INFORMATION SHEET

ORDER NO. R5-2010-XXXX
CALAVERAS COUNTY WATER DISTRICT
COPPER COVE WASTEWATER TREATMENT PLANT
CALAVERAS COUNTY

Background

The Calaveras County Water District (CCWD), hereafter referred to as Discharger, owns and operates the Copper Cove Wastewater Treatment Plant (WWTP) that serves the communities of Copper Cove, Conner Estates, Copper Meadows, Saddle Creek, and Lake Tulloch. The WWTP was constructed in the early 1970s, and currently it has 1,802 connections serving approximately 4,500 people.

The WWTP includes collection, secondary wastewater treatment and storage with sodium hypochlorite disinfection, on-site land application, and off-site reuse with tertiary water treatment facilities with Ultra-Violet (UV) light disinfection. This Order prescribes requirements for the Discharger's collection, secondary treatment and storage facilities, and on-site 35-acre Land Application Area (LAA).

The requirements for the tertiary wastewater treatment Ultra-Violet (UV) light disinfection and recycled water irrigation reuse for Saddle Creek Golf Course (SCGC) are specified in the existing National Pollutant Discharge Elimination System (NPDES) Order for Calaveras County Water District & Saddle Creek Golf Course L.P., Copper Cove Wastewater Reclamation Facility, Order No. R5-2006-0081, NPDES Permit No. CA0084620 or subsequent Order. To provide the Discharger time to comply with requirements in Order No. R5-2006-0081, a companion Time Schedule Order No. R5-2006-0082 was also adopted by the Central Valley Water Board. The NPDES Permit allows the seasonal reuse of up to 0.95 mgd of tertiary treated wastewater from Copper Cove WWTP on SCGC irrigation.

WDRs Order No. 5-00-136, adopted by the Central Valley Water Board on 16 June 2000, prescribes requirements for the Copper Cove WWTP, and allows a monthly average dry weather influent flow (ADWF) of 0.20 million gallons per day (mgd). The Discharger plans to modify treatment facilities and to increase capacity to accommodate the proposed ADWF limit of 0.35 mgd. The changes include installing mechanical headworks, reconfiguring Ponds 1 and 2 from series to parallel and increasing the Pond 6 dam height by approximately ten feet.

Existing Wastewater Treatment, Storage, and Disposal System

The total monthly average inflows including Inflow and Infiltration (I&I) to the WWTP for the years 2007 and 2008 range from approximately 0.15 to 0.28 mgd. The WWTP is being modified to increase its capacity to treat an increased flow limit for future development.

The treatment and storage facilities consist of a headworks, a flow diverter, two aerated treatment Ponds 1 and 2 operated in series, an aerated treatment Pond 4, an effluent storage Pond 6 and an emergency storage Pond 5. Sodium hypochlorite is added to the effluent as it exits Pond 4 and then the disinfected effluent is discharged to Pond 6. From Pond 6, treated

secondary effluent is typically conveyed either to the tertiary wastewater treatment facility for further treatment and delivered to SCGC or disposed to the LAA, which is located northeast of Pond 6. The LAA is used to dispose of secondary treated wastewater when recycled water is not needed. The runoff that occurs within the LAA is returned to Pond 6 by graded slopes of the LAA. Pond 6 has an estimated capacity of 205 acre-feet excluding the two feet of freeboard. Pond 3 is out of service and Pond 5 is used for emergencies and all accumulation in Pond 5 is allowed to infiltrate or is pumped to Pond 6.

Modifications to the Wastewater System

The Discharger plans to modify the current facilities to increase the treatment and storage capacities for future use.

A new mechanical screen and screening washer are being installed to remove solids and debris from the raw sewage. In addition, the influent pumping station will consist of a 10-foot diameter wet well with three submersible chopper pumps. The Discharger proposes to change the operation of Pond 1 and Pond 2 from series to parallel in order to increase the treatment capacity. Pond 1 was equipped with two 10-horsepower aerators and Pond 2 had one10-horsepower aerator. The Discharger has installed four 15-horsepower aerators to Pond 1 and four 15-horsepower aerators to Pond 2 to increase biological treatment. The Discharger plans to increase the capacity of Pond 6 by raising the dam height approximately ten feet. Excluding the two feet of freeboard, the proposed storage capacity of Pond 6 will be approximately 415 acre-feet, which satisfies the 300 acre-feet storage requirement of an ADWF of 0.35 mgd and 100-year return period annual precipitation. The cost of the Pond 6 expansion is estimated to be $5.6 million. As of August 2008, the Discharger has not determined a specific timeline for this project due to financial hardship. Therefore, the Order allows the Discharger time to complete the expansion and the Executive officer to approve an incremental flow increase.

