

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2002-0168

WASTE DISCHARGE REQUIREMENTS

FOR
AMADOR WATER AGENCY
WILDWOOD ESTATES COMMUNITY LEACHFIELD SYSTEM
AMADOR COUNTY

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

1. On 13 November 2001, Amador Water Agency (Discharger) submitted a Report of Waste Discharge (RWD) for an existing community leachfield system (CLS) that treats and disposes of domestic wastewater generated by homes in the Wildwood Estates subdivision in Amador County.
2. Wildwood Estates is a 40-acre residential subdivision with 37 half-acre residential parcels. The community is currently 86 percent developed; 32 of the 37 residential parcels are improved with single-family dwellings, and the remaining five are as yet unimproved. Each parcel has or will have a 1,500-gallon septic tank and sewer line owned by the parcel owner; from the curb, wastewater is conveyed in an effluent collection system to community leachfields for treatment and disposal.
3. The Wildwood Estates Community Leachfield was constructed in 1990, after approval by Amador County, and has been regulated by the County since that time. Upon adoption of this Order, regulation of the discharge will be in accordance with the California Water Code (CWC), as implemented by this Order.
4. The CLS includes the septic tanks, effluent collection system (commencing at the septic tank effluent outlet), and community leachfields.
5. The Discharger owns and operates the CLS and is responsible for the proper design, operation, and maintenance of the CLS. The Discharger also serves as the authorized public agency responsible for ensuring the CLS described herein is adequately designed, located, sized, spaced, constructed, and maintained, as required by CWC section 13282.
6. The CLS is at 12970 Burnt Cedar Lane, Amador County, in Section 10, T6N, R12E, MDB&M (Assessors Parcel Number 38-630-040) as shown on Attachment A, which is attached hereto and made part of this Order by reference.
7. The septic tanks are on numerous parcels. A list of the Parcel Numbers for the Wildwood Estate subdivision is provided below.

<u>Assessor Parcel No.</u>	<u>Assessor Parcel No.</u>	<u>Assessor Parcel No.</u>	<u>Assessor Parcel No.</u>
38-630-001	38-630-011	38-630-021	38-630-047
38-630-002	38-630-012	38-630-044	38-630-032

<u>Assessor Parcel No.</u>	<u>Assessor Parcel No.</u>	<u>Assessor Parcel No.</u>	<u>Assessor Parcel No.</u>
38-630-003	38-630-013	38-630-045	38-630-033
38-630-004	38-630-014	38-630-024	38-630-034
38-630-005	38-630-015	38-630-025	38-630-035
38-630-006	38-630-016	38-630-026	38-630-036
38-630-007	38-630-017	38-630-027	38-630-037
38-630-008	38-630-018	38-630-028	
38-630-009	38-630-019	38-630-029	
38-630-010	38-630-020	38-630-030	

Existing Facility and Discharge

8. Each septic tank in the subdivision consists of a two-chamber fiberglass septic tank. Both chambers capture and store solids while they undergo anerobic decomposition. The heavier solids settle and form sludge at the bottom. The lighter solids, including fats and greases, rise to the surface and form a scum layer. The scum and sludge undergo decomposition and digestion, which both liquifies some solids (which are then discharged) and also produces carbon dioxide and methane gas, which are volatilized from the tank. Both the liquefaction and gasification processes reduce the solids volume in the tank and therefore reduce the frequency of septic tank cleaning.
9. The septic tanks have two basic functions, waste treatment and solids storage, but it is essential to the long-term function of the community leachfields that particulate (i.e., non-liquefied sludge) solids and scum be kept from exiting the tank. For this reason, the exit of the second chamber draws from the tank below the scum and above the sludge, and it is imperative that regular inspections and cleanings assure that neither the sludge layer nor the scum layer increases to the extent that particulates are scoured and discharged from the tanks. As an added safety measure, each tank effluent port is fitted with a plastic effluent filter cartridge (1/8 inch screen) to capture errant solids.
10. The septic tanks are inspected on an annual basis by Discharger. If a septic tank requires cleaning, it is the homeowner’s responsibility to have the septic tank pumped out and the sludge shipped offsite for disposal at an authorized facility. If the homeowner doesn’t pump the tank, then the Discharger will arrange for the work and bill the homeowner.
11. Effluent flows via gravity from each septic tank to the effluent collection system. The entire effluent collection system operates by gravity and discharges into two dosing tanks, each of which is equipped with a dosing siphon. The dosing tanks discharge the wastewater to the community leachfields. The two dosing siphons and tanks are identical, but each doses a separate leachfield. The siphons used are Orenco Systems’ Model No. 442 and the dosing tanks are 1,500 gallon concrete septic tanks. The RWD indicates that each leachfield dose is approximately 1,200 gallons. Dosing occurs four times per day at design flow.
12. The two community leachfields consist of approximately 4,300 total linear feet of pressure dosed leachline on a 4.2-acre parcel, as shown on Attachment B, which is attached hereto and made part of this Order by reference. The 4,300 feet of leachline is divided into approximately equal amounts between the two separate leachfields. Distribution pipes within each disposal trench

