CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2003-0054

WASTE DISCHARGE REQUIREMENTS

FOR
FAIRWAY/GLENMOOR LLC
AMADOR WATER AGENCY
FAIRWAY PINES/MACE MEADOW COMMUNITY LEACHFIELD SYSTEMS
AMADOR COUNTY

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

1. On 4 November 2002, the Amador Water Agency submitted a Report of Waste Discharge (RWD) for a community leachfield system (CLS) that treats and disposes of domestic wastewater generated by homes in the vicinity of the Mace Meadow area of Amador County.

2. Waste Discharge Requirements (WDRs) Order No. 99-133, adopted by the Regional Board on 17 September 1999, prescribes requirements for an as-then undeveloped Mace Meadow leachfield but did not include requirements for the existing Fairway Pines leachfield. Because a common collection system and pump station is used for the homes within the Mace Meadow area, and wastewater from this service area may be directed to either CLS, it is therefore appropriate to rescind the WDRs for the Mace Meadow CLS and regulate both the Mace Meadow CLS and the Fairway Pines CLS under one Order.

3. The Fairway Pines leachfield is in Section 16, T7N, R13E, MDB&M (Assessors Parcel Number 33-010-084) as shown on Attachment A, which is attached hereto and made part of this Order by reference. The Mace Meadow leachfield is in Section 16, T7N, R13E, MDB&M, (Assessors Parcel Numbers 23-070-165 and 23-070-166) as shown on Attachment B.

4. The Amador Water Agency owns and operates the Fairway Pines CLS and is responsible for its proper operation and maintenance. Fairway/Glenmoor is responsible for designing and constructing the remainder of the Fairway Pines leachfield. Fairway/Glenmoor is in the process of constructing the Mace Meadow leachfield on Parcel F-1A (APN No. 23-070-166). Fairway/Glenmoor must design and install the leachfield in conformance with this Order and the Amador Water Agency's requirements. The Amador Water Agency has accepted ownership of Parcel F-1A, and once it accepts ownership of the constructed system, is responsible for proper operation and maintenance of the leachfield. Fairway/Glenmoor has maintained ownership of Mace Meadow leachfield parcel F-1B (APN No. 23-070-165), and at some point will design and build the remainder of the Mace Meadow leachfield on this parcel, in conformance with this Order and the Amador Water Agency's regulations. Once it accepts ownership of the land and the constructed system, the Amador Water Agency will be responsible for its proper operation and maintenance. A community leachfield will not be constructed on Parcel F-2.

5. The Amador Water Agency serves as the authorized public agency responsible for ensuring the two CLS described herein is adequately designed, located, sized, spaced, constructed, and maintained, as required by California Water Code (CWC) section 13282.

6. Each entity shall hereafter be referred to individually ("Amador Water Agency" or "Fairway/Glenmoor LLC") or jointly as "Discharger".

7. The term "CLS: includes the effluent collection system (commencing at the septic tank effluent outlet), lift station, and community leachfields.

Septic Tanks and Collection Systems

8. The Fairway Pines service area comprises of approximately 202 equivalent single residential units (EDUs). Currently, only 23 of the 202 EDUs have been developed as single-family dwellings, while the remaining EDUs are as yet unimproved. In addition, there are four EDUs along Faiway Drive that are discharging into the wastewater system. Additional nearby EDUs may be added due to failing leachfields. The RWD projects the growth rate for the serve area to be approximately 10-20 EDUs per year.

9. The Mace Meadow portion of the service area will consist of 275 residential units, none of which has been constructed as yet.

10. Each parcel has or will have a 1,500-gallon septic tank and sewer line owned by the parcel owner; from the service connection, wastewater is conveyed in an effluent collection system to community leachfields for treatment and disposal.

11. Each septic tank will have two chambers. 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.

12. 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 1/8 inch polyethlyene screen to capture errant solids.

13. 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.

