CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 93-070

WATER RECLAMATION REQUIREMENTS FOR:

LIVERMORE-AMADOR VALLEY WATER MANAGEMENT AGENCY,
EAST BAY MUNICIPAL UTILITY DISTRICT,
AND
CALIFORNIA DEPARTMENT OF TRANSPORTATION
ALAMEDA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board), finds that:

1. The Livermore-Amador Valley Water Management Agency (LAVWMA) (hereinafter the Discharger) applied on March 19, 1993, for issuance of water reclamation requirements for the proposed uses of reclaimed water. The reclaimed water will be used to irrigate about 12.5 miles of interstate freeway in San Leandro, Castro Valley and Hayward.

2. The California Department of Transportation (CALTRANS) (hereinafter the User) has installed permanent irrigation piping on I-580 in Castro Valley between Crow Canyon Road and I-238 (see attached Figure 1). The user is planning to install irrigation piping on I-880 between Marina Boulevard in San Leandro and Winton Avenue in Hayward (see attached Figure 2 and Figure 3) as part of its on-going widening projects. The user is planning to install irrigation piping on I-580 between Dutton Avenue in San Leandro and I-238 in Castro Valley (see attached Figure 1 and Figure 2) in the future.

3. The Discharger (LAVWMA) is a joint powers agency servicing Livermore, Pleasanton, and the Dublin San Ramon Services District (DSRSD). The Discharger currently discharges oxidized and disinfected wastewater from DSRSD plant and the City of Livermore water reclamation plant into the East Bay Dischargers Authority (EBDA) transport pipeline. The EBDA effluent is then discharged into Lower San Francisco Bay through a deepwater outfall. The DSRSD plant and the City of Livermore water reclamation plant presently discharge an average of 7.5 million gallons per day (mgd) and 5.0 mgd respectively from their wastewater treatment plants. The combined wastewater flows to two flow-equalization basins and receive additional chlorination before being pumped to the EBDA transport pipeline. The DSRSD operates and maintains the LAVWMA export pipeline, pump station, and standby chlorination facility.

4. The East Bay Municipal Utility District (EBMUD), as sole purveyor of water including reclaimed water in the East Bay, will be responsible for connecting the facilities between the LAVWMA pipeline and the CALTRANS irrigation systems.

5. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on December 17, 1986. The Basin Plan contains a listing of beneficial uses of Lower San Francisco Bay and San Lorenzo Creek and contiguous water bodies.

6. The beneficial uses of Lower San Francisco Bay and contiguous water bodies include:

   Water contact recreation
   Non-contact water recreation
   Wildlife habitat
   Preservation of Rare and Endangered Species
   Estuarine Habitat
   Fish migration and spawning
   Industrial service supply
   Shellfish harvesting
   Navigation
   Commercial and Sport Fishing

7. The beneficial uses of San Lorenzo Creek and contiguous water bodies include:

   Municipal and Domestic Supply
   Ground Water Recharge
   Fresh Water Replenishment
   Water Contact Recreation
   Non-Contact Water Recreation
   Warm Fresh Water Habitat
   Cold Fresh Water Habitat
   Wild Life Habitat
   Fish Migration
   Fish Spawning

8. California Water Code Section 13512 states that it is the intention of the Legislature that the State undertake all possible steps to encourage development of water reclamation facilities so that reclaimed water may be made available to help meet the growing water demands of the State.

9. Section 13523 of the California Water Code provides that a Regional Board, after consultation with and reception of recommendations from the State Department of Health Services (DOHS), and if it is determined such action to be necessary to protect the public health, safety or welfare, shall prescribe water reclamation requirements for water which is used or proposed to be used as reclaimed water. The use of

reclaimed water for the purposes specified in finding 1 and Finding 2 could affect the public health, safety, or welfare, and requirements for those uses are therefore necessary in accordance with the Water Code.

10. These water reclamation requirements are in conformance with the statewide reclamation criteria established by the DOHS, as prescribed in Title 22, Section 60301 through Section 60355, California Code of Regulations.