within a leachfield are fitted with ball valves for the purpose of equal distribution of wastewater to all the leachlines; the ball valves are intended to compensate for varying heads due to elevation differences and friction losses between the various leachlines. These valves were adjusted at the time of the initial system testing to provide equal pressure in all leachlines as they enter the disposal trenches, but need to be checked and adjusted periodically.

13. Good practice requires that either an alternate leachfield of the same size be installed and alternately used or that sufficient area be set aside to replace the entire leachfield. This leachfield area has sufficient space available along the northern border to accommodate complete replacement of the entire 4,300 feet of leachline.
14. To minimize soil saturation of the leachfield area during the wet season, a stormwater diversion ditch directs stormwater away from the leachfields. The stormwater ditch is part of the CLS and needs to be maintained to ensure effective wet-weather performance of the leachfields.
15. The RWD states that the CLS is designed for approximately 10,300 gallons per day (gpd). Design flow is based on a single family dwelling flow of 263 gallons per day (a total daily average flow of 9800 gpd from the 37 parcels when fully built out).
16. Limited tests performed in the leachfield area prior to construction indicated that the average percolation rate at a soil depth of 36 inches is approximately 39 minutes per inch (mpi) and at a soil depth of 60 inches is approximately 60 mpi. The disposal trenches are 41 to 53 inches deep and 36 inches wide with 30 inches of drainage rock below the distribution lateral, with nine feet between trenches. The wastewater application rate is approximately 0.3 gallons per day per square foot of disposal trench (considering the invert and the full 30 inches of sidewall area) at design flow.
17. On 2 July and 10 July 2001, the Discharger collected samples of the wastewater effluent discharged from the the two dosing siphon tanks to the leachfields. The sample data from each monitoring event are presented below.

<u>Constituent</u>	<u>Units</u>	<u>2 July 2001 Effluent Concentration</u>	<u>10 July 2001 Effluent Concentration</u>
PH	S.U.	6.8	6.8
Total Dissolved Solids (TDS)	mg/l	282	304
Total Kjeldahl Nitrogen	mg/l	56	58
BOD ₅	mg/l	106	176
Total Coliform Organisms	MPN/100 ml	>2400	>2400
Total Fecal Organisms	MPN/100 ml	>2400	>2

18. The sample data indicate that the septic tanks provide primary treatment. Wastes that pass through the septic tanks are discharged to the soil underlying the leach lines; the soil then treats some of the remaining wastes. However, the amount of treatment depends on the waste type and

concentrations, soil type and depth, percolation rates, wastewater application rates, and depth to groundwater. Under the best of circumstances, some waste constituents may migrate through the soil column to the underlying groundwater. Groundwater monitoring is appropriate and necessary to monitor the effectiveness of treatment within the soil column and assure groundwater quality consistent with terms specified herein.

19. On 1 February 1996, the Amador County Environmental Health Department conducted an inspection of Wildwood Estates Community Leachfield. The inspection report states *“In the southeast portion of the site, near a dosing tank, numerous small cedars, less than 12” tall, were seen. Experience has shown that one of the biggest threats to leachfield longevity is infiltration of leach rock by tree roots.”*
20. On 19 March 1998, the Amador County Environmental Health Department conducted a second inspection of the Wildwood Estates Community Leachfield. The inspection report states *“Several cedar and pine saplings have sprouted over the drainage field. Removal of these saplings should be prioritized to prevent root intrusion which is a major cause of premature leachfield failure.”*
21. On 24 February 2000, Amador County Environmental Health Department conducted a third inspection of the Wildwood Estates Community Leachfield. The inspection report states *“It appears that there is a broken pipe at the valve box serving trenches 28, 29, 30, 46, 47, and 48. There was effluent on the ground surface and the valve box was full of effluent...No effluent was noted flowing offsite.”*
22. Monitoring of wastewater depth in disposal trenches can aid in estimating the condition of leachfields and adjusting distribution of wastewater within the leachfield, and is key to determining when replacing a leachfield is necessary. The Discharger installed observation wells in the disposal trenches for this purpose. The February 2000 County inspection found effluent in most of the 48 disposal trenches. The depth of effluent in the disposal trenches ranged from 23 to 42 inches below ground surface (or 1 to 30 inches above the invert of the trench). Trenches range in depth from 41 to 53 inches below the ground surface.
23. Waste brines from water softeners could adversely affect the functioning and life of the community leachfields, as well as cause unnecessarily elevated concentrations of sodium and chloride that can degrade groundwater and adversely affect agricultural use of the groundwater. Because the Wildwood Estates homeowners receive excellent quality supply water, the use of water softeners is unnecessary, and if the Discharger allows them, they must exclude self-regenerating models.
24. Acid and organic chemical solvent septic system additives typically contain halogenated and aromatic hydrocarbons that are highly mobile in soils and groundwater. The additives can impede effective treatment and pollute groundwater, and their use must be restricted as monitoring and cleanup can be costly.
25. An operation and maintenance manual, *“Wildwood Estates Sewerage System”*, was developed for the CLS when it was originally built in 1990; however, the manual does not address operation and maintenance that are necessary to assure compliance with this Order and therefore must be revised.
26. No other sources of wastewater exist in the vicinity of the leachfield area.

