

ORIGINAL

Decision No. 81621

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Investigation on the Commission's own
motion into the status, operations,
service, maintenance, facilities, equip-
ment, water supply, practices, rates,
rules, tariff schedules and records of
James J. Downey, dba Greenvue Estates
Water Company, Inverness Park Water
Company, Kenwood Village Water Company,
Penngrove Water Company, Point Reyes
Water Company, Rio Dell Water Company,
and Russian River Terrace Water Company;
and James J. Downey and W. H. Appleton,
dba Canon Manor Water System; and Happy
Acres Water Co., Inc., in Sonoma and
Marin Counties.

Case No. 9076
(Filed June 9, 1970)

Alan W. Haverty, Attorney at Law, for James J.
Downey, respondent.

Robert H. Reed, for Sonoma County Public Health
Service; Marjorie E. Schrader, for herself;
and Mrs. Joan M. Snider, for herself; interested
parties.

Robert T. Baer, Attorney at Law, and J. E. Johnson,
for the Commission staff.

SECOND INTERIM OPINION

Subsequent to the issuance of Decision No. 78508 herein
on April 2, 1971, further public hearings were held before Examiner
Cline at San Francisco on May 15, June 27, and August 30, 1972, and
at Guerneville on August 31, 1972.

At these hearings evidence was introduced by the Commission
staff to show the extent of compliance with the interim order of
Decision No. 78508 and in support of additional recommended improve-
ments in the various water systems under investigation.

Representatives of the Division of Industrial Safety, the County of Sonoma Public Health Department, the State Department of Public Health, and the Kenwood Fire Protection District also made recommendations regarding improvements to be made in various water systems operated by the respondent James J. Downey.

Customers of the Russian River Terrace Water Company, the Penngrove Water Company, and the Rio Dell Water system testified regarding their complaints with respect to the service offered by these water systems.

Based upon a consideration of such evidence and the utilities' 1972 annual reports to the Commission, the Commission finds as follows:

Stipulation Items of Appendix A to Decision
No. 78508 Herein Issued April 2, 1971 Applicable
to Penngrove System

1. Item No. 1(a), which was ordered to be completed by June 30, 1971, was 50 percent complete as of August 17, 1972. The top slab necessary to seal the well at the front of the pumphouse had not been poured.

2. Item No. 1(b), which was ordered to be completed by June 30, 1971, had not been performed as of August 17, 1972. There has been no written verification of the well test or change in pump size. The Penngrove system is supplied from the well and augmented by a takeoff from the aqueduct. Downey proposes to replace the present 5 hp booster pump with a 7-1/2 hp booster pump or a 10 hp booster pump to increase the water pressure in the system.

3. Item No. 2, which was ordered to be completed by June 30, 1972, was 50 percent complete as of August 17, 1972. The casing to the well at the back of the pumphouse which was ordered to be abandoned was being removed. As of August 30, 1972, the well was at least half filled with gravel and should be completely filled within a week and then sealed off.

4. Item No. 3 has been completed. The effectiveness of the additional chlorinator which was installed in the pumphouse is under the surveillance of the Department of Public Health.

5. Item No. 4 has been completed.

6. No part of Item No. 5, which was ordered to be completed by June 30, 1973, was completed as of August 17, 1972. None of the 1,000 feet of small diameter pipe had been replaced.

Stipulation Items of Appendix A to Decision
No. 78508 Herein Issued April 2, 1971 Applicable
to Kenwood Village System

7. Item No. 6 has been completed. The Sonoma County Health Department has not issued a water supply permit to the Kenwood Village Water Company.

8. None of Item No. 7, which was ordered to be completed by June 30, 1973, was completed as of August 17, 1972. The condition at the top of the well and casing had not been investigated and the outside of the casing had not been effectively sealed against surface contamination to six feet.

9. Item No. 8 has been completed. The effectiveness of the additional chlorinator is under the surveillance of the Department of Public Health.

Stipulation Items of Appendix A to Decision
No. 78508 Herein Issued April 2, 1971 Applicable
to Rio Dell System

10. Item No. 9(a), (b), and (c), which was ordered to be completed by June 30, 1971, was 70 percent complete as of August 17, 1972. The building has not been waterproofed. A new electrical switch, new gutter, and a control wire converter to convert the 110 volts to 12 volts have been installed. The electrical facilities are to be checked by the Division of Industrial Safety.

