CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2005-0066

WASTE DISCHARGE REQUIREMENTS
FOR
VALLEY SPRINGS PUBLIC UTILITY DISTRICT
WASTEWATER TREATMENT PLANT
CALAVERAS COUNTY

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

1. The Valley Springs Public Utility District (VSPUD) (hereafter Discharger) submitted a Report of Waste Discharge (RWD), dated 23 October 2003 for updating Waste Discharge Requirements (WDRs) for the Valley Springs wastewater treatment plant. Supplemental information was received on 19 July 2004, 1 November 2004, 14 January 2005, 16 February 2005, and 28 February 2005.

2. For the purposes of this Order, the term "wastewater treatment plant" (WWTP) shall mean the sanitary sewage collection and transport system, the wastewater treatment system, the effluent storage reservoir, and the effluent disposal system.

3. WDRs Order No. 94-148, adopted by the Regional Board on 20 May 1994, prescribes requirements for the VSPUD wastewater treatment plant (WWTP). This Order is neither adequate nor consistent with the current plans and policies of the Regional Board.

4. WDRs Order No. 94-148 allows a monthly average dry weather inflow of 65,000 gallons per day (gpd). On 23 October 2003, VSPUD submitted a RWD to have its WDRs updated since its wastewater exceeded the flows prescribed in WDRs Order No. 94-148.

5. The VSPUD WWTF is on Assessors Parcel Number 46-015-24 and is owned and operated by the Discharger. The WWTP is located along Highway 12 just east of the town of Valley Springs in Section 24, T4N, R10E, MDB&M, as shown on Attachment A, which is attached hereto and made part of this Order by reference.

6. The WWTP serves approximately 204 residential connections and 71 commercial connections within the town of Valley Springs.

Wastewater Treatment, Storage, and Disposal System

7. The WWTP consists of an influent flow meter, headworks (comminutor), activated sludge unit (aeration tank), two aeration ponds, a polishing pond, and 92 acre-foot clay lined effluent storage reservoir. Wastewater disposal (via spray irrigation) has historically occurred on approximately 15 acres of land. However, in 2004 the Discharger expanded the spray disposal areas to approximately 22 acres. Attachment B, which is attached hereto and made part of this Order by reference, depicts the treatment plant, storage reservoir, and disposal areas.

8. Influent flows are measured through a Palmer Bowlus Flume upstream of the plant headworks and activated sludge unit. As of 2003, the flow has been measured and recorded by a Milltronics Ultrasonic flow meter.

9. Influent enters the WWTP through a Chicago 7B Comminutor. The comminutor automatically cuts coarse sewage solids into small settable solids, which settle out in a settling tank. Just upstream of the comminutor there is a shallow manhole with a bypass side gate. If necessary the influent can be bypassed through this gate and diverted directly into Aeration Pond No. 1

10. After sewage has gone through the comminutor, it enters an Aeration Tank. Inside the tank, air is bubbled through the sewage. Constant aeration allows the sewage to be stirred up to facilitate complete mixing and oxygen transfer.

11. Sewage discharged from the Aeration Tank enters two treatment ponds (Aeration Pond Nos. 1 and 2) and a polishing pond (Pond No. 3) in series.

12. Aeration Pond No. 1 has a volume of approximately 230,000 gallons and a wastewater detention time (assuming a 80,000 gpd flow) of 2.9 days. Oxygen is introduced into the pond by a mechanical floating aerator. Overflow from Pond No.1 flows through connecting conduits to Aeration Pond No. 2. Periodically, solids are pumped from the bottom of the pond and disposed of into the sludge drying beds.

13. Aeration Pond No. 2 has a volume of approximately 575,000 gallons and a wastewater detention time (assuming a 80,000 gpd flow) of 7.2 days. Pond No.2 also has an aerator unit. Wastewater from Pond No. 2 is gravity fed into Pond No. 3.

14. Pond No. 3 is used as a polishing and settling pond. The pond has a working capacity of 470,5000 gallons with wastewater detention time of approximately 5.9 days. With no aeration taking place in the pond, this pond allows further treatment and settleability of the wastewater. Once the wastewater level reaches two feet of freeboard in the pond, it flows into the effluent storage reservoir.

15. The effluent storage reservoir consists of a clay lined earthen reservoir that has an approximate storage volume of 92.2 acre-feet (based on two feet of freeboard). The RWD did not provide specific information (i.e., construction details, type of clay, etc.) about the clay liner system.

16. The Discharger has historically disposed of wastewater on approximately 15 acres of hillside east of the wastewater treatment and storage system. In July 2001, in response to a November 2000 Notice of Violation related to tailwater runoff, the Discharger installed tailwater control ditches on the east and north sides of the spray disposal fields to prevent further tailwater runoff. To increase its disposal capacity, in the summer of 2004 the Discharger expanded the spray disposal areas to approximately 22 acres.

17. The Discharger has a lease agreement with a local farmer to allow cattle grazing within the sprayfield boundaries. Cattle grazing within the effluent spray disposal areas is considered a use of reclaimed water under the Department of Health Services Title 22 regulations. The Regional

Board has no record that the Discharger has submitted a Title 22 Engineering Report. Therefore, this Order requires the Discharger to either submit a Title 22 Engineering Report or a report showing that cattle grazing no longer occurs within the effluent spray disposal fields.

18. Discharge Specification B.1 of the WDRs Order No. 94-148 states "*The monthly average dry weather flow shall not exceed 0.065 millions gallons per day*." The Discharger calibrated the influent flow meter in July 2003, and identified a substantial error (approximately 39 percent) in both the flow rate and the totalizer readings. A new influent flow meter was installed and calibrated on 2 August 2003. For the first full month of monitoring with the new flow meter, the monthly average influent flow was 72,820 gpd; an increase of 28,300 gpd over July 2002 monthly average inflows. The monthly average dry weather flow for the months of May through September 2004 ranged from approximately 64,260 to 84,730 gpd, indicating that the average monthly dry weather flow is approximately 71,000 gpd, which is in violation of Discharge Specification B.1 of the WDRs

19. A water balance submitted as part of the RWD indicates that the wastewater treatment, storage, and disposal system has sufficient capacity to handle a monthly average dry weather flow of approximately 78,500 gpd. The water balance assumed 100 year annual precipitation conditions, the use of 33 acres of spray disposal areas, irrigation during the wet season (except in January and February), and 7.15 acre feet of dead storage in the effluent storage reservoir as of 1 October of each year.

20. During a 24 February 2005 meeting, the Discharger indicated that it was working with the Calaveras County Water District (CCWD) to formalize an agreement such that CCWD would accept a portion of VSPUD effluent for disposal to the CCWD La Contenta WWTP. The Discharger stated that CCWD had verbally agreed that it would accept some wastewater on an as needed or emergency basis for up to three years. The Discharger indicated that it needs to dispose of effluent to CCWD in order to comply with the two-foot freeboard requirement for the remainder of the 2004/2005 wet season, and to ensure that the storage reservoir will be emptied going into the 2005/2006 wet season. This Order requires the Discharger to submit a copy of the agreement with CCWD.

21. The Discharger has not been required to monitor the effluent for total dissolved solids (TDS). However, the RWD provided TDS concentrations in the potable water supply. Results indicate that the concentrations is approximately 270 mg/l. Using standard engineering references, it is assumed that the TDS of the effluent would be in the range of 470 to 520 mg/l.

22. The Discharger has provided calculations for annual mass loading rates (based on average flows) to 33 acres of sprayfields for BOD, total nitrogen, and total dissolved solids. The results, which are provided in the table below, suggest that the WWTP has sufficient disposal capacity (based on agronomic rates) for BOD and total nitrogen, however, not for TDS.

Constituent	Assumed Average Concentration	Mass Loading (based on flow of 71,000 gpd
BOD	32 mg/L	390 lbs/acre/year
Total Nitrogen	5.6 mg/L	67.7 lbs/acre/year
TDS	440 mg/L	5,292 lbs/acre/year

Upgrades and Improvements to the Wastewater System

23. The RWD states that the Discharger is planning on make upgrades and improvements to the WWTP, including improvements to the sanitary sewer collection system to reduce inflow and infiltration (I&I), installing a disinfection unit to disinfect wastewater prior to spray irrigation, increasing the spray disposal areas from approximately 22 to 33 acres, installing additional tailwater collection ponds within the spray disposal areas, and upgrading the sludge drying facilities.

24. In June 2002, the Discharger conducted smoke testing of its sanitary sewer collection system and private laterals and identified 51 areas of infiltration. As of August 2003, the Discharger had made repairs at 41 of the 51 sites. The RWD indicates that the Discharger will make the repairs to the remaining 10 sites by September 2005. This Order requires the Discharger to submit a report certifying that repairs have been made to the collection system in all the locations where I&I was identified during the June 2002 smoke test.

25. In order for the WWTP to handle an average monthly dry weather flow of 78,500 gpd, the Discharger states that it must expand the spray disposal fields from 22 acres to 33 acres. Because the spray disposal areas are located on a hill (with some areas being fairly steep) the Discharger indicated in the RWD that is would construct additional tailwater control features around the entire spray disposal area. The tailwater control system would be designed such that tailwater would flow to a tailwater return pump(s) and return the water back to the WWTP headworks. This Order requires the Discharger to submit a Spray Irrigation Improvement report showing that the tailwater collection ditches are adequately sloped such that the wastewater is collected instead of infiltrated, and that the ditches are no wider than in a typical agricultural field.

26. In anticipation of the WDRs being updated, the Discharger installed chlorination facilities consisting of pumps, chlorine storage, and a building. The spray irrigation pump has a 300-gallon per minute pump capacity with the ability to pump approximately 432,000 gpd. Sodium hypochlorite liquid will be used to disinfect wastewater prior to irrigation, and the Discharger anticipates a dose of 20 mg/l will be needed to achieve a disinfection level of 23/240 MPN for total coliform organisms. The chlorine facilities are operational, but are not connected to the spray irrigation pump system. This Order requires the Discharger to submit a report certifying that the disinfection system is operational, can meet a 23/240 MPN disinfection standard, and is connected to the spray irrigation pump system.

27. The RWD indicates that the Discharger plans to modify the sludge drying facilities within the next 3 to 5 years. Modifications include installing drain tiles beneath the 30-foot by 60-foot sludge drying bed. A decant structure will be constructed which will drain the liquid as the solids

settle to the bottom of the sludge bed. This Order requires that all liquids are collected and returned to the WWTP.

28. Based on information provided in the RWD, and discussion with the Discharger, the Discharger has limited funding to purchase additional land to expand its storage and/or disposal capacity to handle future growth. The Discharger is pursuing additional disposal facilities by contracting with local landowners to accept effluent for disposal. However, nothing has been finalized. This Order requires the Discharger to conduct and submit a Feasibility Study Report that describes and analyzes potential options to increase the WWTP storage and/or disposal capacity, or alternatively, to permanently connect to CCWD.