Effluent Collection System

27. The Wildwood Estates effluent collection system consists of a network of two-inch, Schedule 40 PVC pipe laid at variable grades throughout the subdivision, and consists of three primary collection mains that terminate at the two dosing tanks. Unlike conventional wastewater collection systems, this collection system does not contain any manholes. Instead, air relief/vacuum valves have been installed at high points and dead-end laterals. The peak design flow rate for the main collection lines is approximately 80 gallons per minute. The effluent collection system does not contain any electrically operated equipment.
28. A collection system “overflow” is a discharge to ground surface or to surface water from the effluent collection system at any point upstream of the dosing tanks. Temporary storage or collection facilities may be utilized during maintenance operations and discharges to these facilities are not considered overflow events, provided that the waste is fully contained and properly disposed of.
29. Potential causes of overflows within this system include grease blockages, root blockages, debris blockages, sewer line flood damage, air relief/vacuum valve failures, vandalism, storm or groundwater inflow/infiltration, lack of capacity, and contractor caused blockages.
30. Sanitary sewer overflows often contain high levels of suspended solids, pathogenic organisms, nutrients, oxygen demanding organic compounds, oil and grease, and other wastes. Sanitary sewer overflows can cause temporary exceedences of applicable water quality objectives, pose a threat to public health, adversely affect aquatic life, and impair the public recreational use and aesthetic enjoyment of surface waters in the area.
31. The Discharger is expected to take all necessary steps to adequately maintain and operate, and thereby prevent overflows from, its effluent collection system. A reasonable means to accomplish this is to prepare and implement an operation and maintenance manual that includes overflow prevention and response features.

Planned Changes in Discharge

32. The CLS was designed for full buildout of the community. The Discharger does not have plans for improvements or expansions of the CLS at this time.

Site-Specific Conditions

33. The mean annual rainfall, based on data from Electra Power House CIMIS weather station, is 28 inches per year.
34. All portions of the CLS are outside of the 100-year flood zone.
35. The CLS lies within the Middle Sierra Hydrologic Area No. 532.40, as depicted on interagency hydrologic maps prepared by the Department of Water Resources in August 1986.

36. Soils on the site are of the Josephine and Sites series of metasedimentary origin. The solids have a relatively high clay content resulting in relatively slow percolation rates. Soil depth is shallow and the depth to bedrock is approximately eight feet.
37. Slopes in the leachfield area vary up to 30% toward Grass Valley Creek, immediately below the leachfield area. Elevations range from 2685 ft MSL at the upslope end to approximately 2600 ft MSL on the downslope side. Soil stability could be an issue under saturated soil conditions.
38. The Discharger states that the first recoverable groundwater is located in a relatively thin zone of saturated soil overlying the bedrock. The water in this zone will flow down the slope as it tries to percolate into the fissures of the less permeable bedrock. Therefore, groundwater monitoring wells will be fairly shallow in depth. With shallow wells and a steep slope, water levels in the groundwater monitoring wells may not provide anything more about the groundwater flow direction that is not more accurately deduced from the site topography; therefore, an upgradient well is not needed to ascertain direction of the groundwater movement in this specific case.

Since the upgradient groundwater monitoring well is not needed to determine movement of the shallow groundwater, the Discharger has requested that construction of the upgradient well be postponed until there is evidence that it is necessary to clarify the background shallow groundwater conditions. If the downgradient groundwater monitoring wells do not show problems with the shallow groundwater, then the upgradient groundwater monitoring well and related monitoring will not have to be performed. However, if the downgradient groundwater monitoring wells show evidence of a problem, then the Discharger shall install and monitor an upgradient groundwater monitoring well.