11. The DOHS is currently reviewing their guidelines for water reclamation. Water reclamation applications may be changed once these guidelines are finalized.

12. EBMUD staff prepared a Negative Declaration for this project, in accordance with the California Environmental Quality Act (Public Resources Code Section 21000 et seq.). The Negative Declaration was approved and adopted by the EBMUD Board of Directors on October 23, 1990. The Negative Declaration found that the proposed project would not have a significant effect on the environment.

13. The Board has notified the Discharger and interested agencies and persons of its intent to prescribe water reclamation requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit written views and recommendations.

14. The Board, in a public hearing, heard and considered all comments pertaining to the water reclamation.

IT IS HEREBY ORDERED, that the Discharger, pursuant to the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. <u>Prohibitions</u>

1. The treatment, storage, distribution, or reuse of reclaimed wastewater shall not create nuisance as defined in Section 13050(m) of the California Water Code.

2. No reclaimed wastewater shall be applied to the irrigation areas when soils are saturated, when conditions are such that runoff or ponding is likely to occur, during rainfall, or when rainfall is expected to occur within 24 hours.

3. No reclaimed wastewater shall be allowed to escape from the designated use area via surface flow, airborne spray or surfacing after percolation.

4. There shall be no bypass or overflow of reclaimed wastewater to the waters of the State from the Discharger's or User's wastewater collection, treatment, storage or disposal facilities.

5. The use of reclaimed water shall not cause the degradation of groundwater used for domestic purposes or cause any change in a quality parameter which would make groundwater unsuitable for irrigation use.

6. Reclaimed water shall not be used as a domestic or animal water supply. There shall be no cross-connection between potable water supply and piping containing reclaimed water. Supplementing reclaimed water with water used for domestic supply shall not be allowed except through an air-gap separation.

7. Reclaimed water shall not be discharged onto any facility or area not designated for reclamation such as walkways, passing vehicles, buildings, domestic water facilities or food handling facilities. Drinking water facilities shall be protected from reclaimed water contact.

B. <u>Reclaimed Water Use Specifications</u>

1. The reclaimed water for use on landscape irrigation shall be an adequately oxidized, disinfected wastewater and shall meet the following quality at all times:

   In any grab sample:

a.	5-day Biochemical Oxidation Demand	40.0 mg/l, maximum
b.	Dissolved Oxygen	2.0 mg/l, minimum
c.	Dissolved Sulfide*	0.1 mg/l, maximum

   * To be measured if D.O. falls below 2.0 mg/l

   At any point downstream of the disinfection facilities where adequate contact with disinfectant is assured:

   d. The median number of total coliform organisms shall not exceed 23 MPN/100 ml as determined from the results of the last seven days for which analysis have been completed. The number of total coliform organisms shall not exceed 240 MPN/100 ml in any two consecutive samples.

2. The User and Discharger shall discontinue the pumping of reclaimed water to the irrigation field during any period when there is reason to believe that the limits specified in B.1., above, are not being met. The pumping of reclaimed water shall not resume until all conditions which caused the limits specified in B.1. to be violated have been corrected.

3. Adequate measures should shall be taken to minimize public contact with reclaimed water and to inform the public that reclaimed water is being used. Conspicuous warning signs with proper wording of sufficient size to be clearly read shall be posted at adequate intervals around the use area, unless public access is otherwise restricted.

4. All reclaimed water distribution lines and sprinkler systems shall be appropriately tagged with conspicuous warning signs with proper wording of sufficient size (at controller valves, outlets, etc.) to warn the public that the water is not safe for drinking or direct contact.

5. All reclaimed water valves, outlets, quick couplers, and sprinkler heads should be of a type, or secured in a manner that only permits operation by personnel authorized by the user.

6. There shall be at least a 10-foot horizontal and 1-foot vertical separation (with the domestic water above the reclaimed water pipeline) between all pipelines transporting reclaimed water and those transporting domestic water. In a situation where there is no alternative but to install reclaimed water pipeline at a distance less than that mentioned above, alternative construction criteria (specified in "Criteria for the Separation of Water Mains and Sanitary Sewers") developed by the State Department of Health Services should be used.

