

INFORMATION SHEET

MASTER RECLAMATION PERMIT NO. R5-2008-_____
FRESNO COUNTY SERVICE AREA NO. 34
MILLERTON NEW TOWN RECYCLING SYSTEM
FRESNO COUNTY

Background

Millerton New Town a planned development on Millerton Road east of Friant proposes to use disinfected tertiary recycled water from the community's wastewater treatment facility (WWTF) to irrigate the Brighton Crest Golf Course, and adjacent open space and landscaped areas including common areas, parks, and a school yard within the Millerton New Town development. In addition, the development proposes to use recycled water for landscape irrigation of some residential lots within the development, and to provide for fire protection within the proposed Marina Estates subdivision.

Fresno County Service Area No. 34 (hereafter Discharger or Fresno CSA # 34) was formed in 1986 to operate and maintain public utilities for the planned Millerton New Town development. In August 2007, the Discharger submitted a Report of Waste Discharge (RWD) and applied for a Master Reclamation Permit to allow for distribution and use of recycled water within its service area.

The new tertiary WWTF consists of headworks, a new secondary treatment process, coagulation/flocculation, filtration, disinfection, sludge handling facility, an emergency storage basin, lined effluent storage ponds (permeability less than 10^{-7} cm/sec), and a recycled water irrigation system. The tertiary WWTF will be expanded in phases to a final capacity of 1.07 million gallons per day (mgd).

The tertiary WWTF is designed to provide tertiary treatment and is regulated under Waste Discharge Requirements (WDRs) Order No. R5-2008-____. Order No. R5-2008-____ contains requirements to ensure protection of public health and compliance with Title 22 requirements. The tertiary recycled water shall, at a minimum, be adequately oxidized, coagulated, filtered, and disinfected. The monthly average biochemical oxygen demand (BOD) and total suspended solids shall not exceed 10 mg/L or a daily maximum of 20 mg/L. The median concentration of total coliform bacteria measured in the disinfected effluent shall not exceed 2.2 MPN/100 milliliters utilizing the bacteriological results of the last seven days for which the analyses have been completed, the number of total coliform bacteria shall not exceed 23 MPN/100 milliliters in more than one sample in any 30-day period, and no sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.

Disinfection of tertiary treated effluent will be accomplished 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, with sufficient detention time to ensure a modal contact time of 90 minutes as required by Title 22.

Water Recycling Requirements

The Department of Public Health (DPH) (formerly Department of Health Services) has established statewide recycling water 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

MASTER RECLAMATION PERMIT
INFORMATION SHEET ORDER NO. R5-2008-_____
FRESNO COUNTY SERVICE AREA NO. 34
MILLERTON NEW TOWN RECYCLING SYSTEM
FRESNO COUNTY

-2-

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.

Fresno CSA #34 will treat the wastewater to the standards required in Title 22 for unrestricted irrigation of golf course and other public use areas. As the responsible party named in the Master Reclamation permit, Fresno CSA #34 is responsible to maintain the minimum land application acreage and recycled storage pond capacity to comply with the terms and conditions of this Order. The Order, as proposed, includes requirements for Fresno CSA #34 to establish and enforce rules and regulations for recycled water users in accordance with statewide recycling criteria, and to conduct periodic inspections of the recycled water use sites.

Recycled water Users will include the owners of Brighton Crest Golf Course (The Clarksfield Company), the Clovis Unified School District, Fresno County, and individual homeowners or homeowner associations within the Millerton New Town Development. Fresno CSA #34 will be responsible for obtaining User Agreements and informing individual owners regarding the use and application of recycled water as well as obtain recorded covenants for land dedicated for effluent disposal to ensure unrestricted availability of land for disposal of effluent.

This Order as proposed would require Fresno CSA #34 as the Producer of recycled water to implement and enforce specific measures relating to the use of recycled water. These include: (a) posting of appropriate warning signs around Use Areas, (b) maintaining setback distances, (c) ensuring distribution and delivery systems are well maintained and operational, and (d) requiring that recycled water be applied at agronomic rates.