39. Potable water for the subdivision is provided by the Discharger and originates from the Mokoleumne River. The TDS of the source water is approximately 28 mg/L.

Groundwater Degradation

40. State Water Resources Control Board (SWRCB) Resolution No. 68-16 (“Policy with Respect to Maintaining High Quality Waters of the State”) (hereafter Resolution 68-16) requires a regional board in regulating the discharge of waste to maintain high quality waters of the state (i.e., background water quality) until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than as described in plans and policies. The discharge is required to meet waste discharge requirements that will result in the best practicable treatment or control of the discharge necessary to assure that pollution or nuisance will not occur and highest water quality consistent with maximum benefit to the people will be maintained.
41. Some degradation of groundwater in the leachfield area is consistent with Resolution 68-16 provided that degradation:
 - a. is confined to a reasonable area;
 - b. is minimized by means of full implementation, regular maintenance, and optimal operation of best practicable treatment and control (BPTC) measures;

- c. is limited to waste constituents typically encountered in domestic wastewater; and
- d. does not result in water quality less than that prescribed in the applicable basin plan.

Basin Plan, Beneficial Uses, and Regulatory Considerations

- 42. 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 Water Resources Control Board. Pursuant to Section 13263(a) of the CWC, waste discharge requirements must implement the Basin Plan.
- 43. Surface water drainage for the CLS site is to Grass Valley Creek, a tributary to Sutter Creek, which is in turn tributary to Dry Creek, and thence the Sacramento-San Joaquin Delta.
- 44. The beneficial uses of Sacramento-San Joaquin Delta are municipal and domestic supply; agricultural irrigation and stock watering; industrial process and service supply; water contact recreation; non-contact water recreation; warm and cold freshwater habitat; migration for warm and cold water species; warm water spawning; wildlife habitat; and navigation.
- 45. The beneficial uses of the underlying groundwater are municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.
- 46. The Basin Plan establishes numerical and narrative water quality objectives for surface and groundwater that waste discharge requirements must implement. To implement narrative water quality objectives, translators of available water quality criteria must be applied on a case-by-case basis to determine the appropriate numerical limitation.
- 47. The Basin Plan identifies maximum contaminant levels (MCLs) as numerical water quality objectives for waters designated as municipal supply. More stringent criteria than MCLs are sometimes necessary to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
- 48. The Basin Plan contains narrative water quality objectives for chemical constituents, tastes and odors, and toxicity. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants or animals. The chemical constituent objective requires that groundwater shall not contain chemical constituents in concentrations that adversely affect beneficial uses. The tastes and odors objective requires that groundwater shall not contain taste or odor producing substances in concentrations that cause nuisance or adversely affect beneficial uses.
- 49. The Basin Plan allows the use of septic tank/leachfield systems where a conventional municipal sewerage system is not available provided construction guidelines referenced in the Basin Plan are met and provided a properly empowered entity assumes responsibility for the systems. This entity must assure proper operation and maintenance, and assure system replacement as necessary to preclude nuisance, pollution, and health impacts. In addition to the requirements of CWC section

13282, the Basin Plan requires that the public entity be empowered to finance its actions and empowered to issue permits, conduct monitoring and surveillance, and maintain control of pumping and disposal of septage, as well as to abandon properly, if necessary, any CLS.