11. Item No. 10 has been completed. A representative of the Division of Industrial Safety is to verify the low signal voltage.

12. Item No. 11 has been completed.

13. Item No. 12, which was ordered to be completed by June 30, 1971, was 75 percent complete as of August 17, 1972. There have been water outages because the well failed or sanded up. Two 10 hp pumps are needed, instead of a 5 hp pump and a 10 hp pump connected in parallel.

14. Item No. 13 has been completed. The effectiveness of the dual chlorination system is under the surveillance of the Department of Public Health.

15. Item No. 14 has been completed.

16. Item No. 15 has been completed.

17. Item No. 16 has been completed.

18. Item No. 17, which was to have been completed by June 30, 1972, has not been done. A source of supply meter had not been installed as of August 17, 1972. Downey is reluctant to install the meter which will cost \$350 because there is a sharp hydraulic hammer in the system when the pumps turn over, which may damage such a meter. The meter should not be installed until the hydraulic hammer is controlled or subdued.

Stipulation Items of Appendix A to Decision
No. 78508 Herein Issued April 2, 1971 Applicable
to Russian River Terrace System

19. Only 5 percent of Item No. 18, which was to have been completed by June 30, 1971, had been completed as of August 17, 1972. The foundation of the new pumphouse had been framed and a small amount of concrete had been poured. At the hearing on June 27, 1972, Mr. Downey agreed that a test well for a new supply of water would be drilled within 45 days and that he would submit to the staff plans and specifications regarding his proposal for the new well site and pumping plant that is supposed to replace the existing plant. As of August 17, 1972, the new test well had not been drilled, and as of August 30, 1972, no plans or specifications with respect to the well site had been submitted to the staff.

At present there are two wells about five feet apart at Hollydale Station which are the source of water supply for the system. Since June 1, 1972, there have been submersible pumps in both wells. One of the wells has a 5 hp submersible pump backed up by a new 10 hp booster pump. This well will pump from 80 gallons to 110 gallons a minute. The other well has a 2-inch submersible pump backed up by a 5 hp booster pump. Both wells are presently being operated to their capacity. If respondent tries to take more water out of the second well it is likely to cause water to come down from the river itself instead of in from the aquifer. If larger pumps are installed as provided in Items Nos. 19 and 20 to produce 200 gpm, the existing wells may be destroyed. That is why Downey proposes to supplement the supply with a new well. If the new well produces a sufficient quantity of high quality water the two existing wells will be used as standby sources of water. Downey should not be required to make the improvements required by Items Nos. 18, 19, and 20 until it is determined whether the proposed new well proves out.

20. Item No. 21 has been completed. Dual chlorinators equipped to operate simultaneously such that either will provide necessary disinfection have been installed. The effectiveness of the equipment is under the surveillance of the Department of Public Health.

21. No part of Item No. 22, which was to have been completed by June 30, 1972, had been completed as of August 17, 1972. A main line meter on the discharge side of the Hollydale pumphouse fronting on River Drive had not been installed. The meter installation should be deferred pending determination of the water supply available at the new well site.

22. Item No. 23 which was to have been completed by June 30, 1971 was 95 percent complete as of August 17, 1972. The front section of the Terrace pumphouse between the door and roof needs to be enclosed to prevent unauthorized entry.

23. The maximum yield of the Terrace Well is 60 gallons per minute. A yield of 30 gallons per minute which is the rate at which the well is actually pumped is a safe yield. Item No. 24 is completed.

24. The main line meter has not been installed on the discharge side of the Terrace pumphouse as required by Item No. 25. The installation of this meter should be deferred pending the determination of the water supply at the new well site.

25. Item No. 26 has been completed.

26. Item No. 27 which was to have been completed by June 30, 1971 has been completed except for the installation of a lock to provide protection from vandalism.