The proposed Order would require the Discharger to monitor the quality of the recycled water in accordance with Waste Discharge Requirements Order No. R5-2008-_____ and require the User or responsible management entity (REM) assigned by Fresno CSA #34 to monitor its application in accordance with the proposed Monitoring and Reporting Program. Specifically, the proposed Order would require the User or REM to report the amounts of recycled water applied to the Use Areas, calculate nitrogen and salt loading to individual Use Areas, inspect the Use Areas on at least a monthly basis to ensure that water recycling is in compliance with the proposed Order; and submit required quarterly and annual monitoring reports to the Regional Water Board.

The State Legislature established the California Recycled Water Task Force (Task Force) in 2001 to evaluate the current framework of State and local rules, regulations, ordinances and permits to identify opportunities for and obstacles to the same use of recycled water in California. In June 2003, the Task Force completed its review and issued its final report, titled "Water Recycling 2030, Recommendations of California's Recycled Water Task Force." Recommendation 4.2.1 of the report states that the State Board should convene a committee

to review the legal requirements of Federal and State statutes and regulations that relate to the regulation of incidental runoff of recycled water to determine the regulatory and enforcement options that are available to the regional boards. Following a stakeholder process and internal review, on 24 February 2004 the Executive Director issued a memorandum providing guidance on regulation of recycled runoff and discharges of recycled water from ponds. The proposed Order is consistent with that memorandum.

The golf course and other application areas may contain numerous hills and sloped areas that would promote runoff unless closely managed during irrigation. In addition, the golf course may use ponds to store the recycled water that, during wet weather, may overflow and enter surface waters. Such runoff cannot occur except under an NPDES permit, and the Discharger is required to provide all runoff controls necessary to keep wastewater irrigation runoff out of drainage channels or surface waters. However, minor amounts of incidental runoff or over-spray cannot be completely prevented. The proposed Order requires that incidental runoff or over-spray be minimized to the extent practicable through operational strategies. Consistent with the 24 February 2004 State Water Board memorandum, such incidental runoff will not require an individual NPDES permit.

Site and Groundwater Conditions

Topography in the area consists of moderately steep to gently sloping hills. Soils in the area range from sandy loam to clay underlain by decomposed granite and are generally of moderate permeability. Soil units are generally thin to moderately thick. The contact between soil and the decomposed granite is often abrupt. Predominant soils in the project area include Sesame and Fallbrook. These soils have moderate to slow drainage. Regional groundwater is contained in fractured bedrock and to a lesser extent in alluvial/weathered bedrock deposits. Groundwater typically flows northeast to southwest. Depth to water is variable, with shallow groundwater encountered at depths less than 10 feet below grade on portions of the Use Area. Two monitoring wells were installed in the vicinity of the existing effluent storage ponds. Based on existing data, groundwater in the area is generally of good quality, except for nitrates, with average EC, chloride, and nitrate as nitrogen concentrations were 300 $\mu\text{mhos/cm}$, 15 mg/L and 12 mg/L, respectively. The average nitrate concentration at 12 mg/L exceeds the primary maximum contaminant level (MCL) for nitrate, expressed as nitrogen of 10 mg/L.

Due to the low volume of the initial stage of the WWTF and the fact the effluent storage ponds were lined the WWTF would not appear to be the source of the nitrate in groundwater. With replacement of the existing pond liner with a new high-density polyethylene liner with a permeability less than 10^{-7} cm/sec and application of recycled water at agronomic rates, further degradation of groundwater is not expected.

Basin Plan, Beneficial Uses, and Regulatory Considerations

Millerton New Town and the WWTF are in the San Joaquin Basin. The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition, (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Board.

Land use in the vicinity is primarily residential, recreational, or rangeland. The rockiness of the soil, the low to moderate water holding capacity, and limited water available for irrigation makes this area unsuitable for cultivation. Because of the low potential for growing salt sensitive crops, an EC limit in groundwater of 900 $\mu\text{mhos/cm}$, based on Title 22 Table 64449 B, which establishes recommended, upper, and short term ranges for EC of 900 and 1,600 $\mu\text{mhos/cm}$ for drinking water is appropriate to protect the beneficial uses of underlying groundwater.