Antidegradation Analysis

50. The CLS provides minimal treatment of wastewater and is highly dependent upon proper management and waste constituent attenuation in the disposal field to prevent pollution of groundwater and to protect beneficial uses. While the Basin Plan conditionally allows septic tanks with leachfield systems for rural development, it includes the expectation of optimal site selection and conservative design which meet minimum guidelines, and attentive and judicious operation and maintenance. This leachfield area fails to meet Basin Plan criteria for depth of soil below leaching trenches, and historical preventative precautions, as well as operation and maintenance, have been deficient. This Order requires the discharger to prevent pollution, nuisance, or contamination, and requires the discharger to appropriately operate and maintain the systems consistent with CWC section 13282. In addition, this Order include provisions to implement Resolution 68-16.
51. TDS concentrations in the effluent are well below the governing numerical water quality objective of 450 mg/L, a water quality criterion translated pursuant to Basin Plan procedures from narrative objectives that require protection of agricultural supply, the beneficial use most sensitive to TDS. Other salt components can safely be assumed to be proportionately low such that TDS can be an effective indicator parameter in their regulation, and restricting the use of water softeners should make them unimportant in regulating water quality. The threat of toxic chemicals can reasonably be controlled through periodic education of homeowners.
52. The incremental addition of dissolved salts though water useage (about 275 mg/L) is at the high end of normal for domestic use, but reasonable considering modern water conservation practices. A TDS effluent limitation of 310 mg/L represents no cost or change in practice for the Discharger, and limits salt degradation to a reasonable amount while providing some protection of the groundwater beneath the community leachfields.
53. Waste constituents in effluent that represent the greatest risk of exceeding a water quality objective and may be used as indicator parameters regarding the performance of the CLS are nitrogen and coliform. As demonstrated from effluent samples, both must be effectively attenuated within the soil to assure water quality objectives are met. The constraining water quality objective for nitrogen prescribed by the Basin Plan, using the prescribed translation process to rule out other beneficial uses as more sensitive, is the MCL, 10 mg/L. The Basin Plan numeric water quality objective for total coliform is 2.2 MPN/100 mL.
54. Groundwater limitations equal to water quality objectives for indicator waste constituents are appropriate, as is a more restricted TDS groundwater limitation, and consistent with maximum benefit to the people of the State for this CLS. Accordingly, the discharge as authorized is consistent with the antidegradation provisions of Resolution 68-16.
55. As data are insufficient to establish that the discharge complies with all conditions of authorization, a schedule of tasks to evaluate the CLS and characterize groundwater for indicator waste constituents is appropriate and necessary. Completion of these tasks may show that some

conditions are not met and necessitate modifications to the CLS (e.g., sand filters, disinfection) to allow continued discharge.

56. Section 13241 of the CWC requires that various factors, including economic considerations, be considered when adopting water quality objectives into a Basin Plan. Water Code Section 13263 requires that factors in Section 13241 be considered in adopting waste discharge requirements. The State Board has held that factors of section 13241 need not be specifically addressed when implementing existing water quality objectives in waste discharge requirements because the factors were already considered in adopting the Basin Plan. Although there is no obvious cost to the TDS limitation, cost savings in life of the leachfield and less degradation of groundwater should be realized. No additional analysis of Section 13241 factors is required.

Other

57. The State Water Resources Control Board adopted Order No. 97-03-DWQ (General Permit No. CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial dischargers. The wastewater treatment plant facilities are located underground and are not exposed to stormwater runoff. Because there is no storm water discharge, the Discharger is not required to obtain coverage under General Permit No. CAS000001.
58. On 7 February 1990, in accordance with the California Environmental Quality Act (Title 14, California Code of Regulations (hereafter CCR), section 15261 et seq.), the Amador County Planning Commission certified a final Negative Declaration for the Wildwood Estates subdivision, including the CLS.
59. The project, as approved by Amador County, may degrade water quality, possibly to the degree that water quality objectives will be violated, beneficial uses impacted, and pollution, contamination, or nuisance created. However, Prohibition A.6, Discharge Specification B.8, Effluent Limitations C, Groundwater Limitations E, and Provisions F.1, F.4, F.7, and F.9, among others, mitigate or avoid pollution, nuisance, contamination, exceedance of water quality objectives, and impacts on beneficial uses.
60. Section 13267(b) of the CWC provides 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.

The technical reports required by this Order and the attached “Monitoring and Reporting Program No. R5-2002-0168” are necessary to assure compliance with these waste discharge requirements. The Discharger operates facilities that discharge waste subject to this Order.

61. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards), 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 CWC section 13801, apply to all monitoring wells.
62. 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 20005, et seq. (hereafter Title 27). While the CLS is exempt from Title 27, the data analysis methods of Title 27 may be appropriate for determining whether the discharge complies with the terms for protection of groundwater specified in this Order.
63. 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. The exemption, pursuant to Title 27 section 20090(a), is based on the following:
 - a. The waste consists primarily of domestic sewage and treated effluent;
 - b. The waste discharge requirements are consistent with water quality objectives; and
 - c. The treatment and storage facilities described herein are comparable in function to a municipal wastewater treatment plant.
64. 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.

Public Notice

65. 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.
66. The Discharger and interested agencies and persons were notified of the intent to prescribe waste discharge requirements for this discharge, and provided an opportunity to submit written views and recommendations and to be heard in a public meeting.
67. In a public meeting, all comments pertaining to the discharge were heard and considered.

IT IS HEREBY ORDERED that, pursuant to CWC sections 13263 and 13267, the Amador Water Agency, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted hereunder, shall comply with the following:

[Note: Other prohibitions, conditions, definitions, and some methods of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" dated 1 March 1991.]

A. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Bypass or overflow of untreated or partially treated waste is prohibited.
3. Discharge of sewage from the sanitary sewer system at any point upstream of the dosing tanks, including septic tanks, is prohibited. Discharge of treated wastewater outside of the leachfield area is prohibited.
4. Surfacing of waste within or downgradient of the community leachfields is prohibited.
5. Discharge of waste classified as 'hazardous' under Title 23, CCR, Section 2521, or as 'designated' under of CWC section 13173 is prohibited, including any discharge of sludge.
6. The discharge of wastewater to any disposal trench where the observation well shows wastewater is within 16 inches of ground surface is prohibited.

B. Discharge Specifications

1. The monthly average flow shall not exceed 11,000 gallons per day.
2. The wastewater treatment and leachfield areas shall not cause pollution or a nuisance as defined by Section 13050 of the California Water Code.
3. Public contact with wastewater in the leachfield area shall be precluded or controlled through such means as fences and signs, or acceptable alternatives.
4. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations.
5. Objectionable odor originating from the leachfield area shall not be perceivable beyond the limits of the leachfield area.
6. All treatment, storage, and community leachfields shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
7. Application of wastewater shall be confined to the leachfield area defined in this Order.
8. The Discharger shall operate all systems and equipment to maximize treatment of wastewater and optimize the quality of the discharge. In particular, the Discharger shall

comply with the following items, and shall describe their implementation in the Operation and Maintenance Plan required by the Provisions. The frequency of each task may be modified upon written request by the Discharger and written approval by the Executive Officer. The written request must clearly show that the reduction in frequency will not have the potential to impact water quality.

- a. Inspect each septic tank at least annually.
 - b. Cut vegetation in the leachfield area as needed to prevent threat of root intrusion into the leachlines and drainage rocks, and remove the vegetative litter.
 - c. Annually evaluate whether wastewater is evenly distributed to all the disposal trenches and make modifications to the distribution system as necessary to optimize distribution and preclude the depth of wastewater in any disposal trench exceeding 16 inches from the ground surface.
 - d. Prior to 1 November each year, inspect the stormwater diversion ditch and perform necessary maintenance, including vegetation control.
 - e. Properly maintain the septic tanks, including pumping a tank when any one of the following conditions exist, or can be reasonably projected to occur before the next inspection of a tank:
 1. The combined thickness of sludge and scum exceeds one-third of the tank depth of the first compartment,
 2. The scum layer is within three inches of the outlet device; or,
 3. The sludge layer is within eight inches of the outlet device.
 - f. Require septic tanks that are cracked or otherwise damaged be promptly repaired or replaced.
 - g. Clean septic tank filters on a regular basis.
 - h. Inform homeowners, through a public education program, about the chemicals and actions which have the potential to impair the proper and sustained functioning of the CLS. Chemicals of concern include self-regenerating water softeners, acid and organic chemical solvent septic system additives, and kitchen greases and oils. Actions of concern include the excessive use of garbage disposal systems, connecting rainfall drainage controls to the collection system, and draining swimming pools into the collection system.
9. The CLS shall have sufficient treatment, storage, and disposal capacity to accommodate allowable wastewater flow, inflow and infiltration, and design seasonal precipitation during the winter months. 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.

10. A 100-foot buffer zone shall be maintained from the edge of any watercourse (measured from the 10 year high water mark of the watercourse) or spring, and from any domestic or irrigation well, to the nearest point of the leachfields.
11. A 50-foot buffer zone shall be maintained from the leachfields to the nearest property boundary.

C. Effluent Limitations

1. Effluent discharged from the dosing tanks shall not have a pH less than 6.5 or greater than 8.5.
2. Effluent discharged from the dosing tanks shall not have a monthly average TDS exceeding 310 mg/L.

D. General Solids Disposal Specifications

Sludge means the solid, semisolid, and liquid residues removed during the wastewater treatment processes.

1. Sludge shall be removed from septic tanks and dosing tanks as needed to ensure optimal operation and optimal life of the community leachfields, but no less frequent than as specified in Discharge Specification B.8.
2. Sludge that accumulates in the dosing tanks shall be removed as needed to ensure the protection and optimal life of the community leachfields.
3. Sludge removal shall be by either the Discharger or a licensed liquid waste hauler and documented by copies of manifests.
4. Disposal of residual sludge and solid waste must be to a facility operated in accordance with valid waste discharge requirements issued by a regional water quality control board.

