatment conditions at the WWTF, the ongoing upgrade project, and the proposed reclamation/recycling practices or the policies of the Central Valley Water Board and the State Water Resources Control Board.

### Historic Wastewater Treatment Facility and Reclamation

9. Prior to the recent upgrade activities, the WWTF consisted of a headworks with grinding and coarse and fine screening, a flow meter, four aeration basins, two oxidation ponds, and one 3.5-acre storage pond.
10. The Discharger’s self-monitoring reports from January 2007 through December 2009 characterize the discharge as follows. The monthly averages for flow and electrical conductivity ([EC](#)) are based on data from June 2008 through December 2009 due to problems with data collection/measurement prior to June 2008.

### Historic Effluent Quantity and Quality

<u>Constituent/Parameter</u> <sup>1</sup>	<u>Flow</u>	<u>BOD</u>	<u>EC</u>
Units <sup>2</sup>	mgd	mg/L	µmhos/cm
Range	0.21–1.5	10–102	672–784
Average	0.69	42	722

1. BOD = 5-day Biochemical Oxygen Demand; EC = Electrical Conductivity

2. mgd = million gallons per day; mg/L = milligrams per liter; µmhos/cm = micromhos per centimeter

From January 2009 through June 2010, the average [EC](#) value of the effluent has decreased and averaged about 675 µmhos/cm.

11. Wastewater was discharged to an approximately 114-acre spray field just west of the WWTF using spray irrigation cannons. During the upgrade of the WWTF, the spray field area acreage was reduced to about 85 acres. The historic spray field area was not planted with a crop but contained native vegetation and pasture grasses. The resulting vegetation was periodically plowed into the soil or grazed by livestock.

### **WWTF Upgrade Project**

12. For the purposes of this Order, the upgraded tertiary WWTF includes the wastewater collection system, the treatment system, effluent storage ponds, effluent distribution piping, lined sludge storage area, and the Discharger's onsite Use Area (spray fields and crops).
13. Improvements to the WWTF include: upgrade of the existing headworks (new influent sewer lines, new influent flow metering and new fine/coarse bar screens); construction/installation of an extended aeration basin; two new secondary clarifiers; coagulation of clarified effluent; six continuous backwash sand filters; an ultraviolet light disinfection chamber; three new storage ponds; two new sludge dewatering centrifuges; and conversion of an existing treatment pond to a dewatered sludge storage area. The WWTF will produce an effluent anticipated to meet coliform levels of 2.2 Most Probable Number per 100 milliliters (MPN/100 mL) and a total nitrogen concentration of less than 10 mg/L.
14. Tertiary treated effluent from the WWTF will be recycled and/or disposed of at the 181-acre Use Area west and southwest of the WWTF, as shown in [Attachment A](#). The term Use Area, as used herein, includes the Prison's existing 85-acre onsite spray field area upon which tertiary treated water will be disposed of, and the Prison's 96-acre onsite farmland upon which tertiary treated water will be recycled for irrigation of crops. Additionally, tertiary effluent will be delivered to the Tehachapi-Cummings County Water District for distribution under a [Master Reclamation Permit](#). The effluent will be used to irrigate the Stallion Springs Golf Course southwest of the WWTF, as shown in [Attachment A](#). Additional potential Reclamation Areas include sod farms and/or green belts, as shown in [Attachment A](#). The term Reclamation Area, as used herein, includes the Stallion Springs Golf Course and sod farms to which Tehachapi-Cummings County Water District will distribute tertiary treated water to be recycled for irrigation.
15. The WWTF is designed for continuous operation with backup systems for component malfunction and primary power outage. All critical mechanical components will have duplex or redundant backup units. In the event of a malfunction, the backup units will automatically be started by the system. A standby power generator will provide power to the headworks and alarm system in case of a power outage. There is adequate emergency storage to meet Title 22 reliability and redundancy requirements.

## Sludge Management and Biosolids Disposal

16. Sludge as used herein means the solid, semisolid, and liquid residues generated during the treatment of industrial and domestic sewage in the wastewater treatment facility. Sludge includes solids removed during primary, secondary, or advanced wastewater treatment processes, but not grit or screening material generated at the headworks. Biosolids as used herein means sludge that has undergone treatment and subsequently been tested and shown to be capable of being beneficially useful and legally used pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land reclamation.
17. The Discharger submitted a *Notice of Intent for Biosolids Discharge to Land* dated 22 January 2010 to obtain coverage for a proposed discharge of sludge under State Water Resources Control Board ([State Water Board](#)) Water Quality Order No. 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* (General Order 2004-0012-DWQ). The Discharger proposed to remove approximately 2,500 tons of sludge that had accumulated in the former treatment ponds, dewater the sludge with a centrifuge, and then dry the sludge in a 3.6-acre clay-lined sludge treatment/storage area (previously a treatment pond). The resulting biosolids are to be used as a soil amendment on land owned by the Discharger.
18. The Discharger was issued a Notice of Applicability (NOA) on 15 May 2010 for coverage under General Order 2004-0012-DWQ. The NOA is for the discharge of sludge from the former treatment ponds and does not cover discharges of sludge generated from the ongoing operation of the tertiary WWTF. The NOA will be terminated at the conclusion of the sludge removal and application project. The Discharger submitted a Pre-Application report on 3 June 2010 indicating a total of 2,127 tons of Class B biosolids would be applied to 60 acres at a rate of 35.4 tons per acre.
19. The Discharger proposes to dewater and store sludge generated from the upgraded tertiary WWTF with a centrifuge and then discharge the dewatered sludge for storage to a 3.6-acre clay-lined storage area that was formerly a wastewater treatment pond located adjacent the upgraded WWTF. The Discharger's consulting engineer provided a 27 August 2010 signed and stamped memo that indicates the clay liner will confine any leachate to the storage area. Additional information regarding the storage area (thickness of clay liner, performance demonstration data, storm water controls) and the proposed methods of treatment of the sludge is necessary. A Use Area Management Plan is required by [Provision G.20 of this Order](#) before land application of biosolids can proceed. Additionally, a technical report demonstrating that the Discharger's storage practices are exempt from Title 27 requirements is required by [Provision G.11](#) of this Order.

20. The use of biosolids as a soil amendment must comply with the conditions of valid WDRs or the requirements of a local (e.g., county) program authorized by a regional water quality control board. For this project, the Discharger is required to apply for coverage under General Order 2004-0012-DWQ. For a biosolids use project to be authorized by General Order 2004-0012-DWQ, the Discharger must file a complete Notice of Intent and receive a Notice of Applicability for each project.
21. This Order requires the Discharger to report any proposed change in sludge use or disposal practice in writing to the Executive Officer at least 90 days in advance of the change.

### **Sanitary Sewer Overflows**

22. A "sanitary sewer overflow" is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the plant. Temporary storage and conveyance facilities (such as wet wells, regulated impoundments, tanks, pipes, etc.) may be part of a sanitary sewer system and discharges to these facilities are not considered sanitary sewer overflows, provided that the waste is fully contained within these temporary storage/conveyance facilities.
23. On 2 May 2006, the State Water Board adopted *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, General Order No. 2006-003-DWQ* ([General Order](#)). The General Order requires all State agencies that own or operate sanitary sewer systems greater than one mile in length to comply with the order. The Discharger's collection system is greater than one mile in length; therefore the General Order is applicable. The Discharger submitted a Notice of Intent ([NOI](#)) for coverage under the general permit to the State Water Resources Control Board in August 2008 and is covered under the General Order.

### **Water Recycling**

24. Domestic wastewater contains pathogens harmful to humans that are typically measured by means of total or fecal coliform, as indicator organisms. California Department of Public Health ([DPH](#)), which has primary statewide responsibility for protecting public health, has established statewide criteria in Title 22, California Code of Regulations, Section 60301 et seq., (hereafter Title 22) for the use of recycled water and has developed guidelines for specific uses. Revisions of the water recycling criteria in Title 22 became effective on 2 December 2000. The revised Title 22 expands the range of allowable uses of recycled water, establishes criteria for these uses, and clarifies some of the ambiguity contained in the previous regulations.
25. A 1988 Memorandum of Agreement ([MOA](#)) between DPH (then called the Department of Health Services) and the State Water Resources Control Board on the use of recycled water establishes basic principles relative to the agencies and the regional water boards. Under terms of the MOA, the State Water Board implements Title 22 and

DPH recommendations for the protection of public health. In addition, the MOA allocates primary areas of responsibility and authority between these agencies, and provides for methods and mechanisms necessary to assure ongoing, continuous future coordination of activities relative to the use of recycled water in California.

