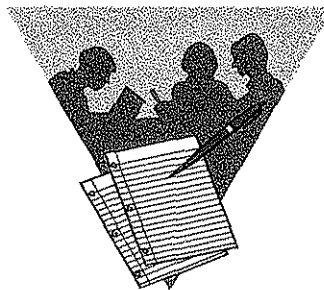


# **WATERMASTER SERVICE**



## **UPPER LOS ANGELES RIVER AREA**

### **POLICIES AND PROCEDURES**



**FEBRUARY 1998**

# UPPER LOS ANGELES RIVER AREA WATERMASTER

CITY OF LOS ANGELES VS. CITY OF SAN FERNANDO, ET AL  
CASE NO. 650079 -- COUNTY OF LOS ANGELES

## WATERMASTER SERVICE

UPPER LOS ANGELES RIVER AREA (ULARA)

### POLICIES AND PROCEDURES

February 10, 1998

#### ULARA WATERMASTER

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213/367-1020 or 213/367-0921

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These ULARA Watermaster Policies and Procedures setting forth provisions and intent of the ULARA Judgment (January 26, 1979 and March 21, 1984), have been reviewed and approved by the ULARA Watermaster and the Administrative Committee.

DATED: February 10, 1998

APPROVED:

President

By Fred Lantz  
Fred Lantz, Assistant General Manager  
The City of Burbank

Vice-President

By Donald R. Froelich  
Donald R. Froelich, Water Services Administrator  
The City of Glendale

Members

By Harold L. Pyke  
for Michael Drake, Director of Public Works  
The City of San Fernando

By Gerald A. Gewe  
Gerald A. Gewe, Executive Assistant to the Director of Water Services  
The City of Los Angeles

By Michael G. Sovich  
Michael G. Sovich, General Manager  
Crescenta Valley Water District

By Melvin L. Blevins  
Melvin L. Blevins, ULARA Watermaster

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## 1.0 INTRODUCTION

It is the purpose and function of the ULARA Watermaster's Policies and Procedures to set forth a summary of the decreed extraction rights within the Upper Los Angeles River Area (ULARA), and a clear picture of overall groundwater management, together with a detailed statement amplifying the rules for the ULARA Watermaster ( Watermaster) and Administrative Committee's activities

The Watermaster Service, Upper Los Angeles River Area - Policies and Procedures (Policies and Procedures) consists of specific provisions for the Watermaster to administer the Judgment addressing the following:

- Summary of water rights as established in the Judgment and its amendments.
- Accounting procedures for groundwater extractions and storage.
- Management of groundwater quality.
- Establishment of the ULARA Administrative Committee.
- Reporting requirements and procedures.

Where provisions of these Policies and Procedures are derived from or interpretive of specific provisions of the Judgment, they are annotated by a reference to the applicable Judgment provision, i.e., (Section No. of the Judgment). The intent of the Watermaster's Policies and Procedures is to be consistent with the provisions and intent of the Judgment and the Stipulation and Order regarding the Sylmar Basin (Stipulation), dated 22, 1984. Refer to Appendix A for maps of the ULARA and Appendix C for the Judgment, January 26, 1979, Appendix D for the Stipulation, March 22, 1984. Appendix E contains "Guidelines for Groundwater Storage." Appendix F provides a status report on the safe yield of each of the four basins located within the ULARA and Appendix G provides background data and facts for each of the basins.

For brevity and simplicity, defined terms are used herein in the sense in which they are defined and used in the ULARA Judgment (Section 2.1 of the Judgment).

## **2.0 SUMMARY OF PUMPING AND GROUNDWATER STORAGE RIGHTS**

The rights to pump and store groundwater in the four basins within the San Fernando Valley (SFV) are separately summarized by basin for purposes of providing a clear description of those rights. For more detailed specifications and intent of the rights of the parties under the terms of the Judgment, reference is made to Sections 1 through 10 of the Judgment, which are attached hereto as Appendix C. Appendix C also includes, for ease of reference, the full table of contents of the Judgment.

### **2.1 SAN FERNANDO BASIN RIGHTS**

Although the waters in the San Fernando Basin (SFB) constitute a single physical body of groundwater, they are divided into four major categories (native waters, import return water, stored water, and physical solution water) for legal purposes. The rights of the parties to extract groundwater depend upon their rights and entitlements to each of the categories. The Watermaster records will account for the total allowable pumping and will also maintain records in the separate categories.

#### **2.1.1 NATIVE WATER RIGHTS**

Los Angeles has Pueblo rights to all native water which constitute a part of the surface flow of the Los Angeles River or groundwater within the SFB. No other party has any rights to such native waters. The Native Safe Yield is 43,660 acre-feet per year (AF/yr.) - (Sections 4.2.4 and 5.1.1.1 of the Judgment).

2.1.2 IMPORT RETURN WATER RIGHTS (Recharge of Delivered Water) - (Section 5.2.1 of the Judgment)

Los Angeles, Glendale and Burbank each has rights to extract from the SFB its import return (recharge of delivered water), i.e., the groundwater derived from percolation attributable to delivered imported water. The credit for such import return water shall be accrued and accounted for by the ULARA Watermaster, as follows:

2.1.2.1 Los Angeles

20.8 percent of all delivered water (including reclaimed water) to the valley fill lands of the SFB. (Section 5.2.1.3 of the Judgment)

2.1.2.2 Glendale

20.0 percent of all delivered water (including reclaimed water) to the SFB and its tributary hill and mountain areas (i.e., total delivered water [including reclaimed water], less 105 percent of total sales by Glendale in the Verdugo Basin and its tributary hills). (Section 5.2.1.3 of the Judgment)

2.1.2.3 Burbank

20.0 percent of all delivered water (including reclaimed water) to the SFB and its tributary hill and mountain areas. (Section 5.2.1.3 of the Judgment)

2.1.2.4 San Fernando

San Fernando no longer receives credit for import return water in the San Fernando Basin due to special credits provided in

the Sylmar Basin Stipulation of March 22, 1984. San Fernando receives up to one-half of the the Sylmar Basin's total safe yield. (6,510 AF/yr. - July 16, 1996)

2.1.2.5 Los Angeles, Glendale and Burbank - Carry Over Credit

The credit for groundwater and Import Return Water (recharge of all delivered water) not extracted in a given water year will be carried over, separately accounted for, and maintained as a cumulative credit, under the category of stored water, by the Watermaster for future extractions. (Section 5.2.1.4 of the Judgment)

2.1.3 STORED WATER RIGHTS

Los Angeles, Glendale, and Burbank, each, has the right to store water in the SFB by direct spreading of imported water and reclaimed water or in lieu practices, and each party has the right to extract equivalent amounts. All such storage shall be reported to the Watermaster. (Section 5.2.1.2 of the Judgment). Guidelines for the storage of water in the SFB are available in Appendix E.

2.1.4 PHYSICAL SOLUTION WATER RIGHTS

2.1.4.1 Los Angeles' Physical Solution Water

Under Section 9 of the Judgment, several parties other than Los Angeles are entitled to extract physical solution water chargeable to the rights of Los Angeles upon payment of specified

amounts of money to Los Angeles. Parties that are entitled to physical solution water rights can apply for such water from Los Angeles to be used after they have used their import return water credit. The parties and their maximum physical solution quantities are as follows:

Glendale

5,500 AF/yr. (Section 9.4 of the Judgment)

Burbank

4,200 AF/yr. (Section 9.4 of the Judgment)

Van de Kamp's

120 AF/yr. (Section 9.3.1 of the Judgment)

Toluca Lake

100 AF/yr. (Section 9.3.1 of the Judgment)

Sportsmen's Lodge, Inc.

25 AF/yr. (Section 9.3.1 of the Judgment)

2.1.4.2 Glendale's Physical Solution Water

Glendale may furnish physical solution water out of its share of Los Angeles' physical solution water to the following parties in accordance with the provisions in Section 9.3.1 of the Judgment:

Forest Lawn 400 AF/yr.

Environmentals, Inc. 75 AF/yr.

(Now Angelica Healthcare

Services - formerly

Southern Services Co.)

2.1.4.3 Burbank's Physical Solution Water

Burbank may furnish physical solution water out of its share of Los Angeles' physical solution water to the following parties in accordance with the provisions in Section 9.3.1 of the Judgment:

Valhalla	300 AF/yr.
Lockheed	25 AF/yr.

2.1.5 OTHER CATEGORIES OF WATER RIGHTS

2.1.5.1 Over-Extractions

2.1.5.1.1 Burbank and Glendale

a. Ten Percent Over-Extraction

In addition to current extractions of import return water, stored water, and physical solution rights, Burbank and Glendale may each in any water year extract from the SFB an amount not to exceed ten percent (10%) of its last annual credit for import return water. This over-extraction may occur without additional approval of the Watermaster. There is the obligation however to replace such over-extraction by reduced extractions during the next water year. Any such over-extraction, which if not replaced in the next water year will be deemed physical solution water extracted

in the subsequent water year (Section 5.2.1.5 of the Judgment).

b. Emergency Condition

In the event that the 10% over-extraction right is also exhausted and either Burbank or Glendale, or both of these parties is required to pump additional groundwater for cleanup purposes, each party may request to enter into an emergency condition provision. A written request for the impacted water year is to be submitted to the Watermaster for approval. This over-extraction under an emergency condition, if approved, is subject to payment to Los Angeles, the party whose water right is affected. The rate for this water will be subject to agreement with Los Angeles. The emergency condition provision provided in Section 9.4 of the Judgment follows:

In the event of emergency, and upon stipulation or motion and subsequent order of the Court, said quantities (Physical solution extractions) may be enlarged in any year.

This emergency condition need is satisfied by the Watermaster's approval, as stated above.

#### 2.1.5.1.2 Los Angeles

Whenever the needs of Los Angeles require the extraction of groundwater in excess of the native safe yield, plus any import return water credit and stored water credit, Los Angeles may extract from the Underlying Pueblo Waters, subject to an obligation to replace such excess as soon as practical (Section 6.8 of the Judgment).

### 2.1.6 OTHER GROUNDWATER PUMPING ACTIVITIES

#### 2.1.6.1 Pumping for Dewatering

##### 2.1.6.1.1 Within Los Angeles

##### a. Proposed Facilities

Within certain areas of the SFB in the City of Los Angeles (see Map - Appendix A - Water Service Areas), buildings or building modifications that are proposed may require dewatering facilities that can affect SFB storage and Los Angeles' water rights. Thus, the building permit applications for these proposed buildings or modifications that are submitted to the Los Angeles Department of Building and Safety (DBS) are to be referred to the Office of the Watermaster for review and approval with regard to dewatering plans. If the Watermaster determines that Los Angeles' water rights are affected by the dewatering, an agreement

must be established and approved by the Watermaster and the Los Angeles Department of Water and Power (DWP) with the party responsible for the dewatering activity before the issuance of a Certificate of Occupancy by the DBS.

b. Existing Facilities

For existing dewatering facilities within the SFB in Los Angeles that were not reviewed and approved by the Watermaster, the Watermaster has the authority to investigate the dewatering activity and to evaluate its impact on SFB storage and Los Angeles' water rights. The Watermaster is responsible for notifying the appropriate parties and establishing any agreements between such parties, the Watermaster, and Los Angeles.

In either case, if the dewatering party requests to discharge the groundwater to a storm drain or to use the groundwater in a consumptive manner, the dewatering party would be required to pay Los Angeles for the amount of water being discharged or used. Further, the dewatering party is also required to meter and report to the Watermaster the amount of groundwater being discharged or used on a monthly basis.

#### 2.1.6.1.2 Outside Los Angeles

For buildings or building modifications that are proposed within the SFB and not in the City of Los Angeles that may require dewatering facilities, procedures to provide Watermaster review and approval regarding proposed dewatering plans have not been established. Thus, the dewatering parties and the affected parties with water rights are to establish agreements, as required, that are subject to review and approval by the Watermaster. Again, the dewatering parties are required to meter and report the amount of groundwater being discharged or used on a monthly basis to the Watermaster.

#### 2.1.6.2 Provisions For Charging to Basin Account-SFB

##### 2.1.6.2.1 Temporary Losses

Any party or non-party may request that they be permitted to pump groundwater on a temporary basis, with the amount being charged to the Basin Account. Thus, they would be exempted from water right charges to any party. A written request must be submitted to the Watermaster stating the purpose and the estimated volume of the pumping. At the discretion of the Watermaster, a recommendation may be made

to the ULARA Administrative Committee that the temporary pumping be allowed and be charged to the Basin Account. The Watermaster will also recommend the conditions on the time, volume, manner, method of reporting, and similar circumstances of the pumping. The ULARA Administrative Committee, by unanimous vote, may then approve the request as recommended.

In determining whether to recommend that temporary pumping be charged to the Basin Account, the Watermaster shall consider the stated purpose of the pumping, which can include, but not be limited to, the following:

- Groundwater studies for aquifer characterization
- Plume definition
- Groundwater treatment facility testing and startup
- Temporary dewatering for construction purposes

The Watermaster shall also consider whether the temporary groundwater pumping is consistent with the purposes served by the Judgment and is for the benefit of the basin.

#### 2.1.6.2.2 Operational Losses for Groundwater Treatment Facilities

It is recognized that treatment facilities established for groundwater cleanup may need to pump groundwater for special back-

washing and facility system development. In such cases, the pumping can be charged to the Basin Account under this section. The plant operator must meter and report all well production amounts and the reason for the operational losses of groundwater to the municipal water purveyor and the Watermaster. The municipal water purveyor shall then meter and report to the Watermaster the amount of treated groundwater actually received from the operator and the reported reason for the loss to be considered for assignment to the Basin Account. If the Watermaster agrees that the loss falls within the scope of the Basin Account, approval will be granted to charge the loss to the Basin Account. Any amount charged to the Basin Account will be exempted from being charged to any party's water rights.

The Watermaster will be responsible for accounting and reporting of pumping under this section.

## **2.2 SYLMAR BASIN RIGHTS**

### **2.2.1 STIPULATION**

On August 26, 1983, the ULARA Watermaster reported to the Court pursuant to Section 10.2 of the Judgment that the Sylmar Basin was in a condition of overdraft (see Appendix D). In response to the Watermaster's letter and a Minute Order of the California Superior Court, the Cities of Los Angeles and San Fernando responded by a letter

to the Court, agreeing with the Watermaster's finding on overdraft. On March 22, 1984, Judge Harry L. Hupp of the Superior Court signed the Stipulation, effective October 1, 1984, stipulating the following:

The Cities of Los Angeles and San Fernando shall be limited in their pumping to bring the total pumping within the safe yield of the basin, less any rights exercised by the private parties. Los Angeles and San Fernando were established to each have rights of 3,105 AF/Yr.

Based on the recommendation of the Watermaster and by unanimous vote of the Administrative Committee on July 16, 1996, Los Angeles' and San Fernando's pumping rights were each increased up to 3,255 AF/yr. This increase is subject to continued evaluation by the Watermaster with final approval by the ULARA Administrative Committee for a period up to 10 years with an opportunity for earlier review.

## **2.2.2 PRIVATE PARTY RIGHTS**

### **2.2.2.1 Moordigian and Meurer Engineering**

The Judgment recognized two parties with water rights. Moordigian no longer has water rights. No pumping has taken place since 1957 and the lands have been sold. Meurer Engineering (now Santiago Estates) was estimated to have pumped less than 0.5 AF/yr. since 1975-76, with no anticipated increase in the future. Even though

Santiago Estates' pumping has been less than one AF/yr., provision for their rights pursuant to Section 5.1.2.2 of the Judgment was established in the Stipulation. The pumping that occurs pursuant to the overlying rights of the Santiago Estates must be subtracted from the safe yield of the Sylmar Basin (which is presently 6,510 AF/yr.). Los Angeles and San Fernando are each entitled to one-half of the remainder.

2.2.2.2 Other Party Rights - No other party owns any right to extract native or import return waters from the Sylmar Basin.

#### 2.2.3 STORED WATER RIGHTS

Los Angeles and San Fernando each have the right to store water in the Sylmar Basin in accordance with procedures set forth in Section 2.1.3, and are subject to the same accounting procedures as are applicable in the SFB. These stored water rights were assigned to Los Angeles and San Fernando under the Stipulation, Paragraph 4.

#### 2.2.4 OVER EXTRACTION

It is recognized that unusual circumstances, including weather conditions or water system operational problems, may result in water shortages. Los Angeles and San Fernando shall have the right to request the Watermaster for authority to over-extract from the Sylmar Basin an amount not to exceed ten per cent (10%) of their annual entitlement plus stored water credit. The request shall identify the unusual circumstances and shall justify the need for over-extractions. At the

discretion of the Watermaster each request for over-extraction shall be reviewed and shall be approved, modified, or denied. The over-extraction may be approved from year to year while the unusual circumstances continue, so long as the total amount of water extracted by either Los Angeles or San Fernando does not exceed 1,000 AF.

When the unusual circumstances cease, notification of the cessation and a plan for the replacement of the over-extracted amount must be submitted to the Watermaster. The Watermaster shall at his discretion approve the plan or order that it be resubmitted. The plan must provide at a minimum that all water over-extracted be replaced within six years by under-pumping, except that under-pumping will not be required to exceed ten percent of the annual allowed pumping of the party. (Refer to Stipulation, Paragraph 2).

## **2.3 VERDUGO BASIN RIGHTS**

### **2.3.1 GLENDALE AND THE CRESCENTA VALLEY WATER DISTRICT**

Glendale and Crescenta Valley Water District (Crescenta Valley) own appropriative and prescriptive rights in the Verdugo Basin to extract, with equal priority, the following quantities of groundwater: (Section 5.1.3.2 of Judgment).

Glendale	3,856 AF/yr.
Crescenta Valley	3,294 AF/yr.

#### **2.3.2 PRIVATE DEFENDANT RIGHTS**

No private defendant, as such, is entitled to extract groundwater from Verdugo Basin.

(Section 5.1.3.2 of the Judgment)

#### **2.3.3 STORAGE RIGHTS**

Glendale and Crescenta Valley do not have a right to store water. The Verdugo Basin is too steep and shallow to implement storage activities.

#### **2.3.4 MODIFICATION OF ANNUAL PUMPING RIGHTS**

With approval of the Watermaster, either Glendale or the Crescenta Valley may pump the unused portion of the other party's annual pumping allocation, so long as, the total amount pumped is within the total safe yield of 7,150 AF/Yr. The modification of the groundwater pumping shall be reviewed by the Watermaster annually.

### **2.4 EAGLE ROCK BASIN RIGHTS**

#### **2.4.1 NATIVE WATER**

The Eagle Rock Basin has no significant or measurable native safe yield and no parties have rights to native waters in this Basin. The Pueblo Right of Los Angeles does not extend to this basin. (Section 5.1.4 of the Judgment)

#### **2.4.2 IMPORT RETURN WATER**

Los Angeles has caused imported water to be delivered for use on lands overlying Eagle Rock Basin. Return flow from such water constitutes the entire safe yield of Eagle Rock Basin. Los Angeles has the right to extract or cause to be extracted the entire safe yield of the Eagle Rock Basin. (Section 5.2.4 of the Judgment)

#### **2.4.3 PHYSICAL SOLUTION WATER**

Foremost (now McKesson/Sparkletts) and Deep Rock (now Hinkle-Schmidt) have physical solution rights to extract Los Angeles' water from Eagle Rock Basin (Section 9.2.1 of the Judgment). These parties pay Los Angeles for all water extracted. Each party may extract up to 500 AF/Yr. pursuant to stipulations filed on November 1, 1965 to the Judgment. However, the estimated recharge from delivered water (safe-yield) is up to 300 AF/Yr. for the entire basin. It would not be possible for each party to pump 500 AF/Yr.

#### **2.4.4 STORAGE RIGHTS**

Los Angeles and the Physical Solution parties have no storage rights in the Eagle Rock Basin.

### **3.0 WATERMASTER ACCOUNTING OF GROUNDWATER PUMPING AND STORAGE**

The Watermaster is responsible for the accounting of each party's annual extraction right.

#### **3.1 BURBANK AND GLENDALE (SAN FERNANDO BASIN)**

In the San Fernando Basin annual accounting for these parties will be performed in the following manner: Import Return water credit will be taken first, followed by all or a portion of either physical solution water or stored water credits. At the end of each water year, each party will notify the Watermaster, in writing, of their election as to whether water in excess of import return water credit will be debited from physical solution water or stored water credits, or a portion of both

Glendale (Verdugo Basin)

In the Verdugo Basin Glendale only will first take its annual allowable right. There is no storage right. With the approval of the Watermaster, Glendale or Crescenta Valley may pump the unused portion of the other party's annual pumping allocation, so long as, the total amount pumped is within the total safe yield of 7,150 AF/Yr.

Each party must file monthly, semi-annual, and annual reports as detailed in Section 7.0 of the Policies and Procedures.

**3.2 LOS ANGELES**

San Fernando Basin

In the San Fernando Basin native safe yield water will be taken first, followed by import return water credit, and finally, stored water credits. In the event all of these rights are exhausted, Los Angeles may initiate provisions under Section 6.8 of the Judgment.

Sylmar Basin

In the Sylmar Basin the amount allowed by the Stipulation annually will be taken first, followed by any stored water credits. In the event all of these rights are exhausted, Los Angeles may initiate provisions under the Stipulation.

Los Angeles must file monthly, semi-annual, and annual reports as detailed in Section 7.0 of the Policies and Procedures.

**3.3 SAN FERNANDO (SYLMAR BASIN)**

The amount allowed by the Stipulation annually will be taken first, followed by any stored water credits. In the event all of these rights are exhausted, San Fernando may initiate provisions under the Stipulation.

San Fernando must file monthly, semi-annual, and annual reports as detailed in Section 7.0 of the Policies and Procedures.

#### **3.4 CRESCENTA VALLEY WATER DISTRICT**

In the Verdugo Basin Crescenta Valley will first take its annual extraction right. There is no storage right. With the approval of the Watermaster, Glendale or Crescenta Valley may pump the unused portion of the other party's annual pumping allocation, so long as, the total amount pumped is within the total safe yield of 7,150 AF/Yr.

Each party must file monthly, semi-annual, and annual reports as detailed in Section 7.0 of the Policies and Procedures.

#### **3.5 OTHER PARTIES AND NON-PARTIES**

Other parties and non-parties pumping or discharging groundwater from the ULARA including dewaterers and those involved with groundwater cleanup programs must file monthly production reports and any associated water quality reports with the Watermaster. Refer to Appendix B-1, for a sample of a type of Monthly Production Form.

#### **3.6 METERING REQUIREMENTS**

##### **3.6.1 WATER-MEASURING DEVICES**

The amount of water pumped by each well or well field must be determined by a procedure acceptable to the Watermaster. All production wells must be equipped with a positive displacement, velocity impeller, Venturi or orifice-type meter with a totalizer. The totalizer should be susceptible to correction by, and only by, changing mechanical gear equipment.

#### **3.6.2 METER TEST PROGRAM**

Each party is required to check the production from all water wells operated by or for such party. The metering device measuring well production shall be tested for accuracy at least once within each three to five - year period and the results filed with the Watermaster. Costs of such testing will be at each party's expense and may be performed by a party's own qualified personnel.

#### **3.7 INSPECTION**

The Watermaster has the right to verify, upon prior request, the production and metering of any well or wells owned by any party or non-party, and shall have the right of reasonable field inspection for such purpose.

#### **4.0 WATERMASTER AUTHORITY ON WATER RIGHTS**

If a field inspection or investigation by the Watermaster reveals that a party or non-party without water rights is extracting groundwater from the ULARA, the Watermaster has the authorization of the California Superior Court to enforce the provisions of the Judgment by taking one or more of the following actions:

- Advising the party or non-party of the provisions of the Judgment and the role of the Watermaster in administering the Judgment of the California Superior Court.
- Advising the party or non-party of their water rights, if any, in accordance with the Judgment and their responsibilities for metering and reporting.
- Notifying the applicable ULARA parties that are affected with regards to water rights.
- If appropriate, notifying the party or non-party without water rights to cease their groundwater

extractions from the ULARA and to destroy their wells that are used for pumping groundwater.

- If necessary, arranging for a hearing before the California Superior Court between the party or non-party and the Watermaster to resolve any ULARA water rights issues.

The party or non-party will also meet with the ULARA party that is affected with regard to water rights to discuss this matter.

#### **5.0 WATERMASTER MANAGEMENT OF GROUNDWATER QUALITY**

In addition to the Watermaster's responsibilities to administer the Judgment, manage water rights, ensure the basin objectives of a safe yield operation, the Watermaster is also responsible for managing the groundwater quality of the basin. This added responsibility of groundwater quality management is to ensure that the objectives of the California Regional Water Quality Control Board (RWQCB) are met with regard to their anti-degradation policy for groundwater.

Management of groundwater quality is an essential activity of the Watermaster due to the potential impact to each party's ability to utilize its water right.

Groundwater quality management of the basin consists of characterizing areas of groundwater contamination and its movement. The Watermaster coordinates with various agencies and parties to ensure that basin groundwater quality is protected and managed through activities that include, but are not limited to, the following:

- Investigation of sources of contamination.
- Periodic sampling and analysis of wells to monitor groundwater quality.

- Periodic measurement of groundwater elevations in wells to determine groundwater gradients and flow directions in the basin.
- Evaluation of groundwater gradients and flow directions to assess basin response to pumping and spreading activities.
- Reporting of current and projected pumping and spreading activities.
- Computer model simulations of projected pumping and spreading activities to assess the basin response to future operations.
- Review and evaluation of the effectiveness of the groundwater basin remediation projects to contain and remove contaminant plumes from the basin with a pump-and-treat technology.
- Review and evaluation of the effects of projects involving the spreading of reclaimed water to recharge the basin.
- Review and evaluation of proposed conjunctive use projects involving the spreading, storage, and future extraction of imported supplies.

#### **5.1 COORDINATED RESPONSE FOR GROUNDWATER CLEANUP AND CONTROL**

The Watermaster and the ULARA Administrative Committee (representing all parties within the ULARA) affirm their commitment to participate in a coordinated response to cleanup and control the spread of existing contamination of groundwater supplies within the SFB.