27. Items Nos. 28 and 29 have been completed.

28. The remaining approximately 100 feet, or less, of 1-1/2-inch or 2-inch pipe on the north side of the Middle Hollydale tank should be replaced with 4-inch pipe. Downey has already replaced approximately 400 feet of 1-1/2-inch pipe on the north side of the Middle Hollydale tank with 4-inch pipe.

29. Item No. 31 has been completed. The effectiveness of the chlorinators is under the surveillance of the Department of Public Health.

Additional Repairs and Improvements Not Specified
in the Interim Order of Decision No. 78508 in
Case No. 9076

30. At the Rio Del high level concrete tank Downey should install either a pressure pump system or a continuously running pump system which will provide service to all customers within the vicinity of the existing concrete tank with pressures at least equal to 25 psi.

31. The Canon Manor tank has been reconditioned. The leaks in the Lower Rio Dell and Middle Hollydale water tanks should be repaired.

32. The Villa Road redwood tank in the Rio Dell System has been repaired and placed back into service.

33. All debris and ground vegetation within a radius of 25 feet of all water tanks, pumphouses, and pressure tanks should be removed.

34. The storage tank at the Cannon Manor system is fed by two submersible pumps from a highly productive well. A low head, high volume booster pump is continually running off the tank. The head on the pump is about 20 pounds and is good for about 250 gallons per minute. With the booster pump in operation the pressure is 35 psi and with the pump off the pressure is still 15 psi. The pump has been in service for eight or nine years without a failure. If the pump goes out the whole system can be fed off the two submersible pumps in the well.

Under the circumstances Downey will not be required to install a standby booster pump at this time.

35. At Penngrove the existing pumps are not large enough to provide sufficient water pressure for the system at peak period. Standby 5 hp pumps which can be operated in parallel with the existing pumps to provide adequate pressure during peaks should be installed for each of the two Penngrove pressure systems.

36. The 10,000-gallon tank at Lower Hollydale in the Russian River Terrace system which is no longer in use should be dismantled.

37. If all defective water meters in the systems are repaired and activated or replaced, it will decrease the water use in the systems and will alleviate some of the water shortages, and it will also increase the revenues for the systems. All defective meters should be repaired and activated or replaced.

38. The present facilities of James J. Downey, doing business as Greenvue Estates Water Company, Inverness Park Water Company, Kenwood Village Water Company, Penngrove Water Company, and Russian River Water Company, and James J. Downey and W. H. Appleton, doing business as Canon Manor Water system and Happy Acres Water Company, Inc., cannot adequately serve their current customers.

39. Mr. Downey did not comply with the staff request and order of the Presiding Officer that he furnish for the record at the hearing held on August 30, 1972, an estimate of the amounts expended in making the improvements to the various water systems in complying with the 31 items set forth in Appendix A to Decision No. 78508, segregated as to amounts spent for electrical work and amounts spent for other improvements to the various water systems.

Quality of the Water Supply at the
Rio Dell Water System

40. The main well serving the Rio Dell system is high in carbon dioxide. This creates a low ph or a slight acid condition in the water which causes the water to be corrosive and attack the steel pipes, thereby producing corrosion products, such as particles of rust, and discoloration which make the water nonpotable. This condition may be alleviated by aerating the water before it is pumped into the system or by adding chemicals such as sodium carbonate or sodium hydroxide to raise the ph to a level where the water is not corrosive. An engineering study should be made to determine the best and most economical method of treating the water to eliminate this problem.

41. When the water is out or the pressure is low a back siphonage is created which will suck foreign material back into the water system.

Quality of Water Supply at the Russian
River Terrace System

42. In the Hollydale Well No. 1 the iron and manganese content of the water supply exceeds the recommended limit of the Public Health Service and the free carbon dioxide is excessive.

43. The iron and manganese content of the water at the Terrace Well is satisfactory, but the free carbon dioxide is excessive.

44. The excessive carbon dioxide in the water supply can be remedied by the treatment of the water as specified in Finding 40.

45. The high manganese content may be remedied by adding the chemical potassium permanganate and after a short period filtering the chemically treated water through a green sand type of filter.

Quality of the Water at the Penngrove Water System

46. The screening on Tank No. 2 is satisfactory.

47. Tank No. 1 needs to be properly screened around the edges to keep large insects and small animals out of the water supply.