7. Irrigation areas shall be properly graded to minimize ponded water.

C. <u>Provisions</u>

1. The Discharger and User shall comply with all sections of this Order immediately upon adoption.

2. The Discharger and User shall comply with the Self-Monitoring Program as adopted by the Board and as amended by the Executive Officer.

3. The Discharger and User shall maintain in good working order and operate, as efficiently as possible, any facility or control system installed, or as modified, to achieve compliance with this Order.

4. In the event the Discharger or User is unable to comply with any of the conditions of this Order due to:

   a. Breakdown of wastewater transport or treatment equipment;
   b. Accidents caused by human error or negligence; or
   c. Other causes such as acts of nature,

   the Discharger or User shall notify the Board by telephone as soon as the Discharger or the Discharger's agents have knowledge of the incident. Written confirmation of this notification shall be submitted within two weeks of the telephone notification. The written notification shall include pertinent information explaining reasons for the non-compliance and shall indicate what steps were taken to correct the problem and the dates thereof, and what steps are being taken to prevent the problem from recurring.

5. The Discharger and User shall permit the Board or its authorized representatives, in accordance with Section 13267(c) of the California Water Code:

   a. Entry upon premises where a regulated facility or activity is located ar conducted, or where records are kept under the conditions of the Order;

   b. Access to and of, at reasonable times, any records that must be kept under the conditions of this Order;

   c. Inspection, at reasonable times, of any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; or

   d. To photograph, sample or monitor, at reasonable times, for the purpose of assuring compliance with this order.

6. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger or User, the succeeding owner or operator shall be notified about the existence of this Order by letter, a copy of which shall be forwarded to this Board.

7. The Discharger shall file with the Board a Report of Waste Discharge at least 180 days before making any material change in the character, location, or volume of the reuse, except for emergency conditions in which case the Board shall be notified.

8. The Board will review this Order periodically and may revise the requirements when necessary.

9. After notice and opportunity for hearing, this Order may be terminated or modified for reason, including, but not limited to:

   a. Violation of any term condition contained in this Order;

   b. Obtaining this Order by misrepresentation, or failure to disclose fully all relevant facts;

   c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized reuse; or

   d. Endangerment to public health or environment that can only be regulated to acceptable levels by Order modification or termination.

I, Steven R. Ritchie, Executive Officer, do hereby certify the foregoing is full, true, and correct copy of an Order adopted by the California Regional Quality Control Board, San Francisco Bay Region on July 21, 1993.

STEVEN R. RITCHIE
Executive Officer

Attachments:
Figures 1 through 3 - Maps of areas irrigated with reclaimed water
Self-Monitoring Program

