

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2007-\_\_\_\_\_

WASTE DISCHARGE REQUIREMENTS  
FOR  
COUNTY OF FRESNO JUVENILE JUSTICE CAMPUS  
WASTEWATER TREATMENT FACILITY  
FRESNO COUNTY

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

1. The County of Fresno (hereafter Discharger or County) submitted a Report of Waste Discharge (RWD), dated 26 September 2003, in support of a discharge to land from a wastewater treatment facility (WWTF) for the County's Juvenile Justice Campus (hereafter Facility). Additional information to complete the RWD was received on 22 December 2003, 6 January 2004, 15 March 2004, and 13 April 2004. The WWTF has a design average daily flow of 0.12 million gallons per day (mgd) and a maximum daily flow of 0.135 mgd. No outside sewer mains are connected to the Facility's sewer system.
2. The Facility is at 3333 American Avenue, approximately seven miles southwest of downtown Fresno, in Section 6, Township 5 South, Range 21 East, MDB&M, as shown on [Attachment A](#), which is attached hereto and made part of this Order by reference.
3. For the purposes of this Order, the WWTF shall include the wastewater collection system, the treatment system, effluent storage ponds, recycled water distribution piping, and land application areas (Use Areas). [Attachment B](#), which is attached hereto and made a part of this Order by reference, is a plan view of the WWTF and Use Areas.
4. The RWD discusses the Master Plan for the Facility, which will be constructed to accommodate the County's needs for the next 40 years. The first phase (Phase 1) was completed in 2006 and additional phases are planned for the years 2001, 2017, and 2040. Phase 1 of construction includes 480 beds for juveniles, a delinquency court, an institutional core building, and a laundry facility. Phases 2 and 3 will add 240 beds each and Phase 4 will add 480 beds.
5. Flow data from Phase 1 will be used to modify the wastewater generation factors used to determine the required capacity for future phases. At Phase 2, wastewater service may be available from a municipal system. The cost of connection will be evaluated prior to expansion of the WWTF. The anticipated time till expansion will be required is six to 15 years.

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### Wastewater Treatment Facility

6. The WWTF provides disinfected tertiary treatment of the wastewater. Treatment includes influent screening, flow equalization, trickling filtration, clarification, flocculation, digestion, tertiary filtration, and disinfection. Adjacent to the WWTF are two lined effluent storage ponds and one lined emergency storage basin. A treatment system flowchart is presented in [Attachment C](#), which is attached hereto and made a part of this Order by reference.
7. Influent to the treatment system is screened with duplex mechanical fine screens to remove solids then stored in an enclosed aerated flow equalization tank. The flow equalization tank has a storage capacity of 40% of the total daily flow. This allows wastewater that enters the plant during high flow periods to be stored for processing when influent flows are reduced. The treatment system operates at the average daily flow rate, which reduces the required downstream treatment process capacity.
8. Suspended solids are removed from the influent wastewater in a primary clarifier adjacent to the flow equalization tank. Settled solids are removed from the bottom of the clarifier and conveyed to the sludge storage tank using airlift pumps. The clarified wastewater is conveyed to the first stage trickling filter tower for secondary treatment.
9. Secondary treatment consists of four trickling filters in series that will biologically oxidize the soluble organics in the wastewater. The four filters are operated to achieve the required biochemical oxygen demand (BOD) removal and nitrification of ammonia and other nitrogen compounds. Wastewater is sprayed over the plastic, cross-flow trickling filter media, where microorganisms remove organic compounds and convert them to carbon dioxide, water, and new cells. Periodically, solids slough off and are carried out of the trickling filters to the secondary clarifiers where they are removed by airlift pumps and conveyed to the sludge storage tank.
10. Prior to final clarification, a coagulant (polyaluminum hydroxychloride or aluminum chlorohydrate) is added to the clarifier effluent to agglomerate fine particulates into larger particles to be removed during filtering. Rapid mixing disperses the coagulant and enhances flocculation.
11. The clarified effluent is filtered using duplex sand filters to remove fine suspended solids remaining in the wastewater after clarification. The RWD states that the sand and anthracite media comply with the specifications for filter media issued Department of Health Services (DHS). The filters are sized to treat a maximum flow rate of five gallons per minute per square foot with one filter unit out of service as required by Title 22.
12. The filters are backwashed to flush out solids collected on the filter media. The backwash water is returned to the treatment system at the flow equalization tank.