26. The effluent from the tertiary WWTF will be treated to meet the requirements for disinfected tertiary recycled water ([Title 22, Section 60301.230](#)), and is approved for use on food crops, including all edible root crops, where the recycled water comes into contact with the edible portion of the crop; parks and playgrounds; school yards; residential landscaping; unrestricted access golf courses; and any other irrigation use specified in Title 22, Section 60304, and not prohibited by other sections of the California Code of Regulations ([CCR](#)).
27. On 3 February 2009, the State Water Board adopted Resolution No. 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.
28. On 23 April 2009, the Central Valley Water Board adopted Resolution No. R5-2009-0028, *In Support of Regionalization, Reclamation, Recycling and Conservation for Wastewater Treatment Plant* (Resolution R5-2009-0028). Resolution R5-2009-0028 encourages water recycling, water conservation, and regionalization of wastewater treatment facilities. It requires the Discharger to document:
  - a) Efforts to promote new or expanded wastewater recycling opportunities and programs;
  - b) Water conservation measures; and
  - c) Regional wastewater management opportunities and solutions (e.g., regionalization).

The Discharger will be compliant with sections a and b above because it will recycle effluent for irrigation of crops and it implements water conservation devices such as low flow toilets. Regionalization of the Prison's WWTF is not applicable in this instance, as there is not within a reasonable distance a regional plant to accept the Prison's discharge, and there is not one planned for the foreseeable future.

### **Site-Specific Conditions**

29. The Tehachapi area is characterized by warm summers and cool, wet winters with periods of snowfall. The Tehachapi area receives an annual average rainfall of just less than 11 inches per year with the majority from November through April and there is considerable variation in rainfall totals from year to year. Snowfall averages up to 30 inches per year at higher elevations. Snowfall on the valley floor is typically light and quickly melts. Convective (thunderstorm) events create precipitation during summer and fall while frontal events are dominant during the winter and spring. Rainfall intensities

are greater during convective events. Intensities can reach 0.40 inches per hour, 1.2 inches per six hours, and 1.7 inches during 24 hours once every two years. Intensities of 1.2 inches per hour, 3.0 inches per six hours, and 4.10 inches during 24 hours can be expected once in about 100 years.

30. Soils in the area of the WWTF and the Use Areas are alluvial in nature and are reported to be up to 350 feet thick and underlain by granitic basement rocks. According to the United States Department of Agriculture Natural Resources Conservation Service (USDA/NRCS) *Soil Survey of Kern County (Southeastern Part, 1981)*, soils in the area consist primarily of the Havala sandy loam and the Steuber sandy loam, both derived of granitic rocks. The Havala sandy loam is described as deep, well drained, and exhibits moderately slow permeability. The Steuber sandy loam is described as deep, well drained, and exhibits moderately rapid permeability.
31. The WWTF, the Use Areas, and the Reclamation Areas are not within a 100-year floodplain according to Federal Emergency Management Agency Map 06029C3225E. Surface water drains typically to the west/southwest in the area of the Prison.
32. The Discharger is not required to obtain coverage under a National Pollutant Discharge Elimination System general industrial storm water permit because all storm water runoff from the WWTF property is retained onsite and does not discharge to a water of the United States.
33. The land use in the vicinity of the WWTF is primarily urban commercial (the Prison), agricultural, native vegetation, and rural residential. The primary crops grown within five miles of the WWTF include turf (sod farms), apples, and carrots, according to the land use maps prepared by California Department of Water Resources ([DWR](#)). Much of the surrounding area contains native vegetation.

### **Groundwater Considerations**

34. WDR Order 88-035 does not require groundwater monitoring in the vicinity of the WWTF and/or Use Area, but a limited amount of groundwater data (depth to groundwater, analytical results) is available from the testing of nearby irrigation wells, supply wells, and groundwater monitoring wells (monitoring first encountered groundwater) at an underground storage tank cleanup site referred to as the "Motor Pool" site about 0.75 mile southeast of the WWTF.
35. The depth to groundwater in the vicinity of the WWTF was reported in WDR Order 88-035 to be on the order of 140 to 174 feet below the ground surface ([bgs](#)) with a direction of flow to the west/northwest. However, available data indicates there is an upper or perched groundwater zone at about 40 feet bgs. The static water level in Well No. 12 (Prisons supply well) was recorded to be 64 feet at the start of a pump test in 1999 and a video log of supply well No. 11 (Prisons former supply well) at the same time depicted groundwater flowing into the well at a depth of about 34 feet bgs.

36. A groundwater monitoring network is present at a underground storage tank site referred to as the “Motor Pool” site. Clean up activities at the Motor Pool site are ongoing. The depths of the monitoring wells at the Motor Pool site range from 30 to 150 feet deep. The typical depth to groundwater in the shallow wells at the Motor Pool site historically have ranged from about 15 to 65 feet bgs, with the average being about 35 to 40 feet bgs. Field EC values in the network’s upgradient wells (east of the Motor Pool site) range from about 500 to 600 micromhos per centimeter ( $\mu\text{mhos/cm}$ ).
37. Volatile organic compounds (VOCs) including tetrachloroethene (PCE) were historically detected in some of the samples collected from the Motor Pool wells, and the source was thought to be a former dry cleaning facility that was present on Prison property to the southeast of the WWTF and just east of the Motor Pool site. Central Valley Water Board staff oversaw the investigation of the former dry cleaning facility, but found no evidence of a release of VOCs, and the case was closed. Groundwater samples from the Motor Pool site are still analyzed for VOCs, and trace concentrations are still present in some downgradient wells.
38. On 29 July 2010, the Discharger submitted a Work Plan for the installation of three groundwater monitoring wells to monitor first encountered groundwater in the vicinity of the WWTF. Central Valley Water Board staff reviewed the Work Plan and concurred with the proposed design and location of the three wells. Well installation activities commenced in August 2010 and the wells have been installed, but well construction details and the preliminary analytical results have not been received.

### Source Water Quality

39. Water is provided to the Prison by two sources: groundwater and surface water. Groundwater is supplied by Well No. 12, installed to a depth of 495 feet bgs in 1965. Well No. 12 produces about 1.15 mgd. A surface water system treats water from the State Water Project and supplies 0.75 mgd. The following table compares groundwater and surface water analytical results reported in an April 1998 *Wastewater Treatment Plant and New Potable Water Source Study* prepared by Boyle Engineering Corporation (now AECOM) on behalf of the Discharger.

<u>Constituent</u>	<u>Surface Water (mg/L)<sup>1</sup></u>	<u>Groundwater (mg/L)<sup>1</sup></u>
Hardness (as calcium carbonate)	130	270
Sodium	49	31
Sulfate	51	90
Chloride	58	34
Nitrate (NO <sub>3</sub> )	<1	11
Total Dissolved Solids (TDS)	325	640

1. Units are in milligrams per liter (mg/L)

40. The following table includes selected results of the Discharger’s 2006 Annual Water Quality Report that tests the blended supply waters.

<u>Constituent/Parameter</u>	<u>Units</u> <sup>1</sup>	<u>Average</u>	<u>Range</u>
Arsenic	µg/L	2.5	ND – 2.5
Chloride	mg/L	33.5	28 – 39
Electrical Conductivity (EC)	µmhos/cm	635	590 – 680
Nitrate (NO <sub>3</sub> )	mg/L	15.5	15 – 16
Total Dissolved Solids (TDS)	mg/L	445	410 – 480
Endothal	µg/L	194.2	190.5 – 197.9

1. µg/L = micrograms per liter; mg/L = milligrams per liter; µmhos/cm = micromhos per centimeter.

41. The majority of the constituents detected in the blended source water were at concentrations below any maximum contaminant levels (MCLs) (primary or secondary). Nitrate concentrations are below the primary MCL of 45 mg/L for nitrate and the EC is below the lower or recommended secondary MCL of 900 micromhos per centimeter (µmhos/cm). However, the detection of six herbicides with one significantly exceeding the MCL is a concern. Endothal, an herbicide defoliant used for terrestrial and aquatic weed control, was detected at an average of 194.2 micrograms per liter (µg/L), about double the MCL of 100 µg/L. A wood preservative (pentachlorophenol) and a VOC (toluene) were also detected at low levels. Available data indicates several VOCs including PCE and trichloroethene have been detected in source water in the past. Monitoring of VOCs, pesticides, and herbicides is included in [Monitoring and Reporting Program R5-2011-0007](#) for both effluent and groundwater monitoring.
42. Nitrate and perchlorate in groundwater are regional concerns in the Cummings Valley and have not historically been part of the effluent and/or groundwater monitoring programs. Monitoring of nitrate and perchlorate is included in [Monitoring and Reporting Program R5-2011-0007](#) for both effluent and groundwater monitoring.

