

Regional Water Quality Control Board
Central Valley Region
Board Meeting – 25/26 January 2007

Response to Written Comments – Tentative Order – Water Recycling Requirements, Grizzly
Creek Golf LLC, Grizzly Creek Golf Course Irrigation, Plumas County

The following are responses to written comments received from interested parties in response to the Tentative Grizzly Creek Golf LLC, Grizzly Creek Golf Course Irrigation, Water Recycling Requirements (WRR). Written comments from the interested parties on the proposed Order were required to be received by the Regional Water Quality Control Board (Regional Board) by 22 October 2006 in order to receive full consideration. Comments were received on 23 October 2006 from the following parties:

1. California Sportfishing Protection Alliance (CSPA)

CSPA requested status as designated party for this agenda item at the Regional Board hearing. The requested status has been granted.

Written comments from the above interested party are summarized below, followed by the response of the Regional Board staff. The comments are numbered to correspond to the numbering in the interested party letter.

CALIFORNIA SPORTFISHING PROTECTION ALLIANCE (CSPA) COMMENTS

1. Comment: *Incomplete RWD and cursory information in the Order prevents informed public comments*

Response: The Commenter indicated that the Order does not disclose when or if the Discharger has even completed a RWD, and it fails to list Grizzly Ranch Community Services District (GRCS D) as a discharger. The following has been added to Finding No. 1: The Report of Waste Discharge was deemed complete on 13 June 2006. Grizzly Ranch CSD is not listed as a Discharger, as they are merely the producer of the tertiary treated water, and they are already regulated by Order No. R5-2005-0170 (NPDES No. CA0085162). The Grizzly Creek Golf Course, LLC will apply the disinfected tertiary treated recycled wastewater to their golf course, therefore they are considered the Discharger.

2. Comment: *Incomplete groundwater data. Unfortunately, the discharger has failed to provide the following information required for a complete RWD:*

- a. *All waste constituents to be discharged (see Finding No. 5 and 6);*
- b. *The background quality of the uppermost layer of the uppermost aquifer;*
- c. *The background quality of other waters that may be affected (discharges to reclamation canals, irrigation channels and surface waters);*

- d. *The detailed underlying hydrogeology conditions such as hydraulic conductivity of the soils, capillary rise, groundwater gradient; effects of pumping has groundwater, well map showing locations of all water wells including springs and isolated wetlands within one mile of the WWTP/land application;*
- e. *How treatment and control measures are justified as best practicable treatment and control;*
- f. *The extent the discharge will impact the quality of each aquifer; and*
- g. *The expected obtainable degree of degradation below water quality objectives.*

Response: The CEQA documents noted in Finding No. 31 of the Order indicates that the water-recycling project will not result in significant impacts to water quality. Furthermore, the CEQA documents (specifically the Draft Supplemental EIR, dated February 1998) contain extensive information on the setting, impacts and mitigation measures for the water-recycling project. Section 3.4 of the February 1998 CEQA document includes the setting (groundwater chemistry), treatment and disposal options, and impacts on the groundwater from the water-recycling project. The CEQA document discusses the impacts from the spray irrigation, and that the treatment of wastewater to Title 22 standard is required prior to spray irrigation disposal. Additionally, in Appendix D of the February 1998 CEQA document, there is a report entitled “Ground Water Resource Evaluation”, dated 11 February 1998. This document provides extensive information on the existing groundwater conditions and groundwater quality. The document indicates that available groundwater chemistry data indicate that the groundwater in the project’s wells are excellent and meets Primary Drinking Water Standards. In Appendix F of the February 1998 CEQA document, is the On-Site Wastewater Management Plan. This document contains information on the project wastewater characteristics, site groundwater and geology, treatment and disposal design criteria and the recommended treatment and disposal system. The recommendation for wastewater disposal is to produce effluent suitable for spray irrigation on landscape areas, including the golf course. This will require compliance with Title 22 requirements for adequately disinfected, oxidized, coagulated, clarified, and filtered effluent. A table of background groundwater quality sample analysis has been added to the Information Sheet.

3. Comment: *Incomplete Description of the Treatment Processes*

Response: The Commenter indicates that the Order fails to provide a detailed description of WWTP in either the Order or the attached information sheet. On Page 1 of the Information Sheet, fourth paragraph, it states “The facility includes a Sequencing Batch Reactor (SBR) for removal of BOD, TSS, and nitrogen...” and “...the facility has multimedia filters for additional removal of BOD, TSS, and turbidity, in preparation for disinfection to meet the recycled water requirements of Title 22 for tertiary quality recycled wastewater.” In general, Waste Discharge Requirements (WDRs) do not

contain detailed descriptions of the wastewater treatment system or make recommendations on the design of the system. This approach is consistent with Water Code Section 13360, which states:

No waste discharge requirement or other order of a regional board or the state board or decree of a court issued under this division shall specify the design, location, type of construction, or particular manner in which compliance may be had with that requirement, order, or decree, and the person so ordered shall be permitted to comply with the order in any lawful manner.