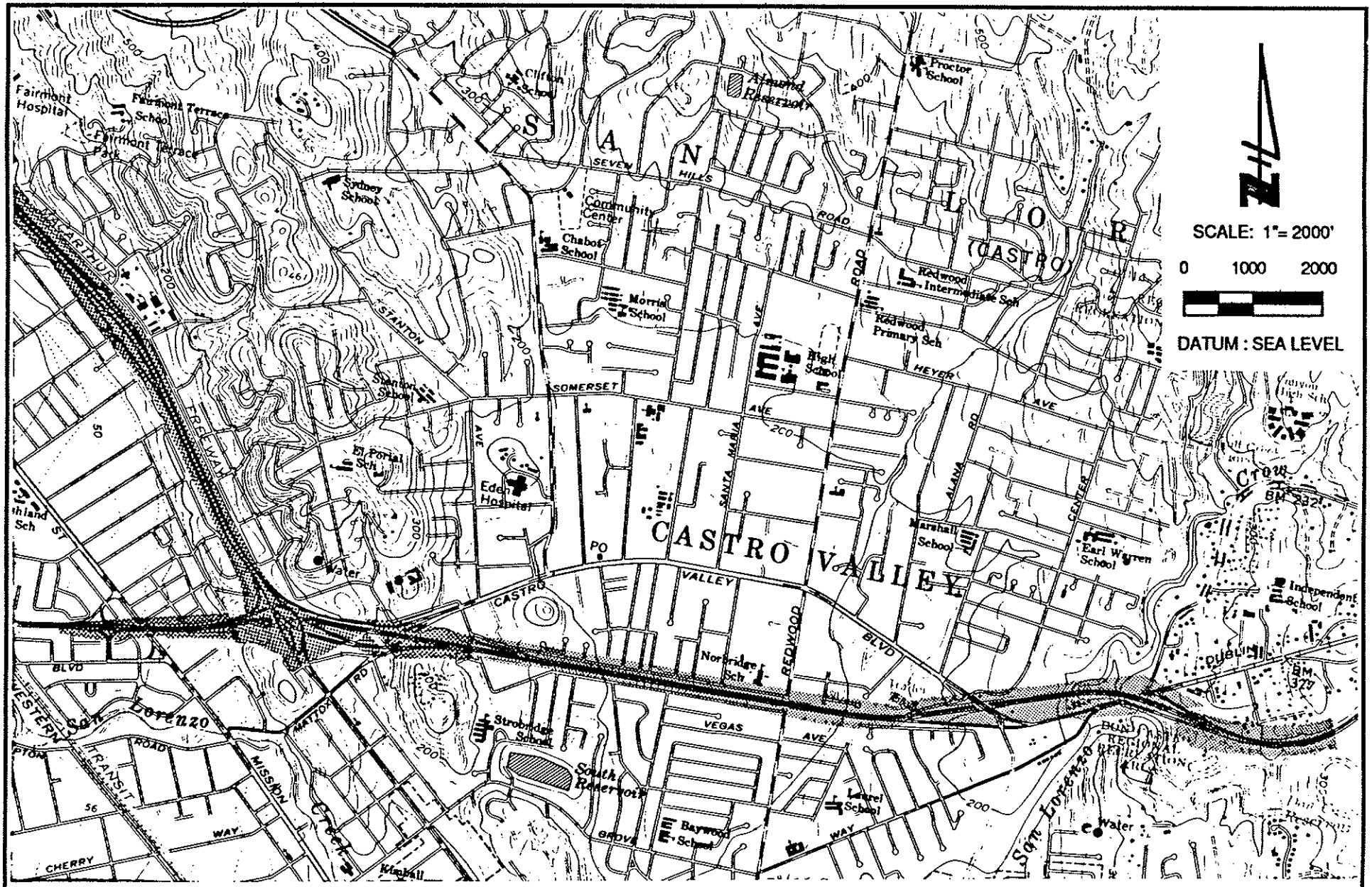

FIGURE 1

ROUTE I - 580 IRRIGATION AREA

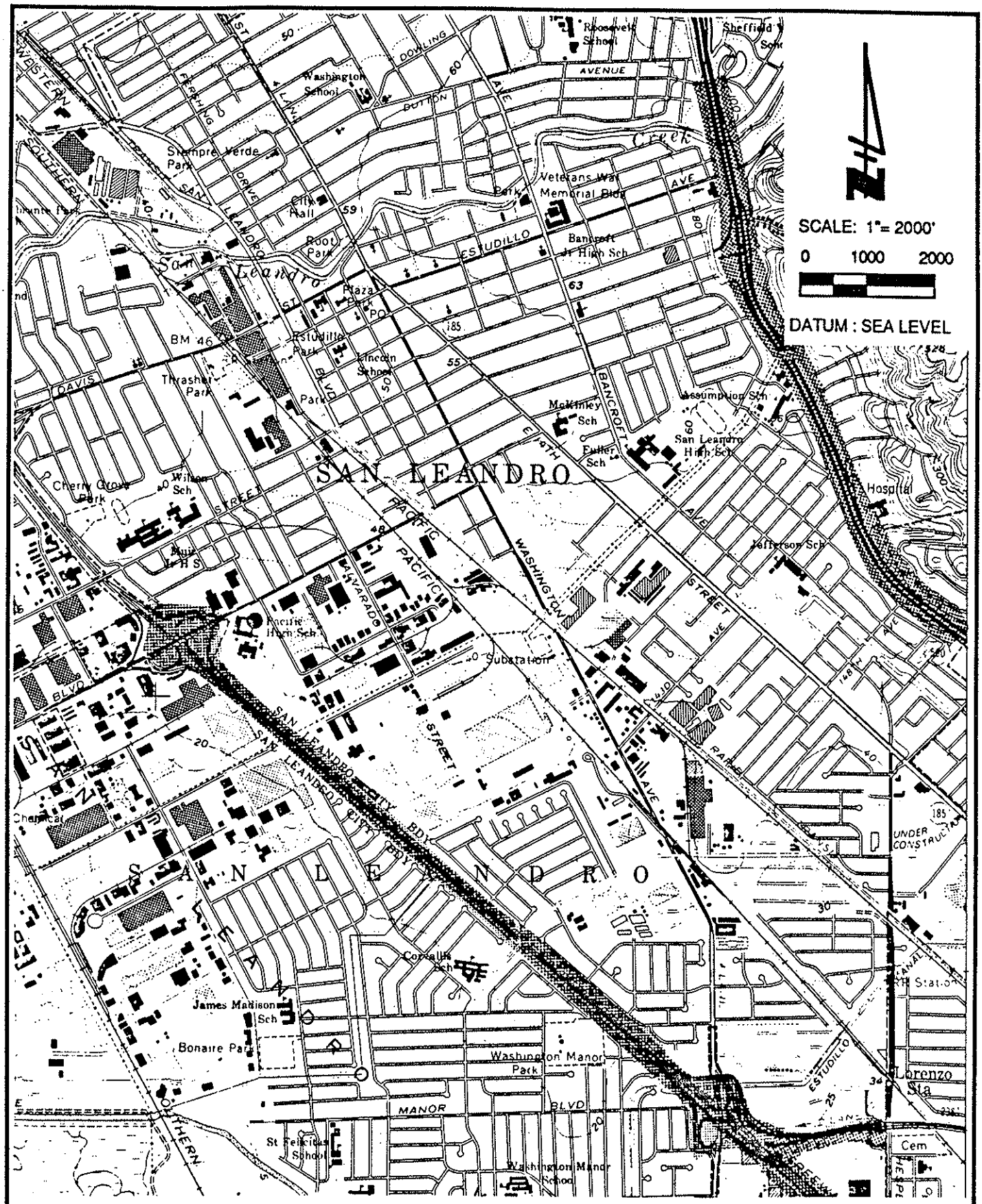

FIGURE 2

ROUTE I - 580 AND I - 880 IRRIGATION BETWEEN DAVIS STREET AND ROUTE 238

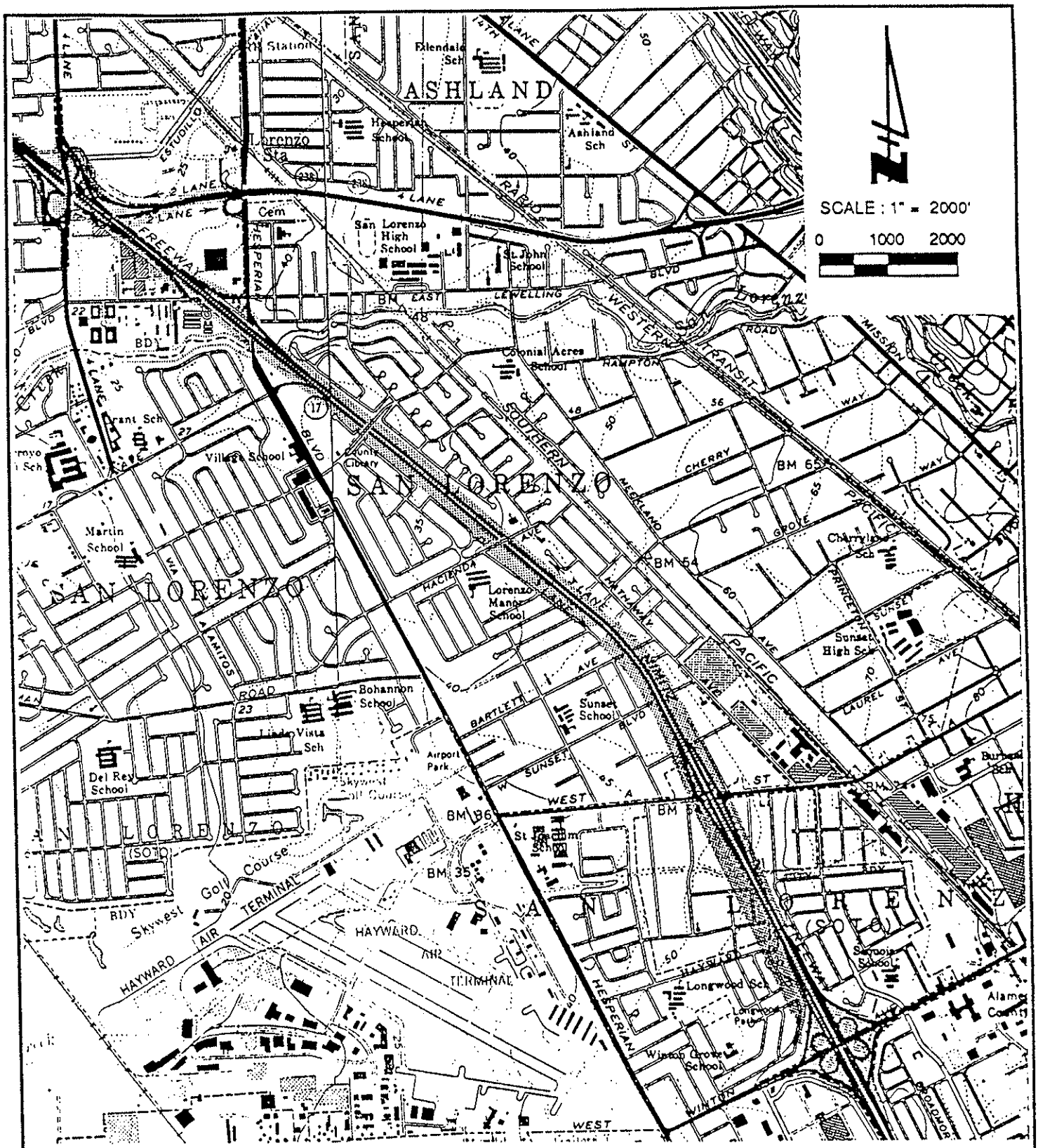

FIGURE 3

ROUTE 880 IRRIGATION
ROUTE 238 TO WINTON AVENUE

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

LIVERMORE-AMADOR VALLEY WATER MANAGEMENT AGENCY
EAST BAY MUNICIPAL UTILITY DISTRICT
STATE DEPARTMENT OF TRANSPORTATION
ALAMEDA COUNTY

ORDER NO. 93-070

CONSISTS OF

PART A

PART A

I. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13268, 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No. 73-16.

The principle purposes of a monitoring program by a waste discharger, also referred to as a self-monitoring program, are:

1. To document compliance with waste discharge requirements and prohibitions established by this Regional Board; and

2. To facilitate self-policing by the discharger in the prevention and abatement of pollution arising from waste discharge.

II. RECLAIMED WATER SAMPLING AND ANALYSIS

The Discharger shall document effluent quality under their regular facility Waste Discharge Order self-monitoring program. See below for any violations related to the water reuse program.

III. REPORTS TO BE FILED WITH THE REGIONAL BOARD

1. Violation of Requirements

In event the Discharger is unable to comply with conditions of the water reuse requirements and prohibitions the Discharger shall notify the Regional Board in writing within two weeks of the non-compliance. The written report shall include pertinent information explaining reasons for non-compliance and shall indicate what steps are being taken to prevent the problems from recurring.