14. The septic tank effluent is discharged via gravity to a service connection on the public side of the property boundery. Each service connection consists of a low pressure swing check valve which is in turn flanked by two quarter-turn ball isolation valves. The service connection check valves serve to prevent effluent back flow from the collection system in the event of a blockage or system failure in the collection system.

15. Effluent from the service connections flows via gravity into a series of two, three, and six inch collection mains that are in road right-of-way and/or easements. The network of collection mains directs the effluent from both subdivisions to a lift station near the northwest corner of Fairway Pines Unit II (APN 33-010-082).

16. The lift station is a 4,000 gallon fiberglass tank which has a low level connection to a 30 inch pumping vault that is equipped with duplexed three-horsepower submersible pumps. Effluent is pumped to a four inch Schedule 40 PVC force main. The lift station contains remote communication alarms (i.e. auto dialers) which are activated in the event of high water levels.

17. The RWD states that the existing lift station is designed to deliver approximately 60 gallons per minute (gpm) (86,400 gpd) to the force main. However, the influent line to the lift station has a peak flow capacity of approximately 240 gpm. While the lift station is capable of handling existing flows, it will need to be upgraded to handle the flows as the subdivision continues to grow.

18. Effluent leaves the lift station via a force main. Near the northwesterly corner of the Fairway Pines leachfield, a hydraulic flow splitting manifold directs a portion of the effluent to the Fairway Pines leachfield, with the remainder being directed to the Mace Meadow leachfield. The Amador Water Agency has not provided information as to how it will determine which leachfield to direct the flow to, or when it will change the flows between fields; this information will be described in the Operation and Maintenance Plan required as part of the Provisions of this Order.

Fairway Pines Leachfield and Discharge

19. The Fairway Pines leachfield was constructed in 1996, 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.

20. When wastewater flow rates exceed the disposal capacity (approximately 8,100 gpd) of the existing Fairway Pines leachfield, the remaining flow will be diverted to the Mace Meadow leachfield. The flow rate for the collection system is currently approximately 2,000 gallons per day (gpd), all of which is discharged to the Fairway Pines leachfield.

21. The Fairway Pines leachfield discharges through to a 3,000 gallon fiberglass dose tank, which is equipped with a dosing siphon and dose counter. The RWD indicates that each dose is approximately 1,560 gallons. Dosing will occur six times per day at design flow.

22. The leachfield is split into two sections which consist of approximately 2,800 total linear feet of pressure dosed leachline on a 7.15-acre parcel, as shown on Attachment C, which is attached hereto and made part of this Order by reference. The 2,800 feet of leachline is divided between the two separate leachfields. Distribution pipes within each disposal trench within the 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.

23. The dose tank is equipped with a "dump valve" for draining the dose tank. This valve when open will drain the entire dosing tank to a dedicated drain line situated on the northern side of the leachfield. The drain line is 90 feet long and utilizes a graveless chamber to maximize the volume in the trench (2000 gallons).

24. 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. The leachfield has been designed such that the existing leachlines are placed approximatly 20 feet on center horizontally, thereby alllowing the replacement area to be situated interstitally between the active leachlines

25. After the leachfield is expanded to its maxium size of approximately 5,600 lineal feet, the RWD states that the Fairway Pines leachfield disposal capacity will be approximately 16,100 gallons per day (gpd). However, the leachfield's current size (2,800 feet) restricts the disposal capacity to approximately 8,100 gallons per day.

26. 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 26 minutes per inch (mpi) and at a soil depth of 48 inches is approximately 47 mpi. The disposal trenches are 48 to 65 inches deep and 24 inches wide with 36 inches of drainage rock below the distribution lateral, with eight feet between trenches. The wastewater application rate is approximately 0.48 gallons per day per square foot of disposal trench (considering the invert and the full 36 inches of sidewall area) at design flow. As described in a 1998 document from a California Registered Engineer, the leachfield can currently accept the wastewater from 39.5 EDUs.