Sanitary Sewer Collection System

29. The VSPUD collection system consists of approximately 11,000 lineal feet of 6-inch and 3,000 lineal feet of 8-inch sanitary sewer lines. The sewer lines are constructed of both vitrified clay and Plastic SDR-35. Approximately 90 percent of the piping is clay and the remainder is plastic. The Discharger maintains two lift stations within the collection system. Both have duplex pump systems and high level alarms, and are wired with manual cut out switches and plugs to accommodate hookup of a generator in case of power outages.

30. A "sanitary sewer overflow" is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the wastewater treatment plant. Temporary storage and conveyance facilities (such as wet wells, regulated impoundments, tanks, highlines, etc.) may be part of a sanitary sewer system and discharges to these facilities are not considered sanitary sewer overflows, provided that the waste is fully contained within these temporary storage/conveyance facilities.

31. At this site, sanitary sewer overflows consist of domestic sewage. The chief causes of sanitary sewer overflows could include grease blockages, root blockages, debris blockages, sewer line flood damage, manhole structure failures, vandalism, pump station mechanical failures, power outages, storm or groundwater inflow/infiltration, lack of capacity, and contractor caused blockages.

32. Sanitary sewer overflows often contain high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen demanding organic compounds, oil and grease, and other pollutants. 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.

33. The Discharger is expected to take all necessary steps to adequately maintain, operate, and prevent discharges from its sanitary sewer collection system. The Discharger does not currently have a Sanitary Sewer Overflow and Operation and Maintenance Plan. This Order requires that the Discharger submit this Plan.

Site Specific Conditions

34. The average annual precipitation for this area is approximately 21.66 inches, which is based on rainfall data from the Department of Water Resources Camp Pardee weather station (DWR Station #B20 1428 00). The 100-year return rainfall is approximately 41.39 inches.

35. The average annual pan evaporation at the Camp Pardee weather station is approximately 60.76 inches.

36. The facility lies within the Sutter Creek Hydrologic Unit Area No. 531.20, as depicted on interagency hydrologic maps prepared by the Department of Water Resources in August 1986.

37. According to information presented in the RWD, the soils and geology underlying the WWTP are cemented clays, gravels, and sands of the Valley Springs formation. The hill on which the spray disposal fields are located exhibits large outcropping of the Mehrten formation (found beneath the Valley Springs formation which was apparently eroded away) consisting of conglomerate, sandstone, and tuff. Soils on the hill are shallow and stony with depths averaging 12 inches. The soil is most closely described as gravelly loam with cobbles.

38. The RWD did not provide any information on shallow groundwater quality, groundwater flow directions, or depth to shallow groundwater. However, it is known that several springs are located just outside the spray disposal areas, indicating that seasonal groundwater may be fairly shallow.

39. The VSPUD supplies domestic water for the residents of Valley Springs. The water is obtained from two groundwater supply wells near the town of Valley Springs; the wells are in the vicinity of the WWTP. One well has recently become contaminated by coliform bacteria and is no longer in use. VSPUD is planning on drilling a replacement well north of the current WWTP.

Groundwater Degradation

40. State Water Resources Control Board (State Board) Resolution No. 68-16 (hereafter Resolution 68-16 or the "Antidegradation Policy") requires the Regional Board in regulating the discharge of waste to maintain high quality waters of the state 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 that described in the State Board and Regional Board policies (e.g., quality that exceeds water quality objectives).

    Resolution No. 68-16 requires: "Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the state will be maintained."

41. The Regional Board finds that some degradation of groundwater beneath the wastewater storage reservoir, leachfields, and spray disposal fields is consistent with Resolution 68-16 provided that:

a. The degradation is confined within a specified boundary;

b. The Discharger minimizes the degradation by fully implementing, regularly maintaining, and optimally operating best practicable treatment and control (BPTC) measures;

c. The degradation is limited to waste constituents typically encountered in municipal wastewater as specified in the groundwater limitations in this Order; and

d. The degradation does not result in water quality less than that prescribed in the Basin Plan.

42. Some degradation of groundwater by some of the typical waste constituents released with discharge from a municipal wastewater utility after effective source control, treatment, and control is consistent with maximum benefit to the people of California. The technology, energy, water recycling, and waste management advantages of municipal utility service far exceed any benefits derived from a community otherwise reliant on numerous concentrated individual wastewater systems, and the impact on water quality will be substantially less. Degradation of groundwater by constituents (e.g., toxic chemicals) other than those specified in the groundwater limitations in this Order, and by constituents that can be effectively removed by conventional treatment (e.g., total coliform bacteria) is prohibited. When allowed, the degree of degradation permitted depends upon many factors (i.e., background water quality, the waste constituent, the beneficial uses and most stringent water quality objective, source control measures, and waste constituent treatability).

43. Economic prosperity of local communities and associated industry is of benefit to the people of California, and therefore sufficient reason exists to accommodate growth and some groundwater degradation around the WWTF, provided that the terms of the Basin Plan are met.

44. The Discharger does not currently monitor groundwater quality beneath the wastewater treatment, storage, and disposal facilities. Therefore, it is unknown if the discharge of waste at the Valley Springs WWTP is in compliance with Resolution 68-16. This Order requires the Discharger to install groundwater monitoring wells and begin groundwater monitoring to determine whether the discharge of waste is in compliance with Resolution 68-16.

Treatment and Control Practices

45. This WWTF provides treatment and control of the discharge that incorporates:

a. Technology for secondary disinfected treatment of municipal wastewater;

b. Alarm and automatic flow diversion systems to prevent system bypass or overflow;

c. Application of wastewater at agronomic application rates; and

d. Certified operators to assure proper operation and maintenance.

46. A standard method of reducing coliform bacteria and other pathogens in wastewater to chlorinate or otherwise disinfect the effluent. Disinfection is considered a BPTC method, and effluent that is adequately disinfected should not impact groundwater at concentrations exceeding the coliform water quality objective. Therefore, to be consistent with Resolution No. 68-16, it is appropriate to require that the discharge results in compliance with a coliform Groundwater Limitation of less than 2.2 MPN/100 ml.

47. The WWTP design and effluent disposal program incorporates minimal BPTC measures. In order to determine compliance with Resolution No. 68-16 it is appropriate to establish a schedule for installation and sampling of groundwater monitoring wells and to formally determine background groundwater concentrations for selected constituents. In addition, it appears that TDS loading rates on the disposal fields are excessive. If groundwater is degraded or there is evidence that the discharge may cause degradation, then the Discharger will be required to evaluate and implement additional BPTC measures for each conveyance, treatment, storage, and disposal component of the system. Completion of these tasks will ensure that BPTC and the highest water quality consistent with the maximum benefit to the people of the state will be achieved.

48. This Order establishes interim groundwater limitations for the WWTP that will not unreasonably threaten present and anticipated beneficial uses or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan. This Order contains tasks for assuring that BPTC and the highest water quality consistent with the maximum benefit to the people of the state will be achieved. Accordingly, the discharge is consistent with the antidegradation provisions of Resolution 68-16. Based on the results of the scheduled tasks, the Regional Board may reopen this Order to reconsider groundwater limitations and other requirements to comply with Resolution 68-16.

Basin Plan, Beneficial Uses and Regulatory Considerations

49. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*, (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Board. Pursuant to Section 13263(a) of the California Water Code, waste discharge requirements must implement the Basin Plan.

50. Surface water drainage from the WWTP is to Cosgrove Creek, a tributary to the Calaveras River below New Hogan Dam. The beneficial uses of Calaveras River are municipal and domestic supply; agricultural supply; industrial service supply; industrial process supply; water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; and wildlife habitat.

51. The beneficial uses of underlying groundwater are municipal and domestic water supply; agricultural supply; industrial service supply; and industrial process supply.

52. The Basin Plan establishes numerical and narrative water quality objectives for surface water and groundwater within the basin, and recognizes that water quality objectives are achieved primarily through the Regional Board's adoption of waste discharge requirements and enforcement orders. Where numerical water quality objectives are listed, these are limits necessary for the reasonable protection of beneficial uses of the water. Where compliance with narrative water quality objectives is required, the Regional Board will, on a case-by-case basis,

adopt numerical limitations in orders, which will implement the narrative objectives to protect beneficial uses of the waters of the state.

53. The Basin Plan specifies a numerical water quality objective for ground waters for Bacteria that states, in part, the following:

> *"The following objectives apply to all ground waters of the Sacramento and San Joaquin River Basins, as the objectives are relevant to the protection of designated beneficial uses."*
>
> ***"Bacteria***
> *In ground waters used for domestic or municipal supply (MUN), the most probable number of coliform organisms over any seven-day period shall be less than 2.2/100mL."*

Groundwater, as described in the Basin Plan (page I-1.00), includes all subsurface waters that occur in fully saturated zones and fractures within soils and other geologic formations.

54. The Basin Plan includes a water quality objective for chemical constituents that, at a minimum, requires waters designated as domestic or municipal supply to meet the maximum contaminant levels (MCLs) specified in the following provisions of Title 22, California Code of Regulations: Tables 64431-A (Inorganic Chemicals) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, and Tables 64449-A (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits) and 64449-B (Secondary Maximum Contaiminant Levels-Rangers) of Section 64449. The Basin Plan's incorporation of these provisions by reference is prospective, and includes future changes to the incorporated provisions as the changes take effect. The Basin Plan recognizes that the Regional Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.

55. 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 animals, or aquatic life. 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 tastes or odors producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

56. Section 13241 of the Water Code requires the Regional Board to consider various factors, including economic considerations, when adopting water quality objectives into its Basin Plan. Water Code Section 13263 requires the Regional Board to address the factors in Section 13241 in adopting waste discharge requirements. The State Board, however, has held that a Regional Board need not specifically address the Section 13241 factors when implementing existing water quality objectives in waste discharge requirements because the factors were already considered in adopting water quality objectives. These waste discharge requirements implement adopted water quality objectives. Therefore, no additional analysis of Section 13241 factors is required.

57. Under the "Antidegradation" section, the attached Information Sheet lists the various waste constituents identified thus far as fitting the restriction of Finding No. 52 and 53, along with limits of each constituent necessary to maintain beneficial uses known to be adversely affected at certain concentrations of the waste constituent in groundwater. The listing identifies the constituent, the beneficial use and its associated limit, as well as the technical reference for the limit. Some limits become less restrictive when the water supply is limited to certain applications of a beneficial use, but that requires additional factual information. Interim groundwater limitations for each constituent reflect the most restrictive listed limit for the waste constituent, except if natural background quality is greater, in which case background becomes the interim limitation.

Water Recycling

58. State Board Resolution No. 77-1, *Policy with Respect to Water Recycling in California*, encourages recycling projects that replace or supplement the use of fresh water, and *The Water Recycling Law* (CWC sections 13500-13529.4) declares that utilization of recycled water is of primary interest to the people of the State in meeting future water needs.

59. The California Department of Health Services (DHS) has established statewide water recycling criteria in Title 22, CCR, Section 60301 et. seq. (hereafter Title 22). The Discharger will treat the wastewater to secondary standards and disinfect the effluent per Title 22 requirements.