48. The water furnished to the Penngrove system from the Sonoma County Aqueduct is from an approved source and the water quality is good.

49. The iron and manganese content of the water from the well on the Penngrove system meets the U. S. Public Health Drinking Water Standards.

The Chlorinators on the Rio Dell, Russian River Terrace, and Penngrove Systems

50. The MecOMatic hypochlorinators which have been installed to chlorinate the water at the Rio Dell, Russian River Terrace, and Penngrove systems are reliable.

51. The Wallace and Tiernan hypochlorinator at the Terrace pump station on the Russian River Terrace system should be checked to determine if it is in good working order. If it is not in good working order it should be repaired or replaced with a reliable chlorinator.

52. The Department of Public Health recommends (1) that the hypochlorinators be checked at least once a day, or more frequently, as necessary, (2) that chlorine residuals tests be made every day to determine the effectiveness of the operation of the chlorinators and the chlorinators be adjusted accordingly, and (3) that results of the chlorine residuals be recorded and the records be made available to the state and local health departments and to the Commission staff.

Requirements for Issuance of Health Officer's
Permit to Canon Manor Water System

53. Satisfactory completion and performance of the following items are necessary before the Sonoma County Public Health Officer's permit will be issued to Canon Manor Water System:

- (a) The cap on the well is to be sealed around the sides and at the opening for the electrical cable. This work has not been reported to be completed and the Sonoma County Public Health Officer has not been called in for inspection.
- (b) The cover for the 30,000-gallon storage tank is to be sealed water-tight and dustproof. A representative of the Canon Manor Water system has reported that this work has been completed, but the Sonoma County Health Officer has not inspected the tank to see that it is tight.
- (c) The area including the well site, storage tank, and booster pump is to be fenced to exclude animals and people. The work on the fence had been begun but it had not been completed on June 27, 1972.
- (d) The pumphouse building containing the chlorinator and the booster pump is to be kept locked. On May 12, 1972, locks had been placed on both buildings.
- (e) A tap at the well for collecting samples prior to chlorination is to be provided. This has not been done yet.
- (f) A daily log of chlorine residual readings is to be kept. No such log has been made available to the Sonoma County Public Health Officer for examination.
- (g) At least one sample is to be taken every four weeks for bacteriological analysis. A copy of the laboratory report is to be sent to the Public Health Officer. A report for May 18 from the private laboratory in Santa Rosa which states that the water met the State pure water standards for lack or absence of coliform was furnished to the Sonoma County Public Health Officer.

Requirements for Issuance of Health Officer's
Permit to Kenwood Village Water System

54. Satisfactory completion and performance of the following items are necessary before the Sonoma County Health Officer's permit will be issued to the Kenwood Village Water Company.

- (a) A tap at the well for collecting samples prior to chlorination is to be installed. This tap has been installed.
- (b) A log of chlorine residual readings is to be kept.
- (c) At least one sample is to be taken every four weeks for bacteriological analysis. A copy of the laboratory report is to be sent to the Public Health Officer. No copies of such reports have been sent to the Public Health Officer.

55. Kenwood Village Water Company should comply with the requirements of Finding 54 and advise the Sonoma County Health Officer of such compliance so that he will issue a Health Officer's permit to Kenwood Village Water Company.

Requirements for Issuance of Health Officer's Permit to Happy Acres Water System

56. Satisfactory completion and performance of the following items are necessary before the Sonoma County Public Health Officer's permit will be issued to Happy Acres Water System:

- (a) The tank requires a waterproof cover and replacement of the missing screens.
- (b) The gravel fill hole in the pump base is to be sealed to exclude small animals, dirt, and water.
- (c) A sampling tap is to be installed on the well discharge line before the chlorinator.
- (d) The booster pump building is to be kept locked.
- (e) Chlorination shall be continuous and a log of chlorine readings shall be kept.
- (f) One water sample shall be taken every four weeks for bacteriological analysis. A copy of the laboratory report shall be sent to the Public Health Officer.
- (g) The iron, manganese, and turbidity problem must be rechecked by a certified chemical laboratory in order to determine necessary treatment.