27. On 28 March 2000, the Amador County Environmental Health Department conducted an inspection of Fairway Pines Community Leachfield. The inspection report states that "*Review of the flow meter records appear to indicate that flows during relatively dry weather are within the expected range for the number of users. During the wet weather, however, the flow rate appears to increase dramatically. This likely indicates an I&I situation in the gravity portion of the collection system. The source of the additional flow should be identified and corrected.*"

28. 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 March 2000 County inspection found that most of the disposal trenches observation wells were dry. The inspection found effluent in only three of the disposal trenches. The depth of effluent in the disposal trenches ranged from 44 to 49 inches below ground surface (or 1 to 8 inches above the invert of the trench). Trenches range in depth from 48 to 52 inches below the ground surface.

29. An operation and maintenance manual*, "Fairway Pines Sewerage System",* was developed for the CLS when it was orginally built in 1996; however, the manual does not address operation and maintaince that are necessary to assure complance with this Order and therefore must be revised.

Mace Meadow Leachfield and Discharge

30. The Mace Meadow leachfield occupies two parcels comprising approximately 37.7 total acres, as shown on Attachment B, which is attached hereto and made part of this Order by reference. After setbacks, the leachfield will occupy about 25 acres. A portion of the leachfield was constructed in the fall of 2002 on APN 023-070-166 (19.05 acres total size). The Amador Water Agency owns and will operate the leachfield on this parcel. As additional capacity is needed, Fairway/Glenmoor LLC will construct leachfields on the other parcel (APN 023-070-165) and deed portions of it to the Amador Water Agency. This Order pertains to the current and future leachfields on both parcels.

31. The site soil is described as silty clay with less than ten percent gravel dervied from the weathering of the underlying schist bedrock. The depth at which bedrock is considered to be present is ten feet. Percolation rates ranged between 5 to100 mpi at depths ranging between 36 and 60 inches.

32. Effluent from the force main will be discharged to 4,000 gallon dose tanks equipped withdual dose siphons. The total length of active disposal trench at build-out will be approximately 28,000 lineal feet. The maximum wastewater disposal capacity for the leachfield will be approximately 64,600 gallons per day.

33. Information submitted by the Discharger's consultant (a California Registered Engineer) indicate that approximately 8,372 lineal feet of leachlines were installed for Phase 1 (19.05 acres) of the Mace Meadow leachfield. The engineer has calculated that the installed leachlines can dispose of 15,069 gpd of wastewater. The leachfield disposal trenches are 27 inches deep and 36 inches wide with 12 inches of drainage rock and trench sidewall depth below the distribution lateral. The wastewater application rate is approximately 0.6 gpd per square foot of disposal trench (considering the trench bottom area only), at design flow.

34. 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. The leachfield's

replacement area is situated interstitially between active lines, which are spaced a minmum of 20 feet apart horizontally. The leachfield will be constructed in sectors as required to support the system's user connection rate. Each sector is comprised of several thousands of feet of disposal trench.

35. Order No. 99-133 required that the Discharger submit both a Preliminary Groundwater Investigation Report and a Groundwater Report to the Board before construction and installation of the leachline. The Discharger failed to submit either report before beginning construction, but has proposed, and the Executive Officer approved, that the reports shall be completed and submitted before any wastewater is discharged to the Mace Meadow leachfield.

Effluent Characteristics

36. On 2 July and 10 July 2001, the Discharger collected samples of the wastewater effluent discharged to the Wildwood Estates CLS. Communities within the service area are similar residential subdivisions and are supplied with the same potable water source as Wildwood Estates. Therefore, the Discharger expects the wastewater characteristics to be similar. The sample data from each monitoring event are presented below.

Constituent	Units	2 July 2001 Effluent Concentration	10 July 2001 Effluent Concentration
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

37. 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.

38. Nitrate nitrogen is highly mobile in the soil column and nitrates that are not taken up by the vegetative cover will continue to move vertically through the soil. The RWD shows the annual loading rate to the leachfield for total nitrogen is approximately 146 lbs/acre/year.