As a result, WDRs include effluent limits that are protective of groundwater quality but no guidance on how that limit is achieved. Therefore the description of the processes provided above is adequate.

4. Comment: *Order fails to Describe Potential Impacts to Endangered Species*

Response: The Commenter indicates that the Order did not inform the public of the sensitive habitat that surrounds the application area. The Commenter also indicates that the Grizzly Ranch occupies more than a thousand pristine acres. In Finding No. 2 of the Order, there is a description of the area that will receive recycled water application. Only 110 acres of irrigated turf will potentially receive the recycled water application. The other 900 acres of the Grizzly Ranch will not receive the recycled water application. The CEQA documents state in Appendix A, of the Draft Supplemental Environmental Impact Report, Planned Development Permit PD4-96/97-14, Cedar Crest, February 1998 the following: "Endangered, threatened or rare species or their habitats (including but not limited to plants, fish, insects, animals, and birds) – No Impact".

The Commenter indicates that it appears that the Discharger has already commenced to operate the system and now seeks Regional Board approval after the fact. The Discharger is not operating the recycling system, however some of the piping system has been installed. Per Order No. R5-2005-0170, the wastewater treatment plant will not be operated until at least **30** connections are made to the system. The Discharger is awaiting approval of the WRRs before it commences in the discharge of the recycled water to its golf course. As part of this Order requirements, strict adherence to the requirements of DHS guidance, the California Health and Safety Code, and Title 22, California Code of Regulations are required (as illustrated in the Recycled Water Specifications of the Order).

5. Comment: *Order fails to include Site Maps*

Response: Regional Board staff concurs with your comment. The Site Map (Attachment A) does contain a topographic map, however Attachment A-2, Site Map of the Recycling Area, will be added to the attachments, further clarifying the area of the proposed recycle water use.

6. Comment: *Order fails to Include Setbacks for Surface Water*

Response: Recycled Water Specification B.9. states “Recycled water shall not be applied so as to cause saturated conditions within 100 feet of any water body”. Recycled Water Specification B.19. was modified to include setbacks included in the Producer’s NPDES permit, which includes a 50-foot setback to drainage courses.

7. Comment: *Order fails to Restrict Waste Application to Agronomic rates*

Response: Section B.8, Recycled Water Specifications of the Order requires that “Recycled water shall be applied in amounts suitable for the plants being irrigated and consistent with prevailing irrigation practices for fresh water, except under extreme conditions and upon approval of the Executive Officer.” Essentially, this is the definition of agronomic rates. In this case, the definition of agronomic rates means the land application of recycled water at rates of application, which provide the plants with needed nutrients for optimum health and growth. The Order does not let the Discharger apply the wastewater at a rate beyond which the plants can uptake. The recycled water is not being used to grow crops (such as alfalfa), therefore as long as the Discharger applies recycled water to the golf course consistent with fresh water application, than the Discharger is within their permit requirements.

Additionally, the GRCSO will only produce approximately 11.6% (81,000 gpd) of the water needed for turf management (at full build out), and the remaining 88.4% (700,000 gpd) will have to be potable water. Turf irrigation will only occur on 110-acres of the total 210-acre golf course.

8. Comment: *Order must require Proper Organic Waste Loading Ratio*

Response: Regional Board staff concurs with your comment. A provision has been added to the Order, requiring the Discharger to submit an irrigation management plan. Regional Board staff has not included limits related to the ratio of carbon, nitrogen, and phosphorous or required dischargers to amend their wastewater to achieve the optimum ratios. Instead, staff has imposed wastewater effluent limits and the Discharge Specification B.4, which states: “Neither the treatment nor the use of recycled water shall cause a pollution or nuisance as defined by the California Water Code, §13050.”

Also included in Groundwater Limitations C. is the following: “The recycled water shall not cause groundwater underlying the water recycling area to contain waste constituents statistically greater than background water quality...”

9. Comment: *Order fails to demonstrate that Chlorination is BPTC*

Response: This Order does not require the Discharger to chlorinate the wastewater for recycling uses. This order is for the use of the disinfected tertiary treated wastewater

from the Grizzly Ranch CSD, and not the treatment of the wastewater from the Grizzly Ranch CSD. Finding No. 14 merely states that for a chlorine disinfection process, the chlorine residual contact time must meet Section 60301.230(a)(1) of Title 22. The Producer (Grizzly Ranch CSD) provides disinfected, tertiary quality water that meets Title 22 requirements for recycled wastewater. All requirements for disinfection of the wastewater are in Order No. R5-2005-0170 for the Grizzly Ranch CSD.