57. No report of the completion or performance of any of the items listed in Finding 56 above has been submitted to the Sonoma County Public Health Officer.

Fire Protection at Kenwood Village
Water Company

58. There are five or six fire hydrants in service on the Kenwood Village Water Company system.

59. The president of the Kenwood Fire Protection District recommends that the Commission order Downey to make the following improvements for fire flow and fire protection:

- (a) Install a six-inch fire flow meter on the Sonoma Aqueduct. This is not feasible because the Sonoma Water District does not wish to provide such a connection to the Kenwood Village Water Company for fire protection service.
- (b) Provide additional storage and pumping facilities to supply 1,000 gpm fire flow for four hours. Such additional facilities would require an investment of at least \$60,000 to \$80,000, and it is not feasible to direct Downey to make such an investment for fire protection service at this time.
- (c) The wharf hydrant in the middle of the block on Misbro Way should be hooked back into the system.
- (d) Street boxes and valves should be installed for the fire hydrants at Mission and Greene Streets, on Shaw at Los Guilicos, on Laurel at Los Guilicos, and on Rhorer at Los Guilicos. Such fire hydrants are now vulnerable to vehicular collision, and if a hydrant is knocked off the main, the entire water supply can be lost as there is no way to shut off the hydrant.
- (e) The two-inch line on Los Guilicos Avenue at the bridge across Kenwood Creek should be replaced with a six-inch line to match the six-inch lines on either side of Kenwood Creek so that the flow will not be reduced at this location. The fire hydrant on the

Shaw Avenue side of Kenwood Creek will produce 500 gpm, whereas the hydrants on the Rhorer Avenue side of Kenwood Creek will produce only 50 gpm.

- (f) The existing pumping station on Greene Street should be brought up to safety standards and the building protected from vandalism.
- (g) Fire hydrants should be spaced not farther than 500 feet apart where residential parcels are less than one acre in size and not farther than 750 feet apart where the residential parcels are one acre or more in size.
- (h) Where there is looping the mains should be not less than six inch and where there is no looping the mains should be not less than eight inch.
- (i) Line extensions and service areas should be approved by the Kenwood Fire Protection District prior to approval by this Commission.
- (j) Downey should be required to install any future water facilities at least up to Sonoma County standards.

60. The Kenwood Village Fire Protection District is willing to pay a hydrant fee for repairs to and maintenance of hydrants once they are in the condition specified in Finding 59(c) and (d).

61. The Kenwood Village Fire Protection District has decided against a direct connection for itself to the Sonoma Aqueduct. A fire hydrant connection on the Sonoma Aqueduct main would require hose lays which would be so long that too much time would be lost in laying hose and there would be too much friction loss in the hose itself. Last summer the Sonoma Aqueduct was dry for five hours and it may run dry in the future in which case there would be no water for fire protection through a connection with the Sonoma Aqueduct.

Size of Respondents' Water Utility Operations

62. Respondents' 1972 annual reports to the Commission, except for the Canon Manor system for which no annual report has ever been filed, indicate total salaries charged to expense of about \$11,300. For the approximate 1,100 total connections, this represents less than \$1.00 per month per connection. The annual reports also indicate that four to five employees' (including Downey's) time is allocated among the four largest systems. Also, several customers indicated the apparent relative insufficiency for maintenance and operation.

Conclusions

The Commission concludes as follows:

1. The Commission should direct respondents to perform such construction work for, and to make such repairs to, the various public utility water systems, and to make such tests and studies and to file such reports, as are specified in the order which follows.
2. Further hearings should be held in this proceeding to determine the extent of compliance with the order below what, if any, further improvements should be ordered and the appropriate fines, if any, which should be levied if the construction repairs, tests, and studies required by the order have not been completed.
3. This Commission should not order Downey (1) to obtain approval from the Kenwood Fire Protection District for line extensions and service areas prior to approval by this Commission and/or (2) to install any future water facilities at least up to Sonoma County standards. The Kenwood Fire Protection District may participate fully in any proceedings before this Commission which relate to line extensions, service areas, and facilities of the water utilities which are owned and/or operated by respondent Downey in the service areas with which the Kenwood Fire Protection District is concerned.
4. The Commission should order respondents to limit service to those customers presently being served by the various water systems until further order of this Commission.