39. Total dissolved solids may contain highly mobile waste constituents, such as chlorides, that have limited attenuation in the soil column underlying the leachfield. The RWD shows the annual loading rate to the leachfield for total dissolved solids is approximately 1,760 lbs/acre/year.

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.

40. 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 service area receives excellent quality supply water, the use of water softeners is unnecessary, and if the Discharger allows them, they must exclude self-regenerating models.

41. 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.

Sanitary Sewer Overflows

42. 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.

43. 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.

44. 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 excedences 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.

45. 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.

Site-Specific Conditions

46. The mean annual rainfall, based on data from Electra Power House CIMIS weather station, is 28 inches per year.

47. All portions of both leachfields are outside of the 100-year flood zone.

48. The Amador County Planning Department has zoned the parcels sourrounding both leachfields for residential use, including the use of on-site septic systems.

49. The leachfields are 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.

50. Soils in both leachfields are of the Josephine series of metasedimentary origin. The solids have a relatively high clay content resulting in moderately-slow percolation rates. Soil depth is shallow and the depth to bedrock is approximately 9 to 11 feet.

51. Slopes in the Fairway Pines leachfield vary up to 30% toward Pioneer Creek, immediately below the leachfield area. The site elevation ranges from 3475 ft MSL at the upslope end to approximately 3250 ft MSL on the down slope side. Slopes in the Mace Meadow leachfield area have similar steep slopes. Soil stability could be an issue under saturated soil conditions. The leachfields may also receive additional water from stormwater runoff from the land surrounding the leachfield.

52. Potable water for the service area originates from the Mokoleumne River. The TDS of the source water is approximately 28 mg/L.

Groundwater Degradation

53. 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.

54. 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 implemention, 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

55. 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.

56. Surface water drainage from the Fairway Pines leachfield is to Pioneer Creek, a tributary to Sutter Creek, which is in turn tributary to Dry Creek, and then the Sacramento-San Joaquin Delta.

57. Surface water drainage from the Mace Meadow leachfield is to Misery Creek, a tributary to Sutter Creek, which is in turn tributary to Dry Creek, and then the Sacramento-San Joaquin Delta.

58. 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.

59. The beneficial uses of the underlying groundwater are municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.

60. 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.

61. 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.

62. 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.

63. 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

64. 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 judicous operation and maintenance. These leachfield areas may fail 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.

65. TDS concentrations in the effluent should be well below the governing numerical water quality limit of 450 mg/l, a value translated from the narrative Chemical Constituents objective pursuant to Basin Plan procedures 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.

66. 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.

67. 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 for nitrate, 10 mg/L. The objective is being applied to total nitrogen to account for conversion of other forms of nitrogen to nitrate in the subsurface environment. The Basin Plan numeric water quality objective for total coliform is less than 2.2 MPN/100 mL.

68. 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.

69. 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.

70. 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 numerical and narrative 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

71. 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. Both leachfields are 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.

72. On 12 April 1991, 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 Fairway Pines subdivision, including the CLS.

73. On 17 September 1999, in accordance with the Title 14, CCR, section 15261 et seq., the Regional Board certified a Mitigated Negative Declaration for the 64,600 gpd Mace Meadow leachfield.

74. The projects, as approved by both Amador County and the Regional Board, 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.

75. 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. R5-2003-0054" are necessary to assure compliance with these waste discharge requirements. The Discharger operates facilities that discharge waste subject to this Order.

76. 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.

77. 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.

78. 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.

79. 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

80. 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.

81. 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.

82. In a public meeting, all comments pertaining to the discharge were heard and considered.

IT IS HEREBY ORDERED that, Order No. 99-133 is rescinded, and pursuant to CWC sections 13263 and 13267, Fairway/Glenmoor LLC, and Amador Water Agency, their 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 presence of leachate within one foot of the lowest finished disposal field grade is prohibited.