60. A 1988 Memorandum of Understanding between DHS and the State Board on the use of recycled water establishes basic principles relative to the two agencies and the regional boards. The Memorandum allocates primary areas of responsibility and authority between the agencies and provides for methods and mechanisms necessary to assure ongoing, continuous future coordination of activities relative to use of recycled water.

61. DHS requires that the American Water Works Association (AWWA) Guidelines for Distribution of Non-Potable Water and Guidelines for the On-site Retrofit of Facilities Using Disinfected Tertiary Recycled Water be implemented in design and construction of recycling equipment. The guidelines require installation of purple pipe, adequate signs, and adequate separation between the recycled water lines and domestic water lines and sewer lines. It is unknown if the Discharger uses purple pipes.

62. Section 60323(a) of Title 22 states that no person shall produce or supply recycled water for direct reuse from a proposed water recycling plant unless an engineering report is submitted for review and approval by DHS and the Regional Board. Irrigation of turf grasslands for cattle grazing is considered a beneficial reuse. Therefore, the Discharger is required to submit a Title 22 Engineering Report.

OTHER REGULATORY CONSIDERATIONS

63. The United States Environmental Protection Agency (EPA) has promulgated biosolids reuse regulations in 40 CFR 503, *Standard for the Use or Disposal of Sewage Sludge,* which establishes management criteria for protection of ground and surface waters, sets application rates for heavy metals, and establishes stabilization and disinfection criteria.

64. The Regional Board is using the Standards in 40 CFR 503 as guidelines in establishing this Order, but the Regional Board is not the implementing agency for 40 CFR 503 regulations. The Discharger may have separate and/or additional compliance, reporting, and permitting responsibilities to the EPA.

65. The State 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 design flow at this wastewater treatment plant is less than 1.0 mgd and therefore the Discharger is not required to apply for a stormwater NPDES permit.

66. On 28 January 2004, the Valley Springs Public Utiltiy District adopted a Negative Declaration for the expansion of the sprayfields at the WWTP in accordance with the California Environmental Quality Act (CEQA), (Public Resources Code Section 21000, et seq.), and the State Guidelines.

67. The action to update WDRs for this existing facility is exempt from the provisions of the CEQA, in accordance Title 14, California Code of Regulations (CCR), Section 15301.

68. Section 13267(b) of the California Water Code 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 discharging, or who proposes to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of discharging, or who proposes to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports 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."

69. The technical reports required by this Order and the attached "Monitoring and Reporting Program No. R5-2005-0066" are necessary to assure compliance with these waste discharge requirements. The Discharger operates the facility that discharges the wastes subject to this Order.

70. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells, 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.

71. 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. While the WWTF 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.

72. 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, California Code of Regulations (CCR), Section 20005 et seq. (hereafter Title 27). The exemption, pursuant to Title 27 CCR 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 associated with a municipal wastewater treatment plant.

73. Pursuant to California Water Code 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

74. 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.

75. The Discharger and interested agencies and persons have been notified of the intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

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

IT IS HEREBY ORDERED that Order No. 94-148 is rescinded and, pursuant to Sections 13263 and 13267 of the California Water Code, Valley Springs Public Utility District, 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 a sanitary sewer system at any point upstream of the WWTP is prohibited. Discharge of treated wastewater downstream of the WWTF, other than at the approved spray disposal areas or into the CCWD collection system, is prohibited.

4. Discharge of waste classified as 'hazardous', as defined in Sections 2521(a) of Title 23, CCR, Section 2510, et seq., (hereafter Chapter 15), or 'designated' as defined in Section 13173 of the California Water Code, is prohibited.

5. Use of the tailwater control system for storage or disposal of wastewater is prohibited.

6. Surfacing of wastewater outside or downgradient of the effluent storage reservoir is prohibited.

B. Discharge Specifications:

1. The monthly average dry weather inflow to the WWTP shall not exceed 71,000 gpd. Upon the Executive Officer's approval of the report prescribed in Provision G.1.a, the monthly average dry weather flow shall not exceed 78,500 gpd.

2. Disposal of effluent shall be confined to the effluent storage reservoir, spray disposal areas, and CCWD collection system (per signed agreement) as defined in this Order.

3. 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.

4. Neither the treatment nor the discharge shall cause a condition of pollution or nuisance as defined by the California Water Code, Section 13050.

5. Objectionable odors originating at the facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas.

6. As a means of discerning compliance with Discharge Specification No. 5, the dissolved oxygen content in the upper zone (one foot) of the effluent storage reservoir shall not be less than 1.0 mg/l.

7. The wastewater in the storage reservoirs shall not have a pH of less than 6.5 or greater than 8.4.

8. Public contact with wastewater shall be precluded or controlled through such means as fences and signs, or acceptable alternatives.

9. The Discharger shall operate all systems and equipment to maximize treatment of wastewater and optimize the quality of the discharge.

10. The wastewater treatment, storage, and disposal system shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

11. The WWTP shall have sufficient treatment, storage, and disposal capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary infiltration and inflow 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.

12. The freeboard in the effluent storage reservoir shall never be less than two feet as measured vertically from the water surface to the lowest point of overflow.

13. By **1 November** each year, available reservoir storage capacity shall at least equal the volume necessary to comply with Discharge Specifications No. 11 and No. 12.

14. The effluent storage reservoir shall be managed to prevent the breeding of mosquitoes. In particular,

    a. An erosion control program shall be implemented to ensure that small coves and irregularities are not created around the perimeter of the waste surface.

    b. Weeds shall be minimized through control of water depth, harvesting, and/or herbicides.

    c. Dead algae, vegetation, and debris shall not accumulate on the water surface.

C. Effluent Limitations

1. Effluent discharged to the effluent storage reservoir shall not exceed the following limits:

Constituent	Units	Monthly Average	Daily Maximum
BOD [1]	mg/L	30	80
Total Settleable Solids	ml/L	0.5	1.0

[1] BOD denotes 5-day biochemical oxygen demand at 20° C.

2. Effluent discharged to the effluent storage reservoir shall not have a pH of less than 6.5 or greater than 8.4.

3. Beginning 1 April 2006, effluent discharged to the spray disposal field shall not exceed a monthly average of 23 MPN/100ml or a daily maximum of 240 MPN/100ml for Total Coliform Organisms (measured as a monthly median).

D. Spray Disposal Area Specifications

1. Application of effluent shall comply with the following setback requirements:

Setback Definition[1]	Minimum Irrigation Setback (feet)
Edge of spray disposal area to property boundary	50
Edge of spray disposal area to public road	50
Edge of spray disposal area to irrigation well	100

Setback Definition[1]	Minimum Irrigation Setback (feet)
Edge of spray disposal area to domestic well	100
Edge of spray disposal area to manmade or natural surface water drainage course [2] or spring	50

[1] As defined by the wetted area produced during irrigation.
[2] Excluding ditches used exclusively for tailwater return.

2. Irrigation runoff (i.e., tailwater) shall be completely contained within the designated spray disposal area and shall not enter any surface water drainage course.

3. Irrigation of effluent shall not be performed within 24 hours of a forecasted storm, during a storm, within 24 hours after any measurable precipitation event, or when the ground is saturated.

4. Spray irrigation of effluent is prohibited when wind velocities exceed 30 mph.

5. The spray disposal area shall be managed to prevent breeding of mosquitoes. In particular:

   a. There shall be no standing water 48 hours after irrigation ceases;

   b. Tailwater ditches must be maintained essentially free of emergent, marginal, and floating vegetation, and;

   c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store effluent.

6. Tailwater ditches shall be adequately sloped such that the wastewater flows to a collection point.

7. Tailwater ditches shall not be operated such that their primary purpose is wastewater storage, evaporation, or percolation.

E. General Solids Disposal Specifications:

Sludge, as used in this document, means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screenings generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the WWTP. Biosolids refers to sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities.

1. Sludge and solid waste shall be removed from screens, sumps, ponds, and tanks as needed to ensure optimal plant operation.

2. Treatment and storage of sludge generated by the WWTP shall be confined to the WWTP property, and shall be conducted in a manner that precludes infiltration of waste constituents into soils in a mass or at concentrations that will violate the Groundwater Limitations of this Order.

3. Any storage of residual sludge, solid waste, and biosolids at the WWTP shall be temporary, and the waste shall be controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or at concentrations that will violate the Groundwater Limitations of this Order.

4. Residual sludge, biosolids, and solid waste shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27. Removal for further treatment, disposal, or reuse at disposal sites (i.e., landfills, WWTFs, composting sites, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a regional water quality control board will satisfy this specification.

5. Use of biosolids as a soil amendment shall comply with valid waste discharge requirements issued by a regional water quality control board. In most cases, this will mean the General Biosolids Order (State Water Resources Control Board Water Quality Order No. 2000-10-DWQ, *General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities*). For a biosolids use project to be covered by the General Biosolids Order, the Discharger must file a complete Notice of Intent and receive a Notice of Applicability for each project.

6. Use and disposal of biosolids shall comply with the self-implementing federal regulations of Title 40, Code of Federal Regulations (CFR), Part 503, which are subject to enforcement by the U.S. EPA, not the Regional Board. If during the life of this Order, the State accepts primacy for implementation of 40 CFR 503, then the Regional Board may also initiate enforcement where appropriate.

F. Groundwater Limitations:

1. Release of waste constituents from any wastewater treatment, storage, or disposal system component associated with the WWTP shall not cause groundwater under and beyond that system component, 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 ambient background quality, whichever is greater:

Constituent	Units	Limitation
Ammonia (as NH_4)	mg/l	1.5
Boron	mg/L	0.7
Chloride	mg/L	106
Iron	mg/L	0.3
Manganese	mg/L	0.05
Sodium	mg/L	69

Constituent	Units	Limitation
Total Coliform Organisms	MPN/100 mL	<2.2
Total Dissolved Solids [1]	mg/L	450
Total Nitrogen	mg/L	10
Nitrite (as N)	mg/L	1
Nitrate (as N)	mg/L	10
Bromoform	µg/l	4
Bromodichloromethane	µg/l	0.27
Chloroform	µg/l	1.1
Dibromochloromethane	µg/l	0.37

[1.] 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. Exhibit a pH of less than 6.5 or greater than 8.4 pH units.

c. Impart taste, odor, or color that creates nuisance or could impair any beneficial use.