The ULARA Administrative Committee designates the Watermaster as the entity to coordinate party and non-party involvement in the effort to preserve and restore the quality of groundwater within ULARA. This anticipates that new or significantly increased extractions from existing SFB well fields to meet water supply demands may

include blending or treatment of groundwaters removed from areas of high-level degradation or contamination.

The Watermaster will also coordinate with other agencies for the following purposes:

- RWOCB  
To investigate sources or potential sources of groundwater contamination and to regulate surface water discharges including the spreading of reclaimed water to increase the water recharge to groundwater basins.
- California Department of Toxic Substance Control (DTSC)  
To investigate sources or potential sources of groundwater contamination.
- U. S. Environmental Protection Agency (EPA)  
To develop groundwater remediation projects and to conduct independent groundwater investigations.
- California Department of Health Services (DHS)  
To regulate groundwater production wells and treatment plants that produce a potable water supply for distribution by the water purveyor.

An important part of exercising these additional responsibilities and coordinating responses to contamination of the SFB water supplies is the collection, compilation and evaluation of essential data from producers within ULARA along with the distribution of such data to the proper state and federal agencies for review and comment.

## 5.2 **WELLS**

Each party or non-party shall provide to the Watermaster, for review and comment, plans and drawings for the following:

- Construction of any new well or well field.
- Deepening of any existing well.
- Modification of the perforations of the casing of any existing well.
- Plans for increasing or decreasing the effective extraction capacity of any existing well.
- Abandonment of any existing well.
- Data and other information that will enable the ULARA Watermaster to evaluate the potential impacts on groundwater pollution containment and cleanup.

These items will be reviewed by the Watermaster and evaluated as to whether significant adverse groundwater contaminant migration would be anticipated and to recommend alternatives as may be needed.

Factors and data included in the evaluation and modeling procedure may include the following:

- Groundwater quality data (i.e., historical and present).
- Water table elevations.
- Analysis of groundwater contaminant migration and flow patterns based on changes involving new wells, increased extraction, etc.

## 5.3 **OPERATING PRINCIPLES - SAN FERNANDO BASIN**

Any plans for new or significantly increased extraction by a producer in the SFB to meet water supply needs shall be submitted to the Watermaster for review and comment. The

proposed extraction activity will be evaluated to the extent feasible against good basin management objectives for maintaining and improving water quality, while operating the basin for water supply purposes.

The San Fernando Basin Groundwater Flow Model (Flow Model), developed as a part of the Remedial Investigation of Groundwater Contamination in the San Fernando Valley (RI), dated December 1992, will be utilized to evaluate that such new or increased extractions will not contribute significantly to the spread of groundwater contaminants. The evaluation will be completed using the Flow Model, which will be updated as new data and new modeling procedures become available. The accuracy of the Flow Model over time in predicting groundwater gradient patterns and the possible associated migration of contaminants will be discussed with the RWQCB and other interested agencies as needed, when requested.

#### **5.4 GROUNDWATER PUMPING AND SPREADING PLAN FOR THE UPPER LOS ANGELES RIVER AREA**

To assess the basin response to pumping and spreading operations by all the parties with regard to contaminant migration, all parties and non-parties who pump groundwater are required to submit annual reports by May 1 to the Watermaster that include the following:

- A 5-year projection of annual groundwater pumping rates and volumes.
- A 5-year projection of annual spreading rates and volumes.
- The most recent water quality data for each well.

After receiving the aforementioned annual reports, the Watermaster will prepare the annual Groundwater Pumping

and Spreading Plan for the Upper Los Angeles River Area (Pumping and Spreading Plan) by July 1. The intent of this plan is for the Watermaster to look into the future and evaluate the impact from the projected pumping and spreading by all the ULARA parties as it relates to the implementation of the Judgment, and to make recommendations for inclusion into the Pumping and Spreading Plan. The ULARA Administrative Committee will review and approve the final report prior to its release. This annual Pumping and Spreading Plan will be made available to the RWQCB and other interested agencies.

The Pumping and Spreading Plan provides a yearly assessment of the basin response to the 5-year basin operation by all parties and non-parties with regard to changes in groundwater quality. The data and projections provided by the parties and non-parties are used as data input for the Flow Model to perform the simulations that are used to evaluate the basin response.

In reviewing the assessment, the Watermaster may include recommendations regarding projected operations in the Pumping and Spreading report and advise the applicable parties and non-parties of the recommendations.

The following information and data should be considered in developing the Watermaster's Pumping and Spreading Plan:

- Ownership, location and construction details for relevant wells, both active and inactive.
- Capacity of producing wells, 5-year projected pumping volumes, and a monitoring program.

- The name and location of each groundwater producer's wells operated during the previous water year (as reported in the Annual Watermaster Service in the Upper Los Angeles Area Report - filed on May 1 of each year in the California Superior Court).
- The quantity data for groundwater pumped from each well.
- If available, chemical analysis for all groundwater in wells tested during the previous water year, including data for volatile organic compounds (VOCs).
- Groundwater level data for wells monitored during the previous water year.
- An annual status report on production wells as to pumping during the previous water year.
- Significant changes in groundwater pumping during the previous water year, including resulting water level changes (as provided in the ULARA Watermaster's Annual Report).
- A summary of groundwater treatment plant operations and amounts of groundwater treated.
- Planned construction and a time schedule for new water supply and monitoring wells, if any.
- Planned modifications and a time schedule for modification or abandonment of existing wells, if any.
- Planned groundwater treatment facilities and construction time schedule.
- Maps showing locations of existing and proposed wells, treatment and water supply distribution systems.

## **5.5 GROUNDWATER TREATMENT FACILITIES**

As permanent groundwater treatment facilities provide for increased pumping capacity in the ULARA, all pumping is to be conducted under the basin objectives of safe yield operation - to preserve a long-term balance of inflow and outflow and to preserve the groundwater storage credits of the parties. Thus, the Watermaster is required to account for all cleanup groundwater, the amount pumped, and its use or disposition. Groundwater consumptively used or discharged from ULARA by a party or non-party must be charged to a party's pumping right. Also, if the treated groundwater is returned to groundwater storage, the initial pumping of the groundwater would be considered non-consumptive, and not charged to a party's entitlement. However, in the event that this does not restore a party's pumping, returning groundwater to storage or discharging the groundwater to a storm drain is not consistent with the intent of the Judgment, and the Watermaster will not approve it.

### **5.5.1 TREATED GROUNDWATER DELIVERED FOR CONSUMPTIVE USE**

If the treated groundwater is delivered for direct consumptive use, either on site or off site, the cleanup pumper must establish an agreement with the Watermaster and the party whose pumping rights may be affected to ensure that all potentially impacted parties are made whole. If the groundwater is used on site, the cleanup pumper would be required to financially compensate the party whose pumping right is affected. If the treated groundwater is used off site, an agreement would have to be established between the cleanup pumper and the water purveyor responsible for supplying water to that area.

#### 5.5.2 TREATED WATER DISCHARGED TO A STORM DRAIN

If the treated groundwater is discharged to a storm drain, it is presumed wasted from the ULARA as surface flow. Before such a method of disposal will be considered, the cleanup pumper would have to receive approval from the Watermaster and secure an agreement with the party with water rights within the ULARA in which the treated groundwater is delivered for consumptive use. Also, the approval of the Los Angeles Regional Water Quality Control Board would be required to discharge the treated groundwater to the storm drain.

#### 5.5.3 MONTHLY REPORTING OF METERED AMOUNTS

Consistent with Section 6.0 of these Policies and Procedures, each cleanup pumper is required to report monthly to the ULARA Watermaster the metered amounts of the following:

- Groundwater pumped.
- Treated groundwater returned to groundwater storage by re-injection.
- Treated groundwater discharged to the storm drains or elsewhere.
- Treated groundwater delivered for direct consumptive use.
- The amounts of water spread in spreading facilities.

#### 5.5.4 NOTIFICATION OF PROPOSED GROUNDWATER TREATMENT FACILITIES

During the initial stages of planning all parties and nonparties will notify the Watermaster of their intent to construct any facility to remove

volatile organic compounds (VOCs) or any other contaminant from groundwater produced from the SFV. This notice will include the following information:

- The intended location and a description of the facility (type of treatment).
- The capacity in gallons per minute.
- The expected concentration of all identified contaminants in the groundwater to be treated.
- The intended disposition of all water to be treated.
- The expected start-up date and potential period of time over which the treatment facility will operate.

All operators of treatment facilities for wells in the ULARA will report to the Watermaster, annually, the following information:

- Name (or other designation) of the treatment facility;
- Type of treatment;
- Quantity of groundwater treated during the year;
- Quality of groundwater before treatment, and after treatment, ie., influent quality and effluent quality, at the beginning and at the end of the reporting period and/or treatment process;
- Proposed disposal of treated groundwater;
- Quantities of contaminants removed from the groundwater during the year; and
- Record any correction or modification made to the extraction and treatment system.

## **6.0 ULARA WATERMASTER AND ADMINISTRATIVE COMMITTEE RULES**

### **6.1 FUNCTION AND PURPOSE OF ADMINISTRATIVE COMMITTEE**

An Administrative Committee composed of representatives from the five major parties has been formed to advise with, request, consent to, and review actions of the ULARA Watermaster. In performing said functions, the ULARA Administrative Committee shall be consulted by the ULARA Watermaster and shall approve all discretionary ULARA Watermaster determinations. In the event of disagreement between the ULARA Watermaster and the ULARA Administrative Committee, the matter shall be submitted to the Court for review and resolution.

### **6.2 MEMBERSHIP OF ADMINISTRATIVE COMMITTEE**

#### **6.2.1 MEMBERSHIP**

Members of the ULARA Administrative Committee shall be designated in writing and filed with the ULARA Watermaster by each party having a right to extract groundwater from the ULARA. The ULARA Watermaster shall maintain and periodically circulate a list of all ULARA Administrative Committee members, the party represented, and the appropriate names, addresses and telephone numbers of ULARA Participants for purposes of notice or other communication.

#### **6.2.2 ALTERNATES**

Any appointing party may designate an alternate to act on the ULARA Administrative Committee in the absence of the regular member.

#### **6.2.3 TERM**

Each member or alternate of the ULARA Administrative Committee shall serve at the will of the appointing party and may be removed or replaced by a written notice from such party to the ULARA Watermaster.

#### **6.2.4 NONPARTICIPATION**

Any eligible party may, by written advice to the ULARA Watermaster, elect not to participate in the ULARA Administrative Committee. While such election not to participate is in effect, such party shall not participate in any vote affecting the basin or basins in which it has a right. Such nonparticipation shall not prejudice or impair the rights of such party under the ULARA Judgment.

### **6.3 OFFICERS OF ADMINISTRATIVE COMMITTEE**

#### **6.3.1 OFFICERS AND DUTIES**

The ULARA Administrative Committee shall elect at its annual April meeting, from its membership, a chairman and vice chairman. The ULARA Watermaster shall act as secretary. Said officers shall perform the duties usual to their office.

### **6.4 MEETINGS OF THE ADMINISTRATIVE COMMITTEE**

#### **6.4.1 ANNUAL MEETING**

An Annual April Meeting of the ULARA Administrative Committee shall be held at the ULARA Watermaster's offices at 9:30 a.m. in April of each year or at such other convenient time as may be set by the ULARA Watermaster. At such meeting, the agenda

shall include election of officers and approval of the ULARA Watermaster Report.

#### 6.4.2 MONTHLY MEETINGS

Monthly meetings shall be held at the call of the ULARA Watermaster, at a time and place designated in the call. Fifteen days' notice by FAX or in writing shall be given of any such monthly meeting and shall contain a proposed agenda describing the monthly meeting. No ULARA Watermaster discretionary action shall be authorized or approved at such meeting except as to agenda items set forth in the notice of such meeting.

#### 6.4.3 WAIVER OF NOTICE

Notice of meeting may be waived in writing by each member entitled to act on matters considered thereat, and in such event, said meeting shall be valid as though duly noticed.

#### 6.4.4 VOTING AND ACTION

Each member of the ULARA Administrative Committee, or his alternate in event of his absence, shall have one vote. Action of the ULARA Administrative Committee shall be by unanimous vote of the members who represent the five major parties in the basin or basins affected by such action (Section 8.3.2 of the Judgment). The following parties shall be deemed affected by actions in the respective basins:

Los Angeles

San Fernando, Sylmar, and Eagle Rock Basins

Glendale

## San Fernando and Verdugo Basins

### Burbank

San Fernando Basin

### San Fernando

Sylmar Basin

### Crescenta Valley

Verdugo Basin

Santiago Estates (formerly Meurer Engineering)  
Sylmar Basin - Meurer Engineering notified the  
Watermaster that they would relinquish  
participation in the ULARA Administrative  
Committee, and thus their voting right.

#### 6.4.5 ACTION WITHOUT MEETING

Any action which could be taken at a meeting of the  
ULARA Administrative Committee may be taken without  
a meeting if assent thereto in writing is executed  
by all parties entitled to vote on such matters and  
said assent is filed with the ULARA Watermaster.

#### 6.5 ULARA WATERMASTER RULES AND GUIDELINES

The "Policies and Procedures of the ULARA Watermaster"  
serve as the rules and guidelines of the Watermaster in  
protecting the groundwater basins of ULARA.

#### 7.0 REPORTS TO THE ULARA WATERMASTER

##### 7.1 MONTHLY REPORTS

##### 7.1.1 FORM OF REPORTS

The ULARA Watermaster will provide to each party and non-party producing groundwater, current Monthly Water Production Report forms (refer to sample of forms in Appendix B herein).

#### **7.1.2 SPECIFICATIONS IN REPORT**

Those receiving such Monthly Water Production Report shall list extractions, by individual wells, for the full calendar month. To the extent that any party and non-party shall have optional bases for extractions, such report shall designate the category of water to which the ULARA Watermaster is to charge or credit each such extraction. Such categories may include "import return water"; "native waters"; "physical solution water"; "stored water"; (in the case of Los Angeles) "underlying Pueblo water"; "dewatering pumping"; and "pumping for groundwater cleanup".

#### **7.1.3 CHANGE IN WELL STATUS**

Any changes in well status (water wells drilled, capped, destroyed, or wells having meter problems) shall be noted on said Monthly Water Production Reports.

#### **7.1.4 FILING AND COPIES**

Each party and non-party extracting groundwater shall file its Monthly Water Production Report with the ULARA Watermaster. Each private party and non-party extracting groundwater under the physical solution (including nonconsumptive water users in the SFB) and pumping for groundwater cleanup, shall file its Monthly Production Reports with the ULARA Watermaster, and furnish a copy of the report to the appropriate City (Los Angeles, Burbank or

Glendale) chargeable for such water use. All of the Monthly Reports shall be filed on or before the 15th of the month following.

#### **7.2 SEMIANNUAL REPORTS WATER LEVEL MEASUREMENTS**

Semiannual water level measurements of all wells shall be taken by each party, during the months April and October of each year, and shall be reported to the ULARA Watermaster in following June and December. Monthly and bi-monthly water level measurements should be made by parties and non-parties (as needed), dealing with groundwater cleanup in the San Fernando Basin. Other items may be added to these reports at the discretion of the ULARA Watermaster.

#### **7.3 ANNUAL REPORTS**

Each party shall file an Annual Report with the ULARA Watermaster on or before February 15 for the preceding Water Year. Said annual reports shall contain aggregate reports for such party by months, separately for each basin, showing:

- Delivered Water.
- Total Amount of Reclaimed Water Treated.
- Total Amount of Reclaimed Water Delivered for Use.
- Imported Water.
- Exported Water.
- Sewage Exported.
- Other items of Data (Inflow and outflow to the basins of ULARA).

#### **8.0. REPORTS BY THE ULARA WATERMASTER**

##### **8.1 MONTHLY REPORTS - ULARA WATERMASTER**

**8.1.1 ULARA WATERMASTER SHALL PROVIDE MONTHLY REPORTS TO PARTIES**

The ULARA Watermaster shall provide to each party having extraction rights, a Monthly ULARA Watermaster Report (refer to attached forms - Appendix B) showing the production for the previous month, and the cumulative production for the water year for each well, and an accounting for each water account (safe yield water, stored water, and physical solution water) showing the amount of pumping credit, debit, and the balance available for extraction.

**8.1.2 ULARA WATERMASTER SHALL PROVIDE MONTHLY REPORTS TO PRIVATE PARTIES AND NON-PARTIES**

The ULARA Watermaster shall provide to each private party and nonparty extracting groundwater under the physical solution, nonconsumptive water users, and groundwater pumpers dealing with groundwater contamination in the SFB a monthly report (Attached Form W/M-2) and furnish a copy of such reports to the appropriate City (Los Angeles, Burbank, or Glendale) held chargeable for such water use.

**8.2 ANNUAL REPORTS - ULARA Watermaster**

**8.2.1 ULARA WATERMASTER SHALL PROVIDE AN ANNUAL REPORT**

The ULARA Watermaster shall, on or about May 1 of each year, prepare and provide each party and the Los Angeles Superior Court with an Annual ULARA Watermaster Report for the preceding water year on hydrologic conditions and ULARA Watermaster activities. This report shall contain data and information on the following items:

### Water Supply, Operations, and Hydrologic Conditions

- Precipitation.
- Runoff and Outflow from ULARA.
- Components of Surface Flow.
- Groundwater Recharge.
- Groundwater Extractions.
- Imports and Exports of Water.
- Water Reclamation.
- Water Level Elevations.
- Groundwater Storage.
- Water Supply and Disposal - Basin.
- Extraction Rights and Stored Water Credit - Basin Summaries.

### Water Quality, Treatment, and Remedial Investigation Activities

- Water Quality.
- Groundwater Quality Management Plan.
- Underground Tanks, Sumps, and Pipelines.
- Private Sewage Disposal Systems (PSDS).
- Landfills.
- San Fernando Valley Remedial Investigation.
- (RI) and Related Activities.
- Water Treatment.
- Groundwater Quality Investigations.

### Ownership and Location of New Wells

#### **8.2.2 DRAFT ANNUAL REPORT TO ULARA ADMINISTRATIVE COMMITTEE**

The ULARA Administrative Committee members shall receive draft copies on or about March 15 to assure review and approval of the Annual ULARA Watermaster Report prior to its release.

**8.2.3 DRAFT ANNUAL GROUNDWATER PUMPING AND SPREADING PLAN  
TO ULARA ADMINISTRATIVE COMMITTEE**

The ULARA Administrative Committee members shall receive draft copies on or about June 15 to assure review and approval of the Annual ULARA Groundwater Pumping and Spreading Plan prior to its release.

**8.2.4 DATA FOR INVOICE OF PHYSICAL SOLUTION AND  
GROUNDWATER CLEANUP WATER**

The ULARA Watermaster shall, at the end of each water year, prepare and forward data sufficient for invoicing all physical solution and groundwater cleanup water extracted.

**9.0 INFORMATION AVAILABLE RELATED TO PUMPING AND BASIN  
MANAGEMENT - SAN FERNANDO VALLEY**

As a part of each City's or agency's (Los Angeles, Glendale, Burbank, San Fernando and CVWD) water utility activities, three categories of information are available and will be made available to the LARWQCB and other interested agencies related to groundwater pumping and basin management, upon request. These categories include: basic data, review documents and additional items of information. A listing of the type of information included is as follows:

**9.1 BASIC DATA - SAN FERNANDO VALLEY**

- Water quality data.
- Groundwater Pumping - assigned water rights and physical solutions rights.
- Reclaimed water use and general operation data.
- Five-year proposed plans for pumping.
- Capital plans - production and treatment.
- Information on projected spreading projects.

## **9.2 REVIEW DOCUMENTS - SAN FERNANDO VALLEY**

- All California Environmental Quality Act (CEQA) documents should be available to the ULARA Watermaster and the LARWQCB, and other interested agencies.
- Plans that parties and non-parties have for groundwater production regarding capital projects, included should be alternatives considered in addition to the recommended projects.
- Fact sheets regarding project costs and time schedules.
- Special studies made - aquifer tests and water quality evaluation.
- All other data and information provided to ULARA Watermaster.

## **9.3 ADDITIONAL ITEMS OF INFORMATION - SAN FERNANDO VALLEY**

- ULARA Watermaster reports dealing with groundwater production and the impact on the various basins through evaluation and/or modeling. This would include anticipated water level and groundwater quality changes.
- All reports and documents related to the implementation of projects should be made available for review to the LARWQCB and other interested parties.
- Annual ULARA Watermaster Report (May 1 - each year).
- ULARA Watermaster meeting announcements and recorded minutes.
- Other special reports of the ULARA Watermaster and Parties related to pumping activities should be made available for review to the LARWQCB and other interested parties.