13. Following filtration, the treated effluent is disinfected using a duplex feed system to pump a 12.5% solution of liquid sodium hypochlorite into the filtered effluent prior to discharge to the chlorine contact chamber. Sufficient detention time is provided to ensure a modal contact time of 90 minutes as required by Title 22. Chemical storage is provided for a minimum of 15 days of sodium hypochlorite usage.
14. Following treatment and disinfection the effluent is discharged to two 80-mil HDPE lined effluent storage ponds prior to irrigation of the landscaped Use Areas. Each pond is 557 feet by 200 feet with a maximum water depth of 15 feet and a total capacity of 45 acre-feet with two feet of freeboard provided.
15. Settled sludge in the clarifier tanks is pumped to an aerated sludge storage tank for digestion and storage. The sludge is thickened to between one to two percent solids. Decant water from the sludge storage tank is returned to the flow equalization tank for processing through the treatment system. The sludge is transferred to a second sludge storage tank and mixed with screenings prior to disposal. Currently, sludge and screenings are transported offsite by a licensed sludge handling company for disposal at an approved receiving station. The volume of sludge to be hauled offsite during Phase 1 is estimated to be approximately 5,000 gallons per week. The use of a sludge-dewatering device, such as a sludge bagging unit, screw press, or centrifuge will be evaluated when the volume of sludge increases sufficiently to justify the capital cost and additional labor.
16. The WWTF is designed for continuous, reliable performance with provisions for component malfunction and primary power outages. These provisions include: a control system to monitor the status and performance of equipment and instrumentation utilized in the treatment process; an alarm and automatic dialer system to contact operating personnel if a problem is detected; all critical mechanical components in the process train have duplex units or spare parts available for immediate repair; in the event of a malfunction, the duplex unit will automatically be started by the control system; by-pass of all unit processes for routine maintenance and repair while maintaining full compliance with the effluent discharge specifications; a standby power generator available for use during power failures; and by-pass to a lined emergency 500,000-gallon storage basin, in the event of a problem.
17. Self-monitoring data from January 2006 to December 2006 characterize the discharge as follows:

<u>Constituent/Parameter</u>	<u>Units</u> <sup>1</sup>	<u>Influent</u>	<u>Effluent</u>	<u>% Removal</u> <sup>2</sup>
Monthly Average Discharge Flow	mgd	0.021	NA <sup>3</sup>	NA
<b>Conventional Pollutants</b>				
pH	su	NA	7.7	NA
BOD <sub>5</sub> <sup>4</sup>	mg/L	171	2.5	98.7%
Total Suspended Solids	mg/L	207	1.1	99.5%

<u>Constituent/Parameter</u>	<u>Units</u> <sup>1</sup>	<u>Influent</u>	<u>Effluent</u>	<u>% Removal</u> <sup>2</sup>
<b>Salts</b>				
Chloride	mg/L	NS <sup>5</sup>	91	NA
Sodium	mg/L	NS	84	NA
EC <sup>6</sup>	µmhos/cm	NS	938	NA
TDS <sup>7</sup>	mg/L	NS	634	NA
<b>Nitrogen Forms</b>				
Nitrate (as Nitrogen)	mg/L	NS	22	NA
Total Kjeldahl Nitrogen	mg/L	NS	32	NA
Ammonia (as Nitrogen)	mg/L	NS	28	NA
Total Nitrogen <sup>8</sup>	mg/L	NS	54	NA

<sup>1</sup> mgd = million gallons per day. su = standard pH units. mg/L = milligrams per liter.  
 µmhos/cm = micromhos per centimeter

<sup>2</sup> Percent removal (% removal)

<sup>3</sup> Not applicable

<sup>4</sup> 5-day biochemical oxygen demand (BOD<sub>5</sub>)

<sup>5</sup> Not sampled

<sup>6</sup> Electrical conductivity at 25°C (EC)

<sup>7</sup> Total Dissolved Solids (TDS)

<sup>8</sup> Calculated by summing the concentrations of nitrate as nitrogen and TKN, and assuming the concentration of nitrite is negligible.