Antidegradation

The antidegradation directives of State Water Board Resolution No. 68-16, "Statement of Policy With Respect to Maintaining High Quality Waters in California," or "Antidegradation Policy" require that waters of the State that are better in quality than established water quality objectives be maintained "consistent with the maximum benefit to the people of the State." Waters can be of high quality for some constituents or beneficial uses and not others. Policy and procedures for complying with this directive are set forth in the Basin Plan.

The technology, energy, water recycling, and waste management advantages of municipal utility service far exceed any benefits derived from a community otherwise reliant on numerous concentrated individual wastewater systems. Degradation of groundwater by some of the typical waste constituents released with discharge from a municipal wastewater utility after effective source control, treatment, and control is consistent with maximum benefit to the people of the State, provided the terms of the Basin Plan are met. Constituents of concern that have the potential to degrade groundwater include, in part, nutrients and salts. However, the discharge will likely not degrade the beneficial uses of groundwater because:

- a. For nitrogen, this Order sets a narrative nitrogen limit requiring that the effluent be applied at agronomic rates reflecting the seasonal hydraulic and nutrient requirements of the Use Area. With storage in lined ponds and application at agronomic rates, no degradation of groundwater for nitrates is expected to occur.
- b. For salinity, this Order sets an effluent limitation for EC of 550 $\mu\text{mhos/cm}$, which is consistent with the Tulare Lake Basin Plan's limit of 500 $\mu\text{mhos/cm}$ plus source in accordance with the 2007 Salinity Guidance, which reasoned that the numerical limits in

MASTER RECLAMATION PERMIT
INFORMATION SHEET ORDER NO. R5-2008-_____
FRESNO COUNTY SERVICE AREA NO. 34
MILLERTON NEW TOWN RECYCLING SYSTEM
FRESNO COUNTY

-5-

the Tulare Lake Basin Plan, for municipal discharges are applicable as best practicable treatment or control (BPTC), even if the discharge is not conducted in the Tulare Lake Basin.

Title 27

Title 27, CCR, section 20005 et seq. (Title 27) contains regulations to address certain discharges to land. Title 27 establishes a waste classification system, specifies siting and construction standards for full containment of classified waste, requires extensive monitoring of groundwater and the unsaturated zone for any indication of failure of containment, and specifies closure and post-closure maintenance requirements. Generally, no degradation of groundwater quality by any waste constituent in a classified waste is acceptable under Title 27 regulations.

Discharges of domestic sewage and treated effluent can be treated and controlled to a degree that will not result in unreasonable degradation of groundwater. For this reason, they have been conditionally exempted from Title 27.

CEQA

On 18 December 1984, Fresno County, 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), certified an Environmental Impact Report (EIR) and approved the Millerton Specific Plan. The EIR was amended in 1999, 2000, and 2004 to include additional areas within the within the Millerton Specific Plan area. The EIR determined that potential impacts to water quality relative to the WWTF and the use of recycled water would be reduced to less than significant given the mitigation measures adopted as part of the Millerton Specific Plan on 20 April 1999.

Mitigation Measures related to water quality include:

- a.) All developments that occur within the Specific Plan area must utilize a community sewer system with effluent treated to tertiary level;
- b.) Reliability and design requirements for the treatment process must adhere to established engineering standards for Department of Public Health (DPH) (formerly Department of Health Services) criteria;
- c.) To the greatest extent possible, reclaimed water shall be reused for irrigation of golf courses and other landscaped areas at agronomic rates; and
- d.) Areas for use of reclaimed water shall be constructed to allow for landscaping and golf course use and protection of wetlands.

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

MASTER RECLAMATION PERMIT
INFORMATION SHEET ORDER NO. R5-2008-_____
FRESNO COUNTY SERVICE AREA NO. 34
MILLERTON NEW TOWN RECYCLING SYSTEM
FRESNO COUNTY

-6-

quality regarding the distribution and use of recycled water. Requirements regarding the treatment and storage of wastewater prior to application are discussed in the accompanying WDRs Order No. [R5-2008-_____](#).

Reopener

The conditions of discharge in the proposed Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. It may be appropriate to reopen the Order if applicable laws and regulations change. The California Water Code requires that water recycling requirements implement all applicable requirements.

kc/DKP: 6/30/08