MLB:ptk

A:WM-P&P.MLB

A:WM-P&P.TOC

A:WM-P&P.DIV

A:WM-P&P.RPT

2/10/98

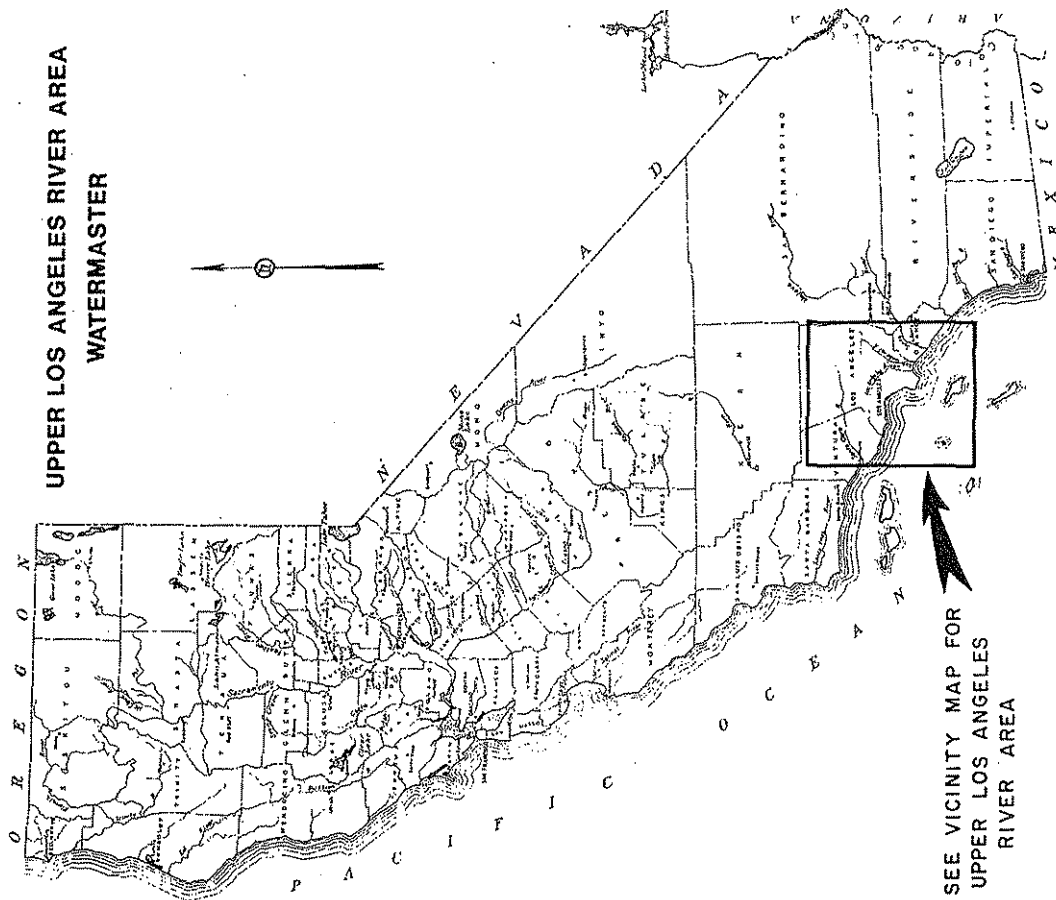
APPENDIX A

MAPS OF ULARA

PUBLIC AGENCY WATER SERVICE AREAS

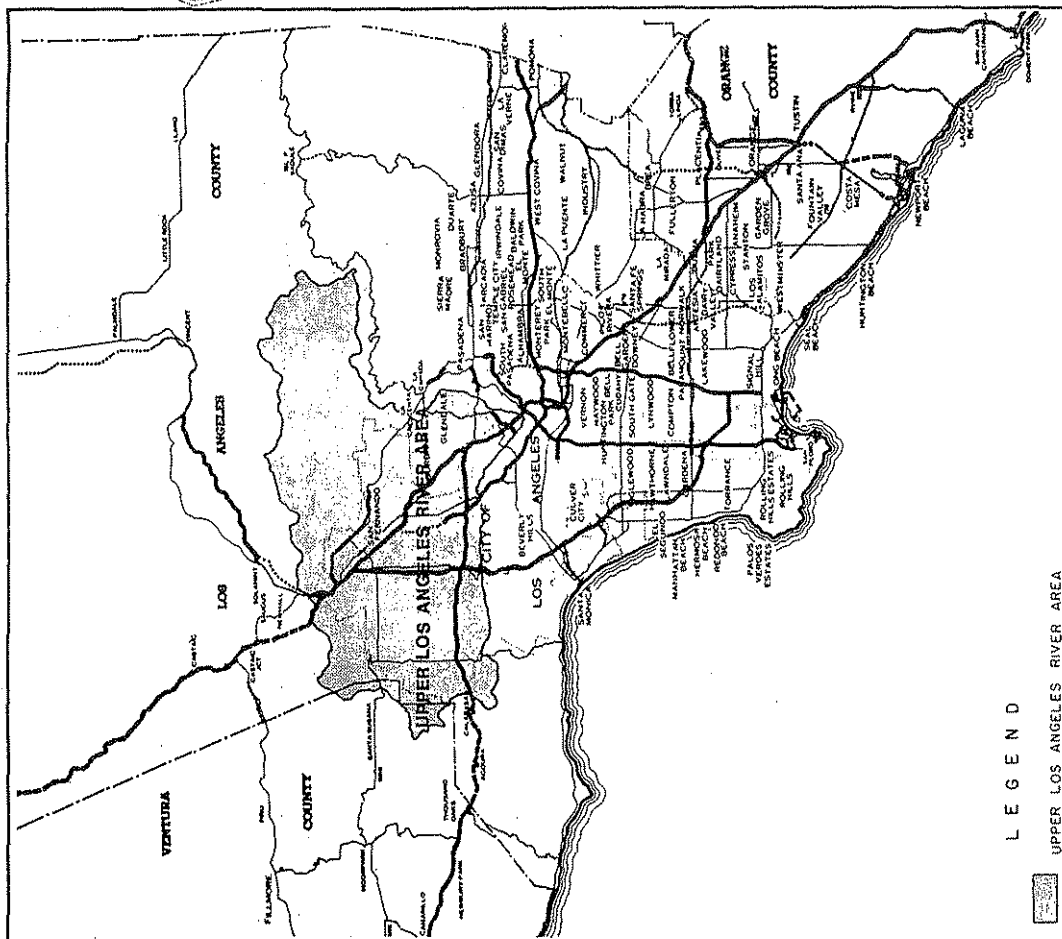
AND PRIVATE PARTIES

# UPPER LOS ANGELES RIVER AREA WATERMASTER



LOCATION MAP

SEE VICINITY MAP FOR  
UPPER LOS ANGELES  
RIVER AREA

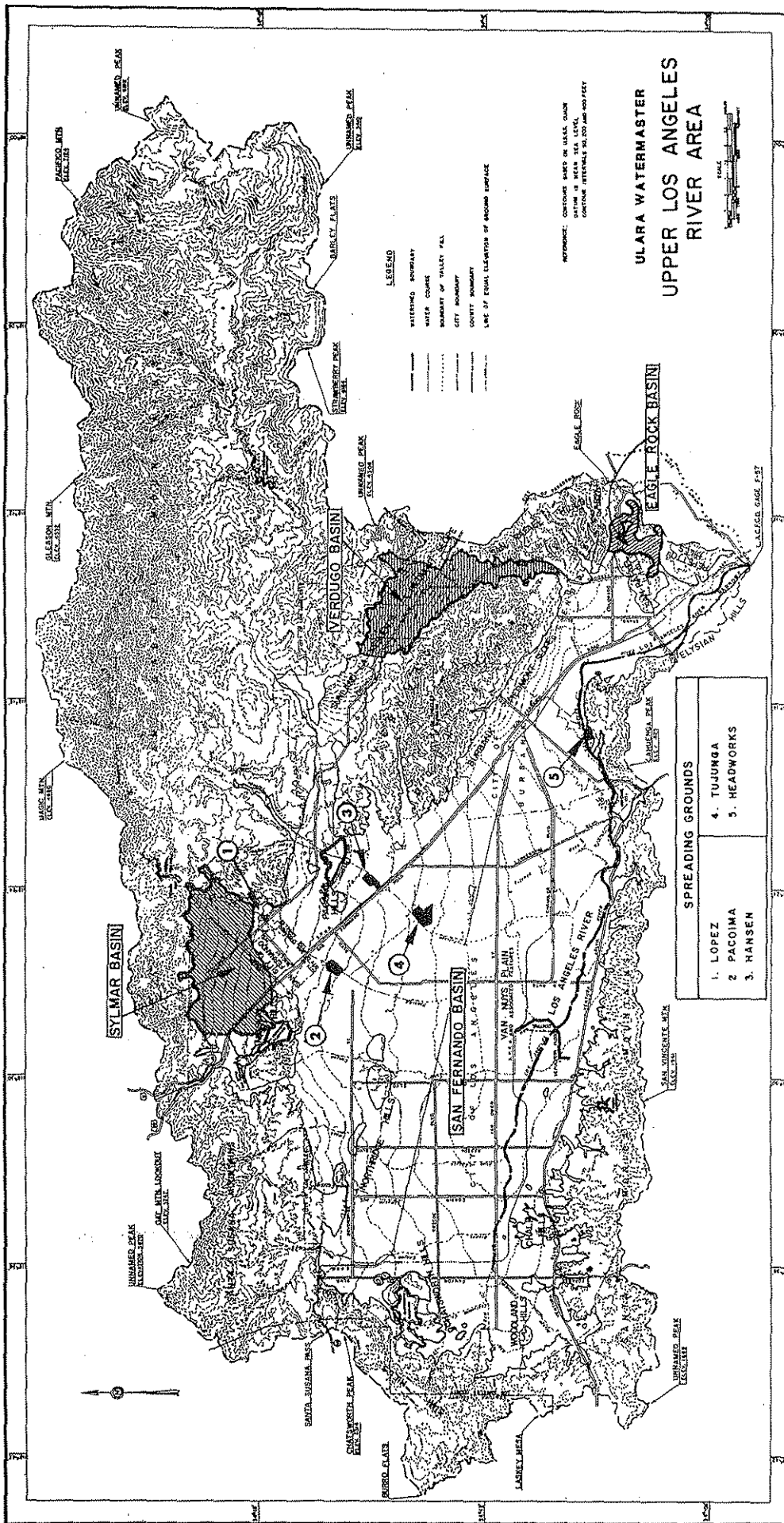


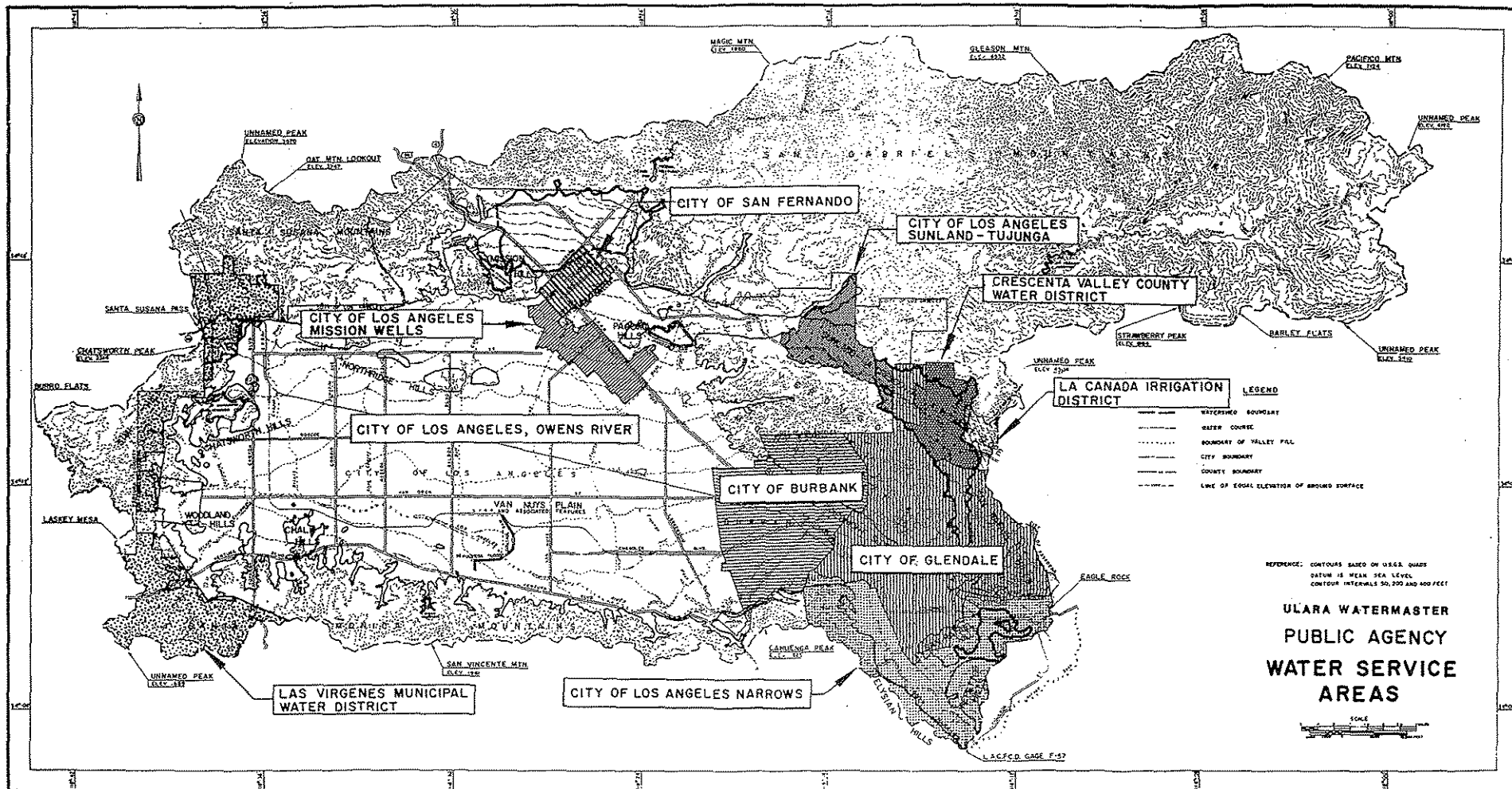
VICINITY MAP  
SCALE

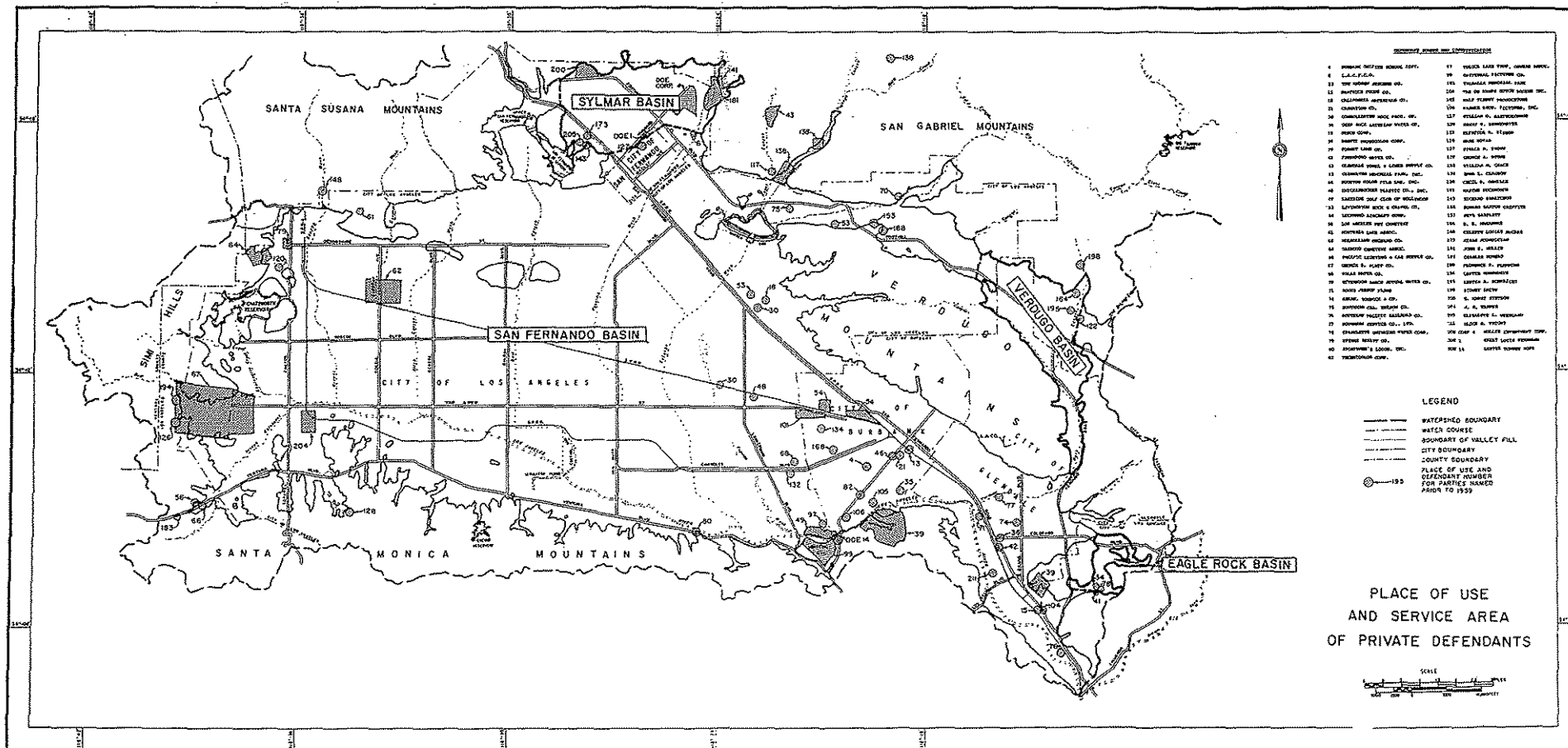
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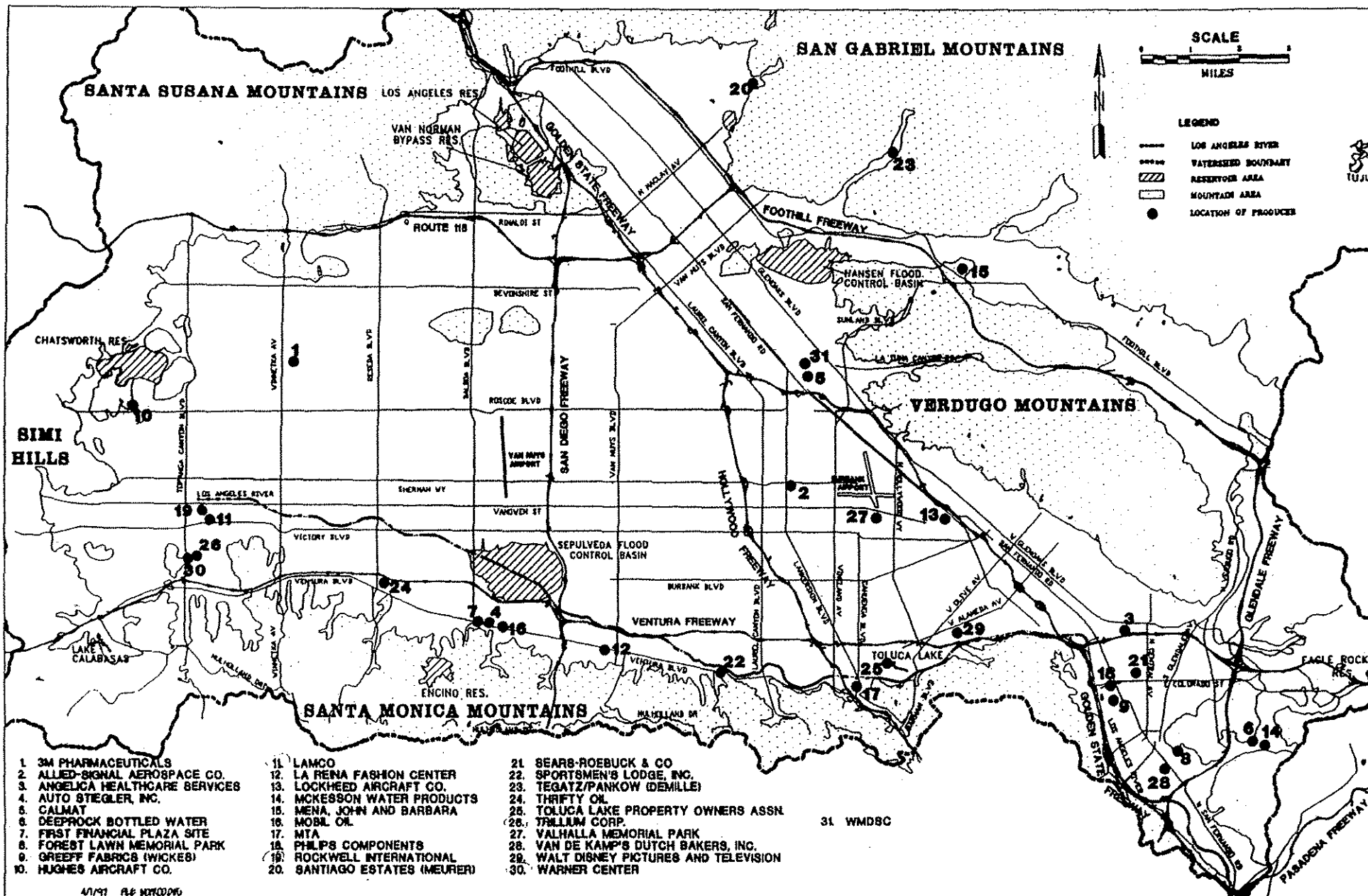
## LEGEND

UPPER LOS ANGELES RIVER AREA









1995-96 Water Year  
ULARA Watermaster  
Report

## Upper Los Angeles River Area: Locations of Individual Producers

PLATE  
3

APPENDIX B

WATER PRODUCTION REPORTS -  
MONTHLY - ACCUMULATIVE - AND  
ULARA WATERMASTER ACCOUNTS

**ULA WATERMASTER SERVICE ARE.**  
P.O. Box 111 — Los Angeles, Calif. 90051  
**MONTHLY WATER PRODUCTION REPORT\***

Basin: SAN FERNANDO

Party: CITY OF BURBANK

Well Field: \_\_\_\_\_

Report for month of August 19 97

Owner No. (1)	LACFCD No. (2)	Water Meter Readings (3)	No. of Meter Turn-overs (4)	Units (5)	Conversion Factor (6)	Ac-Ft (7)
6A	3841C	End <u>382,714</u> Begin <u>382,714</u> Diff. <u>0</u>		1000 FT <sup>3</sup>	.02296	<u>0</u>
7	3882P	End <u>848,953</u> Begin <u>839,205</u> Diff. <u>9,748</u>		100 FT <sup>3</sup>	<del>.002296</del> <u>.003069</u>	<u>29.92</u>
9	3851B	End _____ Begin _____ Diff. _____		100 FT <sup>3</sup>	.002296	
10R	3851C	End <u>334,004</u> Begin <u>334,004</u> Diff. <u>0</u>		100 FT <sup>3</sup>	.002296	<u>0</u>
11A	3851J	End <u>582,138</u> Begin <u>582,138</u> Diff. <u>0</u>		100 FT <sup>3</sup>	.002296	<u>0</u>
12	3851E	End <u>536,088</u> Begin <u>536,088</u> Diff. <u>0</u>		100 FT <sup>3</sup>	.002296	<u>0</u>
13A	3851K	End <u>444,898</u> Begin <u>444,898</u> Diff. <u>0</u>		100 FT <sup>3</sup>	.002296	<u>0</u>
Grand - TOTAL						<u>58.07</u>

Remarks: \_\_\_\_\_

\* Please fill in this report on the last day of the month and mail the original to Mr. Melvin Blevins, Watermaster, at the above address.

APPROVED BY: Fred Rantz

DATE: 9/5/97

ULARA WATERMASTER SERVICE  
SAN FERNANDO BASIN

MONTHLY AND ACCUMULATIVE WATER PRODUCTION SUMMARY  
1996-97 WATER YEAR

Month	Owner Well No.	LACFCD Well No.	End of Month Read (cubic feet x 100)*	Production for Month (cubic feet x 100)*	Conversion Factor to acre-feet	Production	
						Monthly (acre-feet)	Annual (acre-feet)
Jun-97	6A	3841C	382,714	0	2.30E-02	0.00	0.00
	7	3882P	795,235	24,898	3.07E-03	76.41	669.27
	10R	3851C	334,004	0	2.30E-03	0.00	0.00
	11A	3851J	582,138	0	2.30E-03	0.00	0.00
	12	3851E	536,088	0	2.30E-03	0.00	0.00
	13A	3851K	444,898	0	2.30E-03	0.00	0.00
	14A	3850K	154,846	0	2.30E-03	0.00	0.00
	15	3882T	1,378,500	26,418	3.07E-03	81.08	451.89
	17	3841F	271,297	0	2.30E-03	0.00	0.00
	18	3841G	627,559	0	2.30E-03	0.00	0.00
Total:						157.49	1,121.16
Jul-97	6A	3841C	382,714	0	2.30E-02	0.00	0.00
	7	3882P	839,205	43,970	3.07E-03	134.94	804.21
	10R	3851C	334,004	0	2.30E-03	0.00	0.00
	11A	3851J	582,138	0	2.30E-03	0.00	0.00
	12	3851E	536,088	0	2.30E-03	0.00	0.00
	13A	3851K	444,898	0	2.30E-03	0.00	0.00
	14A	3850K	154,846	0	2.30E-03	0.00	0.00
	15	3882T	1,418,144	39,644	3.07E-03	121.67	573.56
	17	3841F	271,297	0	2.30E-03	0.00	0.00
	18	3841G	627,559	0	2.30E-03	0.00	0.00
Total:						256.61	1,377.77
Aug-97	6A	3841C	382,714	0	2.30E-02	0.00	0.00
	7	3882P	848,953	9,748	3.07E-03	29.92	834.13
	10R	3851C	334,004	0	2.30E-03	0.00	0.00
	11A	3851J	582,138	0	2.30E-03	0.00	0.00
	12	3851E	536,088	0	2.30E-03	0.00	0.00
	13A	3851K	444,898	0	2.30E-03	0.00	0.00
	14A	3850K	154,846	0	2.30E-03	0.00	0.00
	15	3882T	1,427,316	9,172	3.07E-03	28.15	601.71
	17	3841F	271,297	0	2.30E-03	0.00	0.00
	18	3841G	627,559	0	2.30E-03	0.00	0.00
Total:						58.07	1,435.84

\* Well 6A reads in cubic feet x 1000, and Wells 7 and 15 read in gallons x 1000.

## Summary

ULARA WATERMASTER SERVICE														
SAN FERNANDO BASIN														
SUMMARY OF PUMPING ACTIVITIES														
1996-97 WATER YEAR														
Party: City of Burbank														
164 West Magnolia Blvd.														
Burbank, CA 91503														
Possible Scenarios For Burbank Water						First			Second ***			Third		
Date	City of Burbank	Lockheed Burbank OU	Valhalla	Operation Loss Basin Account	Subtotal	Import Return* (acre-feet)			Stored Water Credit** (acre-feet)			Physical Solution Water (acre-feet)		
						Credit	Debit	Balance	Credit	Debit	Balance	Credit	Debit	Balance
Oct-96	185.49	143.59	13.23	-143.59	198.72	4,625.00	198.72	4,426.28	61,415.00		61,415.00	4,200.00	-----	4,200.00
		****												
Nov-96	202.98	373.07	12.66	-127	461.71	4,426.28	461.71	3,964.57	61,415.00	-----	61,415.00	4,200.00	-----	4,200.00
		****												
Dec-96	176.29	650.82	4.21	0.00	831.32	3,964.57	831.32	3,133.25	61,415.00	-----	61,415.00	4,200.00	-----	4,200.00
Jan-97	111.04	587.70	0.00	0.00	698.74	3,133.25	698.74	2,434.51	61,415.00	-----	61,415.00	4,200.00	-----	4,200.00
Feb-97	0.00	823.97	1.55	0.00	825.52	2,434.51	825.52	1,608.99	61,415.00	-----	61,415.00	4,200.00	-----	4,200.00
Mar-97	0.00	912.93	38.90	0.00	951.83	1,608.99	951.83	657.16	61,415.00	-----	61,415.00	4,200.00	-----	4,200.00
Apr-97	28.27	1013.60	18.69	0.00	1,060.56	657.16	1,060.56	-403.40	61,415.00	-----	61,415.00	4,200.00	-----	4,200.00
May-97	259.60	950.37	47.79	0.00	1,257.76	-403.40	1,257.76	-1,661.16	61,415.00	-----	61,415.00	4,200.00		4,200.00
Jun-97	157.49	1000.99	51.42	0.00	1,209.90	-1,661.16	1,209.90	-2,871.06	61,415.00	-----	61,415.00	4,200.00		4,200.00
Jul-97	256.61	1026.68	51.42	0.00	1,334.71	-2,871.06	1,334.71	-4,205.77	61,415.00	-----	61,415.00	4,200.00		4,200.00
Aug-97	58.07	1049.94	51.42	0.00	1,159.43	-4,205.77	1,159.43	-5,365.20	61,415.00	-----	61,415.00	4,200.00		4,200.00
Sep-97	239.25	1017.40	51.42	0.00	1,308.07	-5,365.20	1,308.07	-6,673.27	61,415.00			4,200.00		4,200.00
Total	1675.09	9551.06	342.71	-270.59	11,298.27									
* Extraction Right for the 96-97 Water Year.														
** As of October 1, 1996.														
*** Option Stored Water Credit or Physical Solution Water														
**** Development Water 10/96 total amount pumped 143.59, 11/96 partial amount pumped equals development water 127.0														

APPENDIX C

ULARA JUDGMENT - JANUARY 26, 1979

SECTIONS 1 THROUGH 10

January 26, 1979

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1 1. RECITALS

2 This matter was originally tried before the Honorable Edmund  
3 M. Moor, without jury, commencing on March 1, 1966, and concluding  
4 with entry of Findings, Conclusions and Judgment on March 14,  
5 1968, after more than 181 trial days. Los Angeles appealed from  
6 said judgment and the California Supreme Court, by unanimous  
7 opinion, (14 Cal. 3d 199) reversed and remanded the case; after  
8 trial of some remaining issues on remand, and consistent with the  
9 opinion of the Supreme Court, and pursuant to stipulations, the  
10 Court signed and filed Findings of Fact and Conclusions of Law.  
11 Good cause thereby appearing,

12 IT IS ORDERED, ADJUDGED AND DECREED:

13  
14 2. DEFINITIONS AND ATTACHMENTS

15 2.1 Definitions of Terms. As used in this Judgment, the  
16 following terms shall have the meanings herein set forth:

17 [1] Basin or Ground Water Basin -- A subsurface geo-  
18 logic formation with defined boundary conditions, containing  
19 a ground water reservoir, which is capable of yielding a sig-  
20 nificant quantity of ground water.

21 [2] Burbank -- Defendant City of Burbank.

22 [3] Crescenta Valley -- Defendant Crescenta Valley  
23 County Water District.

24 [4] Colorado Aqueduct -- The aqueduct facilities and  
25 system owned and operated by MWD for the importation of water  
26 from the Colorado River to its service area.

27 [5] Deep Rock -- Defendant Evelyn M. Pendleton, dba  
28 Deep Rock Artesian Water Company.

1 is derived from sources outside said watershed. Said term  
2 does not include inter-basin transfers wholly within ULARA.