18. On average, the EC of the WWTF effluent is about 700 µmhos/cm over the source water. The RWD estimated that the effluent EC would be less than 300 µmhos/cm over source water.
19. The RWD reported that nitrogen would be removed in the treatment process through recirculation of nitrified wastewater from the final trickling stage to the first trickling filter stage, and estimated that the average nitrogen concentration in the effluent would be 20 mg/L when active. In a 19 April 2007 communication with the Discharger's consultant, he indicated that the denitrification process has not been implemented.

### Water Recycling

20. Disinfected recycled water from the WWTF flows to the adjacent lined effluent storage ponds following disinfection. The ponds serve as the source water for the irrigation pumping station that pressurizes the recycled water distribution system. The ponds provide storage during the winter months when irrigation is not needed due to rainfall or saturated soils. The ponds have sufficient capacity (45-acre feet) to store effluent during a 100-year rain event.

21. The disinfected recycled water is used to supplement irrigation water for spray irrigation of the landscaped and recreational areas within the Facility, which consist primarily of Bermuda grass. Wards of the State will come into contact with the irrigated Use Areas when used during the day for recreational purposes. The total irrigated area required is approximately 90 acres. The irrigated Use Areas are shown on [Attachment B](#).
22. The Discharger's Recycled Water Balance demonstrates that the 90-acre Use Area and 45-acre lined effluent storage ponds are sufficient to maintain the water balance at the full WWTF flows during Phase 1 of the project.
23. With an average daily flow of 0.12 mgd and average effluent nitrogen concentration of 54 mg/L, the nitrogen loading to the landscaped Use Areas from treated effluent would be approximately 219 lbs/acre/year, which is almost equal to the nitrogen uptake rate of 225 lbs/acre/year for Bermuda grass that makes up the majority of the irrigated Use Areas.

#### **Site-Specific Conditions**

24. The Facility is in an arid climate characterized by hot dry summers and mild winters. The rainy season generally extends from November through March. Occasional rains occur during the spring and fall months, but summer months are dry. Average annual precipitation and evaporation in the discharge area are about 10.6 inches and 66 inches, respectively, according to information published by California Department of Water Resources (DWR).
25. Soils in the vicinity of the project area consist of Hanford sandy loam and Hesperia fine sandy loam according to the U.S. Soil Conservation Service (now the Natural Resources Conservation Service). Permeability of the surface soils is moderate to moderately slow. Published infiltration rates for these soils range from about 0.06 to 2.0 inches per hour.
26. Surface water drainage in the area is by sheet flow. Runoff in the region is to the south-southwest. The nearest surface water is the Oleander irrigation canal, which is an unlined canal that runs southwest to northeast along the western boundary of the Facility.
27. The WWTF is not within a 100-year floodplain according to Federal Emergency Management Agency maps.
28. Land use in the WWTF vicinity is primarily agricultural, light industrial, and rural residential. Primary crops grown in the vicinity of the WWTF include grapes, forage and grain crops, plums, peaches, and other stone fruit crops according to DWR land use data published in 2000. Most crops in this area are furrow irrigated, although some are sprinkler irrigated, according to the University of California Cooperative Extension. Irrigation water is supplied primarily by groundwater.

**Groundwater Considerations**

29. Regional groundwater in the area is encountered at about 55 feet below ground surface (bgs) and flows west-southwest, according to information in *Lines of Equal Elevation of Water in Wells in Unconfined Aquifer*, published by Department of Water Resources in Spring 2004.
30. Source water is provided by two groundwater wells located at the Facility. The average source water characteristics of blended water from the two wells are presented below:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Average</u>
EC	µmhos/cm	210
Chloride	mg/L	4
Sodium	mg/L	24
TDS	mg/L	125
Nitrate (as NO <sub>3</sub> )	mg/L	7.8
Arsenic	µg/L	0.0025
Iron	mg/L	< 0.05
Manganese	mg/L	< 0.01