G. Provisions

1. The following reports shall be submitted pursuant to Section 13267 of the California Water Code and shall be prepared as described by Provision G.3.

   a. At **least 45 days** before the Discharger wants to increase the monthly average dry weather flow limit to 78,500 gpd, the Discharger shall submit a Spray Irrigation Expansion and Improvement Report. The report shall (1) certify that the spray irrigation field has been expanded to 33 areas, (2) provide a map showing the boundaries of the spray disposal areas, (3) describe the installation of tailwater return systems, berms, or other physical methods to prevent tailwater runoff from leaving any of the sprayfields and show that they conform with all of the Discharge Specifications in this Order, and (4) describe any improvements that have been made to ensure that tailwater and spray irrigation wetted areas do not encroach within the setback requires specified in Spray Disposal Area Specifications D.1.

   b. By **30 May 2005**, the Discharger shall submit a CCWD Connection System Report. The report shall (1) certify that the Discharger has the ability to discharge wastewater into the CCWD collection system, (2) provide a copy of the written and signed agreement between VSPUD and CCWD and (3) provide a description of how much wastewater CCWD will accept on an annual basis, and the number of years CCWD will accept wastewater.

   c. By **30 August 2005**, the Discharger shall submit a Contingency Plan describing the steps it will take if the effluent storage reservoir encroaches within two foot of freeboard. The plan shall consider any and all steps necessary to prevent wastewater overflows including restricting water usage, hauling or pumping wastewater to another facility, and shutting

down portions of the facility. This Contingency Plan shall be implemented whenever wastewater levels encroach within two foot of freeboard in the effluent storage reservoir.

d. By **30 November 2005**, the Discharger shall submit a Revenue Plan that describes the costs associated with the wastewater treatment plant improvements to comply with the WDRs, and shows whether the Discharger has necessary funds to implement the improvements. 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 for facility improvements. If the Discharger states that it is unable to raise the funds, then the Revenue Plan shall discuss the feasibility of merging with another wastewater utility district.

e. By **31 December 2005**, the Discharger shall submit a Collection System Improvement Report documenting that the Discharger has made repairs/improvements to the collection system in the remaining areas where I&I was identified in the June 2002 smoke testing study.

f. By **1 April 2006**, the Discharger shall submit a Disinfection System Report certifying that the disinfection system is operational, has been connected to the spray irrigation pump system, and is capable of continuously disinfecting wastewater to a level of 23/240 MPN/100 ml for total coliform organisms.

g. By **1 May 2006**, the Discharger shall submit a Groundwater Monitoring Well Installation Workplan. The workplan shall describe the installation of sufficient wells to allow evaluation of the groundwater quality upgradient and downgradient of the wastewater treatment ponds, effluent storage reservoir, and disposal areas. The workplan shall conform to items listed in Section 1 of Attachment C (*Items to be Included a Monitoring Well Installation Workplan*) to this Order.

h. By **1 June 2006**, the Discharger shall either (1) submit a Title 22 Engineering Report, or (2) a report certifying that cattle grazing is no longer occurring within the spray disposal field boundaries. If the Discharger elects to submit a Title 22 Engineering Report, then the report shall contain the information listed in DHS March 2001 document " *Guidelines for the Preparation of an Engineering Report for the Production, Distribution, and Use of Recycled Water* (Attachment D of this Order).

i. By **1 November 2006**, the Discharger shall submit a Groundwater Monitoring Well Installation Report. The report shall be consistent with, and include the items listed in, the second section of Attachment C of this Order. The report shall describe the installation and development of the monitoring wells, explain any deviation from the approved workplan, and 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 November 2006**, the Discharger shall submit a Sanitary Sewer System Operation, Maintenance, Overflow Prevention, and Response Plan (SSSOP) for the Valley Springs collection system. The SSSOP shall describe the actions designed to prevent, or minimize

the potential for sanitary sewer overflows. The Discharger shall maintain the SSSOP in an up-to-date condition and shall amend the SSSOP whenever there is a change (e.g. in the design, construction, operation, or maintenance of the sanitary sewer system or sewer facilities) that materially affects the potential for sanitary sewer overflows, or whenever there is a sanitary sewer overflow. The Discharger shall ensure that the up-to-date SSSOP is readily available to sewer system personnel at all times and that sewer system personnel are familiar with it.

At a minimum, the Operation and Maintenance portion of the plan shall contain or describe the following:

1. Detailed maps of the sanitary sewer system, identifying sewer mains, manholes, and lift stations;
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 and testing of all pipelines, lift stations, 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 old, worn out, or defective equipment;
5. Provisions to minimize the need for manual operation of critical systems and provide spill alarms or other "fail safe" mechanisms;
6. The ability to provide adequate capacity to convey base flows and peak flows for all parts of the collection system the Discharger owns or over which the Discharger has operational control.

At a minimum, the Overflow Prevention and Response Plan shall contain or describe the following:

1. Maintenance activities that can be implemented to address the cause of the overflow and means to prevent future overflows. Maintenance activities may include pretreatment of wastewater from industrial dischargers who discharge high concentrations of oil and grease in their wastewater;
2. Procedures for responding to sanitary sewer overflows designed to minimize the volume of sewer overflow that enters surface waters, and minimize the adverse effects of sewer overflows on water quality and beneficial uses;
3. 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; and
4. A public notification plan, in which any posting of areas contaminated with sewage is performed at the direction of the Calaveras County Environmental Health Department. All parties with a reasonable potential for exposure to an overflow event shall be notified.

k. By **31 December 2006**, the Discharger shall submit a Feasibility Study Report that describes, and analyzes potential options to increase the WWTP storage and/or disposal capacity. The feasibility study shall include the preferred alternative selected by the Discharger. The following information must be provided in the FS:

   i. A conceptual description of at least these alternatives. Alternatives may include (singly or in combination) the following items. Both land owned by the Discharger and land, which could be leased, should be evaluated.

      a. Expanding the existing storage pond;
      b. Constructing additional storage pond(s);
      c. Maximizing wastewater reclamation on land (i.e., evaporators, paying someone to take the water, etc.)
      d. Constructing additional land disposal areas for other disposal methods;
      e. Reducing inflow and infiltration;
      f. Water conservation (if the Discharger owns/operates the water supply system); and
      g. Permanent connection to the Calaveras County Water District WWTP.

   ii. The conceptual development of each alternative must be based on a common planning horizon (e.g., 10 to 20 years) and must consider anticipated flow increases during the project life. Describe all needs for land acquisition or lease, capital improvements, annual operation and maintenance, equipment replacement frequency, compliance with CEQA, and compliance with the Title 22 reclamation requirements (if applicable). Provide conceptual site plans, process flow diagrams, water balance(s), and other graphics as appropriate to communicate the concept.

   iii. Preliminary cost estimates for each alternative, including direct capital costs (land acquisition or leasing costs, and capital improvements costs, indirect capital costs (design, permitting, and construction management costs), annual operation and maintenance costs (including land lease), annual monitoring program costs, and cyclical replacement costs.

   iv. Selection of the preferred alternative, including rationale for selection.

l. By **1 February 2007**, the Discharger shall submit a Sludge Drying Facility Upgrade Workplan. The workplan shall describe the improvements and upgrades will be made to the existing sludge drying facilities such that the storage of residual sludge, solid waste, and/or biosolids generated at the WWTP will be controlled and contained in a manner to comply with the General Solids Disposal Specifications and that all liquid is collected and returned to the WWTP. This workplan shall also contain a proposed implementation schedule.

m. By **1 February 2008**, the Discharger shall submit a Background Groundwater Quality Study Report. For each groundwater monitoring parameter/constituent identified in the MRP, the report shall present a summary of monitoring data, calculation of the concentration in background monitoring wells, and comparison of background groundwater

quality to that in wells used to monitor the facility. Determination of background quality shall be made using the methods described in Title 27, Section 20415(e)(10), and shall be based on data from at least four consecutive quarterly (or more frequent) groundwater monitoring events. For each monitoring parameter/constituent, the report shall compare measured concentrations for compliance monitoring wells with: 1) the calculated background concentration, and 2) the interim numeric limitations set forth in Groundwater Limitation F.1.a. Where background concentrations are statistically greater than the interim limitations specified in Groundwater Limitation F.1.a, the report shall recommend final groundwater limitations for waste constituents listed therein. Subsequent use of a concentration as a final groundwater limitation will be subject to the discretion of the Executive Officer.

n. By **1 July 2009**, the Discharger shall submit a report certifying the it has make the improvements to the sludge drying facilities as described in the Sludge Drying Facility Upgrade Workplan.

o. **At least 90 days prior** to any sludge removal or disposal from the treatment facility, the Discharger shall submit a Sludge Cleanout Plan. The plan shall include a detailed program and schedule for periodic tank and/or reservoir cleanout and disposal of sludge, provide a description on how sludge will be stored and handled on-site, and provide a description of where the sludge will be disposed of.

2. If groundwater monitoring results show that the discharge of waste is causing groundwater to contain waste constituents in concentrations statistically greater than background water quality then, within **120 days** of the request of the Executive Officer, the Discharger shall submit a BPTC Evaluation Workplan that sets forth the scope and schedule for a systematic and comprehensive technical evaluation of each component of the facility's waste treatment and disposal system to determine best practicable treatment and control for each waste constituent listed in the Groundwater Limitation F.1.a of this Order. The workplan shall contain a preliminary evaluation of each component of the WWTF and effluent disposal system and propose a time schedule for completing the comprehensive technical evaluation. The schedule to complete the evaluation shall be as short as practicable, and shall not exceed one year.

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 investigations and studies, 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 the professional's signature and/or stamp of the seal.

4. The Discharger shall comply with Monitoring and Reporting Program No. R5-2005-0066, which is part of this Order, and any revisions thereto as ordered by the Executive Officer

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 cost-effective control technique(s) including proper operation and maintenance, to comply with discharge limits specified in this order.

7. The Discharger shall provide certified wastewater treatment plant operators in accordance with Title 23 of the California Code of Regulations, Division 3, Chapter 26

8. As described in the Standard Provisions, the Discharger shall report promptly to the Regional Board any material change or proposed change in the character, location, or volume of the discharge.

9. Upon the reduction, loss, or failure of the sanitary sewer system resulting in a sanitary sewer overflow, the Discharger shall take any necessary remedial action to (a) control or limit the volume of sewage discharged, (b) terminate the sewage discharge as rapidly as possible, and (c) recover as much as possible of the sewage discharged (including wash down water) for proper disposal. The Discharger shall implement all applicable remedial actions including, but not limited to, the following:

    b. Interception and rerouting of sewage flows around the sewage line failure;

    c. Vacuum truck recovery of sanitary sewer overflows and wash down water;

    d. Use of portable aerators where complete recovery of the sanitary sewer overflows are not practicable and where severe oxygen depletion is expected in surface waters; and

    e. Cleanup of sewage-related debris at the overflow site.

10. 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.”

11. The Discharger shall not allow pollutant-free wastewater to be discharged into the wastewater collection, treatment, and disposal system in amounts that significantly diminish the system’s capability to comply with this Order. Pollutant-free wastewater includes rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.

12. 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.

13. In the event of any change in control or ownership of land or waste discharge facilities escribed 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.

14. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed herein or by the Executive Officer pursuant to Section 13267 of the CWC. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

15. A copy of this Order shall be kept at the operations facility for the wastewater treatment facility. 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 29 April 2005.