2. Self-Monitoring Reports

Written reports shall be filed regularly for each calendar quarter (ending March, June, September and December). Reports shall be submitted to this Regional Board's office no later than the fifteenth day of the month following the end of each quarter. The reports shall consist of the following:

a. Letter of Transmittal

A letter transmitting the self-monitoring reports should accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory.

The transmittal letter shall contain a statement by the Discharger, or the Discharger's authorized agent, under penalty of perjury, that to the best of the signer's knowledge the report is true, accurate and complete.

b. Results of Analyses and Observations

Tabulations of the results from all required analyses specified in Table I (Attachment A) by date, time, type of sample, and sample station.

IV. STANDARD OBSERVATIONS

1. Evidence of runoff of reclaimed water from the site (Show affected area on a sketch, and estimate volume).

2. Odor from Irrigation site: If present, indicate apparent source, characterization, direction of travel, and any public use areas or offsite facilities affected by the odors.

3. Evidence of ponding of reclaimed water, and/or evidence of mosquitoes breeding within the irrigation area due to ponded water.

4. Warning signs properly posted to inform public that irrigation water is reclaimed water which is not safe for drinking or contact.

5. Evidence of leaks or breaks in the irrigation system pipelines or tubing.

6. Evidence of plugged, broken or otherwise faulty drip irrigation system emitters or spray irrigation system sprinklers.

V. DESCRIPTION OF SAMPLING AND OBSERVATION STATIONS

1. EFFLUENT-RECLAIMED WASTEWATER

Station	Description
E-1	At a point in the disinfection facilities of the City of Livermore, Water Reclamation Plant, and Dublin San Ramon Services District, Wastewater Treatment Plant, for the treated effluent at which point adequate disinfection is assured prior to its use on a landscape areas.

2. LAND OBSERVATION STATIONS

Station	Description
F-1 to F-n	Located at sufficient number of points at the Caltrans irrigation areas in order to ensure compliance with wastewater reclamation requirements.

NOTE: A sketch showing the locations of each observation station shall accompany each monitoring report.

VI. SCHEDULE OF SAMPLING, MEASUREMENTS, AND ANALYSIS

1. The Discharger and User is required to perform observations, sampling, measurements and analyses according to the schedule given in Table I (Attachment A).

2. The User shall conduct a complete inspection of all irrigation lines, sprinklers, and emitters at least once each year, during the dormant season. A report of the findings of this inspection, including a description of any repairs or modifications made to the irrigation system, shall be submitted to the Board by April 15th.

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in the Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 93-070

2. Is effective on the date shown below.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger and revisions will be ordered by the Executive Officer.

STEVEN R. RITCHIE
Executive Officer

Effective Date 7/21/93

Attachments:

A. Table I - Schedule for Sampling, Measurements and Analyses

[File No. 2199.9129]
[Prepared by VBP]
[Reviewed by JDW and TCW]

ATTACHMENT A

TABLE I
SCHEDULE FOR FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

SAMPLING STATIONS	E-1			All F
Type of Sample	C-24	G	Cont.	O
Total Monthly Flow (Gallons)			D	
pH (Units)		3/W		
Dissolved Oxygen (mg/l)		3/W		
BOD (mg/l)	3/W			
Dissolved Sulfides (mg/l)		3/W (1)		
Total Coliform (MPN/100 ml)		3/W		
Applicable Standard Observations				2/W

LEGEND FOR TABLE I

Type of Sample

G = Grab Sample
O = Observations
C-24 = 24 hour composite Sample

Sampling Frequency

M = Monthly
2W = Every two weeks
E = Each event
3/W = Three days per week, on non-consecutive Days

NOTES:
1. Analysis only required when dissolved oxygen falls below 2.0 mg/l.
2. The Discharger shall perform the required observations and file the Reclaimed Water Use reports, as part of the quarterly Self-Monitoring Reports. Reclaimed Water Use reports are only required for months when irrigation occurs.
3. Observations of irrigation sites are to be conducted during irrigation operations.