E. Groundwater Limitations

1. Release of waste constituents from the leachfields shall not cause groundwater, as determined by an approved well monitoring network, to:
 - a. Contain any of the following constituents in concentration greater than as listed or greater than natural background quality, whichever is greater:

<u>Constituent</u>	<u>Units</u>	<u>Limitation</u>
Total Coliform Organisms	MPN/100 mL	Less than 2.2
Total Dissolved Solids ^a	mg/L	310
Total Nitrogen	mg/L	10

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- a. A cumulative impact limit that accounts for several dissolved constituents in addition to those listed here separately [e.g., alkalinity (carbonate and bicarbonate), calcium, hardness, phosphate, and potassium].
 - b. Contain any constituent not identified in Groundwater Limitation E.1.a in concentrations greater than background quality (whether chemical, physical, biological, bacteriological, radiological, or some other property or characteristic).
 - c. Exhibit a pH of less than 6.5 or greater than 8.5 pH units.
 - d. Impart taste, odor, toxicity, or color that creates nuisance or impairs any beneficial use.

F. Provisions

- 1. All of the following reports shall be submitted pursuant to Section 13267 of the California Water Code and shall be prepared by a registered professional as described by Provision F.3.
 - a. By **1 November 2002**, the Discharger shall submit and implement an Operation and Maintenance (O&M) Plan for the CLS. The O&M Plan shall instruct field personnel on how to manage the day-to-day discharge operations to comply with the terms and conditions of this Order and how to make field adjustments, as necessary, to optimize the effectiveness and life of the leachfields and preclude nuisance conditions (e.g., surfacing wastewater). It shall also include a troubleshooting flowchart with recommend remedial actions and a description of notification requirements. The O&M Plan shall address management of the CLS in sufficient detail to optimize compliance with this Order, and most particularly Discharge Specification B.8, including the following:
 - i. An inspection procedure for checking the integrity septic tanks.
 - ii. A description of the type, location, and procedure for calibration of the dose counter installed to comply with the Monitoring and Reporting Program.
 - iii. The procedures to be implemented to assure that wastewater is evenly distributed within the disposal trenches and wastewater will not be disposed of when the depth of wastewater in any trench exceeds 20 inches.

The Discharger shall ensure that an up-to-date O&M Plan is readily available to operating personnel at all times, and that personnel are familiar with it.

- b. By **1 November 2002**, the Discharger shall submit an *Effluent Collection System Operation, Maintenance, Overflow Prevention, and Response Plan* (ECS Plan) that describes the actions designed to prevent or minimize the potential for overflows. The Discharger shall maintain the ECS Plan in an up-to-date condition and shall amend the ECS Plan whenever there is a change (e.g., in the design, construction, operation, or maintenance of the effluent collection system) that materially affects the potential for overflows, or whenever there is an overflow. The Discharger shall ensure that the up-to-date ECS Plan is readily available to operating personnel at all times and that the personnel are familiar with it.
- i. At a minimum, the operation and maintenance portion of the ECS Plan shall contain or describe the following:
1. Detailed maps of the effluent collection system, identifying air relief valves;
 2. A detailed listing of elements to be inspected, a description of inspection procedures and inspection frequency, and sample inspection forms;
 3. A schedule for routine inspection of all pipelines, valves, and other key system components. The inspection/testing program shall be designed to reveal problems that might lead to accidental spills and ensure that preventive maintenance is completed;
 4. Provisions for repair or replacement of defective equipment.
- ii. At a minimum, the overflow prevention and response portion of the ECS Plan shall contain or describe the following:
1. Identification of areas of the collection system that historically have overflowed and an evaluation of the cause of the overflow;
 2. Maintenance activities that can be implemented to address the cause of the overflow and means to prevent future overflows;
 3. Procedures for responding to overflows designed to minimize the volume of overflow that enters surface waters, and minimize the adverse effects of overflows on water quality and beneficial uses; and
 4. Steps to be taken when an overflow or spill occurs, and procedures that will be implemented to ensure that all overflows and spills are properly identified, responded to and reported to appropriate agencies, and if necessary, the public.
- c. By **1 February 2003**, the Discharger shall submit a *Revenue Plan* that describes the costs associated with completing the Provisions of this Order and shows how the Discharger will finance each item. Should the Revenue Plan show that there are inadequate funds, the Discharger must also include an implementation schedule that shows how the Discharger will raise the necessary funds in time to comply with the appropriate due dates.
- d. **Within six months of approval** of the Revenue Plan by the Executive Officer, the Discharger shall submit evidence of adoption of the Revenue Plan.