5. Respondents should be required promptly to hire two new qualified, full-time employees to assist in construction, operation, and maintenance of respondents' water systems.

SECOND INTERIM ORDER

IT IS ORDERED that:

1. On or before August 20, 1973, James J. Downey, doing business as Penngrove Water Company, Kenwood Village Water Company, Rio Dell Water Company, and Russian River Terrace Water Company, and James J. Downey and W. H. Appleton, doing business as Canon Manor Water System and Happy Acres Water Company, Inc., shall perform the construction work, repairs, tests, studies, and reports set forth in Appendix A of this decision, and hire two new qualified, full-time employees to be engaged in construction, operation, and maintenance of such water systems.

2. The design and construction of such facilities shall conform to standard engineering practices and to the requirements of the Commission's General Order No. 103, Rules Governing Water Service Including Minimum Standards for Design and Construction.

3. On or before September 7, 1973, James J. Downey shall file (1) a written report with the Commission listing such construction and repairs which are completed on or before August 20, 1973, or reports giving specific reasons for inability to so complete, and (2) a written estimate of the amounts expended in performing the construction work for and making the repairs to the various water systems in complying with the 31 items set forth in Appendix A to Decision No. 78508, and in complying with the 62 items set forth in Appendix A of this decision, segregated as to amounts spent for electrical work and amounts spent for other improvements.

4. Until further order of this Commission James J. Downey, doing business as Penngrove Water Company, Kenwood Village Water


Company, Rio Dell Water Company, and Russian River Terrace Water Company, and James J. Downey and W. H. Appleton, doing business as Canon Manor Water System and Happy Acres Water Company, Inc., shall limit service to those customers presently being served by said water systems.

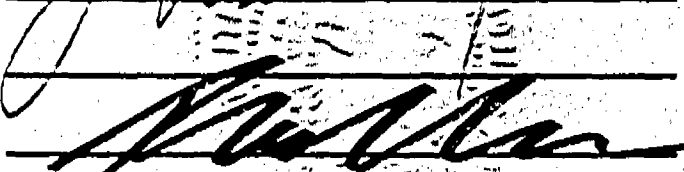
5. Further hearings in this proceeding shall be held before Examiner Cline in the Commission Courtroom, State Building, 350 McAllister Street, San Francisco, California, at 10:00 a.m., Wednesday, September 19, 1973, and at 10:00 a.m., Thursday, September 20, 1973, for the purpose of determining (a) the extent of compliance with this order, (b) what, if any, fines should be levied against respondents if the construction, repairs, tests, and studies required by this order have not been completed and the reports have not been filed with this Commission as required by this order, and (c) what, if any, further improvements to the water systems under investigation should be ordered to be made by respondents.


The Secretary of the Commission shall cause a certified copy of this order to be served personally upon the respondent James J. Downey, and upon the State Department of Public Health, Bureau of Sanitary Engineering, Napa and Sonoma Counties' Departments of Public Health, California Department of Real Estate, and Napa and Sonoma Counties' Departments of Building Permits.

The effective date of this order shall be twenty days after the date hereof.

Dated at San Francisco, California, this 24th day of JULY, 1973.



President


Commissioners


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<u>Item Number</u>	<u>Description of Construction Work, Repairs, Tests, and Reports Applicable to Penngrove Water Company</u>
1.	Pour top slab necessary to seal well at front of pumphouse.
2.	Replace the present 5-hp booster pump with a 10-hp booster pump on the well at the front of pumphouse to increase the water pressure in the system.
3.	Completely fill and seal off the well at the back of the pumphouse.
4.	Replace 1,000 feet of small diameter pipe where customers are unable to receive water at 25 psi on a continuous basis during periods of peak demand.
5.	Properly screen Tank No. 1 around the edges to keep large insects and small animals out of the water supply.
6.	Remove all debris and ground vegetation within a radius of 25 feet of all water tanks, pumphouses, and pressure tanks.
7.	For each of the two Penngrove pressure systems install standby 5-hp pumps which can be operated in parallel with the existing pumps to provide adequate pressure during peaks.
8.	Repair and activate or replace all defective water meters.
9.	Check the operation of the hypochlorinators at least once a day and make chlorine residual tests every day to determine the effectiveness of the operation of the chlorinators and adjust the chlorinators accordingly. Record the results of the chlorine residual tests and make such records available for inspection by the state and local health departments and the Commission staff.