Original signature on file

THOMAS R. PINKOS, Executive Officer

AMENDED

Attachments
JSK: 4/29/05

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2005-0066

FOR
VALLEY SPRINGS PUBLIC UTILITY DISTRICT
WASTEWATER TREATMENT PLANT
CALAVERAS COUNTY

This Monitoring and Reporting Program (MRP) presents requirements for monitoring of wastewater influent, effluent, treatment ponds, storage reservoir, spray disposal areas, groundwater, sludge, and water supply. 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. Specific sample station locations shall be approved by Regional Board staff prior to implementation of sampling activities.

All wastewater samples should be representative of the volume and nature of the discharge. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form. Field testing 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. Instruments are serviced and/or calibrated per manufacturer's recommendations; and
3. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

INFLUENT MONITORING

Influent samples shall be collected at the same frequency and at approximately the same time as effluent samples and should be representative of the influent at the headworks prior to treatment. Influent monitoring shall include, at a minimum the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Flow	gpd	Continuous	Daily	Monthly
BOD[1]	mg/l	Grab	Monthly	Monthly

[1] 5-day biochemical oxygen demand.

EFFLUENT MONITORING

Effluent samples shall be collected downstream from the last connection through which wastes can be admitted to the storage reservoir. At a minimum, effluent monitoring shall consist of the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
BOD[1]	mg/L	Grab	Weekly	Monthly
pH	Standard Units	Grab	Weekly	Monthly

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Total Coliform Organisms[2,5]	MPN[3]/100 ml	Grab	Weekly	Monthly
Total Dissolved Solids	mg/L	Grab	Monthly	Monthly
Nitrate as Nitrogen	mg/L	Grab	Monthly	Monthly
Total Kjeldahl Nitrogen	mg/L	Grab	Monthly	Monthly
Standard Minerals [4]	mg/L	Grab	Annually	Annually

[1] 5-day Biochemical Oxygen Demand
[2] Effluent samples collected for Total Coliform Organisms analysis shall be collected at a point after disinfection and prior to discharge to the spray disposal fields.
[3] Most Probable Number
[4] Standard Minerals shall include, at a minimum, the following elements/compounds: boron, calcium, chloride, iron, magnesium, manganese, potassium, sodium, sulfate, total alkalinity (including alkalinity series), and hardness.
[5] To be analyzed starting in April 2006.

WASTEWATER TREATMENT PONDS AND STORAGE RESERVOIR MONITORING

Samples shall be collected from an established sampling station in an area that will provide a sample representative of the wastewater in each pond. Freeboard shall be measured vertically from the surface of the pond water to the lowest elevation of the surrounding berm and shall be measured to the nearest 0.1 feet. Monitoring of all three treatment ponds and the storage reservoir shall include, at a minimum, the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Dissolved Oxygen[1]	mg/L	Grab	Weekly	Monthly
pH	Standard units	Grab	Weekly	Monthly
Freeboard	0.1 feet	Measurement	Weekly	Monthly
Odors	--	Observation	Weekly	Monthly
Levee condition[2]	--	Observation	Weekly	Monthly

[1] Samples shall be collected at a depth of one foot, opposite the inlet. Samples shall be collected between 0700 and 0900 hours.
[2] Containment levees shall be observed for signs of seepage or surfacing water along the exterior toe of the levees. If surfacing water is found, then a sample shall be collected and tested for total dissolved solids, and total coliform organisms.

SPRAY DISPOSAL AREA MONITORING

Monitoring of the spray disposal areas (including the tailwater control system) shall be conducted **daily** when the disposal areas are used, and the results shall be included in the monthly monitoring report. Evidence of erosion, field saturation, irrigation runoff, or the presence of nuisance conditions shall be noted in the report. Effluent monitoring results shall be used in calculations to ascertain loading rates at the spray disposal areas. Monitoring of the spray disposal areas shall include the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Flows to sprayfields	Gallons	Continuous	Daily	Monthly
Rainfall[3]	Inches	Observation	Daily	Monthly
Acreage Applied [1]	Acres	Calculated	Daily	Monthly
Water Application Rate [2]	gal/acre/day	Calculated	Daily	Monthly
Total Nitrogen Loading Rate [2]	lbs/ac/month	Calculated	Monthly	Monthly
Total Dissolved Solids Loading Rate [2]	lbs/ac/month	Calculated	Monthly	Monthly

[1] Specific disposal fields shall be identified.
[2] Calculated average for each disposal field area.
[3] Rainfall data to be collected form the weather station that is nearest to the disposal fields.

In addition, the Discharger shall provide on a monthly basis, the volume of tailwater that was returned to the WWTP, when stormwater runoff is collected in the tailwater control system, and when storm water runoff from the sprayfields is released off site through the tailwater control system.

At least **once per week** when the spray disposal areas are being used, the entire sprayfield area shall be inspected to identify any equipment malfunction or other circumstances that might allow irrigation runoff to leave the irrigation area and/or create ponding conditions that violate the Waste Discharge Requirements. A daily log of each inspection shall be kept at the facility and be submitted with the monthly monitoring reports. Photocopies of entries into an operator's field log are acceptable. If the spray disposal areas are not used, then the monthly monitoring reports shall state so.

GROUNDWATER MONITORING

This sampling program is effective with the 4th quarter 2006 and shall pertain to all monitoring wells installed in response to these WDRs. 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 and used to determine groundwater gradient and direction of flow. 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[4]
Groundwater Elevation[1]	0.01 Feet	Measurement	Quarterly
Depth to Groundwater	0.01 Feet	Calculated	Quarterly
Gradient	Feet/Feet	Calculated	Quarterly
Gradient Direction	Degrees	Calculated	Quarterly
Total Coliform Organisms[2]	MPN/100ml	Grab	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 Trihalomethanes[5,6]	µg/L	Grab	Quarterly
Standard Minerals[3]	mg/l	Grab	Annually

[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 Standard Minerals shall include, at a minimum, the following elements and compounds: boron, calcium, chloride, iron, magnesium, manganese, potassium, sodium, sulfate, total alkalinity (including alkalinity series), and hardness.
4 Beginning 4th Quarter 2006
5 EPA Method 8020 or equivalent
6 Samples for Trihalomethanes shall only be collected from the spray disposal monitoring wells.

BIOSOLIDS MONITORING

The Discharger shall keep records regarding the quantity of biosolids generated by the treatment processes; any sampling and analytical data; the quantity of biosolids stored on site; and the quantity removed for disposal. The records shall also indicate that steps taken to reduce odor and other nuisance conditions. Records shall be stored onsite and available for review during inspections.

If biosolids are transported off-site for disposal, then the Discharger shall submit records identifying the hauling company, the amount of biosolids transported, the date removed from the facility, the location of disposal, and copies of all analytical data required by the entity accepting the waste. If biosolids are disposed of onsite, then the Discharger shall submit the annual report information as contained in the Statewide General Order for the Discharge of Biosolids (Water Quality Order No. 2000-10-DWQ) (or any subsequent document which replaces Order No. 2000-10-DWQ).

All records shall be submitted as part of the Annual Monitoring Report.

WATER SUPPLY MONITORING

A sampling station shall be established where a representative sample of the municipal water supply can be obtained. Water supply monitoring shall include at least the following for each water source used during the previous year. As an alternative to annual water supply monitoring, the Discharger may submit results of the most current DHS water supply monitoring data.

Constituents	Units	Sampling Frequency	Reporting Frequency
Total Dissolved Solids	mg/L	Annually	Annually
pH	pH units	Annually	Annually
Standard Minerals [1]	mg/L	Annually	Annually

[1] Standard Minerals shall include, at a minimum, the following elements/compounds: boron, calcium, chloride, iron, magnesium, manganese, nitrogen, potassium, sodium, sulfate, total alkalinity (including alkalinity series), and hardness.

REPORTING

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., effluent, reservoir, 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 by the **1st day of the second month** following the end of the reporting period (i.e. the January monthly report is due by 1 March). At a minimum, the reports shall include:

1. Results of the influent, effluent, treatment pond and storage reservoir, spray disposal area, and biosolids monitoring;
2. Copies of inspection logs;
3. A comparison of the monitoring data to the discharge specifications and an explanation of any violation of those requirements;
4. If requested by staff, copies of laboratory analytical report(s); and
5. A calibration log verifying calibration of all hand-held monitoring instruments and devices used to comply with the prescribed monitoring program.

B. Quarterly Report

Beginning with the fourth quarter 2006, the Discharger shall establish a quarterly sampling schedule for groundwater monitoring such that samples are obtained approximately every three months. 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 quarter is due by May 1st) and may be combined with the monthly report. The Quarterly Report shall include the following:

1. Results of groundwater monitoring;

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, an assessment of groundwater flow direction and gradient on the date of measurement, comparison of previous flow direction and gradient data, 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 fourth quarter monitoring report. The Annual Report will include all monitoring data required in the monthly/quarterly 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 December monitoring report for the last sampling event of the year;

2. If requested by staff, tabular and graphical summaries of all data collected during the year;

3. An evaluation of the performance of the domestic wastewater treatment system the groundwater quality beneath the wastewater treatment facility;

4. Summary of information on the disposal of biosolids as described in the "Biosolids Monitoring" section;

5. A discussion of whether the Discharger anticipates removing biosolids in the coming year, and if so, the anticipated schedule for cleaning, drying, and disposal;

6. A discussion of 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;

7. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program;

8. A copy of the certification for each certified wastewater treatment plant operator working at the facility and a statement about whether the Discharger is in compliance with Title 23, CCR, Division 3, Chapter 26.

9. The results from annual monitoring of the effluent, groundwater, and water supply;

10. The number of will-serve letters issued resulting in increased wastewater flows;

11. A forecast of influent flows, as described in Standard Provision No. E.4;

12. A statement of when the O&M Manual was last reviewed for adequacy, and a description of any changes made during the year;

13. Copies of equipment maintenance and calibration records (including influent flow meter), as described in Standard Provision No. C.4.

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 the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions General Reporting Requirements Section B.3.

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

Ordered by: Original signature on file
THOMAS R.PINKOS, Executive Officer

29 April 2005
(Date)

JSK: 4/29/05

INFORMATION SHEET

ORDER NO. R5-2005-0066
VALLEY SPRINGS PUBLIC UTILITY DISTRICT
WASTEWATER TREATMENT PLANT
CALAVERAS COUNTY

Facilities and Discharge

Valley Springs Public Utility District (VSPUD) owns, operates, maintains, and monitors a wastewater treatment plant (WWTP) that includes collection, treatment, storage, and disposal facilities. The WWTP serves the 204 residential connections and 71 commercial connections within the town of Valley Springs.

The WWTP consists of an influent flow meter, headworks (comminutor), activated sludge unit (aeration tank), two aeration ponds, a polishing pond, and a 92 acre-foot clay lined effluent storage reservoir. Wastewater disposal (via spray irrigation) has historically occurred on approximately 15 acres of land. However, in 2004 the Discharger expanded the spray disposal areas to approximately 22 acres.