3 [18] In Lieu Storage -- The act of accumulating ground  
4 water in a basin by intentional reduction of extractions of  
5 ground water which a party has a right to extract.

6 [19] Lockheed -- Defendant Lockheed Aircraft Corporation.

7 [20] Los Angeles -- Plaintiff City of Los Angeles,  
8 acting by and through its Department of Water and Power.

9 [21] Los Angeles Narrows -- The physiographic area  
10 northerly of Gage F-57 bounded on the east by the San Rafael  
11 and Repetto Hills and on the west by the Elysian Hills,  
12 through which all natural outflow of the San Fernando Basin  
13 and the Los Angeles River flow en route to the Pacific Ocean.

14 [22] MWD -- The Metropolitan Water District of Southern  
15 California, a public agency of the State of California.

16 [23] Native Safe Yield -- That portion of the safe  
17 yield of a basin derived from native waters.

18 [24] Native Waters -- Surface and ground waters derived  
19 from precipitation within ULARA.

20 [25] Overdraft -- A condition which exists when the  
21 total annual extractions of ground water from a basin exceed  
22 its safe yield, and when any temporary surplus has been  
23 removed.

24 [26] Owens-Mono Aqueduct -- The aqueduct facilities  
25 owned and operated by Los Angeles for importation to ULARA  
26 water from the Owens River and Mono Basin watersheds easterly  
27 of the Sierra-Nevada in Central California.

28 [27] Private Defendants -- Collectively, all of those

1 accumulate by In Lieu Storage. Said ground waters are dis-  
2 tinguished and separately accounted for in a ground water  
3 basin, notwithstanding that the same may be physically com-  
4 mingled with other waters in the basin.

5 [37] Sylmar Basin -- The separate ground water basin  
6 underlying the area indicated as such on Attachment "A".

7 [38] Temporary Surplus -- The amount of ground water  
8 which would be required to be removed from a basin in order  
9 to avoid waste under safe yield operation.

10 [39] Toluca Lake -- Defendant Toluca Lake Property  
11 Owners Association.

12 [40] ULARA or Upper Los Angeles River Area -- The Upper  
13 Los Angeles River watershed, being the surface drainage area  
14 of the Los Angeles River tributary to Gage F-57.

15 [41] Underlying Pueblo Waters -- Native ground waters  
16 in the San Fernando Basin which underlie safe yield and  
17 stored waters.

18 [42] Valhalla -- Collectively, Valhalla Properties,  
19 Valhalla Memorial Park, Valhalla Mausoleum Park.

20 [43] Van de Kamp -- Defendant Van de Kamp's Holland  
21 Dutch Bakers, Inc.

22 [44] Verdugo Basin -- The separate ground water basin  
23 underlying the area shown as such on Attachment "A".

24 [45] Water Year -- October 1 through September 30 of  
25 the following calendar year.

26 Geographic Names, not herein specifically defined, are used to  
27 refer to the places and locations thereof as shown on Attachment "A".

28 2.2 List of Attachments. There are attached hereto the .

1 total of 329,000 acres, consisting of approximately 123,000  
2 acres of valley fill area and 206,000 acres of hill and  
3 mountain area, located primarily in the County of Los Angeles,  
4 with a small portion in the County of Ventura. Its boundaries  
5 are shown on Attachment "A". The San Gabriel Mountains form  
6 the northerly portion of the watershed, and from them two  
7 major washes--the Pacoima and the Tujunga--discharge southerly  
8 Tujunga Wash traverses the valley fill in a southerly direc-  
9 tion and joins the Los Angeles River, which follows an east-  
10 erly course along the base of the Santa Monica Mountains  
11 before it turns south through the Los Angeles Narrows. The  
12 waters of Pacoima Wash as and when they flow out of Sylmar  
13 Basin are tributary to San Fernando Basin. Lesser tributary  
14 washes run from the Simi Hills and the Santa Susana Mountains  
15 in the westerly portion of the watershed. Other minor washes,  
16 including Verdugo Wash, drain the easterly portion of the  
17 watershed which consists of the Verdugo Mountains, the Elysian,  
18 San Rafael and Repetto Hills. Each of said washes is a non-  
19 perennial stream whose flood flows and rising waters are  
20 naturally tributary to the Los Angeles River. The Los Angeles  
21 River within ULARA and most of said tributary natural washes  
22 have been replaced, and in some instances relocated, by  
23 concrete-lined flood control channels. There are 85.3 miles  
24 of such channels within ULARA, 62% of which have lined con-  
25 crete bottoms.

26 4.1.2 San Fernando Basin. San Fernando Basin is the  
27 major ground water basin in ULARA. It underlies 112,047 acres  
28 and is located in the area shown as such on Attachment "A".

1 south and southwest, the San Rafael Hills on the southeast and  
2 the topographic divide on the east between the drainage area  
3 that is tributary to the Tujunga Wash to the west and Verdugo  
4 Wash to the east, the ground water divide on the west between  
5 Monk Hill-Raymond Basin and the Verdugo Basin on the east and  
6 a submerged dam constructed at the mouth of Verdugo Canyon on  
7 the south.

8 4.1.5 Eagle Rock Basin. Eagle Rock Basin underlies 807  
9 acres and is located in the area shown as such on Attachment  
10 "A". Boundary conditions of Eagle Rock Basin consist of the  
11 San Rafael Hills on the north and west and the Repetto Hills  
12 on the east and south with a small alluvial area to the  
13 southeast consisting of a topographic divide.

#### 14 4.2 Hydrology.

15 4.2.1 Water Supply. The water supply of ULARA consists  
16 of native waters, derived from precipitation on the valley  
17 floor and runoff from the hill and mountain areas, and of im-  
18 ported water from outside the watershed. The major source of  
19 imported water has been from the Owens-Mono Aqueduct, but  
20 additional supplies have been and are now being imported  
21 through MWD from its Colorado Aqueduct and the State Aqueduct.

22 4.2.2 Ground Water Movement. The major water-bearing  
23 formation in ULARA is the valley fill material bounded by  
24 hills and mountains which surround it. Topographically, the  
25 valley-fill area has a generally uniform grade in a southerly  
26 and easterly direction with the slope gradually decreasing  
27 from the base of the hills and mountains to the surface  
28 drainage outlet at Gage F-57. The valley fill material is a

1 each meets the hydrologic definition of "basin." The ex-  
2 tractions of water in the respective basins affect the other  
3 water users within that basin but do not significantly or  
4 materially affect the ground water levels in any of the other  
5 basins. The underground reservoirs of Eagle Rock, Verdugo and  
6 Sylmar Basins are independent of one another and of the San  
7 Fernando Basin.

8 4.2.4 Safe Yield and Native Safe Yield. The safe yield  
9 and native safe yield, stated in acre feet, of the three  
10 largest basins for the year 1964-65 was as follows:

11	<u>Basin</u>	<u>Safe Yield</u>	<u>Native Safe Yield</u>
12	San Fernando	90,680	43,660
13	Sylmar	6,210	3,850
14	Verdugo	7,150	3,590

15 The safe yield of Eagle Rock Basin is derived from imported  
16 water delivered by Los Angeles. There is no measurable  
17 native safe yield.

18 4.2.5 Separate Basins -- Separate Rights. The rights  
19 of the parties to extract ground water within ULARA are  
20 separate and distinct as within each of the several ground  
21 water basins within said watershed.

22 4.2.6 Hydrologic Condition of Basins. The several  
23 basins within ULARA are in varying hydrologic conditions,  
24 which result in different legal consequences.

25 4.2.6.1 San Fernando Basin. The first full year  
26 of overdraft in San Fernando Basin was 1954-55. It  
27 remained in overdraft continuously until 1968, when an  
28 injunction herein became effective. Thereafter, the

1           5.1.1.1 Los Angeles' Pueblo Right. Los Angeles,  
2 as the successor to all rights, claims and powers of the  
3 Spanish Pueblo de Los Angeles in regard to water rights,  
4 is the owner of a prior and paramount pueblo right to the  
5 surface waters of the Los Angeles River and the native  
6 ground waters of San Fernando Basin to meet its reason-  
7 able beneficial needs and for its inhabitants.

8           5.1.1.2 Extent of Pueblo Right. Pursuant to said  
9 pueblo right, Los Angeles is entitled to satisfy its  
10 needs and those of its inhabitants within its boundaries  
11 as from time to time modified. Water which is in fact  
12 used for pueblo right purposes is and shall be deemed  
13 needed for such purposes.

14           5.1.1.3 Pueblo Right -- Nature and Priority of  
15 Exercise. The pueblo right of Los Angeles is a prior and  
16 paramount right to all of the surface waters of the Los  
17 Angeles River, and native ground water in San Fernando  
18 Basin, to the extent of the reasonable needs and uses of  
19 Los Angeles and its inhabitants throughout the corporate  
20 area of Los Angeles, as its boundaries may exist from  
21 time to time. To the extent that the Basin contains  
22 native waters and imported waters, it is presumed that  
23 the first water extracted by Los Angeles in any water  
24 year is pursuant to its pueblo right, up to the amount  
25 of the native safe yield. The next extractions by Los  
26 Angeles in any year are deemed to be from import return  
27 water, followed by stored water, to the full extent of  
28 Los Angeles' right to such import return water and stored

beneficial needs of overlying users. Said appropriative rights are:

San Fernando 3,580 acre feet

Los Angeles 1,560 acre feet.

5.1.2.4 No Prescription. The Sylmar Basin is not presently in a state of overdraft and no rights by prescription exist in said Basin against any overlying or appropriative water user.

5.1.2.5 Other Parties. No other party to this action owns or possesses any right to extract native ground waters from the Sylmar Basin.

5.1.3 Verdugo Basin Rights.

5.1.3.1 No Pueblo Rights. The pueblo right of Los Angeles does not extend to or include ground water in Verdugo Basin.

5.1.3.2 Prescriptive Rights of Glendale and Crescenta Valley. Glendale and Crescenta Valley own prescriptive rights as against each other and against all private overlying or appropriative parties in the Verdugo Basin to extract, with equal priority, the following quantities of water from the combined safe yield of native and imported waters in Verdugo Basin:

Glendale 3,856 acre feet

Crescenta Valley 3,294 acre feet.

5.1.3.3 Other Parties. No other party to this action owns or possesses any right to extract native ground waters from the Verdugo Basin.

1 causing said water to be so stored shall have a right to  
2 extract an equivalent amount of ground water from San  
3 Fernando Basin. The right to extract waters attributable  
4 to such storage practices is an undivided right to a  
5 quantity of water in San Fernando Basin equal to the  
6 amount of such Stored Water to the credit of any party,  
7 as reflected in Watermaster records.

8           5.2.1.3 Calculation of Import Return Water and  
9 Stored Water Credits. The extraction rights of Los  
10 Angeles, Glendale, Burbank and San Fernando in San  
11 Fernando Basin in any year, insofar as such rights are  
12 based upon import return water, shall only extend to the  
13 amount of any accumulated import return water credit of  
14 such party by reason of imported water delivered after  
15 September 30, 1977. The annual credit for such import  
16 return water shall be calculated by Watermaster based  
17 upon the amount of delivered water during the preceding  
18 water year, as follows:

19	Los Angeles:	20.8% of all delivered water
20		(including reclaimed water) to
21		valley fill lands of San
		Fernando Basin.
22	San Fernando:	26.3% of all imported and
23		reclaimed water delivered to
		valley-fill lands of San
		Fernando Basin.
24	Burbank:	20.0% of all delivered water
25		(including reclaimed water) to
26		San Fernando Basin and its
		tributary hill and mountain
		areas.

1           5.2.2 Sylmar Basin Rights.

2               5.2.2.1 Rights to Recapture Import Return Waters.

3           Los Angeles and San Fernando have caused imported waters  
4           to be brought into ULARA and delivered to lands overlying  
5           the Sylmar Basin with the result that percolation and re-  
6           turn flow of such delivered water has caused imported  
7           waters to become a part of the safe yield of Sylmar Basin.  
8           Los Angeles and San Fernando are entitled to recover from  
9           Sylmar Basin such imported return waters. In calculating  
10          the annual entitlement to recapture such import return  
11          water, Los Angeles and San Fernando shall be entitled to  
12          35.7% of the preceding water year's imported water de-  
13          livered by such party to lands overlying Sylmar Basin.  
14          Thus, by way of example, in 1976-77, Los Angeles was  
15          entitled to extract 2370 acre feet of ground water from  
16          Sylmar Basin, based on delivery to lands overlying said  
17          Basin of 6640 acre feet during 1975-76. The quantity of  
18          San Fernando's imported water to, and the return flow  
19          therefrom, in the Sylmar Basin in the past has been of  
20          such minimal quantities that it has not been calculated.

21               5.2.2.2 Rights to Store and Recapture Stored  
22          Water. Los Angeles and San Fernando each have the right  
23          to store water in Sylmar Basin equivalent to their rights  
24          in San Fernando Basin under paragraph 5.2.1.2 hereof.

25               5.2.2.3 Carry Over. Said right to recapture  
26          stored water, import return water and other safe yield  
27          waters to which a party is entitled, if not exercised in  
28          a given year, can be carried over for not to exceed five

1 imported water to be delivered for use on lands overlying  
2 Eagle Rock Basin and return flow from said delivered  
3 imported water constitutes the entire safe yield of Eagle  
4 Rock Basin. Los Angeles has the right to extract or  
5 cause to be extracted the entire safe yield of Eagle Rock  
6 Basin.

7 5.2.4.2 Private Defendants. No private defend-  
8 ants have a right to extract water from within Eagle Rock  
9 Basin, except pursuant to the physical solution herein.

10  
11 6. INJUNCTIONS

12 Each of the parties named or referred to in this Part 6, its  
13 officers, agents, employees and officials is, and they are, hereby  
14 ENJOINED and RESTRAINED from doing or causing to be done any of the  
15 acts herein specified:

16 6.1 Each and Every Defendant -- from diverting the surface  
17 waters of the Los Angeles River or extracting the native waters of  
18 SAN FERNANDO BASIN, or in any manner interfering with the prior and  
19 paramount pueblo right of Los Angeles in and to such waters,  
20 except pursuant to the physical solution herein decreed.

21 6.2 Each and Every Private Defendant -- from extracting  
22 ground water from the SAN FERNANDO, VERDUGO, or EAGLE ROCK BASINS,  
23 except pursuant to physical solution provisions hereof.

24 6.3 Defaulting and Disclaiming Parties (listed in Attachments  
25 "C" and "D") -- from diverting or extracting water within ULARA,  
26 except pursuant to the physical solution herein decreed.

27 6.4 Glendale -- from extracting ground water from SAN  
28 FERNANDO BASIN in any water year in quantities exceeding its

1 water from San Fernando Basin, except in accordance with practices  
2 specified in Attachment "F", or pursuant to the physical solution herein decreed.

## 4 7. CONTINUING JURISDICTION

5 7.1 Jurisdiction Reserved. Full jurisdiction, power and  
6 authority are retained by and reserved to the Court for purposes of  
7 enabling the Court upon application of any party or of the Water-  
8 master by motion and upon at least 30 days' notice thereof, and  
9 after hearing thereon, to make such further or supplemental orders  
10 or directions as may be necessary or appropriate, for interpreta-  
11 tion, enforcement or carrying out of this Judgment, and to modify,  
12 amend or amplify any of the provisions of this Judgment or to add  
13 to the provisions thereof consistent with the rights herein decreed;  
14 provided, however, that no such modification, amendment or ampli-  
15 fication shall result in a change in the provisions of Section  
16 5.2.1.3 or 9.2.1 hereof.

## 13 8. WATERMASTER

### 19 8.1 Designation and Appointment.

20 8.1.1 Watermaster Qualification and Appointment. A  
21 qualified hydrologist, acceptable to all active public agency  
22 parties hereto, will be appointed by subsequent order of the  
23 Court to assist the Court in its administration and enforce-  
24 ment of the provisions of this Judgment and any subsequent  
25 orders of the Court entered pursuant to the Court's continuing  
26 jurisdiction. Such Watermaster shall serve at the pleasure of  
27 the Court, but may be removed or replaced on motion of any  
28 party after hearing and showing of good cause.

1 reasonably necessary to guide Watermaster in performance of  
2 its duties, powers and responsibilities under the provisions  
3 of this judgment.

4 8.2.6 Data Collection. Watermaster shall collect and  
5 verify data relative to conditions of ULARA and its ground  
6 water basins from the parties and one or more other govern-  
7 mental agencies. Where necessary, and upon approval of the  
8 Administrative Committee, Watermaster may develop supplemental  
9 data.

10 8.2.7 Cooperation With Other Agencies. Watermaster may  
11 act jointly or cooperate with agencies of the United States  
12 and the State of California or any political subdivisions,  
13 municipalities or districts (including any party) to secure or  
14 exchange data to the end that the purpose of this Judgment,  
15 including its physical solution, may be fully and economically  
16 carried out.

17 8.2.8 Accounting for Non-consumptive Use. Watermaster  
18 shall calculate and report annually the non-consumptive and  
19 consumptive uses of extracted ground water by each party  
20 listed in Attachment "F."

21 8.2.9 Accounting for Accumulated Import Return Water  
22 and Stored Water. Watermaster shall record and verify addi-  
23 tions, extractions and losses and maintain an annual and  
24 cumulative account of all (a) stored water and (b) import  
25 return water in San Fernando Basin. Calculation of losses  
26 attributable to Stored Water shall be approved by the Adminis-  
27 trative Committee or by subsequent order of the Court. For  
28 purposes of such accounting, extractions in any water year by

1 review actions of Watermaster. Said Administrative Committee  
2 shall be composed of one representative of each party having  
3 a right to extract ground water from ULARA, apart from the  
4 physical solution. Any such party not desiring to participate  
5 in such committee shall so advise Watermaster in writing.

6 8.3.2 Organization and Voting. The Administrative  
7 Committee shall organize and adopt appropriate rules and  
8 regulations to be included in Watermaster Policies and Pro-  
9 cedures. Action of the Administrative Committee shall be by  
10 unanimous vote of its members, or of the members affected in  
11 the case of an action which affects one or more basins but  
12 less than all of ULARA. In the event of inability of the  
13 Committee to reach a unanimous position, the matter may, at  
14 the request of Watermaster or any party, be referred to the  
15 Court for resolution by subsequent order after notice and  
16 hearing.

17 8.3.3 Function and Powers. The Administrative Committee  
18 shall be consulted by Watermaster and shall request or approve  
19 all discretionary Watermaster determinations. In the event of  
20 disagreement between Watermaster and the Administrative  
21 Committee, the matter shall be submitted to the Court for  
22 review and resolution.

23 8.4 Watermaster Budget and Assessments.

24 8.4.1 Watermaster's Proposed Budget. Watermaster  
25 shall, on or before May 1, prepare and submit to the Admin-  
26 istrative Committee a budget for the ensuing water year.  
27 The budget shall be determined for each basin separately and  
28 allocated between the separate ground water basins. The

1 filing of any such motion, the Court shall require the  
2 moving party to notify the active parties of a date for  
3 taking evidence and argument, and on the date so desic-  
4 nated shall review de novo the question at issue. Water-  
5 master's findings or decision, if any, may be received  
6 in evidence at said hearing, but shall not constitute  
7 presumptive or prima facie proof of any fact in issue.

8 8.5.1.3 Decision. The decision of the Court in  
9 such proceeding shall be an appealable supplemental order  
10 in this case. When the same is final, it shall be  
11 binding upon the Watermaster and all parties.

## 12 9. PHYSICAL SOLUTION

### 13 9.1 Circumstances Indicating Need for Physical Solution.

14 During the period between 1913 and 1955, when there existed tempor-  
15 ary surplus waters in the San Fernando Basin, overlying cities and  
16 private overlying landowners undertook to install and operate water  
17 extraction, storage and transmission facilities to utilize such  
18 temporary surplus waters. If the injunction against interference  
19 with the prior and paramount rights of Los Angeles to the waters of  
20 the San Fernando and Eagle Rock Basins were strictly enforced, the  
21 value and utility of those water systems and facilities would be  
22 lost or impaired. It is appropriate to allow continued limited  
23 extraction from the San Fernando and Eagle Rock Basins by parties  
24 other than Los Angeles, subject to assurance that Los Angeles will  
25 be compensated for any cost, expense or loss incurred as a result  
26 thereof.

### 27 9.2 Prior Stipulated Judgments. Several defendants

1                                    Minimal-Consumptive

2                    Conrock Co., for itself and as successor to California  
3                    Materials Co.; Constance Ray White and Lee L. White;  
4                    Mary L. Akmadzich and Peter J. Akmadzich  
5                    Livingston Rock & Gravel, for itself and as successor  
6                    to Los Angeles Land & Water Co.

7                    The nature of each said defendant's water use practices is  
8                    described in Attachment "F". Subject to required reports to  
9                    and inspections by Watermaster, each said defendant may  
10                   continue extractions for said purposes so long as in any year  
11                   such party continues such non-consumptive or minimal-  
12                   consumptive use practices.

13                   9.2.3 Abandoned Operations. The following stipulating  
14                   defendants have ceased extracting water from San Fernando  
15                   Basin and no further need exists for physical solution in  
16                   their behalf:

17                   Knickerbocker Plastic Company, Inc.  
18                   Carnation Company  
19                   Hidden Hills Mutual Water Company  
20                   Southern Pacific Railroad Co.  
21                   Pacific Fruit Express Co.

22                   9.3 Private Defendants. There are private defendants who in-  
23                   stalled during the years of temporary surplus relatively substantial  
24                   facilities to extract and utilize ground waters of San Fernando  
25                   Basin. Said defendants may continue their extractions for consump-  
26                   tive use up to the indicated annual quantities upon payment of com-  
27                   pensation to the appropriate city wherein their use of water is  
28                   principally located, on the basis of the following physical solution:

1 the sum of the amount payable to Los Angeles under para-  
2 graph 9.4 hereof and any additional charges or conditions  
3 agreed upon by either such city and any private defendant.

4 9.4 Glendale and Burbank. Glendale and Burbank have each  
5 installed, during said years of temporary surplus, substantial  
6 facilities to extract and utilize waters of the San Fernando Basin.  
7 In addition to the use of such facilities to recover import return  
8 water, the distribution facilities of such cities can be most  
9 efficiently utilized by relying upon the San Fernando Basin for  
10 peaking supplies in order to reduce the need for extensive new  
11 surface storage. Glendale and Burbank may extract annual quanti-  
12 ties of ground water from the San Fernando Basin, in addition to  
13 their rights to import return water or stored water, as heretofore  
14 declared, in quantities up to:

15                   Glendale                   5,500 acre feet

16                   Burbank                   4,200 acre feet;

17 provided, that said cities shall compensate Los Angeles annually  
18 for any such excess extractions over and above their declared  
19 rights at a rate per acre foot equal to the average MWD price for  
20 municipal and industrial water delivered to Los Angeles during the  
21 fiscal year, less the average energy cost of extraction of ground  
22 water by Los Angeles from San Fernando Basin during the preceding  
23 fiscal year. Provided, further, that ground water extracted by  
24 Forest Lawn and Southern Service Co. shall be included in the  
25 amount taken by Glendale, and the amount extracted by Valhalla and  
26 Lockheed shall be included in the amount taken by Burbank. All  
27 water taken by Glendale or Burbank pursuant hereto shall be charged  
28 against Los Angeles' rights in the year of such extractions.

1 notice on a form to be provided by Watermaster. Thereafter such  
2 party shall be removed from the Active Party list. For purposes of  
3 service on any party or active party by the Watermaster, by any  
4 other party, or by the Court, of any item required to be served  
5 upon or delivered to such party or active party under or pursuant  
6 to the Judgment, such service shall be made personally or by de-  
7 posit in the United States mail, first class, postage prepaid,  
8 addressed to the designee and at the address in the latest desig-  
9 nation filed by such party or active party.

10 10.2 Notice of Change in Hydrologic Condition -- Sylmar Basin.

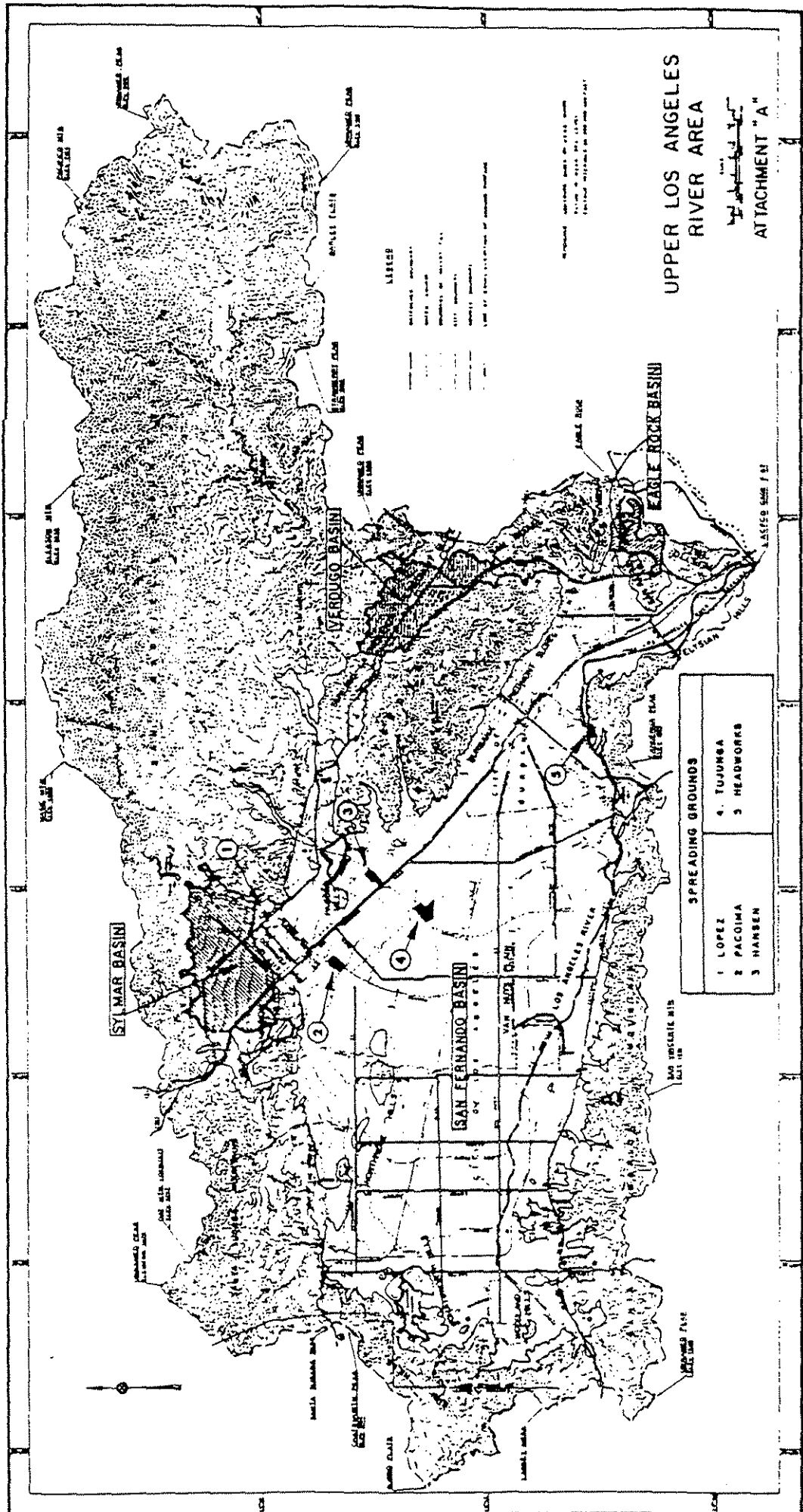
11 If Sylmar Basin shall hereafter be in a condition of overdraft due  
12 to increased or concurrent appropriations by Los Angeles and San  
13 Fernando, Watermaster shall so notify the Court and parties concern-  
14 ed, and notice of such overdraft and the adverse effect thereof on  
15 private overlying rights shall be given by said cities as prescribed  
16 by subsequent order of the Court, after notice and hearing.