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<u>Item Number</u>	<u>Description of Construction Work, Repairs, Tests, Studies, and Reports Applicable to Kenwood Village Water Company</u>
10.	Investigate condition at top of well and casing and effectively seal outside of casing to 6 feet against surface contamination.
11.	Remove all debris and ground vegetation within a radius of 25 feet of all water tanks, pumphouses, and pressure tanks.
12.	Repair and activate or replace all defective water meters.
13.	Hook the wharf hydrant in the middle of the block on Misbro Way back into the Kenwood Village Water system.
14.	Install street boxes and valves for the fire hydrants at Mission and Greene Streets, on Shaw at Los Guillicos, on Laurel at Los Guillicos, and on Rhorer at Los Guillicos.
15.	Replace the two-inch line on Los Guillicos Avenue at the bridge across Kenwood Creek with a six-inch line to match the six-inch lines on either side of Kenwood Creek.
16.	Ascertain from the Kenwood Fire Protection District in what respect the pumping station on Greene Street fails to meet existing safety standards and either correct such deficiencies or report back to the Commission why such deficiencies have not been corrected.
17.	Provide a lock to protect the pumping station on Greene Street from vandalism.
18.	Make a study regarding, and report to the Commission the estimated cost of providing fire hydrants in the Kenwood Village Water Company service area, not further than 500 feet apart where residential parcels are less than one acre in size and not farther than 750 feet apart where the residential parcels are one acre or more in size.

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<u>Item Number</u>	<u>Description of Construction Work, Repairs, Tests, Studies, and Reports Applicable to Kenwood Village Water Company (Continued)</u>
19.	Make a study and submit to the Commission an estimate of the cost of providing in the Kenwood Village Water system six-inch mains where there is looping and eight-inch mains where there is no looping.
20.	Keep a daily log of chlorine residual readings.
21.	Take at least one sample of water every four weeks for bacteriological analysis, and send a copy of the laboratory report to the Sonoma County Public Health Officer.
22.	Obtain a Health Officer's permit for the Kenwood Village Water Company water supply from the Sonoma County Public Health Service.

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<u>Item Number</u>	<u>Description of Construction Work, Repairs, Tests, Studies, and Reports Applicable to Rio Dell Water Company</u>
23.	Waterproof the pumphouse.
24.	To boost the water supply replace the 5-hp pump with a 10-hp pump so that there will be two 10-hp pumps connected in parallel in the Rio Dell pumphouse.
25.	Control or subdue the hydraulic hammer and install a source of supply meter on the discharge side of the Rio Dell pumps.
26.	At the Rio Dell high level concrete tank install either a pressure pump system or a continuously running pump system which will provide service to all customers within the vicinity of the existing concrete tank with pressure at least equal to 25 psi.
27.	Remove all debris and ground vegetation within a radius of 25 feet of all water tanks, pumphouses, and pressure tanks.
28.	Repair and activate or replace all defective water meters.
29.	Make an engineering study to determine the best and most economical method of treating the water from the main well serving the Rio Dell system to eliminate the problems caused by the excessive carbon dioxide in the water and submit a report of the results of such study to the Commission.
30.	Check the operation of the hypochlorinators at least once a day and make chlorine residual tests every day to determine the effectiveness of the operation of the chlorinators and adjust the chlorinators accordingly. Record the results of the chlorine residual tests and make such records available for inspection of the state and local health departments and the Commission staff.