Waste Discharge Requirements (WDRs) Order No. 94-148 allowed a monthly average dry weather flow of 65,000 gallons per day. The Discharger calibrated the influent flow meter in July 2003, and identified a substantial error (approximately 39 percent) in both the flow rate reading and the totalizer. A new influent flow meter was installed and calibrated on 2 August 2003. For the first full month of monitoring with the new flow meter, the monthly average influent flow was 72,820 gpd; an increase of 28,300 gpd over July 2002 monthly average inflows. The monthly average dry weather flow for the months of May through September 2004 ranged from approximately 64,260 to 84,730 gpd, indicating that the average monthly dry weather flow is approximately 71,000 gpd, which is in violation of Discharge Specification B.1 of the WDRs. On 23 October 2003, the Discharger submitted a Report of Waste Discharge to update its WDRs to allow a higher flow.

A water balance submitted as part of the RWD indicates that the wastewater treatment, storage, and disposal system has sufficient capacity to handle a monthly average dry weather flow of approximately 78,500 gpd. The water balance assumed 100-year annual precipitation conditions, the use of 33 acres as spray disposal areas, and irrigation during the wet season (except in January and February) and the wastewater storage reservoir essentially empty (i.e., 7.15 acre feet of dead storage) each October. The Discharger plans to expand the spray disposal areas from 22 to 33 acres and construct additional tailwater controls around the spray disposal fields. In addition, in anticipation of the WDRs being updated, the Discharger installed chlorination facilities consisting of pumps, chlorine storage, and a building.

Basin Plan, Beneficial Uses, and Regulatory Considerations

Surface water drainage from the WWTP is to Cosgrove Creek, a tributary to the Calaveras River below New Hogan Dam. The *Water Quality Control Plan for the California Regional Water Quality Control Board Central Valley Region, Fourth Edition* (Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin. Beneficial uses often determine the water quality objectives that apply to a water body. For example, waters designated as municipal and domestic supply must meet the maximum contaminant levels (MCLs) for drinking waters. The Basin Plan sets forth the applicable beneficial uses (industrial, agricultural, and domestic supply in this instance) of groundwater, procedure for application of water quality objectives, and the process for and factors to consider in allocating waste assimilation capacity.

The Regional Board applies the bacteria objective to all groundwaters designated as municipal or domestic supply (MUN), not just those waters currently used for MUN. This interpretation is consistent with the California Water Code (CWC) and the Basin Plan. The Regional Board has consistently interpreted the objective to apply to groundwater designated for MUN. The Regional Board has a long-standing pattern and practice of adopting WDRs that reflect this interpretation. The following excerpts from the Basin Plan clearly support the plain meaning of the Basin Plan as well as the Regional Board's established pattern and practice:

a. The introductory paragraph on Water Quality Objectives for Ground Waters (page III-9.00 of the Basin Plan) states: *"The following objectives apply to all ground waters of the Sacramento and San Joaquin River Basins, as the objectives are relevant to the protection of designated beneficial uses."*

b. The Policy for Application of Water Quality Objectives (page IV-16.00) states: *"Water quality objectives apply to all waters within a surface water or ground water resource for which beneficial uses have been designated, rather than at intake, wellhead, or other point of consumption."* Consistent with the CWC and the Basin Plan, the Regional Board applies the bacteria objective to all groundwaters designated as municipal or domestic supply (MUN), not just those waters currently used for MUN.

c. State Board Resolution No. 88-63 (Adoption of Policy Entitled "Sources of Drinking Water") defines all groundwaters of the State to be suitable or potentially suitable for MUN uses, and states that they should be designated as MUN in Basin Plans unless at least one the following three criteria are satisfied:

   - The aquifer is regulated as a geothermal energy producing source or has been exempted administratively pursuant to 40 CFR, Section 146.4 for the purpose of underground injection of fluids associated with the production of hydrocarbon or geothermal energy, provided the fluids do not constitute a hazardous waste under 40 CFR Section 261.3.

   - The total dissolved solids concentration of the resource exceeds 3,000 mg/L (5,000 µmhos/cm, electrical conductivity) and it is not reasonably expected by the Regional Board to supply a public water system, or

   - There is contamination, either by natural processes or human activity (unrelated to a specific pollution incident), that cannot reasonably be treated for domestic use using either Best Management Practices or best economically achievable treatment practices, or

   - The water source does not provide sufficient water to supply a single well capable of producing an average sustained yield of 200 gallons per day.

Accordingly, the Regional Board designated all groundwaters of the basins as suitable or potentially suitable for MUN in the Basin Plan (pages II-2.00 and -3.00). The Regional Board can only "de-designate" beneficial uses of a particular water resource through amendment of the Basin Plan.

State Board Order No. WQO-2003-0014 upheld the Regional Board's interpretation of the Basin Plan with respect to implementation of the bacteria objective, stating: *"The Basin Plan contains a water quality objective for bacteria that applies to groundwater that states: 'In groundwaters used for domestic or municipal supply (MUN) the most probable number of coliform organisms over any seven-day period shall be less than 2.2/100 mL.' Since the groundwater is designated for municipal or domestic supply, a groundwater limitation for coliform of less than 2.2MPN/100 mL is appropriate."*

Antidegradation

The antidegradation directives of Section 13000 of the California Water Code require that waters of the State that are better in quality than established water quality objectives be maintained "consistent with the maximum benefit to the people of the State." Waters can be of high quality for some constituents or beneficial uses and not others. Policies and procedures for complying with this directive are set forth in the Basin Plan (including by reference State Board Resolution No. 68-16, "Statement of Policy With Respect to Maintaining High Quality Waters in California," or "Antidegradation" Policy).

Resolution 68-16 is applied on a case-by-case, constituent-by-constituent basis in determining whether a certain degree of degradation can be justified. It is incumbent upon the Discharger to provide technical information for the Board to evaluate that fully characterizes:

- All waste constituents to be discharged;
- The background quality of the uppermost layer of the uppermost aquifer;
- The background quality of other waters that may be affected;
- The underlying hydrogeologic conditions;
- Waste treatment and control measures;
- How treatment and control measures are justified as best practicable treatment and control;
- The extent the discharge will impact the quality of each aquifer; and
- The expected degradation to water quality objectives.

In allowing a discharge, the Board must comply with CWC section 13263 in setting appropriate conditions. The Board is required, relative to the groundwater that may be affected by the discharge, to implement the Basin Plan and consider the beneficial uses to be protected along with the water quality objectives essential for that purpose. The Board need not authorize the full utilization of the waste assimilation capacity of the groundwater (CWC 13263(b)) and must consider other waste discharges and factors that affect that capacity.

Certain waste constituents in municipal wastewater are not fully amenable to waste treatment and control and it is reasonable to expect some impact on groundwater. Some degradation for certain constituents is consistent with maximum benefit to the people of California because the technology, energy, water recycling, and waste management advantages of municipal utility service to the state far outweigh the environmental impact damage of a community that would otherwise be reliant on numerous concentrated

individual wastewater systems. Economic prosperity of local communities is of maximum benefit to the people of California, and therefore sufficient reason to accommodate increases in wastewater discharge provided terms of reasonable degradation are defined and met. The proposed Order authorizes some degradation consistent with the maximum benefit to the people of the state, but does not authorize pollution.

Groundwater monitoring has never been conducted at the site and therefore, staff are unable to establish the most appropriate groundwater limits. In addition, certain aspects of waste treatment and control practices may not be justified as representative of best practicable treatment and control (BPTC). Reasonable time is necessary to gather specific information about the WWTP and the site to make informed, appropriate, long-term decisions. This proposed Order, therefore, establishes interim receiving water limitations to assure protection of the beneficial uses of groundwater of the State pending the completion of certain tasks and provides time schedules to complete specified tasks. The Discharger is expected to identify, implement, and adhere to, BPTC as individual practices are reviewed and upgraded in this process. During this period, degradation may occur from certain constituents, but can never exceed water quality objectives (or background water quality should it exceed objectives) or cause nuisance.

Water quality objectives define the least stringent limits that could apply as water quality limitations for groundwater at this location, except where background quality unaffected by the discharge already exceeds the objective. The values below reflect water quality objectives that must be met to maintain specific beneficial uses of groundwater. Unless natural background for a constituent proves higher, the groundwater quality limit established in proposed Order is the most stringent of the values listed for the listed constituents.

Constituent	Units	Value	Beneficial Use	Criteria or Justification
Ammonia	mg/L	1.5	MUN [1]	Taste and Odor [2]
Boron	mg/L	0.7	AGR [3]	Boron Sensitivity [4]
	mg/L	1.0	MUN[1]	Calif. Drinking Water Action Level[11]
Chloride	mg/L	106	AGR [3]	Chloride sensitivity on certain crops irrigated via sprinklers [4]
		142	AGR [3]	Chloride sensitivity on certain crops [4]
		250	MUN [1]	Recommended Secondary MCL [5]
		500	MUN [1]	Upper Secondary MCL [5]
Iron	mg/L	0.3	MUN [1]	Secondary MCL [6]
Manganese	mg/L	0.05	MUN [1]	Secondary MCL [6]
Nitrate plus Nitrite as N	mg/L	10	MUN [1]	Primary MCL [7]
Nitrite as N	mg/L	1	MUN [1]	Primary MCL [7]
Sodium	mg/L	69	AGR [3]	Sodium sensitivity on certain crops [4]
Total Dissolved Solids	mg/L	450[8]	AGR [3]	Salt sensitivity [4]
		500	MUN [1]	Recommended Secondary MCL [5]
		1,000	MUN [1]	Upper Secondary MCL [5]
Total Coliform Organisms	MPN/100 ml	<2.2	MUN [1]	Basin Plan
Trihalomethanes	µg/L	100	MUN [1]	MCL [8]
Bromoform	µg/L	4	MUN [1]	USEPA Cancer Potency Factor [9]
Bromodichloromethane	µg/L	0.27	MUN [1]	Cal/EPA Cancer Potency Factor [12]
Chloroform	µg/L	1.1	MUN [1]	Cal/EPA Cancer Potency Factor [12]
Dibromochloromethane	µg/L	0.37	MUN [1]	Cal/EPA Cancer Potency Factor [12]

Constituent	Units	Value	Beneficial Use	Criteria or Justification
pH	pH Units	6.5 to 8.4	MUN [1]	Secondary MCL [10]
		6.5 to 8.4	AGR [3]	Protect sensitive crops [4]

1 Municipal and domestic supply
2 J.E. Amoore and E. Hautala, *Odor as an Aid to Chemical Safety: Odor Thresholds Compared with Threshold Limit Values and Volatilities for 214 Industrial Chemicals in Air and Water Dilution*, Journal of Applied Toxicology, Vol. 3, No. 6 (1983).
3 Agricultural supply
4 Ayers, R. S. and D. W. Westcot, Water Quality for Agriculture, Food and Agriculture Organization of the United Nations – Irrigation and Drainage Paper No. 29, Rev. 1, Rome (1985)
5 Title 22, California Code of Regulations (CCR), Section 64449, Table 64449-B
6 Title 22, CCR, Section 64449, Table 64449-A
7 Title 22, CCR, Section 64431, Table 64431-A
8 Title 22, CCR, Section 64439
9 USEPA Integrated Risk Information System
10 Title 40, Code of Federal Regulations, Section 143.3
11 California Department of Health Services, Division of Drinking Water and Environmental Management, Drinking Water Action Levels, http://www.dhs.cahwnet.gov/ps/ddwem.
12 CAL/EPA Toxicity Criteria Database (OEHHA)

Municipal wastewater contains numerous dissolved inorganic waste constituents (i.e., salts, minerals) that together comprise total dissolved solids (TDS). Each component constituent is not individually critical to any beneficial use. Critical constituents are individually listed. The cumulative impact from these other constituents, along with the cumulative affect of the constituents that are individually listed can be effectively controlled using TDS as a generic indicator parameter.