The Report of Waste Discharge (RWD) states that CCWD and the owners of SCGC intend to maximize the use of recycled water for golf course irrigation. The SCGS will be able to replace 168 acre-feet of surface water with recycled water for irrigation annually. The SCGC irrigation demand is estimated between 445 to 630 acre-feet, with an average of 515 acre-feet per year. The estimated recycled water production of the WWTP will be 400 to 415 acre-feet per year after facility modifications. The golf course recycled water demand is expected to exceed the recycled water production. Therefore, the LAA will serve as a backup means of effluent disposal. The SCGC irrigation will be the primary means of reuse and thus effluent disposal. However, due to SCGC's seasonal recycled water use, the Discharger needs to complete the Pond 6 expansion to provide enough effluent storage when SCGC does not irrigate during the wet season. Based on the existing Pond 6 capacity, the Discharger has to use the LAA for effluent disposal. In addition, the Discharger states that use of the LAA is necessary to draw down Pond 6 to allow for maximum storage capacity of Pond 6 before the winter season.

Basin Plan, Beneficial Uses, and Regulatory Considerations

Surface water drainage is to an unnamed tributary of Little Johns Creek, which flows into the Stanislaus River in the section between Goodwin Dam and the San Joaquin River. The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Resources Control Board.

Antidegradation

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:

1. The degradation is limited and will provide social and economical benefit to the people of the State;
2. The degradation will not unreasonably affect present and anticipated future beneficial uses;
3. The degradation is not expected to result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives; and
4. The discharger employs best practicable treatment or control (BPTC) to minimize degradation.

Resolution 68-16 prohibits degradation of groundwater quality as it existed in 1968, or at any time thereafter that groundwater quality was better than in 1968, other than degradation that was previously authorized. An anti-degradation analysis is required for a new discharge location, and/or an increased volume of waste and/or an increased concentration of waste constituents.

Degradation of groundwater by some of the typical waste constituents released with discharge from a municipal wastewater utility after best practical source control, treatment, and control is consistent with providing social and economical benefit to the people of the State. The technology, energy, water recycling, and waste management advantages of municipal utility service exceed any benefits derived from a community otherwise reliant on numerous concentrated individual wastewater systems, and the impact on water quality will be substantially less. The Discharger's anti-degradation analysis discusses how economic prosperity of valley and foothill communities and associated industry is of maximum benefit to the people of the State, and therefore sufficient reason to accommodate growth and groundwater degradation provided terms of the Basin Plan are met.

The Discharger has provided a limited anti-degradation analysis. It states SCGC will maximize the use of the recycled water, and land disposal will be used only for emergencies or to drawdown the remaining effluent in the storage reservoir prior to the winter season. This

strategy will result in less water applied to the LAA. However, the increased amount of wastewater in the treatment and storage ponds may have impacts on the underlying groundwater, especially due to the Pond 6 expansion. The RWD includes two water balances calculated with the proposed flow limit and the current flow rate. Pond 6 will contain 65 acre-feet additional of wastewater under the proposed flow limit. The higher hydraulic head in the pond increases the risk of groundwater degradation. This Order requires the Discharger to evaluate groundwater quality annually and to verify its anti-degradation assertions.

The Discharger has been monitoring groundwater quality at the current WWTP site since 2001. Based on the data available, it is not possible to determine pre-1968 groundwater quality. Therefore this Order requires the Discharger to (1) submit a *Groundwater Statistical Analysis Workplan*, (2) submit an *Annual Report Groundwater Quality Evaluation Report* to determine if degradation is occurring and if that degradation is consistent with the Anti-degradation Policy, (3) complete a *Salinity Reduction Workplan*, and (4) implement the BPTC measures identified in the *Salinity Reduction Workplan*.