### **Basin Plan, Beneficial Uses, and Water Quality Objectives**

43. The *Water Quality Control Plan for the Tulare Lake Basin, 2nd Edition*, (hereafter Basin Plan) designates beneficial uses, establishes 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 Water Board. Pursuant to Section 13263(a) of the California Water Code (CWC), WDRs must implement the Basin Plan.

44. 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 recycling 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.
45. The WWTF and Use/Reclamation Areas lie within the Tulare Lake Hydrologic Basin, specifically the Grapevine Hydrologic Unit (No. 556.00), Tejon Creek Hydrologic Area (No. 556.20), as depicted on interagency hydrologic maps prepared by DWR in 1986. The Basin Plan designates the beneficial uses of groundwater as municipal and domestic supply, agricultural supply, industrial supply, and both contact and non-contact water recreation supply.
46. Surface water drainage is to Chanac Creek, an intermittent tributary to Tejon Creek which flows west to the San Joaquin Valley Floor. The Basin Plan designates Chanac Creek as a West Side Stream and designates the following beneficial uses for the West Side Streams: agricultural supply; industrial service and process supply; water contact and non-contact water recreation; warm freshwater habitat; wildlife habitat; rare, threatened, or endangered species; and groundwater recharge.
47. The Basin Plan includes a water quality objective for chemical constituents that, at a minimum, require waters designated as municipal and municipal supply to meet the State drinking water MCLs specified in Title 22. 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.
48. The Basin Plan establishes narrative water quality objectives for Chemical Constituents, Taste and Odors, and Toxicity. The Toxicity objective, in summary, requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial uses. 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.
49. The Basin Plan contains salt management requirements that have been successfully implemented for several decades. 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. To this end, the Basin Plan states the maximum EC of discharges shall not exceed the EC of the source water plus 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. The Basin Plan also states that 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.

These effluent limits are considered best practicable treatment or control (BPTC) with respect to salinity.

50. 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.
51. 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 irrigating with water having an EC less than 700  $\mu\text{mhos/cm}$ . There is, however, an eight- to ten-fold range in salt tolerance for agricultural crops. 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.
52. The list of crops in [Finding 33](#) is not intended as a definitive inventory of crops that are or could be grown in the area affected by the discharge, but is representative. According to *Water Quality for Agriculture*, grasses such as Tall Fescue and Bermuda are moderately salt tolerant. Carrots and apples are salt sensitive.

### **Antidegradation**

53. State Water Board Resolution No. 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 is consistent with the maximum benefit to the people of the State;
  - b. The degradation will not unreasonably affect present and anticipated future beneficial uses;
  - c. 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; and
  - d. The Discharger employs best practicable treatment or control (BPTC) to minimize degradation.
54. Degradation of groundwater by some of the typical waste constituents released with discharge from a typical wastewater treatment system after effective source control, treatment, and control is consistent with maximum benefit to the people of the State. The ongoing functions provided by the Prison, the jobs it creates, and the resulting economic stimulation to the surrounding communities and associated industries is of

maximum benefit to the people of the State, and therefore sufficient reason to accommodate growth and groundwater degradation, provided the terms of the Basin Plan are met.

55. The upgraded tertiary WWTF will improve the quality of the effluent and reduce the potential of the authorized discharges to degrade groundwater. The authorized discharge (flow) will not increase. Degradation that does occur will be less than authorized in the past. Total nitrogen concentrations in the tertiary effluent will be less than 10 mg/L, and the effluent will largely be used to irrigate pasture lands, various crops, and grasses that will use the available nitrogen in accordance with the required Nutrient Management Plan. Nitrate could potentially degrade groundwater should seepage of leachate from the clay-lined sludge treatment/storage pond occur. As described in [Finding 19](#), the consulting engineer has concluded that the clay liner of the sludge treatment and biosolids storage area will preclude leachate from degrading groundwater. Provision G.11 requires the Discharger to demonstrate that the Discharger's sludge treatment and biosolids storage unit is exempt from Title 27 requirements or, if it cannot, to modify the liner as necessary to meet Title 27 requirements. Therefore, any discharges that do occur from the clay-lined pond will comply with Title 27 requirements and be protective of groundwater quality. This Order requires groundwater monitoring to confirm compliance with water quality objectives.

### **Treatment and Control Practices**

56. The WWTF Upgrade Project described in [Findings 12 through 15](#) provides, or will provide, treatment and control of the discharge that incorporates:
- a. Alarm and automatic flow diversion systems to prevent system bypass or overflow;
  - b. Tertiary treatment of the wastewater to Title 22 2.2 MPN/100 mL standards;
  - c. UV Disinfection;
  - d. A nitrogen removal treatment process;
  - e. Application of wastewater at rates not that will not exceed reasonable agronomic demand in areas where effluent will be recycled and at rates in spray disposal areas that will not cause groundwater to exceed water quality objectives;
  - f. Application of wastewater at rates that will not allow wastewater to stand for more than 48 hours;
  - g. At least daily inspection of the Use Area and Reclamation Area during times of discharge; and
  - h. Appropriate solids disposal practices including disposal at a landfill of screenings and grit, storage solar treatment of sludge/biosolids in a clay-lined pond; and land application of biosolids at agronomic rates.

The preceding treatment and control measures represent BPTC.

57. This Order establishes 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. It also contains groundwater monitoring to ensure that this remains the case. The treatment and control practices described in [Finding 56](#) represent BPTC. Because of the quality of the effluent, it is not expected to appreciably degrade groundwater quality. Any degradation that does occur will be limited and will not cause groundwater to exceed applicable water quality objectives. This, in combination with the information in [Findings 53 through 56](#) indicates the discharge complies with Resolution 68-16.

### **Designated Waste and Title 27**

58. CWC Section 13173 defines designated waste as either:
- a. Hazardous waste that has been granted a variance from hazardous waste management requirements pursuant to Section 25143 of the Health and Safety Code.
  - b. Non-hazardous waste that consists of, or contains, pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations exceeding applicable water quality objectives or could reasonably be expected to affect beneficial uses of the waters of the State contained in the appropriate water quality control plan.
59. Pursuant to section 20090(a) of Title 27, CCR, the discharge of domestic sewage or treated effluent associated with municipal wastewater treatment plants is exempt from Title 27, provided any resulting degradation of groundwater is in accordance with the Basin Plan and the waste need not be managed as a hazardous waste. As described above in the Antidegradation section, the treated wastewater discharge complies with the Basin Plan. The treated wastewater does not need to be treated as a hazardous waste. The discharge of treated wastewater is thus exempt from Title 27 requirements.
60. [Finding 19](#) indicates that wastewater sludge will be dewatered by centrifuge and solar dried and stored in a clay-lined pond prior to application as biosolids to land. Lined ponds can be considered BPTC. As described above, the Discharger's engineering consultant has indicated that the clay-lined pond will contain all leachate. However, the Discharger needs to provide data regarding the pond's clay liner construction and performance.
61. [Provision G.11](#) of this Order incorporates a compliance schedule that requires the Discharger to show that its sludge/biosolids treatment and storage practices are exempt from Title 27 requirements or, if it cannot, to modify its liner as necessary to meet exemption requirements or to fully implement Title 27 containment.

## CEQA

62. The Discharger adopted a Final Environmental Impact Report (EIR) in 1985 in accordance with the California Environmental Quality Act (Public Resources Code Section 21000, et seq.). Central Valley Water Board staff reviewed the EIR and concurred that the EIR had addressed issues with regards to potential impacts to water quality.
63. In 1999, in anticipation of the upgrade of the WWTF, the Discharger filed a Notice of Exemption for the upgraded WWTF. The discharge described in these WDRs is consistent with the Notice of Exemption because:
- a. This Order does not authorize expansion of the Prison's wastewater treatment capacity and land application areas; and
  - b. This Order limits the discharge flow to an equivalent daily flow of no more than 1.1 mgd, which is no more than the highest yearly average flow since 2007, and which is the same as the flow limitation in the current WDRs (Order No. 88-035).

Therefore, the action to revise waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA), in accordance with Title 14, California Code of Regulations (CCR), section 15301.

64. Additionally, this Order includes requirements to protect water quality, including:
- a. [Effluent Limit B.1](#) which establishes numerical effluent limitations that are reflective of best practicable treatment for this discharge.
  - b. Discharge [Specification C.4](#), which stipulates waste constituents cannot be released or discharged in a concentration or mass that causes violation of this Order's groundwater limitations.
  - c. [Provisions G.11, G.20, G.21, and G.22](#), which require the Discharger to submit by 180 days of adoption of this Order: A technical report addressing Title 27 requirements for treatment and storage of sludge/biosolids; a Use Area Management Plan; a Nutrient Management Plan; and a Salinity Source Control Plan, respectively.