Not all TDS constituents pass through the treatment process and soil profile in the same manner or rate. Chloride tends to pass through both rapidly to groundwater. As chloride concentrations in most groundwaters in the region are much lower than in treated municipal wastewater, chloride is a useful indicator parameter for evaluating the extent to which effluent reaches groundwater. Boron is another TDS constituent that may occur in wastewater in concentrations greater than groundwater depending on the source water, to the extent residents use cleaning products containing boron, and whether any industrial dischargers utilize boron (e.g., glass production, cosmetics). Other indicator constituents for monitoring for groundwater degradation due to recharged effluent include total coliform bacteria, ammonia, total nitrogen, and Total Trihalomethanes (TTHMs), a by-product of chlorination. Dissolved iron and manganese are useful indicators to determine whether components of the WWTF with high-strength waste constituents, such as sludge handling facilities, are ineffective in containing waste. Exceptionally high TDS and nitrogen also typifies this type of release.

Treatment Technology and Control

Given the character of municipal wastewater, secondary treatment technology is generally sufficient to control degradation of groundwater from decomposable organic constituents. Adding disinfection significantly reduces populations of pathogenic organisms, and reasonable soil infiltration rates and unsaturated soils can reduce them further. Neither organics nor total coliform organisms, the indicator parameter for pathogenic organisms, should be found in groundwater in a well-designed, well-operated facility.

Chlorine disinfection of effluent causes formation of trihalomethanes, which are priority pollutants. Treatment to reduce these in wastewater generally has not been performed, and little is known at this point on the typical impact on groundwater.

Municipal wastewater typically contains nitrogen in concentrations greater than water quality objectives, which vary according to the form of nitrogen. Degradation by nitrogen can be controlled by tertiary treatment for nitrogen reduction, and agronomic reuse on harvested crops. The effectiveness varies, but generally best practicable treatment and control should be able to control nitrogen degradation at a concentration well below the water quality objectives. The proposed interim limitation reflects water quality objectives.

Waste constituents that are forms of salinity pass through the treatment process and soil profile and effective control of long-term affects relies upon effective source control and pretreatment measures. In the best of circumstances, long-term land discharge of treated municipal wastewater will degrade groundwater with salt (as measured by TDS and EC) and the individual components of salts (e.g., sodium, chloride). The proposed Order sets water quality objectives for the interim while site-specific, constituent-specific limits are developed in conjunction with a BPTC evaluation of source control and pretreatment. The next Order will likely contain effluent limits for salt components other than chloride that, if met, assure groundwater quality will be controlled to an acceptable level.

Other constituents in treated municipal waste that may pass through the treatment process and the soil profile include recalcitrant organic compounds (e.g., ethylene glycol, or antifreeze), radionuclides, and pharmaceuticals. Hazardous compounds are not usually associated with domestic wastes and when present are reduced in the discharge to inconsequential concentrations through dilution with domestic waste, treatment, and the implementation of effective pretreatment programs. It is inappropriate to allow degradation of groundwater with such constituents, so proposed limitations are nondetect.

A discharge of wastewater that overloads soils with nutrients and organics can result in anaerobic conditions in the soil profile, which in turn creates organic acids and decreases soil pH. Under conditions of low soil pH (i.e., below 5), iron and manganese compounds in the soil can solubilize and leach into groundwater. Discharge of residual sludge to land may also lead to increases in groundwater alkalinity and hardness to concentrations that impair the water's beneficial uses and contribute to an overall increase in TDS. Overloading is preventable. Though iron and manganese limits are set at the water quality objective, groundwater pH is expected to remain the same as background.

Title 27

Title 27, CCR, section 20380 et seq. ("Title 27"), contains regulations to address certain discharges to land. Title 27 establishes a waste classification system, specifies siting and construction standards for full containment of classified waste, requires extensive monitoring of groundwater and the unsaturated zone for any indication of failure of containment, and specifies closure and post-closure maintenance requirements. Generally, no degradation of groundwater quality by any waste constituent is acceptable.

Discharges of domestic sewage and treated effluent can be treated and controlled to a degree that will not result in unreasonable degradation of groundwater. For this reason, they have been conditionally exempted from Title 27, except for residual sludge and solid waste generated as part of the treatment process [section 20090(a) of Title 27]. The condition requires that the discharge not result in violation of any water quality objective in groundwater.
Treatment and storage facilities for sludge that are part of the WWTF are considered exempt from

Title 27 under section 20090(a), under the condition that the facilities not result in a violation of any water quality objective. However, residual sludge (for the purposes of the proposed order, sludge that will not be subjected to further treatment by the WWTF) is not exempt from Title 27. Solid waste (e.g., grit and screenings) that results from treatment of domestic sewage and industrial waste also is not exempt from Title 27. This residual sludge and solid waste are subject to the provisions of Title 27.

Accordingly, the municipal discharge of effluent and the operation of treatment or storage facilities associated with a municipal wastewater treatment plant can be allowed without requiring compliance with Title 27, but only if resulting degradation of groundwater is in accordance with the Basin Plan. This means, among other things, degradation of groundwater must be consistent with Resolution 68-16 and in no case greater than water quality objectives. The conditions for sludge, solid waste, and biosolids management proposed in this Order are intended to assure this and must all be evaluated along with other aspects of BPTC.

Proposed Order Terms and Conditions

Discharge Prohibitions and Specifications

The proposed Order establishes an average monthly dry weather flow limit of 71,000 gpd. Upon submittal and approval by the Executive Officer of a Spray Irrigation Expansion and Improvement Report, the average monthly dry weather flow may be increased to 78,500 gpd. The proposed discharge specifications for BOD_5 is based on the treatment technologies employed. The proposed Order requires the Discharger to disinfect the effluent when the Discharger disposes of wastewater to the spray disposal field. The discharge specifications regarding dissolved oxygen and freeboard are consistent with Board policy for the prevention of nuisance conditions, and are applied to all such facilities.

In order to protect public health and safety, the proposed Order requires the Discharger to comply with applicable provisions of Title 22 and to implement best management practices with respect to effluent disposal (e.g., to dispose of effluent at reasonable rates considering the crop, soil, climate, and irrigation management plan.).

Monitoring Requirements

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

the conditions of discharge. Section 13268 of the CWC authorizes assessment civil administrative liability where appropriate.

The proposed Order includes monitoring requirements for influent, effluent, treatment and storage ponds, spray irrigation areas, groundwater, sludge, and water supply.

The Title 27 zero leakage protection strategy relies heavily on extensive groundwater monitoring to increase a discharger's awareness of, and accountability for, compliance with the prescriptive and performance standards. With a high volume, concentrated, uncontained discharge to land, monitoring takes on even greater importance. The proposed Order includes monitoring of applied waste quality, application rates, and groundwater.

Title 27 regulations pertaining to groundwater monitoring and the detection and characterization of waste constituents in groundwater have been in effect and successfully implemented for many years. No regulation currently specifies similar criteria more suitable for a situation where extensive infiltration into groundwater occurs. However, where, as here, such infiltration occurs, it is appropriate that the Title 27 groundwater monitoring procedures be extended and applied on a case-by-case basis under Water Code section 13267.

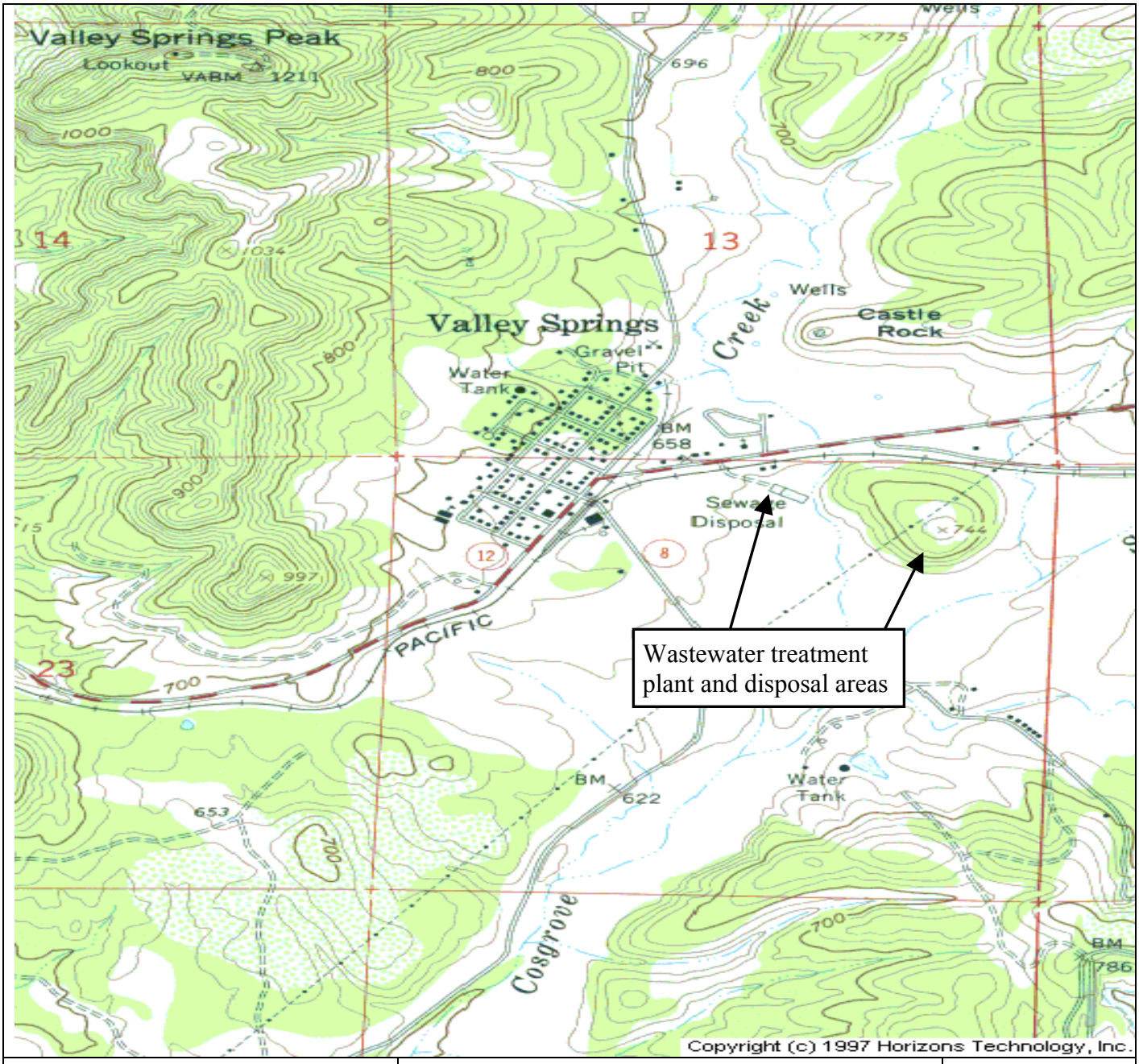
The Discharger must monitor groundwater for constituents present in the discharge and capable of reaching groundwater and violating groundwater limitations if its treatment and control, and any dependency of the process on sustained environmental attenuation, proves inadequate.