31. The Discharger installed five groundwater monitoring wells in the vicinity of the WWTF in 2006. The monitoring wells were drilled using a mud-rotary drilling rig and constructed of 4-inch diameter schedule 80 PVC casing with 20 feet of 0.03-inch slotted screen. During the initial sampling, depth-to-water ranged from about 48 to 52 feet below ground surface (bgs) and groundwater flow was to the west at an approximate gradient of 0.001 ft/ft. Based on the well construction details, the three monitoring wells down-gradient of the WWTF and effluent storage ponds were screened 18 to 20 feet below first-encountered groundwater. The screened interval of the two up-gradient monitoring wells is either across or just below first encountered groundwater.

32. Groundwater data for selected constituents is presented below:

<u>Constituent</u>	<u>Units</u>	<u>MW-1U</u>	<u>MW-2U</u>	<u>MW-3D</u>	<u>MW-4D</u>	<u>MW-5D</u>
		up-gradient	up-gradient	down-gradient	down-gradient	down-gradient
EC	µmhos/cm	778	545	695	950	853
TDS	mg/L	600	394	490	645	578
Chloride	mg/L	18	10	13.5	25	21.5
Nitrate (as NO <sub>3</sub> )	mg/L	85.5	63	81	103.5	94.5
Iron	mg/L	0.18	< 0.05	< 0.05	0.22	< 0.05

33. Based on existing groundwater data, shallow groundwater beneath the WWTF is generally of good quality except for nitrate. The average EC of groundwater is 760 umhos/cm and TDS is 540 mg/L. Nitrate concentrations in groundwater are in excess of the primary MCL of 45 mg/L. Based on the data supplied, groundwater in the vicinity of the project area has no further assimilative capacity for nitrogen.

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

34. The Water Quality Control Plan for the Tulare Lake Basin, 2nd Edition, (hereafter Basin Plan) designates beneficial uses, establishes **numerical and narrative** 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), these waste discharge requirements implement the Basin Plan.
35. The WWTF is in Detailed Analysis Unit (DAU) No. 233 of the Kings Basin. The Basin Plan designates the beneficial uses of groundwater in this DAU as municipal and domestic supply, agricultural supply, industrial service supply, industrial process supply, and water contact and non-contact recreation.
36. The Basin Plan includes a water quality objective for chemical constituents that, at a minimum, requires waters designated as domestic or municipal supply to meet the MCLs specified in Title 22. The Basin Plan's incorporation of these provisions by reference is prospective, and includes future changes to the incorporated provisions as the changes take effect. The Basin Plan recognizes that the Regional 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.
37. The Basin Plan establishes narrative water quality objectives for Chemical Constituents, Tastes 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.
38. The Basin Plan identifies the greatest long-term problem facing the entire Tulare Lake Basin as the increase in salinity in groundwater, which has accelerated due to the intensive use of soil and water resources by irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. Until then, the Basin Plan establishes several salt management requirements, including:
- a. The incremental increase in salts from use and treatment must be controlled to the extent possible. The maximum EC 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. Discharges to areas that may recharge good quality groundwaters 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).

- 39. The list of crops in [Finding 28](#) 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. Based on climate, and soil type, it is not likely that crops sensitive to salt and boron will be capable of being grown in the area; however, further information regarding the types of crops grown, background groundwater conditions, and overall effluent quality is necessary to make a final determination.
- 40. The Basin Plan requires municipal WWTFs that discharge to land to comply with treatment performance standards for BOD<sub>5</sub> and TSS. WWTFs that preclude public access and discharge less than 1 mgd must provide removal of 80 percent or reduction to 40 mg/L, whichever is more restrictive, of both BOD<sub>5</sub> and TSS. WWTFs that discharge less than 1 mgd must provide reduction to 40 mg/L of both BOD<sub>5</sub> and TSS.