## General Findings

65. Based on the threat to water quality and complexity of the discharge, the facility is determined to be classified as 2-B. Section 2200 of Title 23, CCR, defines these categories to include any of the following:
- 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 A complexity: ““Any discharge of toxic wastes, any small volume discharge containing toxic waste or having numerous discharge points or ground water monitoring, or any Class 1 waste management unit.”.
66. Pursuant to CWC 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.
67. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.
68. CWC Section 13267(b) states that: “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, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.”
69. The technical reports required by this Order and the attached Monitoring and Reporting Program No. [R5-2011-0007](#) are necessary to assure compliance with these WDRs. The Discharger owns and operates the facility that discharges the waste subject to this Order.
70. DWR sets standards for the construction and destruction of groundwater wells, as described in the *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981). These standards and any more stringent standards adopted by the State or county pursuant to CWC Section 13801, apply to all monitoring wells.

### **Public Notice**

71. 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.
72. The Discharger and interested agencies and persons have been notified of the intent to prescribe WDRs for this discharge, and they have been provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

73. All comments pertaining to the discharge were heard and considered in a public meeting.

**IT IS HEREBY ORDERED** that, Waste Discharge Requirements Order No. 88-035 is rescinded and that, pursuant to Sections 13263 and 13267 of the CWC, the California Department of Corrections and Rehabilitation and its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the CWC 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. Bypass of untreated or partially treated waste, except as allowed by [Provision E.2](#) of Standard Provisions and Reporting Requirements, is prohibited.
3. Discharge of waste classified as “hazardous”, as defined in Section 2521(a) of Title 23, California Code of Regulations, Section 2510 et seq., is prohibited. Discharge of waste classified as “designated,” as defined in CWC Section 13173, in a manner that causes violation of groundwater limitations, is prohibited.
4. Application of wastewater in a manner or location other than that described herein ([Findings 12 through 15, and 24 through 28](#)) is prohibited. Application of wastewater to lands not owned or controlled by the Discharger shall not occur until authorized by a Master Reclamation permit or a Wastewater Recycling order or a Notice of Applicability for Coverage under State Water Board Water Quality Order 2009-0006-DWQ, *General Waste Discharge Requirements for Landscape Irrigation Uses of Municipal Recycled Water*.
5. Cross-connections between any potable water supply and piping containing recycled water are prohibited. As such, no physical connection shall exist between recycled water piping and any domestic water supply well, or between recycled water piping and any irrigation well that does not have an air gap or reduced pressure principle device.

**B. Effluent Limitations**

1. The discharge of disinfected tertiary recycled water from the WWTF to the effluent storage ponds, Use Areas, or to the Tehachapi-Cummings County Water District shall not exceed the following for the constituents listed:

<u>Constituent</u> <sup>1</sup>	<u>Units</u> <sup>2</sup>	<u>Monthly Average</u>	<u>Daily Maximum</u>
Flow	mgd	1.1	---
BOD	mg/L	10	20
TSS	mg/L	10	20
EC	µmhos/cm	1,000	---
Chloride	mg/L	175	---
Boron	mg/L	1.0	---

1. BOD = 5-day Biochemical Oxygen Demand; TSS = Total Suspended Solids; EC = Electrical Conductivity

2. mgd = millions of gallons per day; mg/L = milligrams per liter; µmhos/cm = micromhos per centimeter

2. The arithmetic mean of BOD and TSS in effluent samples collected over a monthly period shall not exceed 10 percent of the arithmetic mean of the values for influent samples collected at the same times during the same period (90 percent removal).
3. The monthly average concentration of total nitrogen in the discharge shall not exceed 10 mg/L, unless the requirements of [Provision G.17](#) have been satisfied and approved by the Executive Officer.
4. The 12-month rolling average EC of the discharge shall not exceed the 12-month rolling average EC of the source water plus 500 µmhos/cm. Compliance with this effluent limitation shall be determined monthly.
5. The median concentration of total coliform organisms in disinfected tertiary recycled water shall not exceed the following ([Title 22, Section 60301.230](#)):
  - a. a most probable number (MPN) of 2.2 total coliform bacteria per 100 milliliters utilizing the bacteriological results of the last seven days for which the analyses have been completed;
  - b. an MPN of 23 total coliform bacteria per 100 milliliters in more than one sample in any 30-day period; and
  - c. an MPN of 240 total coliform bacteria per 100 milliliters at any time.

### C. Discharge Specifications

1. Wastewater treatment and use of recycled water shall not cause pollution or a nuisance as defined by Section 13050 of the CWC.
2. The Discharger shall treat the wastewater such that it complies with Title 22, CCR, Section 60301.230 ("Disinfected Tertiary Recycled Water").
3. The Discharger shall operate all systems and equipment to maximize treatment of wastewater and optimize the quality of the discharge. The wastewater shall be filtered at all times.
4. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of groundwater limitations.
5. All conveyance, treatment, storage, and disposal units shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
6. Objectionable odors shall not be perceivable beyond the limits of the WWTF, storage ponds, and/or Use Area properties at an intensity that creates or threatens to create nuisance conditions.
7. Wastewater shall not be discharged to the Use Area in a manner that causes wastewater to stand for greater than 48 hours. To ensure compliance with this specification, wastewater shall not be discharged to the Use Area during periods of heavy rain or when surface soils are saturated to a point that would restrict the ability to infiltrate into the soils.
8. Effluent storage ponds shall have sufficient capacity to accommodate allowable wastewater flow and design seasonal precipitation and ancillary inflow and infiltration during the winter. 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. On or about **1 October** of each year, the available effluent storage pond capacity shall at least equal the volume necessary to comply with [Discharge Specification C.8](#).

10. Ponds shall be managed to prevent breeding of mosquitoes. In particular,
  - a. An erosion control plan should assure that coves and irregularities are not created around the perimeter of the water surface.
  - b. Weeds shall be minimized through control of water depth, harvesting, and herbicides.
  - c. Dead algae, vegetation and other debris shall not accumulate on the water surface.
  - d. Vegetation management operations in areas in which nesting birds have been observed shall be carried out either before or after, but not during, the 1 April to 30 June bird nesting season.
11. The components of Recycling Specifications D.2, D.3, D.4, D.6, D.7, D.8, D.9, D.10, D.11, D.12 and D.14, designed to preclude unnecessary effluent contact with the public or workers or designed to prevent cross connections/cross contamination of water supplies, apply to parts of the Use Area used for spray disposal and the infrastructure that conveys effluent from the WWTF to spray disposal areas.

#### **D. Recycling 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. Public contact with wastewater effluent shall be controlled using fences, signs, and/or other appropriate means. Signs of a size no less than four inches high by eight inches wide with proper wording (shown below) shall be placed at all areas of public access and around the perimeter of all areas used for effluent disposal or conveyance to alert the public of the use of recycled water. All signs shall display an international symbol similar to that shown in [Attachment B](#), which is attached hereto and made part of this Order by reference, and present the following wording:

**“RECYCLED WATER – DO NOT DRINK”**

**“AGUA DE DESPERDICIO RECLAMADA – POR FAVOR NO TOME”**

5. Disinfected tertiary recycled water is approved for use on food crops, including all edible root crops, where the recycled water comes into contact with the edible portion of the crop; parks and playgrounds; school yards; residential landscaping; unrestricted access golf courses; and any other irrigation use not specified in Title 22, section 60304, and not prohibited by other sections of the CCR.

6. The Discharger shall maintain the following setback distances from areas irrigated with recycled water:

Setback Distance (feet)	To
50	Edge of land application area to domestic well
100	Wastewater/recycled water storage reservoir to domestic well
50	Land application areas to surface water or surface water drainages

7. Recycled water shall not be allowed to escape from the authorized Use Areas by airborne spray or by surface flow except in minor amounts such as that associated with good irrigation practices.

8. Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities.

9. Drinking water fountains shall be protected against contact with recycled water spray, mist, or runoff.

10. Workers shall be educated regarding proper hygienic procedures to ensure personal and public safety.

11. 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.

12. 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.
13. Application of recycled water to the Use Areas 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).
14. Areas irrigated with recycled water shall be managed to prevent breeding of mosquitoes. More specifically:
  - a. All applied irrigation water must infiltrate completely within 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

## **E. Sludge Specifications**

Sludge in this document means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screening material generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the WWTF. Biosolids refers to sludge that has undergone sufficient treatment and testing to qualify for reuse pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land reclamation.

1. Sludge and solid waste shall be removed from screens, sumps, aeration basins, ponds, clarifiers, etc. as needed to ensure optimal plant operation.
2. Treatment and storage of sludge generated by the WWTF shall be confined to the WWTF property.
3. Any handling and storage of residual sludge, solid waste, and biosolids on property of 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 groundwater limitations of this Order.