17 10.3 Judgment Binding on Successors. This Judgment and all  
18 provisions thereof are applicable to and binding upon not only the  
19 parties to this action, but also upon their respective heirs,  
20 executors, administrators, successors, assigns, lessees and licen-  
21 sees and upon the agents, employees and attorneys in fact of all  
22 such persons.

23 10.4 Costs. Ordinary court costs shall be borne by each  
24 party, and reference costs shall be borne as heretofore allocated  
25 and paid.

26 DATED: Jan 26, 1979.

27   
28 \_\_\_\_\_  
Judge of the Superior Court



ATTACHMENT "B"  
LIST OF DISMISSED PARTIES

Adams, Catherine	Fitz-Patrick, Ada H.
Adair, Leo W.	Fitz-Patrick, C. C.
Anderson, Jesse E.	Frank X. Enderle, Inc., Ltd.
Anderson, Elizabeth A.	George, Florence H.
Anderson, Leland H.	George, Elton
Anderson, Bessie E.	Ghiglia, Frank P.
Bank of America, N.T. & S.A., (Trustee)	Givan, Amelia (Deceased)
Becker, Barbara	Glendale Junior College District of Los Angeles County
Beatrice Foods Company	Glendale Unified School District
Becker, Bert	Glenhaven Memorial Park, Inc.
Bishop, Elfreda M.	Griffith, Howard Barton
Bishop, William E.	Handorf, August V., Heirs of
Block, Leonard W.	Hanna, George
Block, Margery J.	Hicks, Forrest W., Executor of Estate of (California Bank)
Burbank C. U. School District	Houston-Fearless Corp., The
Busk, Rodney E.	Industrial Fuel Supply Co.
California, State of	Intervalley Savings & Loan Association
California Trust Company, (Trustee)	Julius, Adenia C.
California Trust Company, Trustee for First National Bank of Glendale	Julius, Louis A.
Citizens N.T.S. Bank of L.A., Trustee of M. M. Crenshaw	Kaesemeyer, Edna M.
Citizens National Trust & Savings Bank of Los Angeles	Karagozian, Charles
Citizens National Trust & Savings Bank of Los Angeles, Trustee, Deed of Trust 3724	Kates, Nathan as Co-Executor, Estate of Duckworth
Color Corporation of America	Kelley, June
Corporation of America	Kelley, Victor H.
Corporation of America, Trustee for Bank of America 32	Kiener, Harry, Deceased, Heirs of
Doe Corporation, 10-50	Knupp, Guy, Trustee
Doe 18-500	Landes, Clara Bartlett
Duckworth, John W., (Estate of)	Lentz, Richard
Equitable Life Assurance Society of the United States	Los Angeles County Flood Control District
Fidelity Federal Savings & Loan Association	Los Angeles Land and Water Company
	Los Angeles Trust and Savings Deposit Company (Safe)

ATTACHMENT "C"  
LIST OF DEFAULTED PARTIES

Aetna Life Insurance Company	Corporation of America, Trustee for Bank of America, I. 54
American Savings & Loan Association	Desco Corp.
Babikian, Helen	Diller, Michael
Bank of America, N.T. & S.A., Trustee	Erratchuo, Richard
Bannan, B. A.	Glendale Towel and Linen Supply Company
Bannan, Clotilde R.	Guyer, Irene W.
Berkemeyer, Henry W.	Herrmann, Emily Louise by Louis T. Herrmann, Successor In Interest
Berkemeyer, Hildur M.	
Bell, William M.	Hicks, Forrest W., Executor of Estate of (California Bank)
Bell, Sallie C.	
Borgia, Andrea, Estate of	Hidden Hills Corporation
Borgia, Frances	Holmgrin, Neva Bartlett
Brown, Stella M.	Hope, Lester Townes
Burns, George A.	Hope, Dolores Defina
Burns, Louise J.	Huston Homes (Doe Corporation 8)
California Bank, Trustee re Hollywood State Bank	Johnson, William Arthur, Sr. (Doe 11)
California Bank, Trustee	Johnson, Grace Luvena (Doe 12)
Citizens National Bank & Savings Bank of Los Angeles, Trust for W. Stavert	Jessup, Marguerite R., Trustee (for 6)
Citizens National Trust & Savings Bank of Los Angeles, Mort. I. 164	Jessup, Marguerite Rice
Citizens National Trust & Savings Bank of Los Angeles Trustee	Jessup, Roger
Citizens National Trust & Savings Bank of Los Angeles, Co-Trustee for Estate of A. V. Handorf	La Maida, James V. (Doe 10)
Clauson, Emma S.	La Marda, Tony (La Maida)
Continental Auxillary Company (Doe Corporation 1)	Lancaster, Paul E.
Cowlin, Josephine McC.	Lancaster, William
Cowlin, Donald G.	Land Title Insurance Company, as Trustee
Cowlin, Dorothy N.	Land Title Insurance Company
	Los Angeles Pet Cemetary
	Metropolitan Savings & Loan Association of Los Angeles
	Monteria Lake Association

ATTACHMENT "D"

DISCLAIMING PARTIES

Andrew Jergens Company, The

Boyar, Mark

Chace, William M.  
(dba V.P.L.C.)

DeMille, Cecil B., Estate of

Drewry Photocolor Corp.

Hayes, Hay B. (Hal)

Houston Color Film  
Laboratories, Inc.

Krown, Samuel P.

La Canada Irrigation District

Lakeside Golf Club (of Hollywood)

Lakewood Water & Power Company

Mack, Lucille

Mollin Investment Co.

Mulholland, P. & R., Trustees  
for R. Wood

Mulholland, Rose

Mulholland, Perry

Mulholland, Thomas

Mureau, Charles

Nathan, Julia N., Trustee

Oakmont Country Club

Platt, George E. Company

Richfield Oil Corporation

Riverwood Ranch Mutual Water  
Company

Smith, Benjamin B.

Southern California Edison  
Company

Spinks Realty Company

Sportsman's Lodge Banquet  
Corporation

Stetson, G. Henry

Technicolor Corporation

Valley Lawn Memorial Park

ATTACHMENT "E"

LIST OF PRIOR STIPULATED JUDGMENTS

<u>PARTY</u>	<u>DATE JUDGMENT FILED</u>
Akmdzich, Mary L.	July 24, 1959
Akmdzich, Peter J.	July 24, 1959
California Materials Company	July 24, 1959
Carnation Company	Nov. 20, 1958
Consolidated Rock Products Co.	July 24, 1959
Hidden Hills Mutual Water Company	March 11, 1965
Knickerbocker Plastic Company, Inc.	Feb. 15, 1960
Livingston Rock & Gravel Co., Inc.	July 24, 1959
Pacific Fruit Express Company	March 11, 1965
Pendleton, Evelyn M., dba Deep Rock Artesian Water Company	Nov. 1, 1965
Sears, Roebuck and Company	June 9, 1958
Southern Pacific Company	March 11, 1965
Sparkletts Drinking Water Corporation	Nov. 1, 1965
Valley Park Corporation	July 24, 1959
Walt Disney Productions	May 15, 1961
White, Constance Ray	Feb. 15, 1960
White, Leo L.	Feb. 15, 1960

ATTACHMENT "F"

STIPULATED

NON-CONSUMPTIVE OR MINIMAL-CONSUMPTIVE USE

PRACTICES

Non-Consumptive Uses

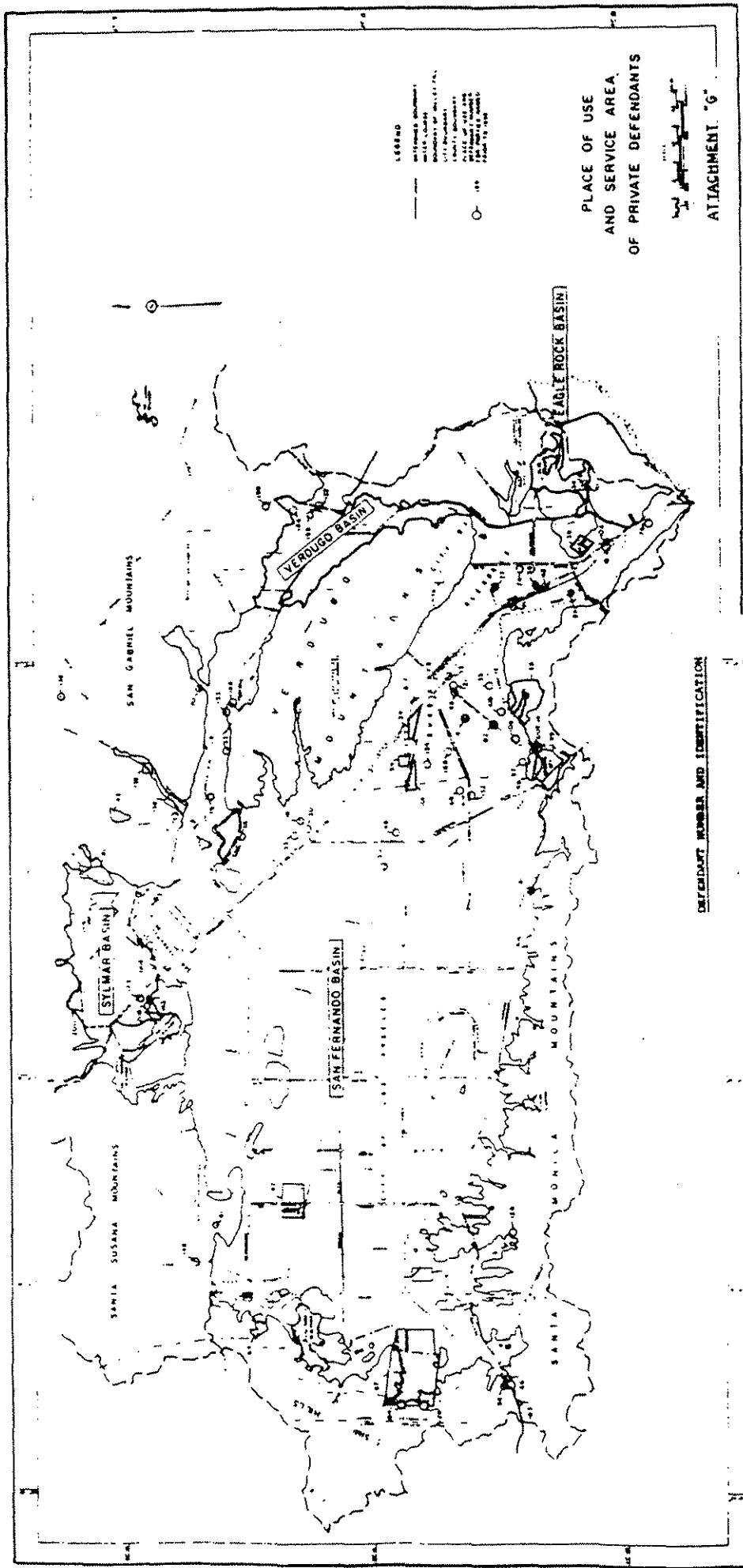
Disney -- extracted ground water is used for air conditioning cooling water in a closed system, which discharges to the channel of the Los Angeles River and is subsequently spread and recharges San Fernando Basin, without measurable diminution or loss.

Sears, Lockheed and Carnation -- extracted ground water, or a portion thereof, is used for air conditioning cooling in a closed system, which discharges to San Fernando Basin through an injection well.

Toluca Lake -- that portion of extracted ground water which is not consumptively used, by evaporation or otherwise, is circulated and passed through the lake to the channel of the Los Angeles River immediately upstream from Los Angeles' spreading grounds, where such water is percolated into the ground water of the Basin without measurable diminution or loss.

Sportsman's Lodge -- that portion of extracted ground water which is not consumptively used, by evaporation or otherwise, is circulated and passed through fish ponds and returned to channels tributary to Los Angeles River upstream from Los Angeles' spreading grounds, where such water is percolated into the ground water of the Basin without measurable loss.

- - - - -



4	BURNER UNITED SCHOOL DIST.	127	STELLA M. BROWN	188	FLORENCE S. PLEPPERS
6	L.A.C.F.C.D.	128	MARK BOTAR	194	LESTER KUSHNORTH
13	THE ANDREW JEROME CO.	129	GEORGE A. BURNS	195	LESTER R. SCHWARTZ
15	BEATRICE FOODS CO.	130	WILLIAM M. CHACE	198	SIGNEE WHITE
16	CALIFORNIA MATERIALS CO.	131	BEN L. CLARSON	200	O. RENEY STEVEN
21	CANMATION CO.	132	CECIL B. DENNIS	204	A. M. WALTER
30	CONSOLIDATED ROCK PROD. CO.	133	MAXINE DUCHONTH	205	ELIZABETH A. WHEELAND
34	DEEP ROCK ARTESIAN WATER CO.	134	RICHARD BRANTON	211	ALICE M. WRIGHT
35	DECO CO.	135	HOWARD BARTON GRIFFITH	DOE CORP & MOLLIN INVESTMENT CORP.	
36	DANNEY PHOTOCOLOR CORP.	136	NEVA BARTLETT	DOE 1	EDDY LOUIS KERNAN
39	FOREST LAM CO.	137	E. E. KAHNAN	DOE 14	LESTER TOWNS BOVE
41	FRESHFORD WATER CO.	138	CELESTE LOUISE MCCABE		
42	GLORIA TUNEL & LINDER SUPPLY CO.	139	KISAG MOONIGIAN		
43	GLENNDAVEN MEMORIAL PARK, INC.	140	JOHN E. MULLIN		
46	GRANTON COLOR FILM LAB, INC.	141	CHARLES MURDOU		
		142	ELFRIEDA M. BISHOP		
		143	WILLIAM O. BARTHOLOMAUS		
		144	HENRY M. BRECKENRIDGE		
		145	ALFRIEDA M. BISHOP		
		146	WILLIAM O. BARTHOLOMAUS		
		147	HENRY M. BRECKENRIDGE		
		148	WILLIAM O. BARTHOLOMAUS		
		149	HENRY M. BRECKENRIDGE		
		150	WILLIAM O. BARTHOLOMAUS		
		151	HENRY M. BRECKENRIDGE		
		152	WILLIAM O. BARTHOLOMAUS		
		153	HENRY M. BRECKENRIDGE		
		154	WILLIAM O. BARTHOLOMAUS		
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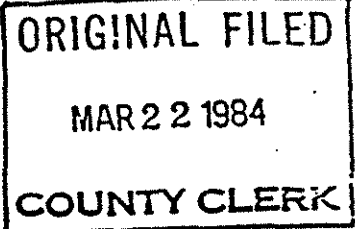
APPENDIX D

STIPULATION AND ORDER

SYLMAR BASIN - MARCH 22, 1984

1 IRA REINER, City Attorney  
2 EDWARD C. FARRELL, Chief Assistant  
3 City Attorney for Water and Power  
4 STEPHEN R. POWERS, JR., Senior  
5 Assistant City Attorney  
6 RALPH GUY WESSON, Assistant City Attorney  
7 111 North Hope Street  
8 Los Angeles, California 90012  
9 (213) 481-6372

10 Attorneys for Plaintiff



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SUPERIOR COURT OF THE STATE OF CALIFORNIA  
FOR THE COUNTY OF LOS ANGELES

THE CITY OF LOS ANGELES,	)	No. 650079
	)	
Plaintiff,	)	STIPULATION AND ORDER RE
	)	SYLMAR BASIN PURSUANT TO
vs.	)	SECTION 10.2 OF JUDGMENT
	)	
CITY OF SAN FERNANDO, et al.,	)	
	)	
Defendants.	)	
	)	

17 The City of Los Angeles by and through Ira Reiner, City  
18 Attorney, Edward C. Farrell, Chief Assistant City Attorney for  
19 Water and Power, Ralph Guy Wesson, Assistant City Attorney, the  
20 City of San Fernando by and through City Attorneys Rutan and  
21 Tucker, Robert S. Bower and Arthur G. Kidman, Kisag and Dean  
22 Mordigian by Lawrence M. Dougherty, and Meurer Eng., Inc., by  
23 Roger or Charles Meurer, stipulate that the Court may enter an  
24 order as provided herein with regard to the following facts.

- 25 1. The Judgment requires in Section 10.2 that the  
26 Watermaster notify the Court and parties in the  
27 event the Sylmar Basin becomes overdrafted due to  
28 pumping by Los Angeles and San Fernando.

1 in this stipulation. That pumping which occurs  
2 pursuant to the overlying rights of the private  
3 parties is to be subtracted from the safe yield,  
4 with Los Angeles and San Fernando pumping the  
5 remainder.

6 5. Parties, City of Los Angeles and City of San  
7 Fernando, agree that pumping within the Sylmar  
8 Basin must be brought within the safe yield,  
9 determined to be 6,210 AF/YR at present. The  
10 Cities of Los Angeles and San Fernando have rights  
11 to native waters and import return waters within  
12 the Sylmar Basin. Their combined water rights to  
13 native and imported waters (Sections 5.1.2.3. and  
14 5.2.2.1 of the Judgment) are nearly equal. Each  
15 has pumped approximately one-half of the total safe  
16 yield of the said basin for the past 14 years  
17 (1968-69 through 1982-83). The City of Los Angeles  
18 and the City of San Fernando stipulate herein that  
19 the Court may enter an order limiting each City's  
20 pumping to the following amounts less-one half of  
21 any rights exercised in accordance with paragraph 4  
22 herein:

23 City of Los Angeles - 3,105 AF/YR.

24 City of San Fernando - 3,105 AF/YR.

25 6. Section 10.2 of the Judgment requires that a notice  
26 of hearing be set for this matter. However, the  
27 parties herein stipulate to waive notice and  
28

1 period. The amount of such underpumping will not be  
2 required to exceed 10 percent of the annual allowed  
3 pumping of any party.

4 The party desiring to overextract from the basin  
5 shall notify the Watermaster of the circumstances  
6 considered to be unusual and shall justify the need  
7 for overextractions. The Watermaster shall review  
8 the existence and cessation of unusual  
9 circumstances and shall in his discretion approve  
10 the required overextraction and replacement  
11 operations.


12 8. Pursuant to Section 8.2.10 of the Judgment, a  
13 recalculation of the safe yield can be requested by  
14 any party in the event such recalculation appears  
15 to be necessary in accordance with the  
16 Watermaster's findings set forth in his annual  
17 report to the parties and Court.

18 9. All parties to this stipulation may make  
19 application to the Court regarding further  
20 evaluation or review of the parties pumping  
21 activities.

22 10. In any year, Los Angeles and San Fernando each have  
23 the right to store water in the Sylmar Basin by  
24 direct spreading or in-lieu practice  
25 (underpumping). The party causing the water to be  
26 stored shall have a right to extract an equivalent  
27 amount of groundwater from said basin. In addition  
28 to the safe yield pumping provided for herein, the

1 DATED: March 21, 1984

2 IRA REINER, City Attorney  
3 EDWARD C. FARRELL, Chief Assistant  
4 City Attorney for Water and Power  
5 STEPHEN R. POWERS, JR., Senior  
6 Assistant City Attorney  
7 RALPH GUY WESSON, Assistant  
8 City Attorney

9 By   
10 RALPH GUY WESSON  
11 Attorneys for the City of Los Angeles  
12 and its Department of Water and Power

13 APPROVED:  
14 The City of San Fernando

15 By   
16 Mayor

17 Attest

18   
19 City Clerk

20 ARTHUR KIDMAN  
21 RUTAN AND TUCKER  
22 Special Counsel

23 By   
24 ARTHUR KIDMAN  
25 Attorneys for the City of San Fernando

26   
27 ROGER or CHARLES MEURER  
28 MEURER ENG., INC.

  
LAWRENCE M. DAUGHERTY  
Attorney for Kisag and Dean Moordigian

1 IRA REINER, City Attorney  
2 EDWARD C. FARRELL, Chief Assistant  
3 City Attorney for Water and Power  
4 STEPHEN R. POWERS, JR., Senior  
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10 Attorneys for Defendant

11 SUPERIOR COURT OF THE STATE OF CALIFORNIA  
12 FOR THE COUNTY OF LOS ANGELES

13 THE CITY OF LOS ANGELES,

14 Plaintiff,

15 vs.

16 CITY OF SAN FERNANDO, et al.,

17 Defendants.

No. 650079

ORDER OF COURT RE SYLMAR  
BASIN PURSUANT TO  
SECTION 10.2 OF JUDGMENT

18 Good cause appearing therefore and the court having  
19 reviewed the stipulation herein presented to the Court, and  
20 having fully approved the facts and settlement set forth therein,  
21 it is ordered, effective October 1, 1984, that:

- 22 1. The Cities of Los Angeles and San Fernando shall be  
23 limited in their pumping to bring the total pumping  
24 within the safe yield of the basin, less any rights  
25 exercised by the private parties, as follows:

26 City of Los Angeles - 3,105 AF/YR.

27 City of San Fernando - 3,105 AF/YR.

- 28 2. It is ordered that during years of unusual  
circumstances (as stated in paragraph 7 of the

1 amount of groundwater from said basin. In addition  
2 to the safe yield pumping provided for herein, the  
3 right to recapture stored water can be carried over  
4 into successive water years.

- 5 5. The Final Judgment, entered on January 26, 1979, is  
6 amended pursuant to changes set forth in this  
7 stipulation. The sections of the Judgment affected  
8 are listed in paragraph 11 of the stipulation.  
9

10 DATED: March 22, 1984

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16 HONORABLE HARRY L. HUPP  
17 JUDGE OF THE SUPERIOR COURT  
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## APPENDIX E

### GUIDELINES FOR GROUNDWATER STORAGE

# UPPER LOS ANGELES RIVER AREA WATERMASTER

CITY OF LOS ANGELES VS. CITY OF SAN FERNANDO, ET AL  
CASE NO. 650079 — COUNTY OF LOS ANGELES

MELVIN L. BLEVINS — WATERMASTER  
Office Location — Room 1455  
111 North Hope Street  
Los Angeles, CA 90012  
Telephone (213) 481 6177

MAILING ADDRESS:  
ULARA Watermaster  
P.O. Box 111, Rm. 1455  
Los Angeles, CA 90051

January 29, 1992

Ms. Claire Trombadore  
Project Manager  
U.S. Environmental Protection Agency  
Remedial Action Branch  
Mail Stop H-6-4  
75 Hawthorne Street  
San Francisco, California 94105

Dear Ms. Trombadore:

## San Fernando Basin Guidelines for Groundwater Storage

This letter is intended to provide guidelines on how the San Fernando Basin (SFB) should be used in the storing of groundwater relative to overall basin management. The Final Judgment (1979) for the Upper Los Angeles River Area (ULARA) provides for the use of the SFB in the storing of groundwater through the spreading of water and in-lieu pumping. These activities require the guidance of the ULARA Watermaster with the concurrence of the Administrative Committee.

The total estimated groundwater storage capacity of the SFB has been estimated to be 3,200,000 acre-feet (AF) of which a regulatory storage capacity of 350,000 AF is required to handle the wet and dry periods. Of the remaining unused storage capacity, approximately 525,000 AF is available for groundwater storage. As of October 1, 1990 the Cities of Los Angeles, Burbank and Glendale have approximately 172,000 AF, 46,000 AF, and 30,000 AF, respectively, of stored water credit, for a total of approximately 248,000 AF. Therefore, current total available storage is approximately 276,000 AF (refer to Figure 1 attached).

Ms. Claire Trombadore

-3-

January 29, 1992

If further information is needed regarding the use and management of the SFB related to pumping or the storing of groundwater, please feel free to call me at (213) 481-6177.