7. The use of the Mace Meadow leachfield is prohibited until the Discharger has submitted, and the Executive Officer has approved, the *Groundwater Characterization Workplan*, the *Groundwater Well Installation Report*, and two rounds of sampling data (as described in the Provisions and MRP).

B. Discharge Specifications

1. The monthly average flow for the Fairway Pines leachfield shall not exceed 8,100 gallons per day. If the Discharger expands the leachfield to the proposed 5,600 linear feet, then it may submit a report (as described in Provision F.1.g) to the Executive Officer, and upon approval, the Executive Officer may increase the flow limit up to 16,100 gpd.

2. The monthly average flow for the Mace Meadow leachfield shall not exceed 15,000 gallons per day. If the Discharger expands the leachfield in the future, then it may submit a report (as described in Provision F.1.g) to the Executive Officer, and upon approval, the Executive Officer may increase the flow limit up to the calculated disposal capacity. In no case shall the flow shall exceed 64,600 gallons per day.

3. The wastewater treatment and leachfield areas shall not cause pollution or a nuisance as defined by Section 13050 of the California Water Code.

4. Public contact with wastewater in the leachfield area shall be precluded or controlled through such means as fences and signs, or acceptable alternatives.

5. 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.

6. Objectionable odor originating from the leachfield area shall not be perceivable beyond the limits of the leachfield area.

7. 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.

8. Application of wastewater shall be confined to each leachfield area defined in this Order.

9. 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 within12 inches of the ground surface.

    d. Annually inspect, and if necessary, clean the leachfield's distribution piping.

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.

10. 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.

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

12. 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.9.

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 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:

Constituent	Units	Limitation
Total Coliform Organisms	MPN/100 mL	Less than 2.2
Total Dissolved Solids[a]	mg/L	310
Total Nitrogen	mg/L	10

   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 July 2003**, the Discharger shall submit and implement an Operation and Maintenance (O&M) Plan for the Fairway Pines CLS. An O&M Plan for the Mace Meadow CLS shall be submitted **60 days prior** to wastewater being discharged to this 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.9, 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 flow meter(s) 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 is within 12 inches of the ground surface.

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

   b. By **1 August 2003**, 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 collection system 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 August 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.

e. By **1 March 2004**, the Discharger shall complete an evaluation of the flow capacity of the lift station (rated at 60 gpm) versus the peak flow capacity of the influent line to the lift station (240 gpm). The report shall evaluate at what point the lift station must be modified such that it can handle peak flows from the collection system. The report shall also give a proposed time schedule for improvements.

f. At least **30 days** prior to discharging waste to the Mace Meadow leachfield, the Discharger shall submit a report that certifies that the dosing siphon tank(s) have been installed at the leachfield.

g. At least **60days** before the Discharger wishes to increase the flow limits to the Fairway Pines and/or Mace Meadow leachfields, the Discharger shall submit a design disposal capacity report. The report(s) shall include at a mimimum the amount (lineal

footage) of new leachlines that were installed, construction and installation details of the disposal trenches and leachlines (i.e., depth and width of trenches, trench sidewall depth below laterals, and square feet per lineal foot of wastewater application area), and wastewater design disposal calculations (in gallons per day).

GROUNDWATER EVALUATION

h. No later than **1 August 2003**, the Discharger shall submit a *Groundwater Characterization Workplan* for both the Fairway Pines and the Mace Meadow leachfields. Note that the Discharger may elect to submit the workplan for the Mace Meadow leachfield at an earlier date, as waste may not be discharged to this leachfield until at least two groundwater samples have been collected. The workplan(s) shall describe the installation of at least one monitoring well upgradient and two groundwater monitoring wells downgradient of each leachfield to allow evaluation of the groundwater quality beneath the site. 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 D, "*Items to be Included in a Monitoring Well Installation Workplan and a Monitoring Well Installation Report of Results."*

i. **No later than 1 May 2004**, the Discharger shall submit a *Well Installation Report* for both the Fairway Pines leachfield and the Mace Meadow leachfield. Note that the Mace Meadow report may be submitted seperately, and must be submitted before any groundwater samples are collected. The report(s) shall be consistent with, and include the items listed in, the second section of Attachment D. In addition, the report(s) 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.