4. Residual sludge, biosolids, and solid waste shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27. Removal for further treatment, disposal, or reuse at sites (i.e., landfill, composting sites, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a regional water quality control board will satisfy this specification.
5. Biosolids shall comply at the time of application with either Class A or Class B pathogen reduction standards as listed in 40 CFR 503.
6. Biosolids shall comply with one of the vector attraction reduction standards as listed in 40 CFR 503.33.
7. Biosolids shall not be applied during periods of heavy rainfall or when the ground is saturated.
8. Use of biosolids as a soil amendment shall comply with valid waste discharge requirements issued by a regional water quality control board or State Water Board. In most cases, this means General Order 2004-0012-DWQ (State Water Board Water Quality Order No. 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 authorized by General Order 2004-0012-DWQ, the Discharger must file a complete Notice of Intent and receive a Notice of Applicability for each project.
9. Any proposed change in solids disposal practices shall be reported to the Executive Officer in writing at least 90 days in advance of the change.

#### **F. Groundwater Limitations**

1. Release of waste constituents from any wastewater or storm water collection, treatment, or storage component, or release of waste constituents from discharges to the Use Area, shall not cause or contribute to groundwater:
  - a. Containing concentrations of constituents identified below, or 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 constituents, in concentrations that cause nuisance or adversely affect beneficial uses.

## G. Provisions

1. The Discharger shall comply with the Standard Provisions and Reporting Requirements for Waste Discharge Requirements, dated 1 March 1991 (Standard Provisions), which are a part of this Order.
2. The Discharger shall comply with Monitoring and Reporting Program (MRP) No. [R5-2011-0007](#), which is part of this Order, and any revisions thereto as adopted by the Central Valley Water Board or approved by the Executive Officer.
3. The Discharger shall keep at the WWTF, a copy of this Order including its MRP, Information Sheet, attachments, and Standard Provisions, for reference by operating personnel. Key operating personnel shall be familiar with its contents.
4. The Discharger shall not allow pollutant-free wastewater to be discharged into the WWTF collection, treatment, and disposal systems in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means storm water (i.e., inflow), groundwater (i.e., infiltration or periodic discharges of groundwater from the Plant's supply wells during well maintenance operations), cooling waters, and condensates that are essentially free of pollutants.
5. The Discharger must 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 only when the operation is necessary to achieve compliance with the conditions of the Order.
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 persons 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 California Water Code Section 13267.
7. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Accordingly, the Discharger shall submit to the Central Valley Water Board on or before each report due date the specified document or, if an action is specified, a written report detailing evidence of compliance with the date and task. If noncompliance is being reported,

the reasons for such noncompliance shall be stated, plus an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board by letter when it returns to compliance with the 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 submit the technical reports and work plans required by this Order for Central Valley Water Board staff consideration and incorporate comments they may have in a timely manner, as appropriate. The Discharger shall proceed with all work required by the following provisions by the due dates specified.
11. **By 30 August 2011**, the Discharger shall submit a technical report subject to Executive Officer written approval demonstrating its sludge/biosolids treatment and storage facilities protect the underlying groundwater from degradation and are exempt from Title 27 requirements. If it cannot, the Discharger will submit a work plan by the above referenced date to indicate how it will comply with Title 27 requirements. Compliance with Title 27 requirements shall be achieved by two (2) years following adoption of this Order.
12. All wastewater discharged shall be oxidized, coagulated (if necessary), filtered, and disinfected pursuant to the Department of Public Health reclamation criteria, CCR, Title 22, division 4, chapter 3, (Title 22), or equivalent. The maximum filtration rate shall not exceed 5 gpm/ft.

13. When coagulation is used, the turbidity of disinfected tertiary recycled water that is passed through undisturbed soil or a filter media shall not exceed the following (Title 22, Section 60301.320):
  - a. an average of 2.0 NTU within a 24-hour period;
  - b. 5.0 NTU more than five percent of the time within a 24 hour period; and
  - c. 10 NTU at any time.
14. When coagulation is not used, (i.e., direct filtration mode):
  - a. The turbidity of the influent to the filtration unit (prior to filtration) shall not exceed 5.0 NTU for more than 15 minutes and never exceed 10 NTU; and
  - b. The effluent turbidity (following filtration) shall not exceed 2.0 NTU at any time.
15. The turbidity of disinfected tertiary recycled water that is passed through a microfiltration, ultrafiltration, nanofiltration, or reverse osmosis membrane shall not exceed the following (Title 22, Section 60301.320):
  - a. 0.2 NTU more than five percent of the time within a 24 hour period; and;
  - b. 0.5 NTU at any time.
16. As a means of discerning compliance with [Discharge Specification C.6](#), the dissolved oxygen content in the upper zone (1 foot) of effluent in the effluent storage ponds shall not be less than 1.0 mg/L for three consecutive sampling events. Should the DO be below 1.0 mg/L for three consecutive sampling events, the Discharger shall report the findings to the Central Valley Water Board and propose a remedial approach to resolve the low DO results **within 30 days**.
17. The Discharger shall comply with the effluent total nitrogen limitation of 10 mg/L ([Effluent Limitation B.3](#)) or, alternatively, the Discharger shall submit a design report and performance demonstration for the storage ponds. The performance demonstration shall establish that the pond design will be protective of groundwater quality and that seepage from the ponds will not contribute to nitrogen in groundwater exceeding groundwater limitations. This provision will be considered satisfied following written acknowledgement from the Executive Officer.
18. The Discharger shall maintain and operate all ponds sufficient to protect the integrity of containment levees and prevent overtopping or overflows. Unless a California 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). As a means of management

and to discern compliance with this Provision, the Discharger shall install and maintain in each pond permanent markers with calibration that indicates the water level at design capacity and enables determination of available operational freeboard.

19. The Use Area parcels shall be graded to prevent ponding along public roads or other public areas and prevent runoff onto adjacent properties.

20. **By 4 August 2011**, the Discharger shall submit a detailed Use Area Management Plan that:

- a. Identifies, by assessors parcel numbers and, as appropriate, field numbers the portions the Use Area that will receive recycled water for crop irrigation and the portions of the Use Area, if any, will be used for spray disposal;
- b. Includes a map illustrating the portions of the Use Area described in a;
- c. Identifies the crops that will be grown on individual Use Area fields using recycled water;
- d. Identifies the proposed hydraulic loading to each individual Use area field;
- e. Describes best management practices that will be implemented to contain site runoff, preclude public access, and eliminate the potential for nuisance condition development; and,
- f. Provides a detailed description of how proposed recycling, spray disposal, and biosolids application operations will be coordinated to ensure that nutrient and waste loading rates will be protective of groundwater quality.

21. **By 4 August 2011**, the Discharger shall, for each separately owned parcel where wastewater is applied for irrigation purposes, develop and implement management practices that control nutrient losses and describe these in a Nutrient Management Plan. The Nutrient Management Plan must be certified, maintained at the Use Area, submitted to the Executive Officer upon request, and must ultimately provide for protection of both surface water and groundwater. The Nutrient Management Plan shall account for all inputs from all sources (i.e., the discharge, manure, chemical fertilizers, etc.) and shall be updated every two years. Groundwater monitoring will be used to determine if implementation of the Nutrient Management Plan is protective of groundwater quality.

22. **By 4 August 2011**, the Discharger shall conduct a salinity evaluation and submit a salinity minimization plan to identify and implement measures to reduce the salinity in discharge to the extent feasible. The salinity minimization plan shall include a time schedule to implement the identified measures.

23. **By 4 April 2011**, the Discharger shall submit an engineering certification that it has sufficient treatment, storage, and disposal capacity to comply with the other terms and conditions of this Order. The certification shall include an appropriate water balance. This Provision will be considered satisfied following written acknowledgement from the Executive Officer that this Provision's criteria have been met.

24. If the Regional 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.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 3 February 2011.