The expansion of the WWTP will accommodate an approximate two percent annual wastewater flow increase over ten years. In addition, this increased flow will meet the reuse demand of SCGC irrigation. Sufficient reasons exist to accommodate this growth as long as the Discharger verifies its anti-degradation analysis and selects and implements BPTC measures within a reasonable timeframe. It is also appropriate to allow some groundwater degradation as long as it is consistent with the Basin Plan and Resolution No. 68-16 because social and economic prosperity of local communities and associated industry is of benefit to the people of California. This Order establishes terms and conditions of discharge to ensure that the discharge does not impact present and anticipated uses of groundwater and includes groundwater limitations that apply water quality objectives established in the Basin Plan to protect beneficial uses of the underlying groundwater. This Order also requires a groundwater quality evaluation annually and determination of the need for salinity reduction, and requires groundwater monitoring to quantify any water quality impacts. Following completion of the work required by the time schedule contained in the Provisions, this Order will be reopened, if necessary, to reconsider effluent limitations and other requirements to comply with Resolution 68-16. Based on the existing record, the discharge is consistent with the anti-degradation provisions of Resolution 68-16.

Title 27 Exemption

State regulations that prescribe procedures for detecting and characterizing the impact of waste constituents from waste management units on groundwater are found in Title 27 CCR Section 20380. Title 27 conditionally exempts certain activities from its provisions. To qualify for an exemption, the activity must meet, and continue to meet, specified preconditions. Title 27 contains several conditional exemptions that are relevant to the discharge. These include exemptions for domestic sewage, wastewater and reuse. Title 27, at section 20090, exempts these activities so long as the activity meets, and continues to meet, all preconditions listed:

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

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

(1) the applicable regional water quality control board has issued WDRs, or waived such issuance;

(2) the discharge is in compliance with the applicable water quality control plan; and

(3) the wastewater does not need to be managed according to Chapter 11, Division 4.5, Title 22of this code as a hazardous waste.

(h) Reuse – Recycling or other use of materials salvaged from waste, or produced by waste treatment, such as scrap metal, compost, and recycled chemicals, provided that discharges of residual wastes from recycling or treatment operations to land shall be according to applicable provisions of this division.

The discharge authorized herein and the treatment and storage facilities associated with the discharge, except for discharges of residual sludge and solid waste, are exempt from the requirements of Title 27, CCR.

a. **Treatment Ponds 1, 2 and 4.** The wastewater treatment ponds are exempt from Title 27 pursuant to Section 20090(a) because they are treatment ponds associated with a municipal domestic wastewater treatment plant.

b. **Emergency Storage Pond 5, Secondary Effluent Storage Pond 6 and LAA**. Pond 5 and Pond 6 are unlined ponds; therefore, wastewater contained in the Ponds potentially percolates to the underlying groundwater. Pond 5 wastewater is pumped into Pond 6 and from Pond 6 the wastewater requires additional treatment before its reuse on the SCGC. The land application area is used to dispose of excess treated wastewater that either cannot be reused at the SCGC or that accumulates in Pond 6 prior to the rainy season. Ponds 5 and 6 and the LAA are conditionally exempt from Title 27 pursuant to Section 20090 (a), and (b).

The LAA and Ponds 5 and 6 are exempt from Title 27 pursuant to Section 20090 (a) because they are associated with municipal wastewater treatment plants. The LAA and Ponds 5 and 6 are exempt from Title 27 pursuant to Section 20090 (b) based on

the following: (1) Central Valley Water Board has issued WDRs. (2) The applicability of this exemption depends on whether the discharge is in compliance with the Basin Plan. The Order requires this assertion to be verified by conducting an annual groundwater quality statistical evaluation for each well and submitting a report to determine if degradation is occurring and if that degradation is consistent with the Anti-degradation Policy. These reports will be used to determine whether additional treatment and/or improved containment are needed to ensure compliance with the Basin Plan and new WDRs are necessary. Because compliance with the Basin Plan cannot be determined immediately, this Order includes a compliance schedule for completion of those tasks. (3) Based on effluent monitoring data presented, treated effluent discharged to the effluent storage ponds does not need to be managed as hazardous waste. Pond 5 and Pond 6 are not exempt from Title 27 pursuant to Section 20090 (h) because the secondary treated wastewater stored in the ponds requires additional treatment before its reuse on the SCGC. The LAA is not exempt from Title 27 pursuant to Section 20090 (h) because their use is for wastewater disposal and there is no reuse.

c. **The SCGC.** The reuse of treated wastewater at the SCGC has regulatory coverage under an NPDES permit and that permit contains the appropriate Title 27 exemption for this activity. This reuse may qualify for an exemption under Title 27 pursuant to Section 20090(h).