j. By **1 July 2005**, 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.

k. If the *Groundwater Quality Study Report* or quarterly monitoring reports show that groundwater exceeds Groundwater Limitations at either leachfield, 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 usews, 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. R5-2003-0054, 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 set aside a site on Amador County Parcel No. 33-010-082 for a Recirculating Gravel Filter plant if in the future such a system is deemed necessary by a California Registered Civil Engineer or the Regional Board.

6. 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)."

7. The Discharger shall use the best practicable treatment and control techniques, including proper operation and maintenance, to assure compliance with terms of this Order.

8. 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.

9. 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."

10. 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.

11. 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.

12. 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.

13. 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.

14. When it appears that either 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 inititate 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.

15. 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.

16. The Regional Board will review this Order periodically and will revise requirements when necessary.

I, THOMAS R. PINKOS, 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 24 April 2003.

THOMAS R. PINKOS, Executive Officer

AMENDED

ASB/JSK/WSW 4/24/03

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2003-0054

FOR
FAIRWAY/GLENMOOR LLC
AMADOR WATER AGENCY
FAIRWAY PINES/MACE MEADOW COMMUNITY LEACHFIELD SYSTEMS
AMADOR COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring domestic wastewater, treated effluent, leachfields, and groundwater. This MRP is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer. Regional Board staff shall approve specific sample station locations prior to implementation of sampling activities.

All samples should be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form.

Field test instruments (such as those used to test pH and dissolved oxygen) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are calibrated prior to each monitoring event;
3. Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

SEPTIC TANK MONITORING

The Discharger shall monitor the septic tanks and report this information in the annual reports. Septic tanks shall be inspected annually and pumped as described below.

Parameter	Units	Type of Measurement	Minimum Inspection	Reporting Frequency
Sludge depth and scum thickness in the first compartment of each septic tank	Feet	Staff Gauge	Annually	Annually
Distance between bottom of scum layer and bottom of outlet device	Inches	Staff Gauge	Annually	Annually

		Type of	Minimum	Reporting

Parameter	Units	Measurement	Inspection	Frequency
Distance between top of sludge layer and bottom of outlet device	Inches	Staff Gauge	Annually	Annually

The Discharger shall retain records of each inspection, by street address, noting the date, measured readings and calculations, and calculated projection of whether the limits of Discharge Specification B.9 will be exceeded before the next reading. The Discharger will also record when cleaning is required, the date of notice to the homeowner, the condition of the tank, and the date that cleaning or repair occurred and by whom. Copies of the Liquid Waste Hauler manifests shall be retained for review as with any other record concerning documentation of compliance with the Order.

PUMP STATION MONITORING

The Discharger shall conduct monthly inspections of automated system related to the operation of wastewater pump stations, and shall include the observations made in the monthly monitoring reports.

EFFLUENT MONITORING

The Discharger shall conduct effluent monitoring of the wastewater entering each leachfield. Wastewater samples shall be collected from each leachfield dosage siphon. Effluent monitoring shall include, at a minimum, the following:

Constituents	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Flow to each leachfield	gpd	Meter	Monthly	Monthly
Total Dissolved Solids	mg/l	Grab	Quarterly	Quarterly
Nitrates as Nitrogen	mg/l	Grab	Quarterly	Quarterly
Total Kjeldahl Nitrogen	mg/l	Grab	Quarterly	Quarterly
Standard Minerals[1]	mg/l	Grab	Annually	Annually

[1] Standard Minerals shall include, at a minimum, the following elements and compounds: Barium, Boron, Calcium, Iron, Magnesium, Manganese, Sodium, Potassium, Chloride, Sulfate, Total Alkalinity (including alkalinity series), and Hardness.