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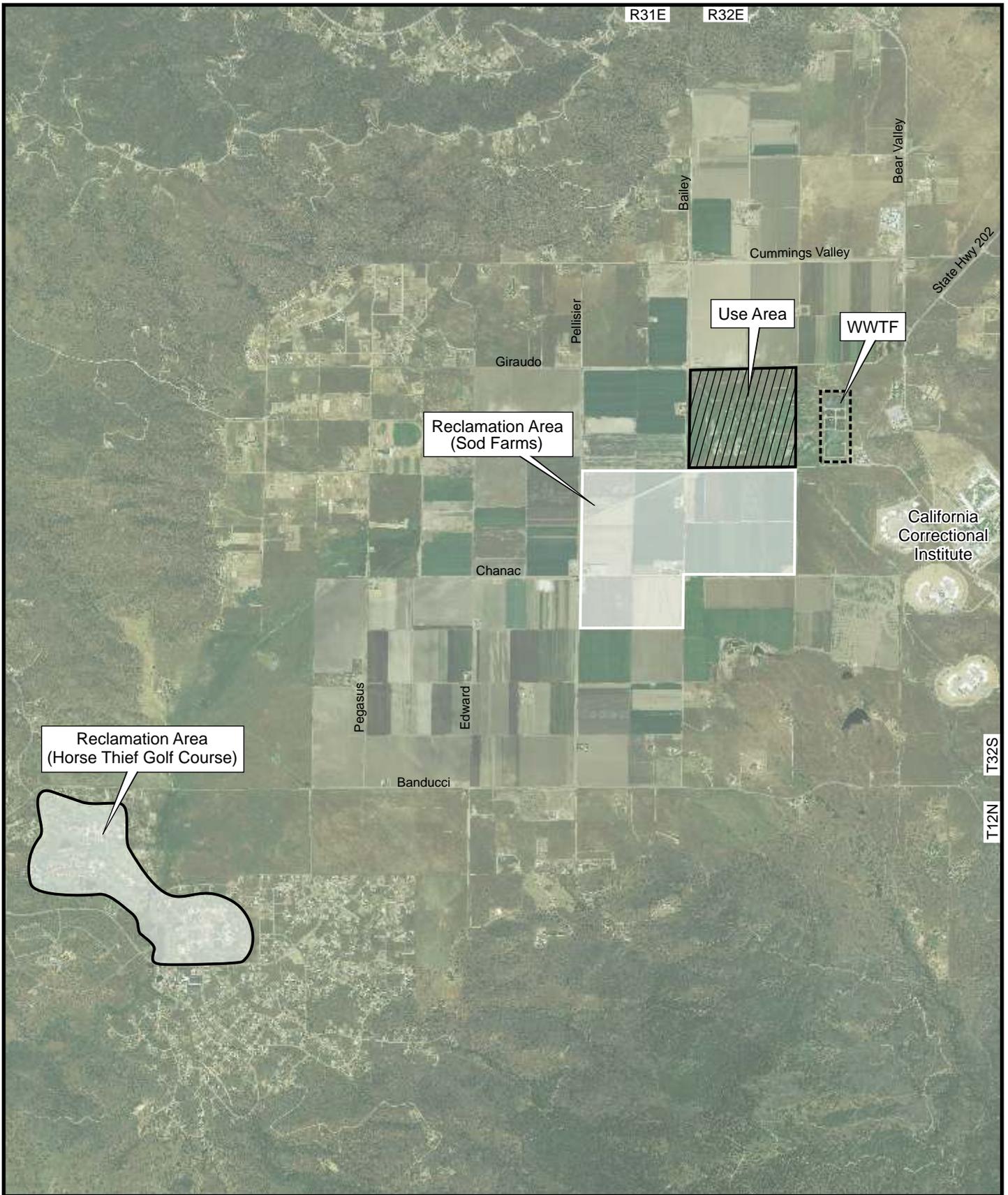
PAMELA C. CREEDON, Executive Officer

Order Attachments:

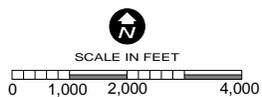
- A Site Map and Use Areas
- B Nonpotable International Water Symbol

Monitoring and Reporting Program No. R5-2011-0007  
Information Sheet

Standard Provisions (1 March 1991) (separate attachment to the Discharger only)



Map Source:  
NAIP Aerial Photograph (2005)



**VICINITY MAP**  
ORDER NO. R5-2011-0007  
WASTE DISCHARGE REQUIREMENTS  
FOR  
CCI TEHACHAPI  
KERN COUNTY

**ATTACHMENT A**



**NONPOTABLE WATER INTERNATIONAL SYMBOL**

ORDER NO. R5-2011-0007  
WASTE DISCHARGE REQUIREMENTS  
FOR  
CCI TEHACHAPI  
KERN COUNTY

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2011-0007  
FOR  
CALIFORNIA DEPARTMENT OF CORRECTIONS AND REHABILITATION  
CALIFORNIA CORRECTIONAL INSTITUTION - TEHACHAPI  
WASTEWATER TREATMENT FACILITY  
KERN COUNTY

This Monitoring and Reporting Program (MRP) is required pursuant to California Water Code (CWC) section 13267.

The Discharger shall not implement any changes to this MRP unless and until the Central Valley Water Board adopts, or the Executive Officer issues, a revised MRP. Changes to sample location shall be established with concurrence of Central Valley Water Board staff, and a description of the revised stations shall be submitted for approval by the Executive Officer.

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. All analyses shall be performed in accordance with **Standard Provisions and Reporting Requirements for Waste Discharge Requirements**, dated 1 March 1991 (Standard Provisions).

Field test instruments (such as pH) may be used provided that the operator is trained in the proper use of the instrument and each instrument is serviced and/or calibrated at the recommended frequency by the manufacturer or in accordance with manufacturer instructions.

Analytical procedures shall comply with the methods and holding times specified in the following: *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA); *Test Methods for Evaluating Solid Waste* (EPA); *Methods for Chemical Analysis of Water and Wastes* (EPA); *Methods for Determination of Inorganic Substances in Environmental Samples* (EPA); *Standard Methods for the Examination of Water and Wastewater* (APHA/AWWA/WEF); and *Soil, Plant and Water Reference Methods for the Western Region* (WREP 125). Approved editions shall be those that are approved for use by the United States Environmental Protection Agency or the California Department of Public Health's Environmental Laboratory Accreditation Program. The Discharger may propose alternative methods for approval by the Executive Officer.

If monitoring consistently shows no significant variation in magnitude of a constituent concentration or parameter after at least 12 months of monitoring, the Discharger may request this MRP be revised to reduce monitoring frequency. The proposal must include adequate technical justification for reduction in monitoring frequency.

A glossary of terms used within this MRP is included on [page 9](#) and a list of the constituents required for the monitoring of Priority Pollutants is included in Table 1, which is on [page 10](#).

### INFLUENT MONITORING

Influent samples shall be collected at the inlet of the headworks at approximately the same time as the effluent samples. Influent monitoring shall include at least the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Continuous	Flow	mgd	Meter
Continuous	pH	pH Units	Meter
Weekly	BOD <sub>5</sub>	mg/L	24-hour composite
Weekly	TSS	mg/L	24-hour composite
Monthly	Monthly Average Daily Flow	mgd	Computed

### EFFLUENT MONITORING

Effluent samples shall be collected just prior to discharge to the storage ponds or to the use areas. Effluent monitoring shall include at least the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Continuous	Turbidity	NTU	Metered <sup>1</sup>
Daily <sup>2</sup>	Total Coliform Organisms	MPN/100 mL	Grab
Daily <sup>2</sup>	pH	pH Units	Grab
Twice Weekly	EC	umhos/cm	24-hour composite <sup>3</sup>
Twice Weekly	BOD <sub>5</sub>	mg/L	24-hour composite <sup>3</sup>
Twice Weekly	TSS	mg/L	24-hour composite <sup>3</sup>
Monthly	Nitrate as N	mg/L	24-hour composite <sup>3</sup>
Monthly	TKN	mg/L	24-hour composite <sup>3</sup>
Monthly	Total Nitrogen	mg/L	Computed
Monthly	Ammonia	mg/L	24-hour composite <sup>3</sup>
Quarterly	Perchlorate	ug/L	Grab
Annually	General Minerals	mg/L	24-hour composite <sup>3</sup>
Annually	Priority Pollutants (see Table 1)	Varies <sup>4</sup>	Varies <sup>4</sup>

<sup>1</sup> In accordance with the requirements of Title 22, Section 60301.320, the Discharger shall report: a). the 24 hour average effluent turbidity; b). the percentage of time the effluent is greater than 5 NTU within a 24-hour period; and c). the instantaneous maximum effluent turbidity. If coagulation is not being used, the instantaneous maximum filter influent turbidity shall also be reported.

<sup>2</sup> Excluding weekends and holidays.

<sup>3</sup> Time-proportioned composite is acceptable.

<sup>4</sup> mg/L or ug/L, as appropriate.

All effluent samples are to be collected just prior to discharge to the storage ponds or to the use areas with one potential exception. Should the Discharger choose to not coagulate the wastewater, the Discharger must sample both filter influent and effluent for turbidity. Filter influent samples must be taken immediately upstream of filtration units. Filter effluent samples must be taken downstream of the filter and prior to discharge to the storage ponds and/or use

areas. All other samples shall be collected just prior to discharge to the storage ponds or to the use areas.