Sincerely,

  
MELVIN L. BLEVINS  
ULARA Watermaster

Enclosure

c: Dr. John F. Mann, Jr. - Watermaster Consultant  
Mr. Hank Yacoub - Los Angeles Regional Board

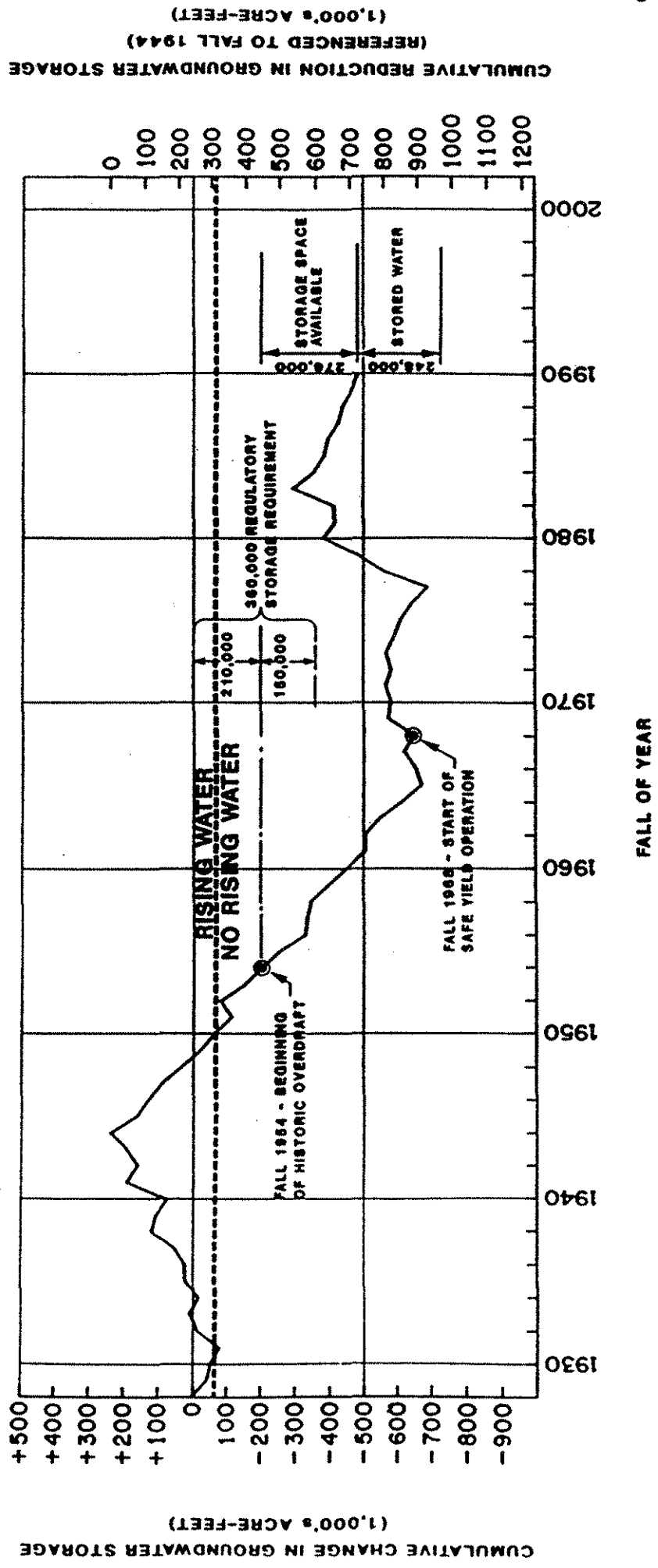
ULARA Administrative Committee Members

Mr. Fred Lantz - Burbank  
Mr. Don Froelich - Glendale  
Mr. Richard James - San Fernando  
Mr. Robert Argenio - Crescenta Valley County Water District  
Mr. Dennis Williams - Los Angeles

Figure 1

# SAN FERNANDO BASIN CUMULATIVE CHANGE IN GROUNDWATER STORAGE

OCTOBER 1, 1990 - STATUS OF GROUNDWATER STORAGE



APPENDIX F

STATUS SAFE YIELD CONDITIONS

## F. STATUS OF SAFE YIELD CONDITIONS

### F-1 San Fernando Basin – Status of Safe Yield Conditions

The Total Safe Yield for the San Fernando Basin for the Water Year 1995-96 was 97,410 AF. This consists of 43,660 AF/yr., Native Safe Yield and 53,750 AF/yr., return flow (recharge) of imported water delivered to the San Fernando Basin. It would appear that the Total Safe Yield value (97,410 AF – 1995-96) is a reasonable calculation of the recharge within the San Fernando Basin.

The City of Los Angeles, under its Pueblo Right, is entitled to pump all of the Native Safe Yield of the San Fernando Basin, given in the ULARA Judgment of January 26, 1979, as 43,660 AF/yr. The cities of Los Angeles, Glendale and Burbank all have rights to return imported water (recharge of delivered water) based on a percentage of all water delivered for consumptive use. For the Water Year 1995-96, the return water rights were as follows:

Los Angeles	43,701 AF/yr.
Glendale	5,424 AF/yr.
<u>Burbank</u>	<u>4,625 AF/yr.</u>
Total	53,750 AF/yr.

The Total Safe Yield is a variable amount, depending on the amounts of delivered water. The Native Safe Yield of 43,660 AF/yr. is not changed. This value is based on the combined recharge of precipitation, hill and mountain runoff, and native water spread in spreading basins.

There is no need to change the safe yield values at present. The accounting of the change in groundwater storage, groundwater extractions, and rising groundwater conditions support this conclusion. The 1979 ULARA Judgment provides for the changes to be made if needed in the future (Section 8.2.10 of the Judgment).

## F-2 Sylmar Basin – Status of Safe Yield Conditions

The Total Safe Yield (Native and Imported Water delivered and recharge) as per the March 22, 1984 Judgment was 6,210 AF/yr. This was to be equally divided between Los Angeles and San Fernando, after subtracting the minor amounts of overlying land owners' rights. However, no subtraction has ever been made to date due to the small amounts involved (less than one AF/yr.).

At the July 16, 1996, Administrative Committee meeting, the committee approved an increase of safe yield for the Sylmar Basin based on the ULARA Watermaster's evaluation and recommendation. The new safe yield value was increased from 6,210 AF/yr. to 6,510 AF/yr. This provides up to 3,254 AF/yr. to San Fernando and Los Angeles, after over-lying party rights are subtracted (approximately one AF/yr.).

Based on the increased recharge of delivered water to the Sylmar Basin of 2,834 AF/yr., a 27 year average (1968-69 thru 1994-95), along with the Native Safe Yield value of 3,850 AF/yr., the Total Safe Yield adds up to 6,684 AF/yr. Thus, the increase from 6,210 AF/yr. to 6,510 AF/yr. appears to be justified. This increase will be monitored for a period up to ten years, with changes recommended by the ULARA Watermaster as needed.

### F-3 Verdugo Basin- Status of Safe Yield Conditions

The Total Safe Yield for the Verdugo Basin (Native and Imported Water delivered and recharged) as per the January 26, 1979 Judgment is 7,150 AF/yr. The Native Safe Yield is 3,590 AF/yr. and the Imported Water delivered within the basin and recharged is 3,560 AF/yr., bringing the Total Safe Yield to 7,150 AF/yr. These values were calculated at the time of the January 26, 1979 Judgment and appear to be adequate for present (1998) conditions.

The assigned water rights of Glendale and Crescenta Valley Water District (CVWD) were based on their appropriative and prescriptive rights. Glendale's pumping rights are 3,856 AF/yr. and CVWD's pumping rights are 3,294 AF/yr. The Total Safe Yield of 7,150 AF/yr. appears to be an adequate value for present conditions based on pumping activities, change in groundwater storage and Rising Groundwater outflow values.

The historic pumping has averaged 4,780 AF/yr. over a 23-year period (1971-72 to 1993-94) which is 2,370 AF/yr. less than the Total Safe Yield (7,150 AF/yr.). The average Rising Groundwater flow from the basin for the 23-year period is 2,592 AF/yr., with an average change in storage over 500 AF/yr. This indicates that whatever has not been pumped results in flow out of the basin.

Based on the ULARA Watermaster's recommendation and approval, either Glendale or CVWD may pump the unused portion of the other party's pumping allocation, so long as the total pumping does not exceed the Total Safe Yield (7,150 AF/yr.). This modification of groundwater pumping shall be reviewed annually and requires the ULARA Watermaster's approval.

#### F-4 Eagle Rock Basin – Status of Safe Yield Conditions

The Total Safe Yield for the Eagle Rock Basin is up to 500 AF/yr. (Based on 13-Yr. average for Water Years 1978-79 thru 1990-91 and 3-Yr. average for 1993-96). This consists of return flows (recharge) of imported water by Los Angeles to the Eagle Rock Basin. There is no significant safe yield of native waters (Section 5.1.4.2 of the Judgment).

The total delivered water to the Eagle Rock Basin was approximately 4,270 AF in 1995-96 and averaged 4,056 AF/yr. for the 13-Yr. period. The potential recharge from this delivered water would be 832 AF/yr. (or 4,000 AF times 0.208). However, due to the confined nature of the Eagle Rock Basin, only 60% of this potential recharge would be available to the pumpers of this basin (up to 500 AF/yr.). The pumping occurs within the confined aquifers only by Sparkletts and Deep Rock under a Physical Solution provision of the ULARA Judgment (Section 9.2.1).

The Total Safe Yield of the Eagle Rock Basin belongs to Los Angeles as a matter of Water Rights (Section 2.4.2 of the Judgment). The Physical Solution Parties (Sparkletts and Deep Rock) potentially would be allowed to extract up to 500 AF/yr. each, based on the November 1, 1965 Stipulation between Los Angeles and these parties. However, since the total safe yield is only 500 AF/yr. (approximately), the ULARA Watermasters' position would be to not allow this to take place.

There is no need to change the Safe Yield value at present. The estimated recharge based on delivered water conditions is approximately 500 AF/yr. The 1979 ULARA Judgment provides for changes to be made if needed (Sections 8.2.10 of the Judgment).

## APPENDIX G

### SAFE YIELD FACT SHEETS

SAFE YIELD FACT SHEET

SAN FERNANDO BASIN

SAN FERNANDO BASIN  
BACKGROUND DATA ON HYDROLOGY AND WATER RIGHTS\*

I. DESCRIPTION OF GROUNDWATER BASIN (SFB)

- A. Total Watershed Area - 329,000 acres (514 sq. mi.) - Plates 1 and 6
- B. Groundwater Basin Area - 112,000 acres (175 sq. mi.) - Plates 2 and 4
- C. Hill and Mountain Area - 217,000 acres (339 sq. mi.) - Plate 6
- D. Maximum Depth of Alluvium - At least 1,200 feet
- E. Total Groundwater Storage Capacity - 3,200,000 acre-feet (AF)
- F. Volume of Stored Groundwater - 2,400,000 AF (October 1, 1995)
- G. Volume\*\* of Usable Stored Groundwater - approximately 1,500,000 AF

II. AVERAGE RECHARGE TO BASIN

- A. Total Recharge (Safe Yield) - 100,000 AF per year (AF/yr) or 138 cubic feet per second (cfs)
- B. Sources of Recharge:
  - 1. Approximately 44 percent is recharge from precipitation and runoff (Native Safe Yield - 43,660 AF/yr).
  - 2. Approximately 56 percent is from return flows (recharge) from imported water applied to lawns, etc. - (56,340 AF/yr).

---

\* Prepared by Mel Blevins - ULARA Watermaster

\*\* Volume of stored groundwater that can be effectively extracted and used is limited due to water quality and hydrogeologic considerations. When the basin groundwater levels are lowered, a poorer quality of water results and it is more difficult to extract due to the hydrogeologic characteristics of the basin.

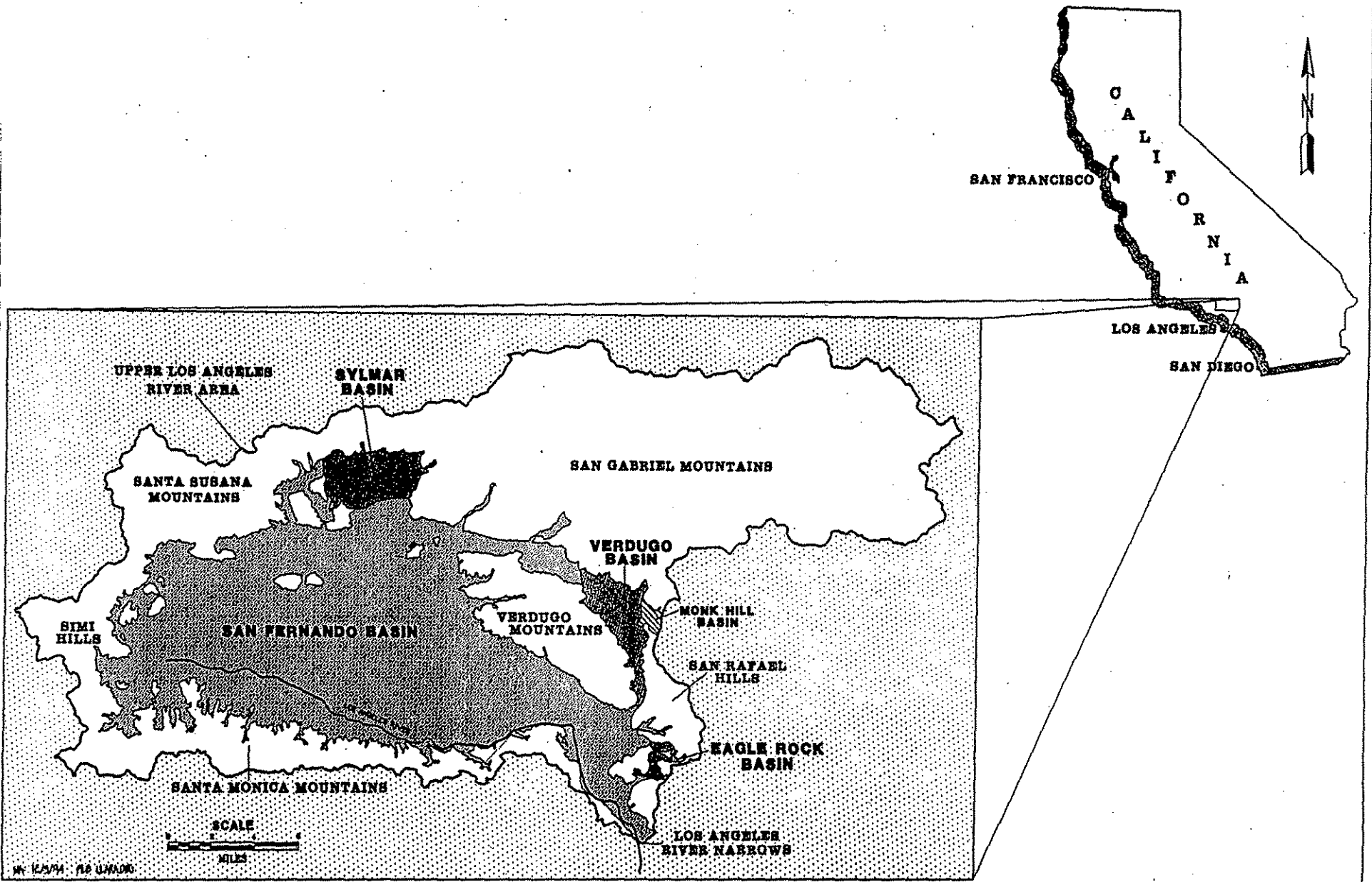
4. Pumping for Physical Solution Cleanup and Dewatering - (1993-94) - Plate 5
  - o Physical Solution - 830 AF
  - o Nonconsumptive Use - 720 AF
  - o Groundwater Dewatering - 70 AF
5. Pumping by all parties and non-parties, period between 1981-82 and 1993-94 (13-year average - 91,700 AF/yr).

IV. WATER QUALITY IN BASIN - (1993-94 DATA)

- A. Eastern portion of San Fernando Basin (where most groundwater is pumped for water supply) - hardness is approximately 170 to 190 and total dissolved solids (TDS) is 290-330 parts per million (ppm).
- B. Western portion of San Fernando Basin (pumping for dewatering and groundwater cleanup only) - hardness is approximately 400 to 700 ppm and TDS is approximately 600 to 1,500 ppm.
- C. Future Pumping from San Fernando Basin - the groundwater pumped from the eastern portion of the San Fernando Basin either meets drinking water standards or is being treated as to the volatile organic compounds (VOC) present. Nitrates in the shallow groundwater zone may exceed standards (45 ppm), but since groundwater is either blended or extracted from lower zones, there does not appear to be a significant problem.
- D. Beginning in 1980, as a result of California Department of Health Services requested testing of the groundwater, it was found that VOC contamination was in the groundwater beneath large areas of the SFB. The primary contaminants are solvents Trichloroethylene (TCE) and Perchloroethylene (PCE), widely used in industries such as metal plating, machine degreasing, and dry cleaners. TCE and PCE have been detected above the State Maximum Contaminant Level (MCL) of 5 parts per billion in over 50 percent of the San Fernando Valley production wells. Also, Nitrates have been detected in the groundwater of the SFB in excess of the MCL of 45 ppm. Nitrates ( $\text{NO}_3$ ) are the result of past agricultural practices and/or septic-cesspool systems (for the areal extent of these contaminants refer to Plates 11, 12, and 13).

- o Special constraints regarding spreading activities - as water is spread high groundwater levels reduce the rate of infiltration. The get-a-way (underflow) from the basins is limited due to hydrogeologic conditions.

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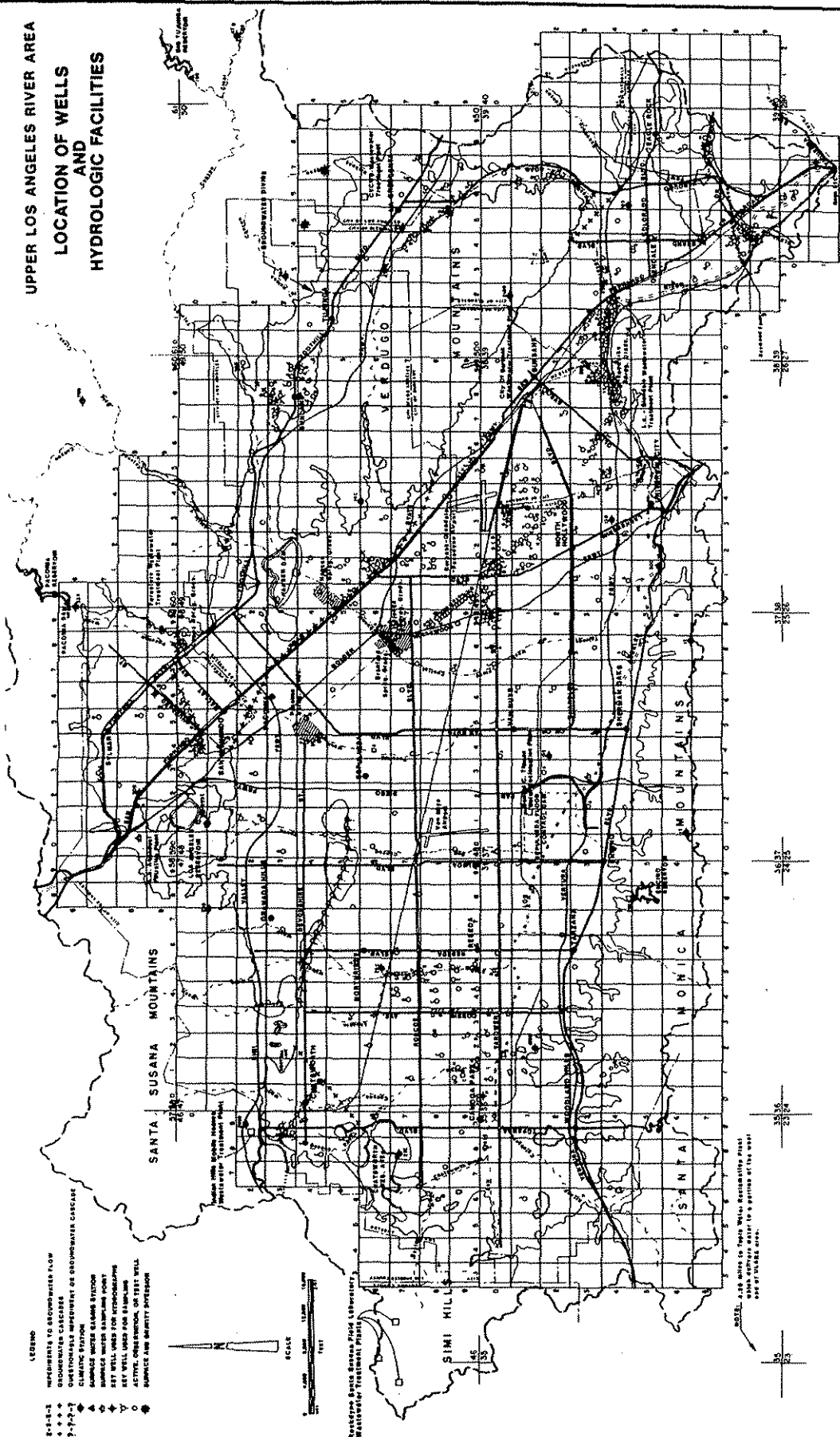