Use of sodium hypochlorite is in common use as a disinfection process. There are advantages and disadvantages to using an Ultra Violet (UV) disinfection system. Based on quarterly groundwater monitoring, groundwater conditions will be evaluated and if degradation is apparent, additional BPTC measures can be imposed.

When using chlorination for disinfection, trihalomethanes (THMs) maybe generated. Because the recycled water storage ponds are lined with HDPE liners little leakage is anticipated. Volatilization of trihalomethanes is expected from the ponds and when applied, especially when spray applied.

10. Comment: *Order fails to demonstrate that a Single Liner is BPTC*

Response: The Commenter indicates that the WWTP relies on a single liner, or equivalent, to prevent waste discharge from the listed treatment/storage units. The treatment/storage ponds and their liners are regulated as part of the Grizzly Ranch CSD Order No. R5-2005-0170, and therefore, liner requirements are not relevant to the Water Recycling Requirements of this Order. Again, this Order is for the use of the tertiary treated recycled water, and not the treatment of wastewater.

11. Comment: *Groundwater Limitation fails to Comply with State Board Decision*

Response: The Commenter requests that the groundwater limitation must be revised to read , “[m]ost probable number of coliform organisms over any seven-day period shall be less than 2.2/100 mL.” In Section C. Groundwater Limitations, last sentence, which currently reads “For coliform, increases shall not cause the most probable number of total coliform organisms to exceed 2.2 MPN per 100 mL over any seven-day period,” therefore no change is warranted.

12. Comment: *Order fails to include a BPTC Evaluation to evaluate BPTC necessary to show compliance with Resolution 68-16.*

Response: It is State policy to promote the use of recycled water to the maximum extent in order to supplement existing surface and ground water supplies to help meet water needs California Water Code (CWC) Sections 13510-13512). The proposed Order contains language (Section C. Groundwater Limitations), which states that the recycled water shall not cause the groundwater underlying the water recycling area to contain waste constituents statistically greater than background water quality except for

coliform. Recycled Water Specification B.4. of the Order states that the use of recycled shall not cause a pollution or nuisance, as defined by the CWC, and Recycled Water Specification B.5. also indicates that the use of recycled water shall not cause degradation of any water supply. This Order requires the Discharger to meet Section 60304 (a) of Title 22 California Code of Regulations (CCR), which states that “recycled water used for surface irrigation...shall be disinfected tertiary recycled water...”. The recycled water used for golf course irrigation will be disinfected tertiary water, and will account for less than 12% of the total required water for irrigation purposes (at full build out). Refer to Response Comment No. 13 below for information regarding antidegradation analysis.

13. Comment: *Lack of a Legally Defensible Antidegradation Analysis*

Response: State Board Resolution No. 68-16 requires in part that:

- 1) High quality waters be maintained until it has been demonstrated that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not results in water quality less than that prescribed in the policies; and
- 2) Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to too discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment of control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.

The proposed Order contains language (Section C Groundwater Limitations of the Order), which states that the recycled water shall not cause the groundwater underlying the water recycling area to contain waste constituents statistically greater than background water quality except for coliform. Additionally, Recycled Water Specification B.4. states that the use of recycled shall not cause a pollution or nuisance, as defined by the California Water Code. Recycled Water Specification B.5. also indicates that the use of recycled water shall not cause degradation of any water supply.

A full antidegradation analysis is only required when a reasonable expectation of possible groundwater degradation exists. Base on the following items, Regional Board staff believes the discharge is a low threat of groundwater degradation:

- a. The recycled wastewater pond is lined with a synthetic liner which will minimize percolation of waste constituents to groundwater;
- b. Recycled water will be applied in amounts suitable for the plants being irrigated and consistent with prevailing irrigation practices for fresh water; and

- c. The Producer will produce disinfected tertiary recycled water for golf course irrigation, consistent with Title 22, CCR.
- d. Even at full development build out, recycled water will account for less than 12% of the total water used for irrigation.

The maximum percentage of recycled water to surface/filtered groundwater will occur when there is the maximum number of residences (380 residences). At the current time, approximately 20-25 residences are built, and less than 5 are full time occupancy. The 12% ratio of recycled water to surface/filtered groundwater will only occur when there are 380 full time residences, and during the months when irrigation is occurring.