### POND MONITORING

Effluent pond monitoring shall include at least the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Weekly <sup>1</sup>	DO	mg/L <sup>2</sup>	Grab
Weekly	Freeboard	Feet <sup>3</sup>	Observation

<sup>1</sup> Measured between 8:00 and 9:00 am on the day of sample collection.

<sup>2</sup> DO taken at a depth of one foot opposite the pond inlet.

<sup>3</sup> To nearest tenth of a foot

Permanent markers (e.g., staff gauges) shall be placed in storage ponds. The markers shall have calibrations indicating water level at the design capacity and available operational freeboard.

The Discharger shall inspect the condition of the storage ponds once per week and write visual observations in a bound logbook. Notations shall include observations of whether weeds are developing in the water or along the bank, and their location; whether dead algae, vegetation, scum, or debris are accumulating on the storage pond surface and their location; whether burrowing animals or insects are present; and the color of the reservoirs (e.g., dark sparkling green, dull green, yellow, gray, tan, brown, etc.).

### UNCONFINED GROUNDWATER MONITORING

After measuring water levels and prior to collecting samples, each monitoring well shall be adequately purged to remove water that has been standing within the well screen and casing that may not be chemically representative of formation water. Depending on the hydraulic conductivity of the geologic setting, the volume removed during purging is typically from 3 to 5 volumes of the standing water within the well casing and screen, or additionally the filter pack pore volume.

The Discharger shall monitor all wells in its Unconfined Groundwater Monitoring Network, and any additional wells installed pursuant to this MRP, for the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Quarterly	Depth to groundwater	Feet <sup>1</sup>	Measured
Quarterly	Groundwater Elevation	Feet <sup>2</sup>	Computed
Quarterly	pH	pH Units	Grab
Quarterly	EC	umhos/cm	Grab
Quarterly	Nitrate	mg/L (as N)	Grab
Quarterly	TKN	mg/L	Grab

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Quarterly	Ammonia	mg/L	Grab
Quarterly	Total Nitrogen	mg/L	Computed
Quarterly	Total Organic Carbon	mg/L	Grab
Quarterly	Arsenic	ug/L	Grab
Quarterly	Iron	ug/L	Grab
Quarterly	Manganese <sup>1</sup>	ug/L	Grab
Quarterly	General Minerals	mg/L	Grab
Quarterly	Perchlorate	ug/L	Grab
Annually	Priority Pollutants	Varies	Varies

1. Select analytical methods for metals (iron, manganese, etc) and nitrates require filtration before acid preservation, or that the samples be collected unpreserved (no acidification) and filtered at the laboratory prior to analysis. It is the Dischargers responsibility to ensure proper sample collection and preservation procedures.

### SOURCE WATER MONITORING

For each source (either well or surface water supply), the Discharger shall calculate the flow-weighted average concentrations for the specified constituents utilizing monthly flow data and the most recent chemical analysis conducted in accordance with Title 22 drinking water requirements. Alternatively, the Discharger may establish representative sampling stations within the distribution system serving the same area as is served by the WWTF.

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Monthly	EC	mg/L	Computed average
Annually	General Minerals	mg/L	Computed average
Annually	Priority Pollutants	Varies	Varies

### SLUDGE MONITORING

Sludge shall be sampled for the following constituents:

Arsenic	Lead	Nickel
Cadmium	Mercury	Selenium
Copper	Molybdenum	Zinc
Organic Nitrogen	Ammonia Nitrogen	Total Solids

Monitoring shall be conducted as required in Title 40 of the Code of Federal Regulations (40 CFR), Part 503.8(b)(4). The constituents listed above shall be monitored at the following frequency, depending on volume of sludge generated:

<u>Volume Generated (dry metric tons/year)</u>	<u>Frequency</u>
0 to 290	Annually
290 to 1,500	Quarterly
1,500 to 15,000	Bimonthly (six samples per year)
Greater than 15,000	Monthly

The Discharger shall demonstrate that treated sludge (i.e., biosolids) meets Class A or Class B pathogen reduction levels by one of the methods listed in 40 CFR, Part 503.32.

The Discharger shall track and keep records of the operational parameters used to achieve Vector Attraction Reduction requirements in 40 CFR, Part 503.33(b).

### **USE AREA MONITORING**

The Discharger shall perform routine monitoring and loading calculations for each discrete irrigation area within the Use Area. Data shall be collected and presented in tabular format in accordance with Table 2.

In addition, the Discharger shall inspect the Use Area on a weekly basis. Evidence of erosion, field saturation, runoff, of the presence of nuisance conditions (i.e., flies, ponding, etc.) shall be noted in field logs and included as part of the quarterly monitoring reports.

### **REPORTING**

All monitoring results shall be reported in **Quarterly Monitoring Reports** which are due by the first day of the second month after the calendar quarter. Therefore, monitoring reports are due as follows:

- First Quarter Monitoring Report: **1 May**
- Second Quarter Monitoring Report: **1 August**
- Third Quarter Monitoring Report: **1 November**
- Fourth Quarter Monitoring Report: **1 February.**

**A transmittal letter shall accompany each monitoring report.** The transmittal letter shall discuss any violations that occurred during the reporting period and all actions taken or planned for correcting violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions or a time schedule for implementing the corrective actions, reference to the previous correspondence is satisfactory.

The following information is to be included on all monitoring reports, as well as report transmittal letters:

Discharger Name  
Facility Name  
Monitoring and Reporting Program Number  
Contact Information (telephone and email)

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner that illustrates clearly, whether the Discharger complies with waste discharge requirements.

In addition to the details specified in Standard Provision C.3, monitoring information shall include the method detection limit (MDL) and the Reporting limit (RL) or practical quantitation limit (PQL). If the regulatory limit for a given constituent is less than the RL (or PQL), then any analytical results for that constituent that are below the RL (or PQL) but above the MDL shall be reported and flagged as estimated.

Laboratory analysis reports do not need to be included in the monitoring reports; however, the laboratory reports must be retained for a minimum of three years in accordance with Standard Provision C.3.

All monitoring reports shall comply with the signatory requirements in Standard Provision B.3. Monitoring data or discussions submitted concerning WWTF performance must also be signed and certified by the chief plant operator. If the chief plant operator is not in direct line of supervision of the laboratory function for a Discharger conducting any of its own analyses, reports must also be signed and certified by the chief of the laboratory.

All monitoring reports that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1.

**A. All Quarterly Monitoring Reports** shall include the following:

**Wastewater reporting:**

1. The results of influent, effluent, and pond monitoring specified on [pages 2 and 3](#).
2. For each month of the quarter, calculation of the maximum daily flow and the monthly average flow.
3. For each month of the quarter, calculation of the 12-month rolling average EC of the discharge using the EC value for that month averaged with the EC values for the previous 11 months.

4. For each month of the quarter, calculation of the monthly average effluent BOD and TSS concentrations, and calculation of the percent removal of BOD and TSS compared to the influent.
5. A summary of the notations made in the pond monitoring log during each quarter. The entire contents of the log for the reporting period do not need to be submitted.

**Groundwater reporting:**

1. The results of unconfined groundwater monitoring specified on [pages 3 and 4](#).
2. For each monitoring well, a table showing constituent concentrations for the last five quarters, up through the current quarter.
3. A groundwater contour map based on groundwater elevations for that quarter. The map shall show the gradient and direction of groundwater flow under/around the facility and/or effluent disposal area(s). The map shall also include the locations of monitoring wells and wastewater storage and discharge areas.

**Source water reporting**

1. For each month of the quarter, calculation of the flow-weighted 12-month rolling average EC of the source water using monthly flow data and the source water EC values for the most recent four quarters.

**B. Fourth Quarter Monitoring Reports**, in addition to the above, shall include the following:

**Wastewater treatment facility information:**

1. The names, certificate grades, and general responsibilities of all persons in charge of wastewater treatment and disposal.
2. The names and telephone numbers of persons to contact regarding the WWTF for emergency and routine situations.
3. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibrations (Standard Provision C.4).
4. A statement whether the current operation and maintenance manual, sampling plan, nutrient management plan, and contingency plan, reflect the WWTF as currently constructed and operated, and the dates when these documents were last reviewed for adequacy.