Upper Los Angeles River Area  
Vicinity and Location Map

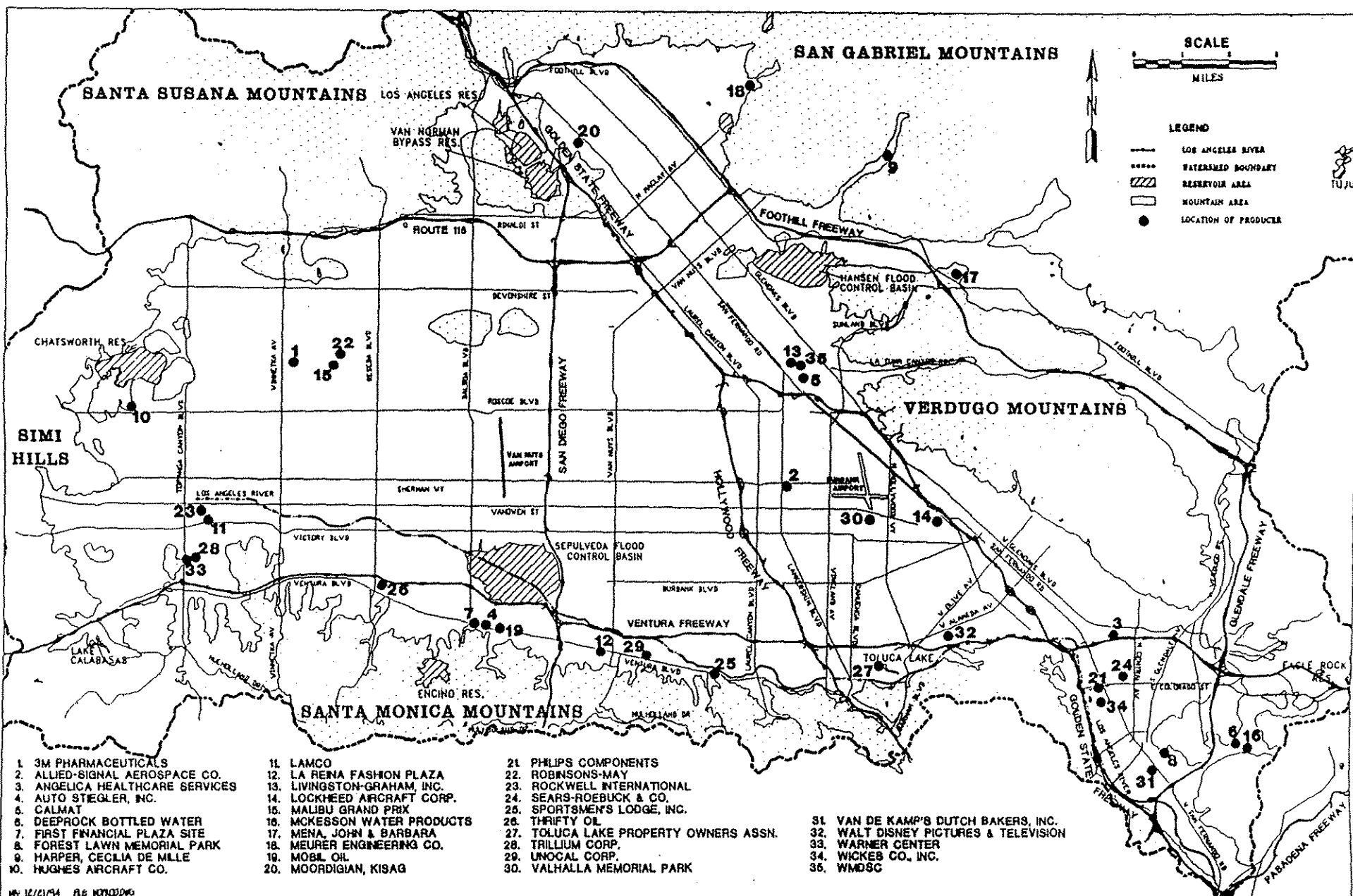
ULARA Watermaster  
Report



# UPPER LOS ANGELES RIVER AREA LOCATION OF WELLS AND HYDROLOGIC FACILITIES



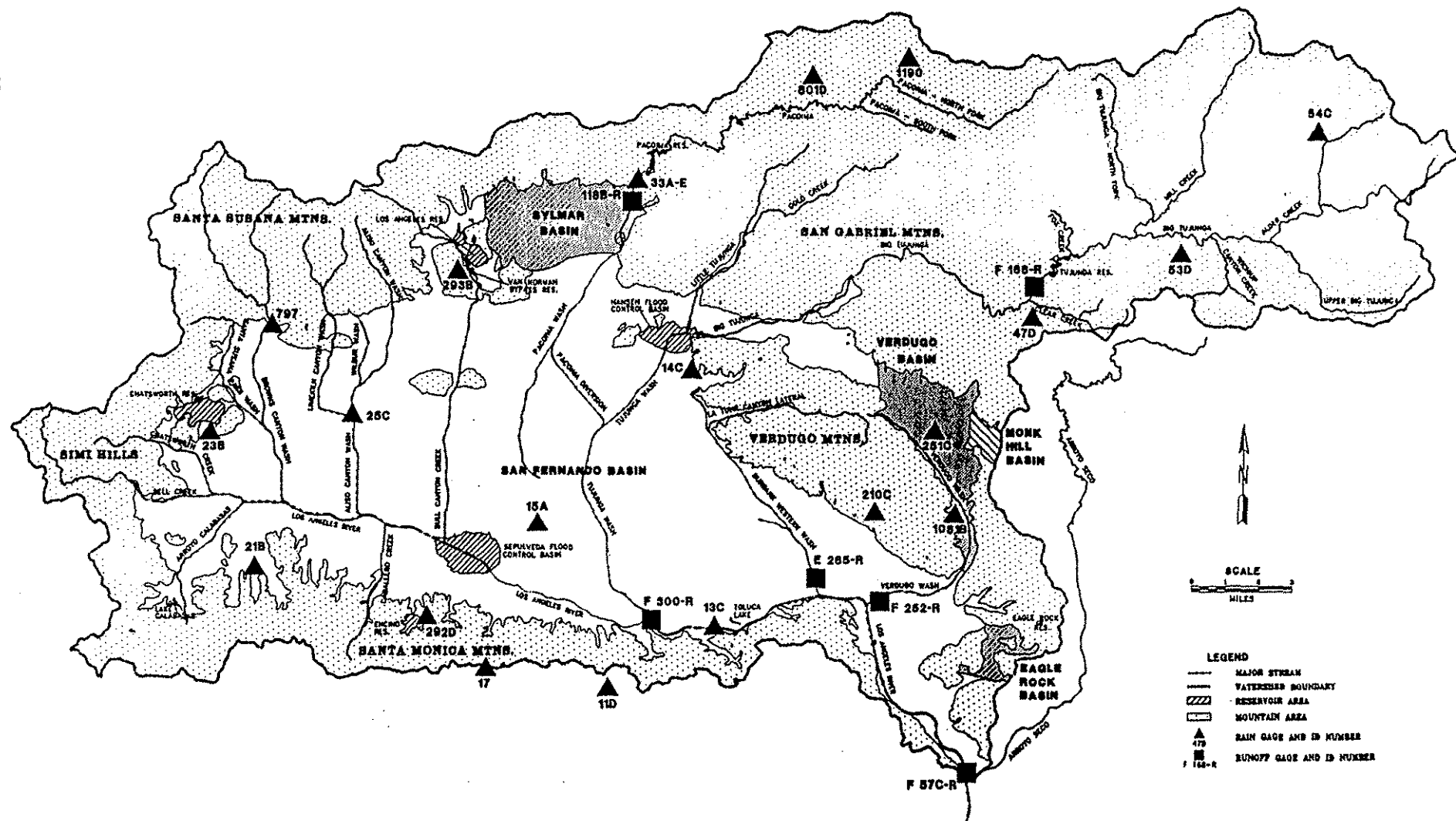




ULARA Watermaster  
Report

## Upper Los Angeles River Area: Locations of Individual Producers

PLATE  
5



MAY 12/21/94 FILE RANGLANDS

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Report

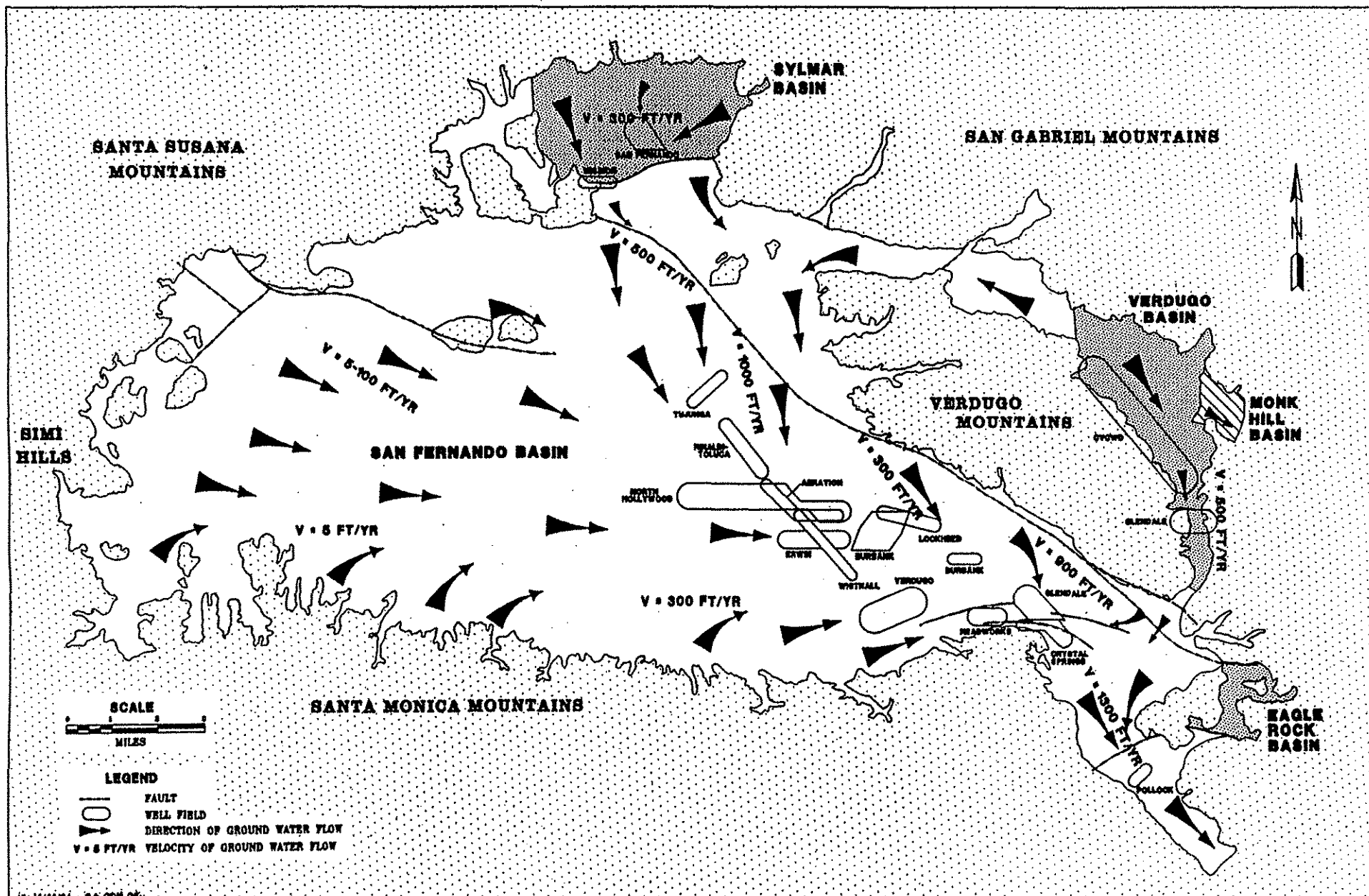
## Upper Los Angeles River Area: Locations of Rain and Runoff Measuring Stations

PLATE  
6



## Upper Los Angeles River Area: Spreading Basins and Water Reclamation Plants

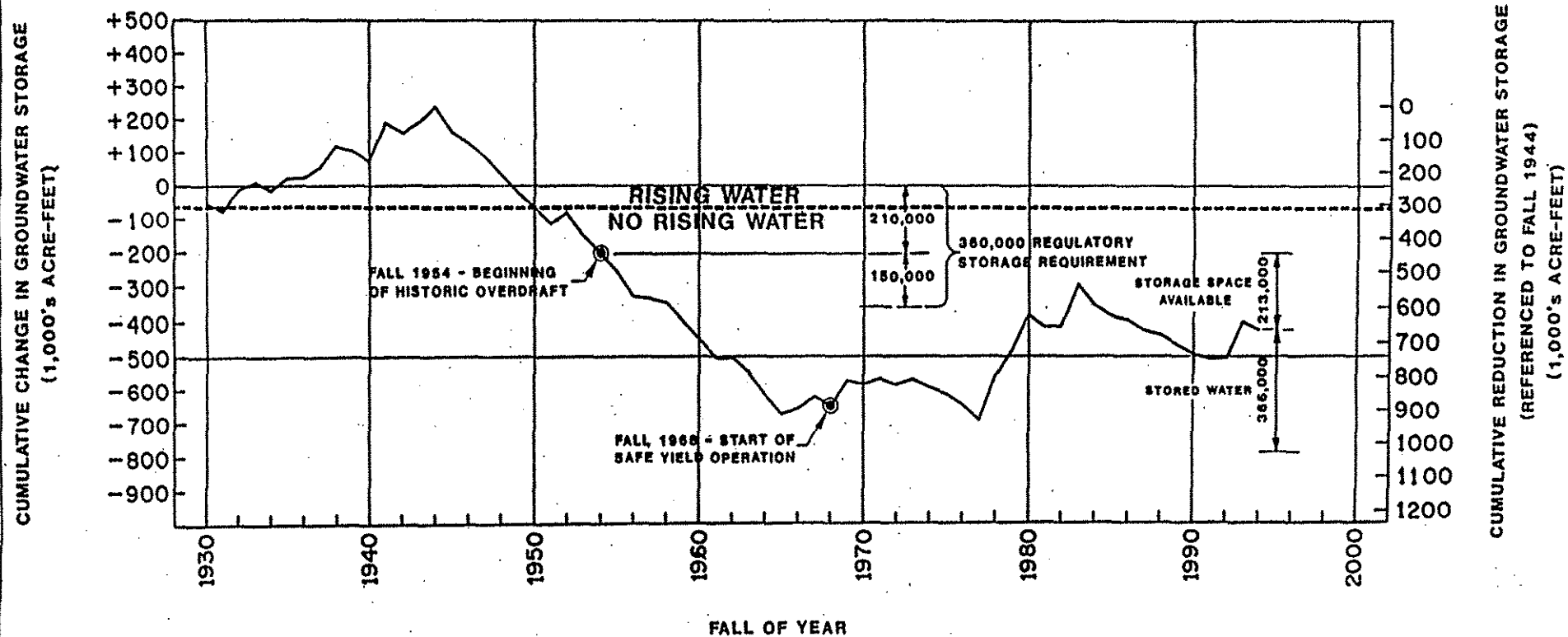




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Report

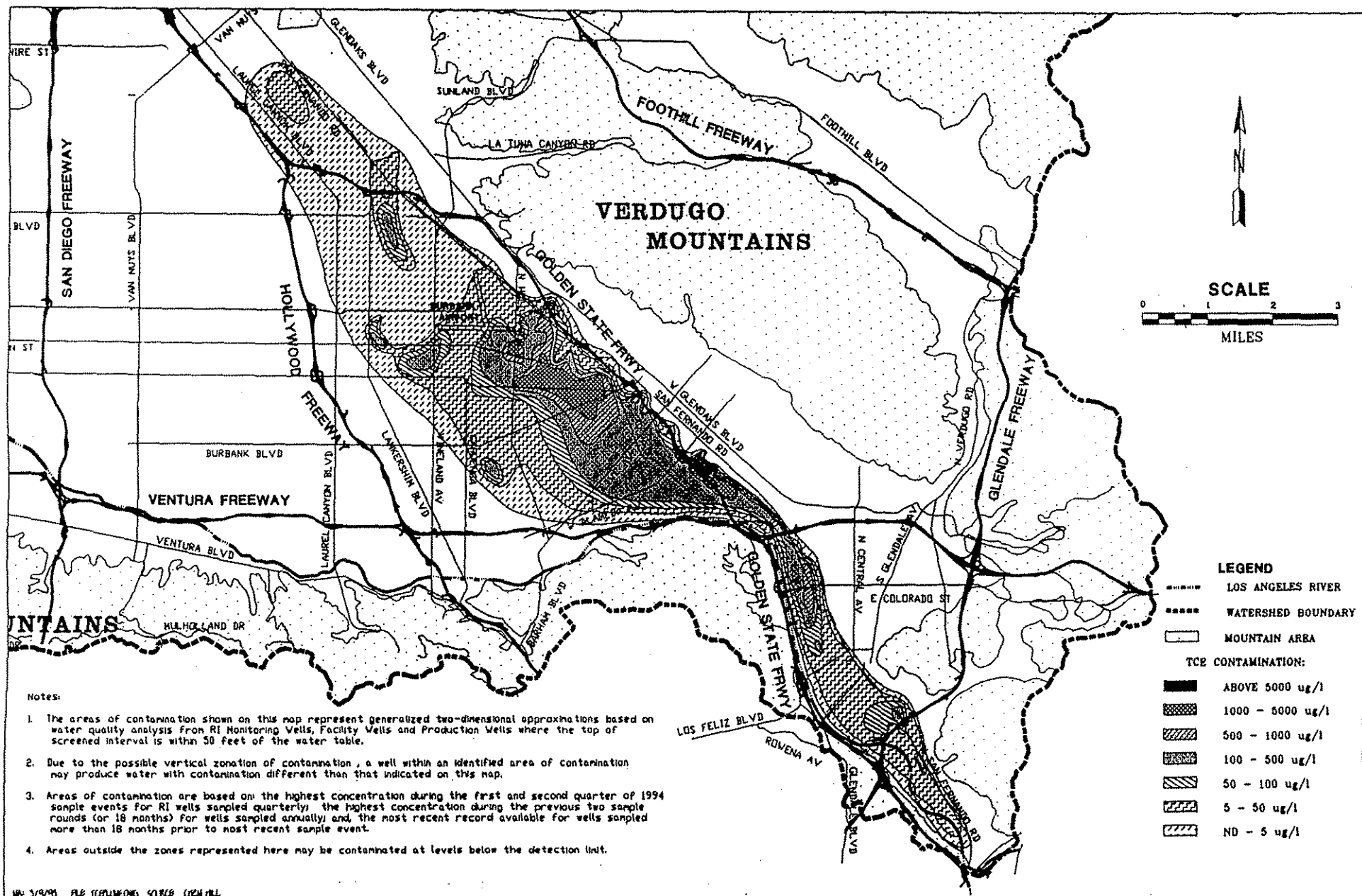
**Upper Los Angeles River Area:  
Estimated Directions and Velocities of Ground Water Flow**

9  
PLATE



**San Fernando Basin  
PCE Contamination [ug/l] In the Upper Zone [Spring 1994]**

PLATE

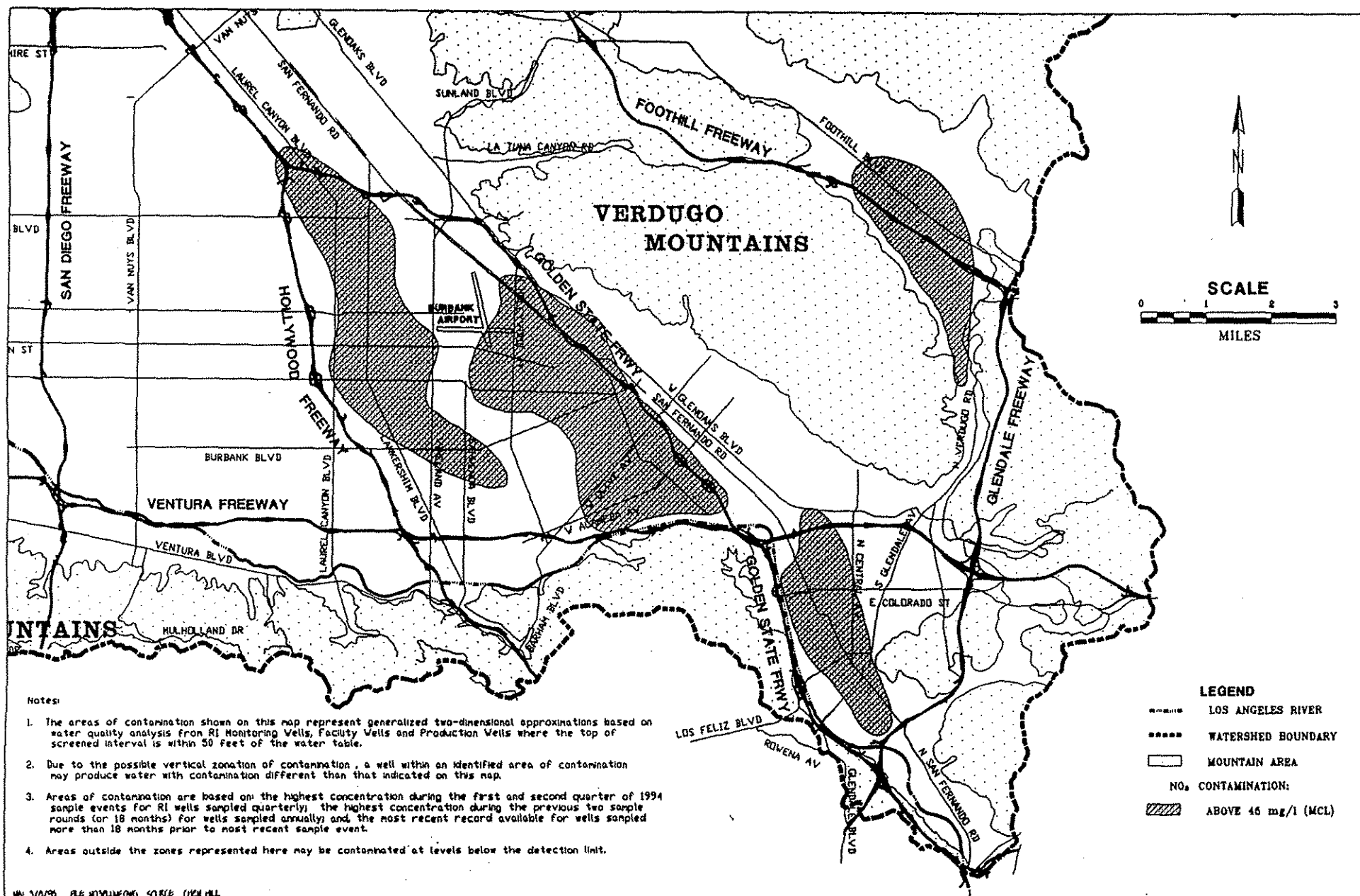


MAP 3/9/95 FILE TCE/VERDUGO SOURCE GLEN HILL

ULARA Watermaster  
Report

# San Fernando Basin TCE Contamination [ug/l] In the Upper Zone [Spring 1994]

PLATE  
12



ULARA Watermaster  
Report

# San Fernando and Verdugo Basins, NO<sub>3</sub> Contamination [mg/l] In the Upper Zone [Spring 1994]

PLATE  
1/3

SPREADING GROUNDS	TOTAL AREA IN ACRES		BASINS		AVERAGE DEPTH IN FEET		MAXIMUM CAPACITY		INFILTRATION RATE IN CUBIC FEET PER SECOND	
	DRY	WETTED	NO.	TYPE	WATER	FREEBOARD	INTAKE IN CUBIC FEET PER SECOND	HOLDING IN ACRE-Feet	SHORT DURATION	LONG DURATION
<u>LACDPW<sup>1</sup></u>										
Lopez	18	13	9	SHALLOW	2	2	25	25 <sup>2</sup>	15	7
Pacolma	169	107	12	MEDIUM	3.5	2	600	432	100	40
Hansen	158	110	19	SHALLOW	2	2	400	320	250	60
Branford	12	7	1	DEEP	35	10	1540 <sup>3</sup>	135	1	1
<u>LOS ANGELES<sup>4</sup></u>										
Tujunga	188	90	23	MEDIUM	2 - 4	2	400	281 - 560	388	100
Headworks	50	30	6	MEDIUM	4	2	70	120	40	30

<sup>1</sup> Owned and operated by Los Angeles County Department of Public Works.

<sup>2</sup> Capacity reduced due to 1971 San Fernando Earthquake

<sup>3</sup> Outflow capacity equals intake capacity

<sup>4</sup> Owned by City of Los Angeles. Tujunga operated by Los Angeles County Dept. of Public Works. Headworks operated by the City of Los Angeles Department of Water and Power.

SPREADING GROUNDS  
IN THE  
SAN FERNANDO BASIN

Plate 14

### III. CONSTRAINTS AND CONCERNS

#### A. Environmental Protection Agency (EPA)

The EPA's Remedial Investigation (RI) is scheduled for completion in June-July 1992 and will characterize the San Fernando Basin (SFB) and its contamination.

The RI will have the following findings:

1. The SFB is stratified.
2. Contamination extent and severity differs by zone.
3. SFB Groundwater Flow Model will simulate gradients and flows in the SFB in response to various operations.
4. EPA and DWP will continue to monitor water quality in the SFB on a quarterly basis.

There are no immediate concerns anticipated with regard to the EPA.

#### B. Regional Water Quality Control Board (RWQCB)

The RWQCB is moving to amend their Basin plan, as they did in the San Gabriel Valley, to urge the ULARA Watermaster to expand its control over pumping in the SFB. The RWQCB plans to hold a public workshop in April 1992 and is pushing to finalize this amendment in the summer.

Although the RWQCB is not currently empowered to control SFB pumping, its amendment will ask that the ULARA Watermaster consider contaminant migration in its policies and encourage purveyors to pump from within contaminated areas primarily.

The RWQCB, which is partially financed by the EPA to perform source investigations, does not seem interested in considering the RI findings while it proceeds with its amendment. The RWQCB action should be a concern to the Department as it is a threat to the DWP's SFB operations now and in the future.

#### C. Tujunga Well Field (TWF) Area Contamination

1. Current Contaminant Levels for TJ-12  
(SLDS for TCE & NO<sub>3</sub> shows concentrations - MCL)

SAFE YIELD FACT SHEET

SYLMAR BASIN

SYLMAR BASIN  
BACKGROUND DATA ON HYDROLOGY AND WATER RIGHTS

I. DESCRIPTION OF GROUNDWATER BASIN

- A. Total Watershed Area - (29,600 acres or 46.3 sq. mi.) - Plates 1 and 2
- B. Basin Area - (5,600 acres or 8.8 sq. mi.) - Plate 3
- C. Tributary Hill and Mountains - (24,000 acres or 37.5 sq. mi.) - Plate 2
- D. Maximum Depth of Water-bearing Materials - (12,000 ft.)
- E. Volume of Stored Groundwater - (304,700 AF; as of Oct. 1995.)
- F. Amount of Groundwater Underflow Through Sylmar and Pacoima Notches (540 AF/yr.)

II. SURFACE HYDROLOGY

- A. Average Precipitation on Valley Fill Area - (29-yr. avg. = 8,700 AF/yr. or 18.7 in./yr.) - Plate 2. Average precipitation 1985-1995 = 17.98 in./yr.
- B. Average Precipitation on Hill and Mountain Areas - (29-yr. avg. = 49,500 AF/yr. or 24.8 in./yr.) - Plate 2.
- C. Hill and Mountain Runoff - (29-yr. avg. = 7,100 AF/yr.) - Plate 2.
- D. Surface Runoff from Impervious Areas on Valley - (29-yr. avg. = 2,700 AF/yr.)
- E. Recharge from Precipitation and Runoff - (3,850 AF/yr.) - ULARA Judgment - 1979.

V. WATER RIGHTS - JANUARY 26, 1979 - ULARA JUDGMENT

A. City of Los Angeles

1. Return Flow from Imports - (2,340 AF/yr.)
2. Share of Native Safe Yield - (1,170 AF/yr.)  
(Based on Approp. Rights).
3. Total Safe Yield Pumping - (3,105 AF/yr.)  
Based on stipulation of March 22, 1984.

B. City of San Fernando

1. Return Flow from Imports - (20 AF/yr.)
2. Share of Native Safe Yield - (2,680 AF/yr.)  
(Based on Approp. Right)
3. Total Safe Yield Pumping - (3,105 AF/yr.)  
Based on stipulation of March 22, 1984.

C. Private Parties - Overlying Rights

1. Meurer Engr. - Based on reasonable beneficial use. (Santiago Estates - successor to Meurer Engr.).
2. Moordigian - Was assigned an overlying water right on January 26, 1979. However, the lands have been subdivided and sold, and the overlying water rights abandoned.