14. Comment: *Revise Order must Contain Recycling Permit Conditions.*

- a. *A requirement that the permittee comply with the uniform statewide reclamation criteria established pursuant to Section 13521 (Title 22). Permit conditions for a use of reclaimed water not addressed by the uniform statewide water reclamation criteria shall be considered on a case-by-case basis.*
- b. *A requirement that the permittee establish and enforce rules or regulations for reclaimed water users, governing the design and construction of reclaimed water use facilities and the use of reclaimed water, in accordance with the uniform statewide reclamation criteria established pursuant to Section 13521.*
- c. *A requirement that the permittee submit a quarterly report summarizing reclaimed water use, including the total amount of reclaimed water supplied, the total number of reclaimed water use sites, and the locations of those sites, including the names of the hydrologic areas underlying the reclaimed water use sites.*
- d. *A requirement that the permittee conduct periodic inspections of the facilities of the reclaimed water users to monitor compliance by the users with the uniform statewide reclamation criteria established pursuant to Section 13521 and the requirements of the master reclamation permit.*

Response: Pursuant to Section 13523.1 of the Porter-Cologne Water Quality Control Act (CWC), all of the items mentioned in your comment refer to the requirements of a Master Reclamation Permit. A Master Reclamation Permit is issued to a supplier or distributor of reclaimed water. Grizzly Creek LLC is neither a supplier nor a distributor of the reclaimed water; therefore the requirements of a Master Reclamation Permit are not applicable to this Order. Grizzly Creek LLC is a user of the reclaimed (recycled) water. Section D.5 of the Order states that “The use of recycled water shall comply with the provisions of Title 22 CCR.”

15. Comment: *The Monitoring Program fails to require the Discharger to monitor for all waste constituents that may impact the groundwater.*

Response: This Order is for the use of the disinfected tertiary treated recycled water, and the influent/effluent monitoring requirements of the wastewater are placed on the Producer in Board Order No. R5-2005-0170 (Grizzly Ranch CSD). Monitoring all of the constituents discussed in your comments (chlorine, pH, ammonia, and nitrogen) are already required in Board Order No. R5-2005-0170. Grizzly Ranch CSD is required to monitor the influent for flow, biochemical oxygen demand (BOD), total suspended solids (TSS), total kjehldahl nitrogen (TKN), and nitrate, and the effluent for chlorine, pH, flow, BOD, TSS, temperature, total coliform, ammonia nitrogen, nitrate nitrogen, TKN, electrical conductivity, total copper, total lead, total silver, dissolved oxygen, total dissolved solids, acute bioassay, total phosphorus and oil and grease. Requiring the User to monitor the recycled wastewater for the same constituents as what the Producer is already required to monitor the effluent is unnecessary and duplicative of the effort of the Producer, and therefore is not included in this Order. Again, this Order is for the use of the recycled tertiary quality wastewater that has met the requirements Board Order No. R5-2005-0170, and not for wastewater treatment. Refer to Response Comment No. 17 below for groundwater monitoring.

16. Comment: *The proposed Order fails to require the Discharger to monitor the application area to ensure that waste is applied at agronomic rates. Monitoring should include fertilizers as shown below:*

a. *Golf course reclamation monitoring*

The Discharger must monitor reclamation activities at the golf course in accordance with the following: 1) reclamation monitoring shall be performed daily and the results shall be included in the monthly monitoring report; 2) erosion, ground saturation, tailwater runoff, reclaimed water storage lake overflows, and nuisance conditions shall be noted in the report; 3) reclaimed water shall also be monitored to determine loading rates at the golf courses.

Reclamation monitoring must include the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Flow to irrigation areas	gpd	Continuous	Daily	Monthly
Rainfall	inches	Measurement	Daily	Monthly
Acreage Applied 1	acres	Calculated	Daily	Monthly
Water Application Rate:				
Reclaimed water	gal/acre/day	Calculated	Daily	Monthly
Fresh water	gal/acre/day	Calculated	Daily	Monthly
Nitrogen Loading Rate 2	lbs/ac/month	Calculated	Monthly	Monthly
Dissolved Solids Loading Rate	lbs/ac/month	Calculated	Monthly	Monthly

1 Specific irrigation areas shall be identified.

2 Including chemical fertilizers

Response: Regional Board staff will require rainfall monitoring, mapping of application areas, and water application rate monitoring. The Monitoring and Reporting Program (Operating Records and Reports) will be revised.

17. **Comment:** *The Order fails to require the installation of an appropriate groundwater monitoring network that is sufficient to detect degradation. The Order must be revised to require groundwater monitoring.*

Response: Even at full build out of the development, the use of recycled water will account for less than 12% of the total water used for irrigation of the golf course. Therefore, we do not anticipate groundwater degradation from recycled water. Pollutants added by typical golf course operations would overshadow the constituents in recycled water. We do not require golf courses that do not use recycled water to monitor groundwater quality. Given the low percentage of recycled water application to overall irrigation water and fertilizer application, we would not be able to determine impacts associated with recycled water. The 12% ratio of recycled water to surface/filtered groundwater is only when the entire project is built out (380 residences), and the residences are full-time occupied. Currently, there are approximately 20-25 residences built, with less than 5 residences permanently occupied.