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<u>Item Number</u>	<u>Description of Construction Work, Repairs, Tests, Studies, and Reports Applicable to Russian River Terrace Water Company</u>
31.	<p>Submit to the Commission the test results of the well which was to have been drilled on or before October 15, 1972. If such results are favorable, also submit to the Commission plans and specifications for the new well site and pumping plant which is to be the principal source of water supply for the Russian River Terrace system.</p> <p>If such results are unfavorable, submit to the Commission a new proposal for augmentation of the existing water supply for the Russian River Terrace system.</p>
32.	<p>If the test results of the well, which was to have been drilled on or before October 15, 1972, were unfavorable, install a main line meter on the discharge side of the Hollydale pumphouse fronting on River Drive (6" saddle).</p>
33.	<p>Enclose the front section of the Terrace pumphouse between the door and roof to prevent unauthorized entry.</p>
34.	<p>If the test results of the well, which was to have been drilled on or before October 15, 1972, were unfavorable, install a main line meter on the discharge side of the Terrace pumphouse.</p>
35.	<p>Install a lock on the concrete cover at the Middle Hollydale tank to protect the booster pump from vandalism.</p>
36.	<p>Replace the remaining approximately 100 feet, or less, of 1-1/2-inch or 2-inch pipe on the north side of the Middle Hollydale tank with 4-inch pipe.</p>
37.	<p>Dismantle the 10,000-gallon tank no longer in use at Lower Hollydale in the Russian River Terrace system.</p>

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<u>Item Number</u>	<u>Description of Construction Work, Repairs, Tests, Studies, and Reports Applicable to Russian River Terrace Water Company (Continued)</u>
38.	Check the Wallace and Tiernan hypochlorinator to determine if it is in good working order. If it is not in good working order, repair it or replace it with a reliable chlorinator.
39.	Make an engineering study to determine the best and most economical method of treating the water from the Hollydale Well No. 1 to eliminate the problems caused by the excessive free carbon dioxide, iron, and manganese in the water and submit a report of the results of such study to the Commission.
40.	Make an engineering study to determine the best and most economical method of treating the water from the Terrace Well to eliminate the problems caused by the excessive free carbon dioxide.
41.	Remove all debris and ground vegetation within a radius of 25 feet of all water tanks, pumphouses, and pressure tanks.
42.	Repair and activate or replace all defective water meters.
43.	Check the operation of the hypochlorinators at least once a day and make chlorine residual tests every day to determine the effectiveness of the operation of the chlorinators and adjust the chlorinators accordingly. Record the results of the chlorine residual tests and make such records available for inspection of the state and local health departments and the Commission staff.

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<u>Item Number</u>	<u>Description of Construction Work, Repairs, Tests, and Reports Applicable to Canon Manor Water System</u>
44.	Seal the cap on the well around the sides and at the opening for the electrical cable.
45.	Fence the area including the well site, storage tank, and booster pump to exclude animals and people.
46.	Provide a tap at the well for collecting samples prior to chlorination.
47.	Keep a daily log of chlorine residual readings.
48.	Take at least one sample of water every four weeks for bacteriological analysis, and send a copy of the laboratory report to the Sonoma County Public Health Officer.
49.	Obtain a Health Officer's permit for the Canon Manor Water System water supply from Sonoma County Public Health Service.
50.	Remove all debris and ground vegetation within a radius of 25 feet of all water tanks, pumphouses, and pressure tanks.
51.	Repair and activate or replace all defective water meters.

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<u>Item Number</u>	<u>Description of Construction Work, Repairs, Tests, and Reports Applicable to Happy Acres Water Company</u>
53.	Provide the water tank with a waterproof cover and replace the missing screen.
54.	Seal the gravel fill hole in the pump base to exclude small animals, dirt, and water.
55.	Install a sampling tap on the well discharge line before the chlorinator.
56.	Keep the booster pump building locked.
57.	Chlorinate the water supply continuously and keep a daily log of chlorine readings.
58.	Take at least one sample of water every four weeks for bacteriological analysis, and send a copy of the laboratory report to the Sonoma County Public Health Service.
59.	Have the iron, manganese, and turbidity problem rechecked by a certified chemical laboratory in order to determine the necessary treatment to remedy this problem, and submit a report regarding such determination to the Commission.
60.	Obtain a Health Officer's permit for the Happy Acres Water Company water supply from the Sonoma County Public Health Service.
61.	Remove all debris and ground vegetation within a radius of 25 feet of all water tanks.
62.	Repair and activate or replace all defective water meters.