### Antidegradation Analysis

- 41. State Water Resources Control 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 BPTC to minimize degradation.
- 42. Constitutes of concern that have the potential to degrade groundwater include salts and nutrients. However, the discharge will likely not degrade the beneficial uses of groundwater because:
  - a. For salinity, the Basin Plan contains effluent limits (EC of SW + 500  $\mu\text{mhos/cm}$ , 1,000  $\mu\text{mhos/cm}$  max.). This Order sets an interim effluent limit for EC at the Basin Plan maximum limit of 1,000  $\mu\text{mhos/cm}$ , which considered antidegradation when it was adopted. In addition this Order requires the Discharger conduct a salinity evaluation and implement BPTC measures to reduce the salinity of the discharge in accordance with the antidegradation policy.

- b. For nitrogen, the Discharger stores the effluent in a manner that protects underlying groundwater from percolation from ponds until it can be beneficially used on crops.

### **Treatment and Control Practices**

- 43. The Discharger provides 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;
  - c. lined effluent storage ponds;
  - d. disinfection of the treated effluent;
  - e. appropriate biosolids storage and disposal practices;
  - f. an operation and maintenance (O&M) manual; and
  - g. certified operators to ensure proper operation and maintenance.
- 44. 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. This Order includes a monitoring and reporting program that contains groundwater monitoring to assure that the highest water quality consistent with the maximum benefit to the people of the State will be achieved.

### **Water Recycling Criteria**

- 45. Domestic wastewater contains pathogens harmful to humans that are typically measured by means of total or fecal coliform, as indicator organisms. California Department of Health Services (DHS), 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.
- 46. A 1988 Memorandum of Agreement (MOA) between DHS and the State Water Resources Control Board (State Water Board) on the use of recycled water establishes basic principles relative to the agencies and the regional water boards. 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.

47. State Water Board Resolution No. 77-1, Policy with Respect to Water Recycling in California, encourages recycling projects that replace or supplement the use of fresh water, and the Water Recycling Law (California Water Code Section 13500-13529.4) declares that utilization of recycled water is of primary interest to the people of the State in meeting future water needs.
48. The Basin Plan encourages recycling for irrigation wherever feasible and indicates that evaporation of recyclable wastewater is not an acceptable permanent disposal method where the opportunity exists to replace an existing use or proposed use of fresh water with recycled water.
49. Title 22, Section 60323 requires recyclers of treated municipal wastewater to submit an engineering report detailing the use of recycled water, contingency plans, and safeguards. The Discharger submitted an engineering report to the Regional Water Board and DHS pursuant to Title 22, Section 60323, for its water recycling operations in May 2005 and a revised report in May 2006 addressing comments made by the DHS in their letter dated 26 October 2005.

#### **Other Regulatory Considerations**

50. The United States Environmental Protection Agency (EPA) has promulgated biosolids reuse regulations in Title 40, Code of Federal Regulations, Part 503, Standards for the Use or Disposal of Sewage Sludge, which establishes management criteria for protection of ground and surface waters, sets application rates for heavy metals, and establishes stabilization and disinfection criteria. The Discharger may have separate and/or additional compliance, reporting, and permitting responsibilities to EPA. The RWD states that all biosolids will be hauled to a separate permitted facility.
51. 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 public agencies that own or operate sanitary sewer systems greater than one mile in length to comply with the order. The Discharger's collection system is less than one mile in length; therefore, the General Order is not applicable.
52. The Discharger is not required to obtain coverage under the National Pollutant Discharge Elimination System general industrial storm water permit for the WWTF because all storm water runoff is diverted into an existing storm water retention basin, kept separate from the wastewater stream, and does not discharge to a water of the United States.
53. As the discharge consists of treated municipal sewage and incidental discharges from treatment and storage facilities associated with a municipal wastewater treatment plant, and as these discharges are regulated by waste discharge requirements consistent with applicable water quality objectives, the Facility and its discharge is exempt from containment pursuant to Title 27, Section 20090(a).

### CEQA

54. Fresno County certified an Environmental Impact Report (EIR) on [25 February 2003](#) for the proposed development of the Fresno County Juvenile Justice Campus in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et, seq.) and the State CEQA guidelines (Title 14, Division 6, California Code of Regulations, as amended). In the EIR, the Discharger stated wastewater treatment impacts would be mitigated as practicable through formal coordination with the appropriate county, state, and federal authorities; the use of tertiary treatment (with nitrogen removal); onsite effluent storage ponds and reuse; optimal setting of facilities; and implementation of an approved groundwater monitoring program.
55. The Regional Water Board is a responsible agency pursuant to CEQA. The Regional Water Board reviewed and considered the EIR prepared by the Discharger. This Order contains requirements that will mitigate or avoid environmental effects on water quality.