DESIGNATED DISPOSAL AREA MONITORING

The Discharger shall conduct a visual inspection of the leachfields on a monthly basis. Inspections of the Mace Meadow leachfield shall commence once waste is discharged. Results shall be recorded and submitted with the monthly monitoring report. Evidence of surfacing wastewater, erosion, field saturation, runoff, or the presence of nuisance conditions shall be noted in the report. If surfacing water is found, then a sample shall be collected and tested for total coliform organisms and total dissolved solids. In addition to the visual inspections, monitoring of the leachfields shall include the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Application Rate[1]	gal/acre•day	Calculated	Monthly	Monthly
Leachline Riser Inspection[2]	Inches	Measurement	Bi-monthly (every other month)[3]	Bi-monthly (every other month)

[1] The application rate for each leachfield

[2] The Amador Water Agency shall measure the depth of any ponded wastewater in each inspection riser. The Discharger shall provide the depth of each disposal trench and the corresponding depth of soil remaining between the ponded wastewater and the surface.

[3] Amador Water Agency shall measure and record the distance from the surface of the liquid in the observation port to the surface of the ground, at least once every two months, and once every month after the accumulation of the first five inches of rain in the winter.

GROUNDWATER MONITORING

Wastewater may not be discharged to the Mace Meadow leachfield until at least two rounds of groundwater samples have been collected. These samples shall be collected and analyzed as described below. In addition, beginning with the second quarter 2004, the Discharger shall conduct the following groundwater monitoring program for the Fairway Pine leachfield. Monitoring at the Mace Meadow leachfield shall at least begin by this date, if not sooner. Prior to construction of any groundwater monitoring wells, the Discharger shall submit plans and specifications to the Board for review and approval. Once installed, all new wells shall be added to the MRP, and shall be sampled and analyzed according to the schedule below.

Prior to sampling, groundwater elevations shall be measured and the wells shall be purged at least three well volumes until pH and electrical conductivity have stabilized. Depth to groundwater shall be measured to the nearest 0.01 feet. Water table elevations shall be calculated. Samples shall be collected using approved EPA methods. Groundwater monitoring shall include, at a minimum, the following:

Constituent	Units	Type of Sample	Sampling and Reporting Frequency[3]
Groundwater Elevation[1]	0.01 Feet	Measurement	Quarterly
Depth to Groundwater	0.01 Feet	Calculated	Quarterly
pH	S.U.	Grab	Quarterly
Total Dissolved Solids	mg/l	Grab	Quarterly
Nitrates as Nitrogen	mg/l	Grab	Quarterly
Total Kjeldahl nitrogen	mg/l	Grab	Quarterly
Total Coliform Organisms[2]	MPN/100 ml	Grab	Quarterly

[1] Groundwater elevation shall be based on depth-to-water using a surveyed measuring point elevation on the well and a surveyed reference elevation.
[2] Using a minimum of 15 tubes or three dilutions
[3] Groundwater monitoring of the Fairway Pines and Mace Meadow leachfields shall begin no later than the second quarter 2004. However, in order to comply with Prohibition No. A7, the Discharger may need to begin monitoring the Mace Meadow leachfield at an earlier date.

MISERY CREEK MONITORING

At least once per month, the Discharger shall monitor (visually inspect) downgradient from the leachfields, between the leachfields and Misery Creek, and along the bank of Misery Creek for evidence of surfacing leachate and wastewater discharges to Misery Creek. The Discharger shall determine whether surfacing liquids are leachate by results of laboratory analyses of samples retrieved of the liquids. If surfacing liquid is observed at any time within a distance of 100 feet downslope from any sector, and not more than 0.5 inches of rainfall has fallen on the site within the previous 24 hours, the surfacing liquid shall be sampled and analyzed for total coliform, TDS, and MBAS (foaming agents).