**Sludge** sampling records shall be retained for a minimum of five years in accordance with 40 CFR, Part 503.17. A log shall be kept of sludge quantities generated and of handling, application, and disposal activities. The frequency of entries is discretionary; however, the log should be complete enough to serve as a basis to report sludge monitoring. Sludge reporting shall include:

1. The results of sludge monitoring specified on [page 4](#).
2. The amount of sludge generated that year, in dry metric tons, and the amount accumulated from previous years.
3. Demonstrations of pathogen reduction methods and vector attraction reduction methods, as required in 40 CFR Parts 503.17 and 503.27, and certifications.
4. A description of disposal methods, including the following information related to the disposal methods used at the WWTF. If more than one method is used, include the percentage of sludge production disposed of by each method.
  - a. For landfill disposal, include: the name and location of the landfill receiving the sludge, and the Order number of WDRs that regulate it.
  - b. For land application, include: the location of the site, and the Order number of any WDRs that regulate it.
  - c. For incineration, include: the name and location of the site where sludge incineration occurs, the Order number of WDRs that regulate the site, the disposal method of ash, and the name and location of the facility receiving ash (if applicable).
  - d. For composting, include: the location of the site, and the Order number of any WDRs that regulate it.

### **Use Area reporting**

1. The type of crop(s) grown in the Use Area, and the quantified hydraulic and nitrogen loading rates in accordance with Table 2 on page 11
2. A summary of the notations made in the Use Area monitoring log during each quarter. The entire contents of the log do not need to be submitted.
3. In accordance with Provision G. 22 of WDR Order R5-2011-0007, the Discharger shall submit an updated copy of the Nutrient Management Plan once every two years from the adoption of the Order.

The Discharger shall implement the above monitoring program on the first day of the month following adoption of this Order.

Ordered by: \_\_\_\_\_

PAMELA C. CREEDON, Executive Officer

\_\_\_\_\_  
(Date)

## GLOSSARY

BOD <sub>5</sub>	Five-day biochemical oxygen demand		
CBOD	Carbonaceous BOD		
DO	Dissolved oxygen		
EC	Electrical conductivity at 25° C		
FDS	Fixed dissolved solids		
NTU	Nephelometric turbidity unit		
TKN	Total Kjeldahl nitrogen		
TDS	Total dissolved solids		
TSS	Total suspended solids		
Continuous	The specified parameter shall be measured by a meter continuously.		
24-Hour Composite	Unless otherwise specified or approved, samples shall be a flow-proportioned composite consisting of at least eight aliquots.		
Daily	Samples shall be collected every day.		
Twice Weekly	Samples shall be collected at least twice per week on non-consecutive days.		
Weekly	Samples shall be collected at least once per week.		
Twice Monthly	Samples shall be collected at least twice per month during non-consecutive weeks.		
Monthly	Samples shall be collected at least once per month.		
Bimonthly	Samples shall be collected at least once every two months (i.e., six times per year) during non-consecutive months		
Quarterly	Samples shall be collected at least once per calendar quarter. Unless otherwise specified or approved, samples shall be collected in January, April, July, and October.		
Semiannually	Samples shall be collected at least once every six months (i.e., two times per year). Unless otherwise specified or approved, samples shall be collected in April and October.		
Annually	Samples shall be collected at least once per year. Unless otherwise specified or approved, samples shall be collected in October.		
mg/L	Milligrams per liter		
mL/L	Milliliters [of solids] per liter		
µg/L	Micrograms per liter		
µmhos/cm	Micromhos per centimeter		
mgd	Million gallons per day		
MPN/100 mL	Most probable number [of organisms] per 100 milliliters		
General Minerals	Analysis for General Minerals shall include at least the following:		
	Alkalinity	Chloride	Sodium
	Bicarbonate	Hardness	Sulfate
	Calcium	Magnesium	TDS
	Carbonate	Potassium	
	General Minerals analyses shall be accompanied by documentation of cation/anion balance.		

**Table 1. Priority Pollutant Scan**

<b><u>Inorganics</u><sup>1</sup></b>	<b><u>Organics</u></b>	3-Methyl-4-Chlorophenol	Hexachlorobenzene
Antimony	Acrolein	Pentachlorophenol	Hexachlorobutadiene
Arsenic	Acrylonitrile	Phenol	Hexachlorocyclopentadiene
Beryllium	Benzene	2,4,6-Trichlorophenol	Hexachloroethane
Cadmium	Bromoform	Acenaphthene	Indeno(1,2,3-c,d)pyrene
Chromium (III)	Carbon tetrachloride	Acenaphthylene	Isophorone
Chromium (VI)	Chlorobenzene	Anthracene	Naphthalene
Copper	Chlorodibromomethane	Benzidine	Nitrobenzene
Lead	Chloroethane	Benzo(a)Anthracene	N-Nitrosodimethylamine
Mercury	2-Chloroethylvinyl Ether	Benzo(a)pyrene	N-Nitrosodi-n-Propylamine
Nickel	Chloroform	Benzo(b)fluoranthene	N-Nitrosodiphenylamine
Selenium	Dichlorobromomethane	Benzo(g,h,i)perylene	Phenanthrene
Silver	1,1-Dichloroethane	Benzo(k)fluoranthene	Pyrene
Thallium	1,2-Dichloroethane	Bis(2-chloroethoxy) methane	1,2,4-Trichlorobenzene
Zinc	1,1-Dichloroethylene	Bis(2-chloroethyl) ether	
Cyanide	1,2-Dichloropropane	Bis(2-chloroisopropyl) ether	<b><u>Pesticides</u></b>
Asbestos	1,3-Dichloropropylene	Bis(2-Ethylhexyl)phthalate	Aldrin
	Ethylbenzene	4-Bromophenyl phenyl ether	alpha-BHC
<b><u>Dioxin Congeners</u></b>	Methyl Bromide	Butylbenzyl Phthalate	beta-BHC
2,3,7,8-TCDD	Methyl Chloride	2-Chloronaphthalene	gamma-BHC (Lindane)
1,2,3,7,8-PentaCDD	Methylene Chloride	4-Chlorophenyl Phenyl Ether	delta-BHC
1,2,3,4,7,8-HexaCDD	1,1,2,2-Tetrachloroethane	Chrysene	Chlordane
1,2,3,6,7,8-HexaCDD	Tetrachloroethylene (PCE)	Dibenzo(a,h)Anthracene	4,4'-DDT
1,2,3,7,8,9-HexaCDD	Toluene	1,2-Dichlorobenzene	4,4'-DDE
1,2,3,4,6,7,8-HeptaCDD	1,2-Trans-Dichloroethylene	1,3-Dichlorobenzene	4,4'-DDD
OctaCDD	1,1,1-Trichloroethane	1,4-Dichlorobenzene	Dieldrin
2,3,7,8-TetraCDF	1,1,2-Trichloroethane	3,3'-Dichlorobenzidine	alpha-Endosulfan
1,2,3,7,8-PentaCDF	Trichloroethylene (TCE)	Diethyl phthalate	beta-Endosulfan
2,3,4,7,8-PentaCDF	Vinyl chloride	Dimethyl phthalate	Endosulfan Sulfate
1,2,3,4,7,8-HexaCDF	2-Chlorophenol	Di-n-Butyl Phthalate	Endrin
1,2,3,6,7,8-HexaCDF	2,4-Dichlorophenol	2,4-Dinitrotoluene	Endrin Aldehyde
1,2,3,7,8,9-HexaCDF	2,4-Dimethylphenol	2,6-Dinitrotoluene	Heptachlor
2,3,4,6,7,8-HexaCDF	2-Methyl-4,6-Dinitrophenol	Di-n-Octyl Phthalate	Heptachlor epoxide
1,2,3,4,6,7,8-HeptaCDF	2,4-Dinitrophenol	1,2-Diphenylhydrazine	Polychlorinated biphenyls
1,2,3,4,7,8,9-HeptaCDF	2-Nitrophenol	Fluoranthene	Toxaphene
OctaCDF	4-Nitrophenol	Fluorene	

<sup>1</sup> With the exception of wastewater samples, samples placed in an acid-preserved bottle for metals analysis must first be filtered. If filtering in the field is not feasible, samples shall be collected in unpreserved containers and submitted to the laboratory within 24 hours with a request (on the chain of custody form) to immediately filter then preserve the sample.

<sup>2</sup> Samples to be analyzed for volatile compounds and phthalate esters shall be grab samples; the remainder shall be 24-hour composite samples.

**Table 2. Reclamation Area Monitoring**

Recycled Water Monitoring Data For Year: _____								
Parcel No. _____ of _____ acres								
		Water application				Nitrogen application		
		Water required	Effluent used	Other water used	Total irrigation water	As fertilizer	As effluent*	Total nitrogen applied
Month	Crop	(AF)	(AF)	(AF)	(AF)	(lbs/acre)	(lbs/acre)	(lbs/acre)
October								
November								
December								
Subtotal:								
January								
February								
March								
Subtotal:								
April								
May								
June								
Subtotal:								
July								
August								
September								
Subtotal:								
Annual Total:								
* calculated as (AF effluent/acre) x (2.72) x (X mg/l total nitrogen) = lbs nitrogen/acre								