### General Findings

56. 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.
57. The Regional Water Board will review this Order periodically and will revise requirements when necessary.
58. California Water Code 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."
59. The technical reports required by this Order and the attached Monitoring and Reporting Program No. [R5-2007-\\_\\_\\_\\_\\_](#) are necessary to assure compliance with these waste discharge requirements. The Discharger operates the Facility that discharges the waste subject to this Order.
60. The California Department of Water Resources set standards for the construction and destruction of groundwater wells, as described in 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 California Water Code Section 13801, apply to all monitoring wells.

### Public Notice

61. 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.
62. The Discharger and interested agencies and persons have been notified of the intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
63. All comments pertaining to the discharge were heard and considered in a public meeting.

**IT IS HEREBY ORDERED** that, pursuant to Sections 13263 and 13267 of the CWC, the County of Fresno 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. Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Bypass or overflow of untreated wastes, 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 California Water Code Section 13173, in a manner that causes violation of groundwater limitations, is prohibited.
4. Application of treated wastewater in a manner or location other than that described herein is prohibited.

#### B. Effluent Limitations

1. The discharge flow shall not exceed:
  - a. A monthly average discharge flow of 0.12 mgd; and
  - b. A peak daily discharge flow of 0.135 mgd.

2. The discharge shall not exceed the following limitations:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
BOD <sub>5</sub> <sup>1</sup>	mg/L	10	20
TSS <sup>2</sup>	mg/L	10	20

<sup>1</sup> 5-day Biochemical Oxygen Demand

<sup>2</sup> Total Suspended Solids

3. The interim monthly flow-weighted average EC of the discharge shall not exceed 1,000 µmhos/cm calculated on a monthly basis. This performance-based limit will be re-opened based upon completion of [Provision G.12](#).
4. Effluent discharged from the WWTF shall comply with the following limits for total coliform organisms:
  - a. The median concentration of total coliform bacteria measured in the disinfected effluent shall not exceed an MPN of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which the analyses have been completed.
  - b. The number of total coliform bacteria shall not exceed an MPN of 23 milliliters in more than one sample in any 30-day period.
  - c. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.
5. Effluent that is filtered through undisturbed soil or a filter media shall not exceed any of the following with regards to turbidity:
  - a. An average of 2.0 NTU within a 24-hour period.
  - b. 5.0 NTU more than 5 percent of the time within a 24-hour period.
  - c. 10.0 NTU at any time.
6. Effluent that is filtered through a microfiltration, ultrafiltration, nanofiltration, or reverse osmosis membrane shall not exceed any of the following with regards to turbidity:
  - a. An average of 0.2 NTU more than 5 percent of the time within a 24-hour period.
  - b. 0.5 NTU 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. Objectionable odors shall not be perceivable beyond the limits of the WWTF at an intensity that creates or threatens to create nuisance conditions.
5. Application of waste constituents to the landscape and recreational areas shall be at reasonable agronomic rates to preclude creation of a nuisance or degradation of groundwater, considering soil, climate, and nutrient demand. The annual nutritive loading of the landscape and recreational areas including the nutritive value of organic and chemical fertilizers and of the recycled water, shall not exceed the demand.
6. 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.
7. 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.
8. 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.6](#).
9. 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.

**D. Recycling Specifications**

1. Recycled water shall be used in compliance with Title 22, Division 4, Chapter 3, Article 3, *Uses of Recycled Water*.
2. Public contact with recycled water shall be controlled using signs and/or other appropriate means. Signs with proper wording (shown below) of a size no less than four inches high by eight inches wide 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 D](#), a part of this Order, and present the following wording:

**“RECYCLED WATER – DO NOT DRINK”**

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

3. Recycled water controllers, valves, and similar appurtenances shall be affixed with recycled water warning signs, and shall be equipped with removable handles or locking mechanisms to prevent public access or tampering. Quick couplers, if used, shall be of a type, or secured in a manner, that permits operation only by authorized personnel. Hose bibs shall not be used.
4. The Discharger will maintain the following setback distances from areas irrigated with recycled water:

<u>Setback Distance (feet)</u>	<u>To</u>
20	Edge of application area to domestic well
100	Wastewater/recycled water storage reservoir to domestic well
50	Application area to surface water

5. No physical connection shall exist between recycled water piping and any domestic water supply or domestic well, or between recycled water piping and any irrigation well that does not have an air gap or reduce pressure principle device.
6. Any irrigation runoff shall be confined to the recycled water use area, and shall not enter any surface water drainage course or stormwater drainage system unless the runoff does not pose a public health threat and is authorized by the regulatory agency.

7. Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities.
8. Drinking water fountains shall be protected against contact with recycled water spray, mist, or runoff.
9. Any connection between the recycled water conveyance system and any potable water conveyance system, groundwater supply well, or surface water supply source for the purpose of supplemental water shall be equipped with a DHS-approved backflow prevention device.
10. Sprinkler heads shall be of the type approved for recycled water and shall create a minimum amount of mist. Drainage through sprinkler heads is prohibited.
11. Land application areas that are spray irrigated and allow public access shall be irrigated during periods of minimal use (typically between 9 p.m. and 6 a.m.). Consideration shall be given to allow maximum drying time prior to subsequent public use.
12. Areas irrigated with recycled water shall be managed to prevent nuisance conditions or breeding of mosquitoes. More specifically:
  - a. All applied irrigation water must infiltrate completely within a 48-hour period;
  - b. Ditches not serving as wildlife habitat should be maintained free of emergent, marginal, and floating vegetation; and
  - c. Low-pressure and unpressurized pipelines and ditches 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. 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 the General Biosolids Order (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 the General Biosolids Order, the Discharger must file a complete Notice of Intent and receive a Notice of Applicability for each project.
6. Any proposed change in sludge use or disposal practice shall be reported in writing to the Executive Officer at least 90 days in advance of the change.

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

1. Containing constituents concentrations in excess of the concentrations specified below or natural background quality, whichever is greater:
  - (i) Nitrate as nitrogen of 10 mg/L.
  - (ii) Total coliform organisms of 2.2 MPN/100 mL.
  - (iii) For constituents identified in Title 22, the MCLs quantified therein.

#### **G. Provisions**

1. The Discharger shall comply with the Standard Provisions and Reporting Requirements for Waste Discharge Requirements, dated 1 March 1991, which are part of this Order. This attachment and its individual paragraphs are referred to as Standard Provisions.
2. The Discharger shall comply with Monitoring and Reporting Program (MRP) No. [R5-2007-\\_\\_\\_\\_\\_](#), which is part of this Order, and any revisions thereto as adopted by the Regional Water Board or approved by the Executive Officer. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program for Discharger self-monitoring reports.

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 Facility 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), 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 required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1. To demonstrate compliance with sections 415 and 3065 of Title 16, CCR, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.
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 Regional 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 Regional Water Board by letter when it returns to compliance with the time schedule. Violations may result in enforcement action, including Regional 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 appropriate Regional Water Board office.

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 Regional 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 Regional Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.
10. As a means of discerning compliance with [Discharge Specification C.4](#), 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 Regional Water Board and propose a remedial approach to resolve the low DO results **within 30 days**.
11. 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.
12. **By 1 January 2008**, 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 in an effort to meet the Basin Plan's salinity performance goal of 500 µmhos/cm over source water. The salinity minimization plan shall include a time schedule to implement the identified measures.
13. 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.

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2007-\_\_\_\_\_  
COUNTY OF FRESNO JUVENILE JUSTICE CAMPUS WWTF  
FRESNO COUNTY

-20-

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 \_\_\_\_\_.

\_\_\_\_\_  
PAMELA C. CREEDON, Executive Officer

Order Attachments:

- A. Vicinity Map
- B. Plane View of Fresno County JJC and WWTF
- C. Flow Schematic
- D. Nonpotable International Water Symbol

Monitoring and Reporting Program No. R5-2007-\_\_\_\_\_  
Information Sheet

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

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