Reopener

The conditions of discharge in the proposed Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. However, information is presently insufficient to develop final effluent and groundwater limitations, so the proposed Order contains interim limitations. Additional information must be developed and documented by the Discharger as required by schedules set forth in the proposed Order. As this additional information is obtained, decisions will be made concerning the best means of assuring the highest water quality possible and that could involve substantial cost. It may be appropriate to reopen the Order if applicable laws and regulations change, but the mere possibility that such laws and regulations may change is not sufficient basis for reopening the Order. The CWC requires that waste discharge requirements implement all applicable requirements.

AMENDED

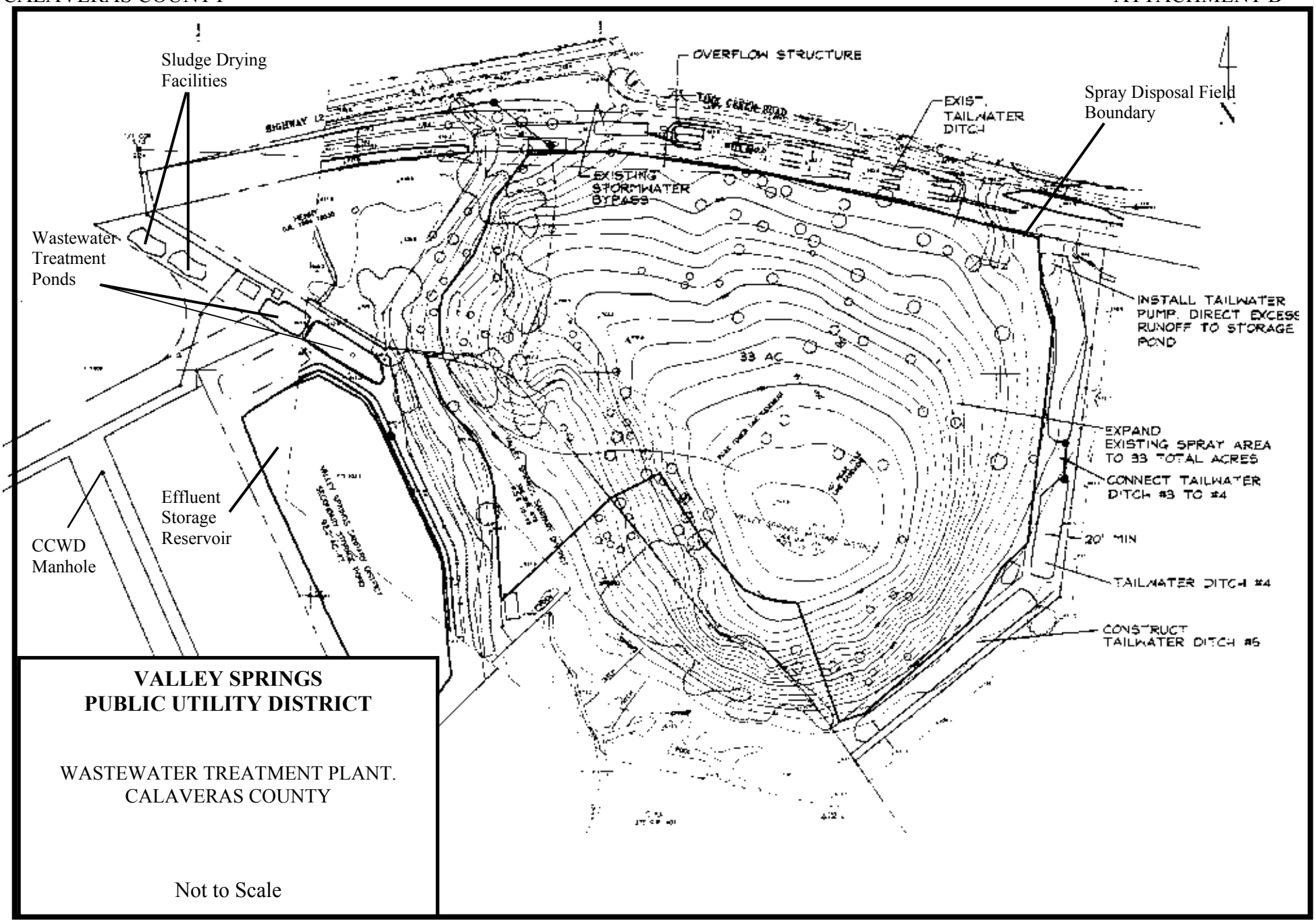
JSK: 29 April 2005



Drawing Reference: U.S.G.S TOPOGRAPHIC MAP 7.5 MINUTE QUADRANGLE	**SITE LOCATION MAP** VALLEY SPRINGS PUBLIC UTITLITY DISTRICT WASTEWATER TREATMENT PLANT	N W E S approx. scale 1 in.= 24,000 ft.

ORDER NO. R5-2005-0066
VALLEY SPRINGS PUBLIC UTILITY DISTRICT
WASTEWATER TREATMENT PLANT
CALAVERAS COUNTY

ATTACHMENT B



California Regional Water Quality Control Board

Central Valley Region

Robert Schneider, Chair

Alan C. Lloyd Ph.D.
Secretary for Environmental Protection

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Arnold Schwarzenegger
Governor

ATTACHMENT C

ORDER NO. R5-2005-0066

REQUIREMENTS FOR
MONITORING WELL INSTALLATION WORKPLANS AND
MONITORING WELL INSTALLATION REPORTS

Prior to installation of groundwater monitoring wells, the Discharger shall submit a workplan containing, at a minimum, the information listed in Section 1, below. Wells may be installed after staff approve the workplan. Upon installation of the monitoring wells, the Discharger shall submit a well installation report which includes the information contained in Section 2, below. All workplans and reports must be prepared under the direction of, and signed by, a registered geologist or civil engineer licensed by the State of California.

SECTION 1 - Monitoring Well Installation Workplan and Groundwater Sampling and Analysis Plan

The monitoring well installation workplan shall contain the following minimum information:

A. General Information:
   Purpose of the well installation project
   Brief description of local geologic and hydrogeologic conditions
   Proposed monitoring well locations and rationale for well locations
   Topographic map showing facility location, roads, and surface water bodies
   Large scaled site map showing all existing on-site wells, proposed wells, surface drainage courses, surface water bodies, buildings, waste handling facilities, utilities, and major physical and man-made features

B. Drilling Details:
   On-site supervision of drilling and well installation activities
   Description of drilling equipment and techniques
   Equipment decontamination procedures
   Soil sampling intervals (if appropriate) and logging methods

C. Monitoring Well Design (in narrative and/or graphic form):
   Diagram of proposed well construction details
   - Borehole diameter
   - Casing and screen material, diameter, and centralizer spacing (if needed)
   - Type of well caps (bottom cap either screw on or secured with stainless steel screws)

- Anticipated depth of well, length of well casing, and length and position of perforated interval
- Thickness, position and composition of surface seal, sanitary seal, and sand pack
- Anticipated screen slot size and filter pack

D. Well Development (not to be performed until at least 48 hours after sanitary seal placement):
Method of development to be used (i.e., surge, bail, pump, etc.)
Parameters to be monitored during development and record keeping technique
Method of determining when development is complete
Disposal of development water

E. Well Survey (precision of vertical survey data shall be at least 0.01 foot):
Identify the Licensed Land Surveyor or Civil Engineer that will perform the survey
Datum for survey measurements
List well features to be surveyed (i.e. top of casing, horizontal and vertical coordinates, etc.)

F. Schedule for Completion of Work

G. **Appendix: Groundwater Sampling and Analysis Plan (SAP)**

The Groundwater SAP shall be included as an appendix to the workplan, and shall be utilized as a guidance document that is referred to by individuals responsible for conducting groundwater monitoring and sampling activities.

Provide a detailed written description of standard operating procedures for the following:

- Equipment to be used during sampling
- Equipment decontamination procedures
- Water level measurement procedures
- Well purging (include a discussion of procedures to follow if three casing volumes cannot be purged)
- Monitoring and record keeping during water level measurement and well purging (include copies of record keeping logs to be used)
- Purge water disposal
- Analytical methods and required reporting limits
- Sample containers and preservatives
- Sampling
  - General sampling techniques
  - Record keeping during sampling (include copies of record keeping logs to be used)
  - QA/QC samples
- Chain of Custody
- Sample handling and transport

SECTION 2 - Monitoring Well Installation Report

The monitoring well installation report must provide the information listed below. In addition, the report must also clearly identify, describe, and justify any deviations from the approved workplan.

A. General Information:
Purpose of the well installation project
Brief description of local geologic and hydrogeologic conditions encountered during installation of the wells
Number of monitoring wells installed and copies of County Well Construction Permits
Topographic map showing facility location, roads, surface water bodies
Scaled site map showing all previously existing wells, newly installed wells, surface water bodies, buildings, waste handling facilities, utilities, and other major physical and man-made features.

B. Drilling Details (in narrative and/or graphic form):
On-site supervision of drilling and well installation activities
Drilling contractor and driller's name
Description of drilling equipment and techniques
Equipment decontamination procedures
Soil sampling intervals and logging methods
Well boring log
- Well boring number and date drilled
- Borehole diameter and total depth
- Total depth of open hole (same as total depth drilled if no caving or back-grouting occurs)
- Depth to first encountered groundwater and stabilized groundwater depth
- Detailed description of soils encountered, using the Unified Soil Classification System

C. Well Construction Details (in narrative and/or graphic form):
Well construction diagram, including:
- Monitoring well number and date constructed
- Casing and screen material, diameter, and centralizer spacing (if needed)
- Length of well casing, and length and position of perforated interval
- Thickness, position and composition of surface seal, sanitary seal, and sand pack
- Type of well caps (bottom cap either screw on or secured with stainless steel screws)

E. Well Development:
Date(s) and method of development
How well development completion was determined
Volume of water purged from well and method of development water disposal
Field notes from well development should be included in report

F. Well Survey (survey the top rim of the well casing with the cap removed):
Identify the coordinate system and datum for survey measurements
Describe the measuring points (i.e. ground surface, top of casing, etc.)
Present the well survey report data in a table

Include the Registered Engineer or Licensed Surveyor's report and field notes in appendix