GROUNDWATER EVALUATION

- e. By **1 December 2002**, the Discharger shall submit a workplan for the characterization of groundwater quality affected by the leachfields. The workplan shall describe the installation of at least two groundwater monitoring wells to allow evaluation of the groundwater quality downgradient of the leachfield. Every monitoring well shall be constructed to yield representative samples from the uppermost layer of the uppermost water bearing zone and to comply with applicable well standards. The workplan shall be consistent with, and include the items listed in, the first section of Attachment C, “*Items to be Included in a Monitoring Well Installation Workplan and a Monitoring Well Installation Report of Results.*”
- f. By **1 June 2003**, the Discharger shall submit a groundwater well installation report. The report shall be consistent with, and include the items listed in, the second section of Attachment C. The report shall clearly show that Discharger has the expertise and equipment necessary to collect groundwater samples. Alternatively, the report may describe the qualified consultant that the Discharger will use to collect groundwater samples.
- g. By **1 October 2004**, the Discharger shall submit a *Groundwater Quality Study Report*. For each groundwater monitoring parameter/constituent identified in the Monitoring and Reporting Program, the report shall present a summary of monitoring data from each monitoring well. Determination of groundwater quality shall be made using the methods described in Title 27, Section 20415(e)(10), and data from at least four consecutive quarterly (or more frequent) groundwater monitoring events.

ANTIDEGRADATION EVALUATION

- h. If the *Groundwater Quality Study Report* shows that groundwater exceeds Groundwater Limitations, then within **120 days** of the Executive Officer’s request the Discharger shall submit a technical report in the form of a *CLS Evaluation Report and Implementation Workplan*. The technical report shall include a comprehensive evaluation of treatment and control measures that address full mitigation of the source of the exceedance(s). The report shall describe treatment and control alternatives studied, the alternative(s) recommended for implementation, and any specific methods the Discharger proposes to monitor and assure continuous optimal performance, the source of funding, and proposed schedule for implementation. The recommended improvements and implementation schedule are subject to the Executive Officer’s approval, but the schedule for full implementation shall be as short as practicable and not exceed two years unless specifically approved by the Regional Board.
2. Upon completion of tasks set forth in Provision F.1, the Regional Board shall consider the evidence provided and make a determination regarding whether the Discharger has justified continued discharge from the CLS as consistent with policy and the CWC or whether substantial evidence indicates continued discharge should not be permitted due to violated water quality objectives, impaired beneficial uses, contamination, or unreasonable degradation.

3. In accordance with California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall contain a statement of qualifications of the responsible licensed professional(s) as well as the professional's signature and/or stamp of the seal.
4. The Discharger shall comply with the Monitoring and Reporting Program No. R5-2002-0168, which is part of this Order, and any revisions thereto as ordered by the Executive Officer. of the CLS in accordance with terms prescribed by this Order.
5. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and made part of this Order by reference. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."
6. The Discharger shall use the best practicable treatment and control techniques, including proper operation and maintenance, to assure compliance with terms of this Order.
7. In event of overflow from the effluent collection system, the Discharger shall take all necessary remedial action to control and limit the volume of sewage discharged, and terminate the overflow as rapidly as possible. Necessary remedial actions may include, but are not limited to, the following:
 - a. Interception and rerouting of sewage flows around the collection line failure;
 - b. Vacuum truck recovery to the extent practical of sanitary sewer overflows and wash down water;
 - c. Use of portable aerators in surface waters where complete recovery of the spilled sewage is not feasible and severe oxygen depletion is expected; and
 - d. Cleanup of sewage-related debris at the overflow site;
 - e. Disinfection and posting of the area.
8. The Discharger shall report to the Regional Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986."
9. The Discharger shall not allow waste-free wastewater to be discharged into the wastewater collection, treatment, and disposal system. Waste-free wastewater means rainfall (roof

gutters, yard drainage), groundwater, cooling waters, and condensates that are essentially free of wastes.

10. The Discharger shall submit to the Regional Board on or before each compliance report due date, the specified document or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, then the Discharge shall state the reasons for such noncompliance and provide an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Board in writing when it returns to compliance with the time schedule.
11. In the event of any change in control or ownership of land or waste discharge facilities described herein, 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 this office.
12. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or recession of this Order.
13. When it appears that the CLS is showing signs of failure (sustained wastewater in disposal trenches at or near the maximum design depth), then the Discharger shall increase the frequency of observation well monitoring and shall initiate construction of the replacement community leachfield when this condition cannot be mitigated by distribution system adjustments and the surfacing of effluent will be otherwise unavoidable.
14. A copy of this Order shall be kept at the CLS for reference by operating personnel. Key operating personnel shall be familiar with its contents.
15. The Regional Board will review this Order periodically and will revise requirements when necessary.

I, THOMAS R. PINKOS, Acting 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 6 September 2002.

THOMAS R. PINKOS, Acting Executive Officer

AMENDED
ASB: 9/6/02