While the WWTP is exempt from Title 27, the data analysis methods of Title 27 are appropriate for determining whether the discharge complies with the terms for protection of groundwater specified in this Order, particularly the intra-well statistical method.

Best Practicable Treatment Technology and Control

The Discharger currently provides treatment and control of the discharge that incorporates:

a. The new mechanical screen, screening washer and wet well that will remove solids and debris from the raw sewage;
b. The two parallel primary treatment ponds, one settling pond, one sodium hypochlorite disinfection facility, one effluent storage reservoir, and the LAA;
c. Alarms to prevent system bypass or overflow;
d. Tertiary treatment for a portion of its total permitted capacity;
e. An Operation and Maintenance Plan; and
f. Certified operators to assure proper operation and maintenance.

Discharge Prohibitions, Specifications and Provisions

The monthly average dry weather influent flow shall not exceed 0.23 mgd. Upon Executive Officer approval of the Completion Report for Pond 6 expansion, the monthly average dry weather influent flow shall not exceed 0.35 mgd.

The Discharger and SCGC shall maximize the use of recycled water for the golf course irrigation.

The proposed Order contains an effluent Total Dissolved Solids (TDS) concentration of 450 mg/L as the monthly average limitation and a TDS concentration of 600 mg/L as the daily maximum limitation. The median concentration of total coliform bacteria measured in the disinfected effluent prior discharge to Pond 6 shall not exceed a most probable number (MPN) of 23 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed, and shall not exceed an MPN of 240 per 100 milliliters in more than one sample in any 30-day period. The proposed Order contains effluent limits for BOD_5 of 30 mg/L monthly average and 80 mg/L monthly maximum. All these limitations are based on reasonable expectations of performance of the secondary treatment system.

The proposed Order prescribes groundwater limitations that implement water quality objectives for groundwater from the Basin Plan. The limitations require that the discharge not cause or contribute to exceedance of these objectives or natural background water quality, whichever is greatest.

The Provisions require submittal of certain technical reports to verify the completion of the modification project, and implement BPTC measures as necessary to comply with the groundwater limitations.

Monitoring Requirements

Section 13267 of the CWC authorizes the Regional Board to require monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the state. In recent years there has been increased emphasis on obtaining all necessary information, assuring the information is timely as well as representative and accurate, and thereby improving accountability of any discharger for meeting the conditions of discharge. Section 13268 of the CWC authorizes assessment of civil administrative liability where appropriate.

The proposed Order includes monitoring requirements for influent, wastewater treatment and storage ponds, effluent, LAA, groundwater, sludge, and water supply monitoring. The Discharger must monitor groundwater for constituents present in the discharge and those constituents that the discharge may cause to be mobilized from soils and which are capable of reaching groundwater and violating groundwater limitations if its treatment and control, and any dependency of the process on sustained environmental attenuation, proves inadequate. For each constituent listed in the Groundwater Limitations section, the Discharger must, as part of each monitoring event, compare concentrations of constituents found in each monitoring well to the background concentration or numerical limitations to determine compliance.

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. However, information is presently insufficient to develop final effluent and groundwater limitations, so the proposed Order contains interim limitations. Additional information must be developed and documented by the Discharger as required by schedules set forth in the proposed Order. As this additional information is obtained, decisions will be made concerning the best means of assuring the highest water quality possible and that could involve substantial cost. It may be appropriate to reopen the Order if applicable laws and regulations change, but the mere possibility that such laws and regulations may change is not sufficient basis for reopening the Order. The California Water Code requires that WDRs implement all applicable requirements.

LFU: 4/30/2010