REPORTING

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., effluent, leachfield, etc.), and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported in the next scheduled monitoring report.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all Groundwater Monitoring Reports shall be prepared under the direct supervision of a Registered Engineer or Geologist and signed by the registered professional.

A. Monthly Monitoring Reports

Monthly reports shall be submitted to the Regional Board on the **1st day of the second month following sampling** (i.e. the January Report is due by 1 March). At a minimum, the reports shall include:

1. Results of effluent, designated disposal area, and Misery Creek monitoring;

2. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular format;

3. If requested by staff, copies of laboratory analytical report(s); and

4. A calibration log verifying calibration of all hand held monitoring instruments and devices used to comply with the prescribed monitoring program.

B. Quarterly Report

The Discharger shall establish a quarterly sampling schedule for effluent monitoring such that samples are obtained approximately every three months. Beginning no later than the second quarter 2004, the Discharger shall establish a quarterly sampling schedule for groundwater monitoring. However, in order to comply with Prohibition No. A7, the Discharger may need to begin monitoring the Mace Meadow leachfield at an earlier date. Quarterly monitoring reports shall be submitted to the Board by the **1st day of the second month after the quarter** (i.e. the January-March quarterly reports is due by May 1st) each year. The Quarterly Report shall include the following:

1. Results of effluent and groundwater monitoring. The results of regular monthly monitoring reports for March, June, September and December may be incorporated into their corresponding quarterly monitoring report;

2. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the groundwater monitoring. The narrative shall be sufficiently detailed to verify compliance with the WDR, this MRP, and the Standard Provisions and Reporting Requirements. The narrative shall be supported by field logs for each well documenting depth to groundwater; parameters measured before, during, and after purging; method of purging; calculation of casing volume; and total volume of water purged;

3. Calculation of groundwater elevations and discussion of seasonal trends if any;

4. A narrative discussion of the analytical results for all groundwater locations monitored including spatial and temporal tends, with reference to summary data tables, graphs, and appended analytical reports (as applicable);

5. A comparison of the monitoring data to the groundwater limitations and an explanation of any violation of those requirements;

6. Summary data tables of historical and current water table elevations and analytical results;

7. A scaled map showing relevant structures and features of the facility, the locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum; and

8. Copies of laboratory analytical report(s) for groundwater monitoring.

C. Annual Report

An Annual Report shall be prepared as the December monthly monitoring report. The Annual Report will include all monitoring data required in the monthly schedule. The Annual Report shall be submitted to the Regional Board by **1 February** each year. In addition to the data normally presented,

the Annual Report shall include the following:

1. The contents of the regular quarterly monitoring report for the last quarter of the year;
2. If requested by staff, tabular and graphical summaries of all data collected during the year;
3. Results of the effluent annual monitoring;
4. A description of any activity to control vegetation in the leachfield area;
5. The results of the inspection, and if necessary, the maintenance activities performed on the stormwater diversion ditch;
6. Annual summary of the septic tank inspections for the year, including the number of tanks on which notifications for cleaning were issued, and from compilation of Liquid Waste Hauler Manifests, the volumes of sludge removed from the WWTF and ultimate sludge disposal site(s);
7. A statement of when the O&M Manual was last reviewed for adequacy, and a description of any changes made during the year;
8. A description of the annual evaluation of effluent distribution and adjustments made, if any;
9. A summary of maintenance and repairs activities which were performed on the effluent collection system;
10. A statement regarding whether flow meter was calibrated during the year;
11. Attached documents as verification of each operator's certification;
12. Attached documentation describing user education actions; and
13. A discussion of any compliance and the corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements.

A letter transmitting the self-monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain a statement by the discharger, or the discharger's authorized agent, under penalty of perjury, that to the best of the signer's knowledge the report is true, accurate and complete.

The Discharger shall implement the above monitoring program as of the date of this Order.

THOMAS R. PINKOS, Executive Officer

24 April 2003
(Date)

AMENDED

ASB: 4/24/03