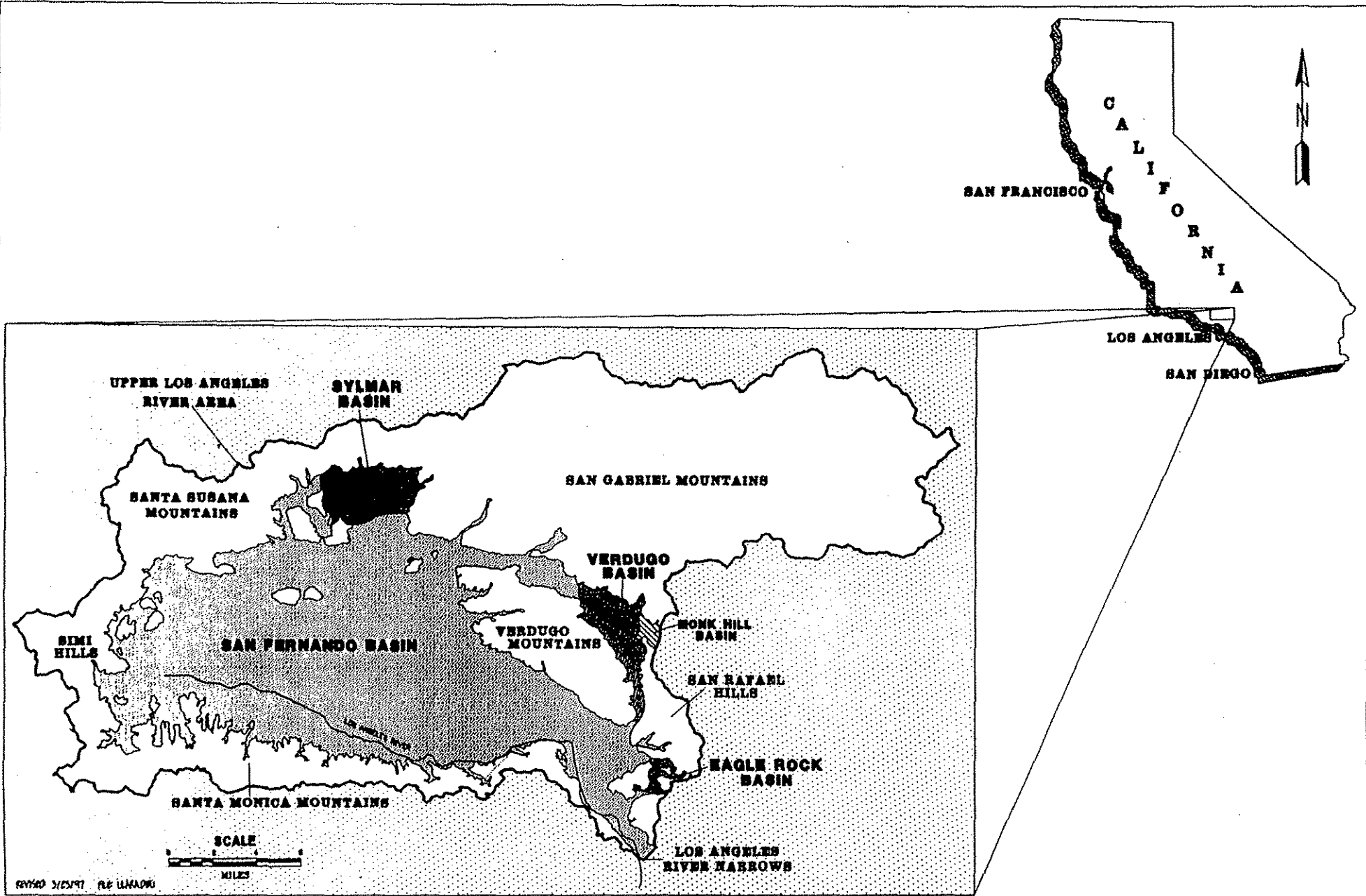
VI. GROUNDWATER CONDITIONS

A. Cum. Change in Groundwater Storage - Table 3  
Fig. 3

1. Period 1928-29 to 1967-68 - (26,100 AF or 650 AF/yr.)
2. Period 1968-69 to 1994-95 - (7,442 AF or 276 AF/yr.)

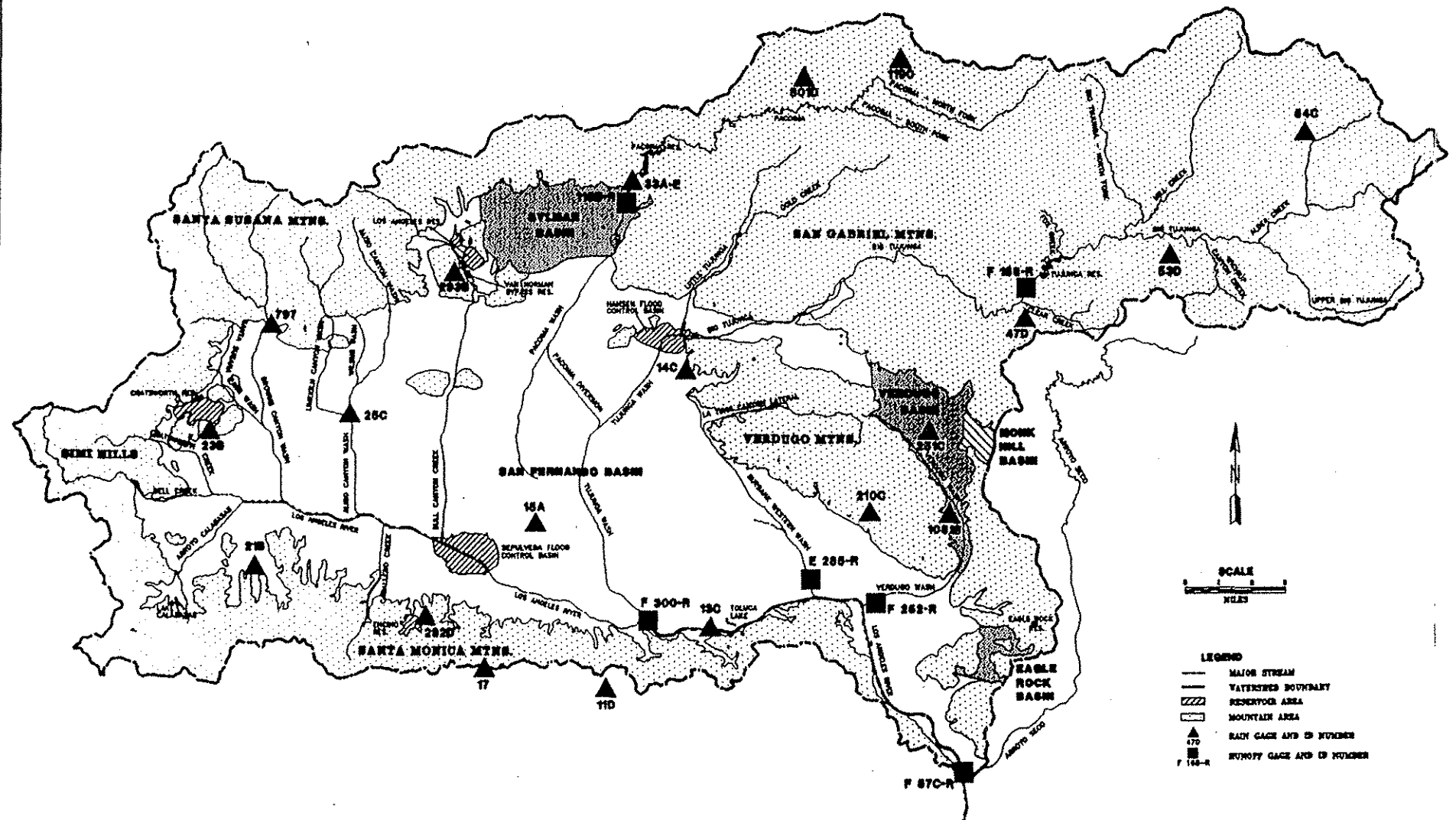
B. Cum. Departure from Safe Yield Pumping - Table 4 &  
Fig. 4 (6,210 AF/yr. vs. Historic Pumping in  
period 1954-55 to 1994-95) - (1,138 AF or  
28 AF/yr.)

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1995-96 Water Year  
ULARA Watermaster  
Report

# Upper Los Angeles River Area: Vicinity and Location Map



1995-96 Water Year  
ULARA Watermaster  
Report

## Upper Los Angeles River Area: Locations of Rain and Runoff Measuring Stations

PLATE  
2







SYLMAR BASIN  
DEPARTURE FROM SAFE YIELD PUMPING  
(ACRE - FEET)

WATER YEAR	SAFE YIELD	ANNUAL PUMPING	CHANGE IN STORAGE	
			ANNUAL	CUM. CHANGE
1954 - 55 <sup>3</sup>	6,210	5,630	580	580
56	6,210	5,980	230	810
57	6,210	6,020	190	1,000
58	6,210	5,470	740	1,740
59	6,210	5,170	1,040	2,780
1959 - 60	6,210	6,840	-630	2,150
61	6,210	6,560	-350	1,800
62	6,210	6,020	190	1,990
63	6,210	6,910	-700	1,290
64	6,210	6,360	-150	1,140
1964 - 65	6,210	6,370	-160	980
66	6,210	6,720	-510	470
67	6,210	6,900	-690	-220
68	6,210	7,240	-1,030	-1,250
69	6,210	5,570	640	-610
1969 - 70	6,210	6,510	-300	-910
71	6,210	4,840	1,370	460
72	6,210	6,620	-410	50
73	6,210	6,240	-30	20
74	6,210	6,420	-210	-190
1974 - 75	6,210	6,320	-110	-300
76	6,210	6,560	-350	-650
77	6,210	6,500	-290	-940
78	6,210	7,230	-1,020	-1,960
79	6,210	7,160	-950	-2,910
1979 - 80	6,210	6,100	110	-2,800
81	6,210	7,500	-1,290	-4,090
82	6,210	6,780	-570	-4,660
83	6,210	6,181	29	-4,631
84	6,210	7,013	-803	-5,434
1984 - 85	6,210	6,208	2	-5,432
86	6,210	6,241	-31	-5,463
87	6,210	6,139	71	-5,392
88	6,210	5,942	268	-5,124
89	6,210	5,459	751	-4,373
1989 - 90	6,210	5,389	821	-3,552
91	6,210	5,546	664	-2,888
92	6,210	6,118	92	-2,796
93	6,210	3,514	2,696	-100
94	6,210	5,450	760	660
1994-95 <sup>3</sup>	6210	5732	478	1,138

SYLMAR BASIN  
CHANGE IN GROUNDWATER STORAGE  
(ACRE - FEET)

CHANGE IN STORAGE			
WATER YEAR	ANNUAL	CUM. CHANGE	TOTAL GROUNDWATER STORAGE
29	-60	-60	323,220
1929 - 30	290	230	323,510
31	1,020	1,250	324,530
32	2,460	3,710	326,990
33	-520	3,190	326,470
34	-80	3,110	326,390
1934 - 35	-1,130	1,980	325,260
36	-730	1,250	324,530
37	-1,380	-130	323,150
38	-1,870	-2,000	321,280
39	150	-1,850	321,430
1939 - 40	-3,660	-5,510	317,770
41	6,040	530	323,810
42	-1,610	-1,080	322,200
43	20	-1,060	322,220
44	1,490	430	323,710
1944 - 45	-300	130	323,410
46	970	1,100	324,380
47	-1,530	-430	322,850
48	-2,480	-2,910	320,370
49	-4,270	-7,180	316,100
1949 - 50	20	-7,160	316,120
51	-710	-7,870	315,410
52	3,940	-3,930	319,350
53	-2,560	-6,490	316,790
54	-780	-7,270	316,010
1954 - 55	-600	-7,870	315,410
56	-2,280	-10,150	313,130
57	-1,500	-11,650	311,630
58	230	-11,420	311,860
59	-1,270	-12,690	310,590
1959 - 60	-1,700	-14,390	308,890
61	-5,890	-20,280	303,000
62	-4,470	-24,750	298,530
63	-2,990	-27,740	295,540
64	-2,680	-30,420	292,860

CHANGE IN STORAGE			
WATER YEAR	ANNUAL	CUM. CHANGE	TOTAL GROUNDWATER STORAGE
1964 - 65	-1,740	-32,160	291,120
66	5,100	-27,060	296,220
67	3,430	-23,630	299,650
68	-2,440	-26,070	297,210
69	3,760	-22,310	300,970
1969 - 70	150	-22,160	301,120
71	3,400	-18,760	304,520
72	-1,870	-20,630	302,650
73	-2,870	-23,500	299,780
74	-520	-24,020	299,260
1974 - 75	-3,180	-27,200	296,080
76	-4,700	-31,900	291,380
77	-1,200	-33,100	290,180
78	1,020	-32,080	291,200
79	1,290	-30,790	292,490
1979 - 80	670	-30,120	293,160
81	-2,070	-32,190	291,090
82	-2,960	-35,150	288,130
83	7,320	-27,830	295,450
84	-4,430	-32,260	291,020
1984 - 85	1,810	-30,450	292,830
86	314	-30,136	293,144
87	920	-29,216	294,064
88	371	-28,845	294,435
89	-749	-29,594	293,686
1989 - 90	-340	-29,934	293,346
91	-124	-30,058	293,222
92	2,188	-27,870	295,410
93	11,069	-16,801	306,479
94	-3,317	-20,118	303,162
1994 - 95	1,490	-18,628	304,652

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Table 2

Table 4

SYLMAR BASIN  
DEPARTURE FROM SAFE YIELD PUMPING  
(ACRE - FEET)

WATER YEAR	SAFE YIELD	ANNUAL PUMPING	DEPARTURE	
			ANNUAL	CUM. CHANGE
1954 - 55	6,210	5,630	580	580
56	6,210	5,980	230	810
57	6,210	6,020	190	1,000
58	6,210	5,470	740	1,740
59	6,210	5,170	1,040	2,780
1959 - 60	6,210	6,840	-630	2,150
61	6,210	6,560	-350	1,800
62	6,210	6,020	190	1,990
63	6,210	6,910	-700	1,290
64	6,210	6,360	-150	1,140
1964 - 65	6,210	6,370	-160	980
66	6,210	6,720	-510	470
67	6,210	6,900	-690	-220
68	6,210	7,240	-1,030	-1,250
69	6,210	5,570	640	-610
1969 - 70	6,210	6,510	-300	-910
71	6,210	4,840	1,370	460
72	6,210	6,620	-410	50
73	6,210	6,240	-30	20
74	6,210	6,420	-210	-190
1974 - 75	6,210	6,320	-110	-300
76	6,210	6,560	-350	-650
77	6,210	6,500	-290	-940
78	6,210	7,230	-1,020	-1,960
79	6,210	7,160	-950	-2,910
1979 - 80	6,210	6,100	110	-2,800
81	6,210	7,500	-1,290	-4,090
82	6,210	6,780	-570	-4,660
83	6,210	6,181	29	-4,631
84	6,210	7,013	-803	-5,434
1984 - 85	6,210	6,208	2	-5,432
86	6,210	6,241	-31	-5,463
87	6,210	6,139	71	-5,392
88	6,210	5,942	268	-5,124
89	6,210	5,459	751	-4,373
1989 - 90	6,210	5,389	821	-3,552
91	6,210	5,546	664	-2,888
92	6,210	6,118	92	-2,796
93	6,210	3,514	2,696	-100
94	6,210	5,450	760	660
1994-95	6210	5732	478	1,138

SYLMAR BASIN  
CITY OF SAN FERNANDO - ALLOWED PUMPING  
NATIVE AND IMPORT SAFE YIELD

(ACRE - FEET)

WATER YEAR	MWD WATER IMPORT		NATIVE SAFE YIELD	TOTAL SAFE YIELD PUMPING
	DELIVERED	RETURN		
1968 - 69	0	0	2,682	2,682
69 - 70	0	0	2,682	2,682
70 - 71	484	127	2,682	2,809
71 - 72	142	37	2,682	2,719
72 - 73	0	0	2,682	2,682
73 - 74	22	6	2,682	2,688
1974 - 75	0	0	2,682	2,682
75 - 76	0	0	2,682	2,682
76 - 77	65	17	2,682	2,699
77 - 78	57	15	2,682	2,697
78 - 79	0	0	2,682	2,682
1979 - 80	214	56	2,682	2,738
80 - 81	24	6	2,682	2,688
81 - 82	0	0	2,682	2,682
82 - 83	80	21	2,682	2,703
83 - 84	31	8	2,682	2,690
1984 - 85	424	112	2,682	2,794
85 - 86	518	136	2,682	2,818
86 - 87	1,257	331	2,682	3,013
87 - 88	140	37	2,682	2,719
88 - 89	86	23	2,682	2,705
1989 - 90	53	14	2,682	2,696
90 - 91	101	27	2,682	2,709
91-92	51	13	2,682	2,695
92-93	116	31	2,682	2,713
93-94	8	2	2,682	2,684
1994-95	0	0	2,682	2,682
27 YR AVG.	137	36	2,285	2,321

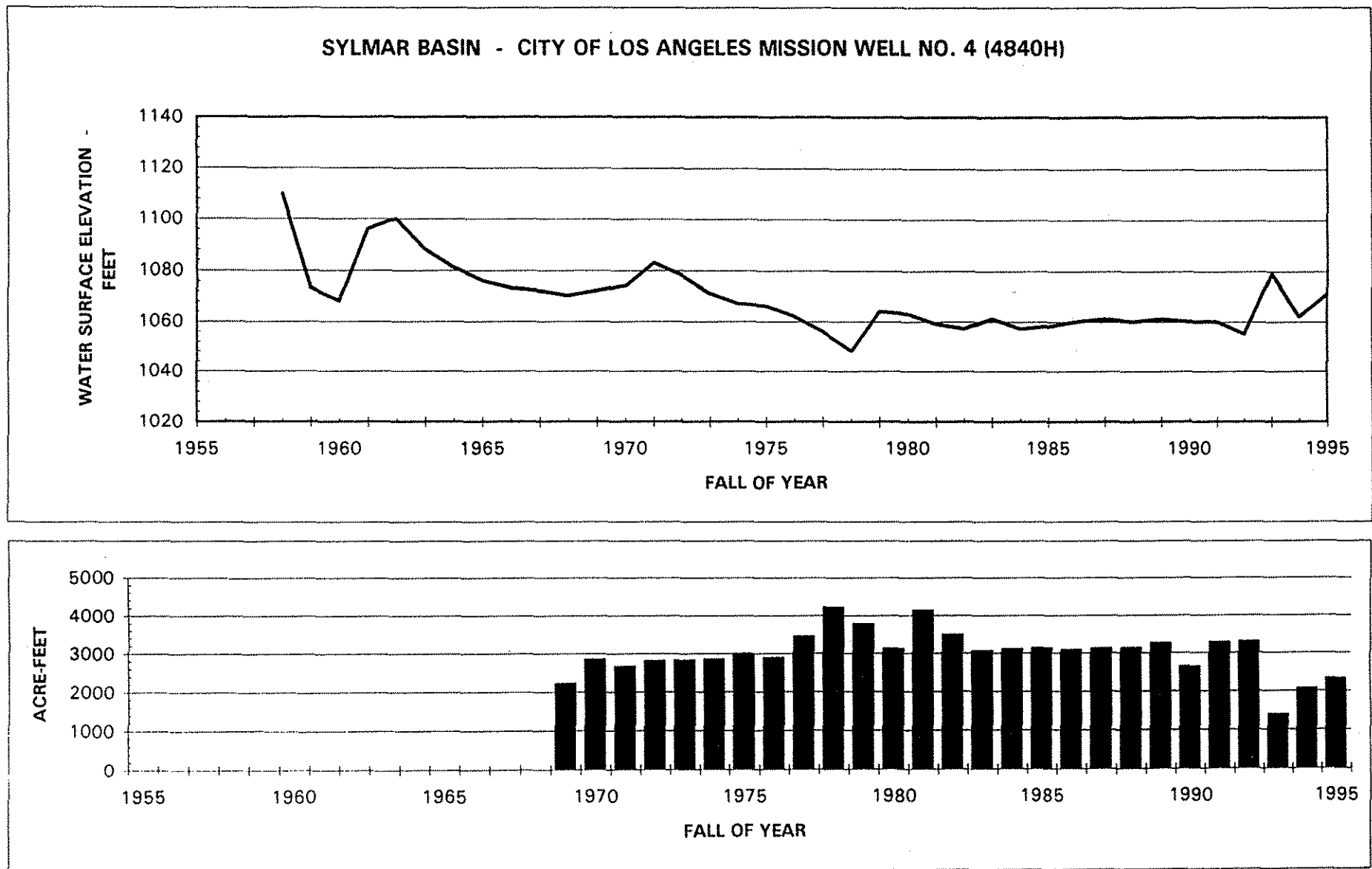


Figure 1

# SYLMAR BASIN CITY OF SAN FERNANDO WELLS NO. 4 (5969) AND NO. 2A (5969D) AND NO. 7A (5868)

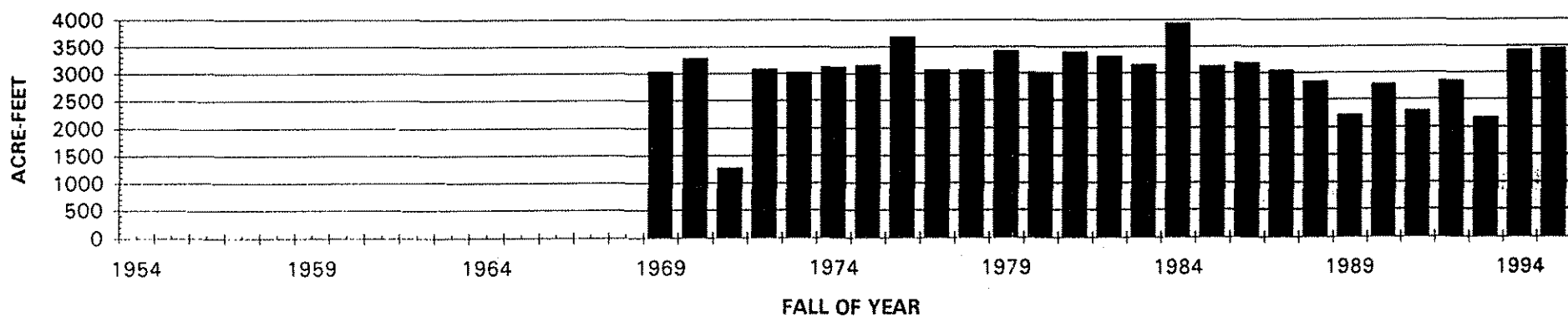
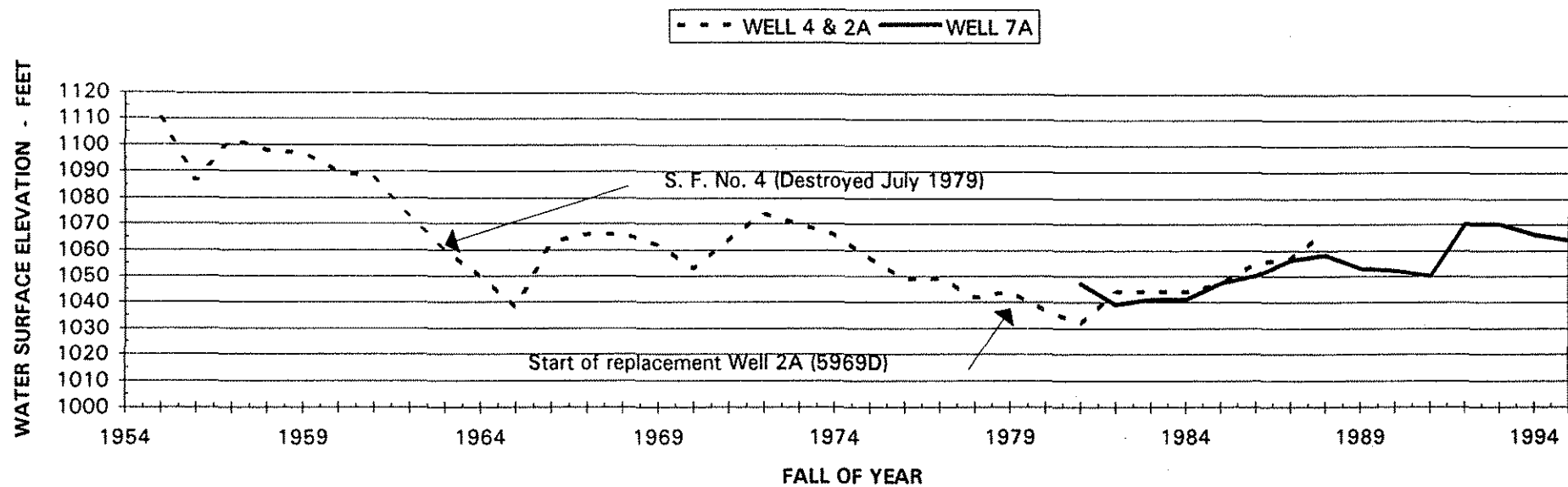


Figure 2

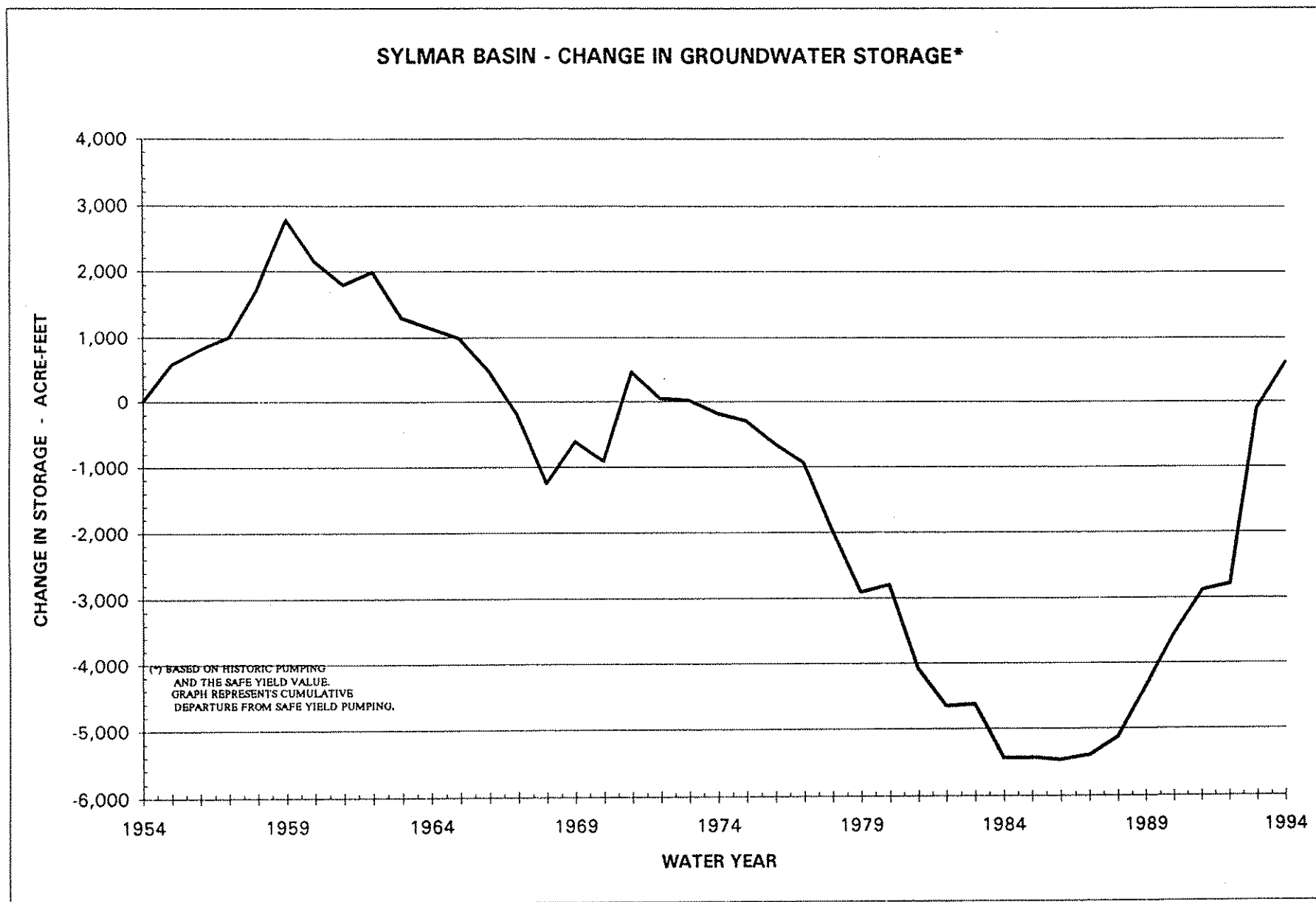
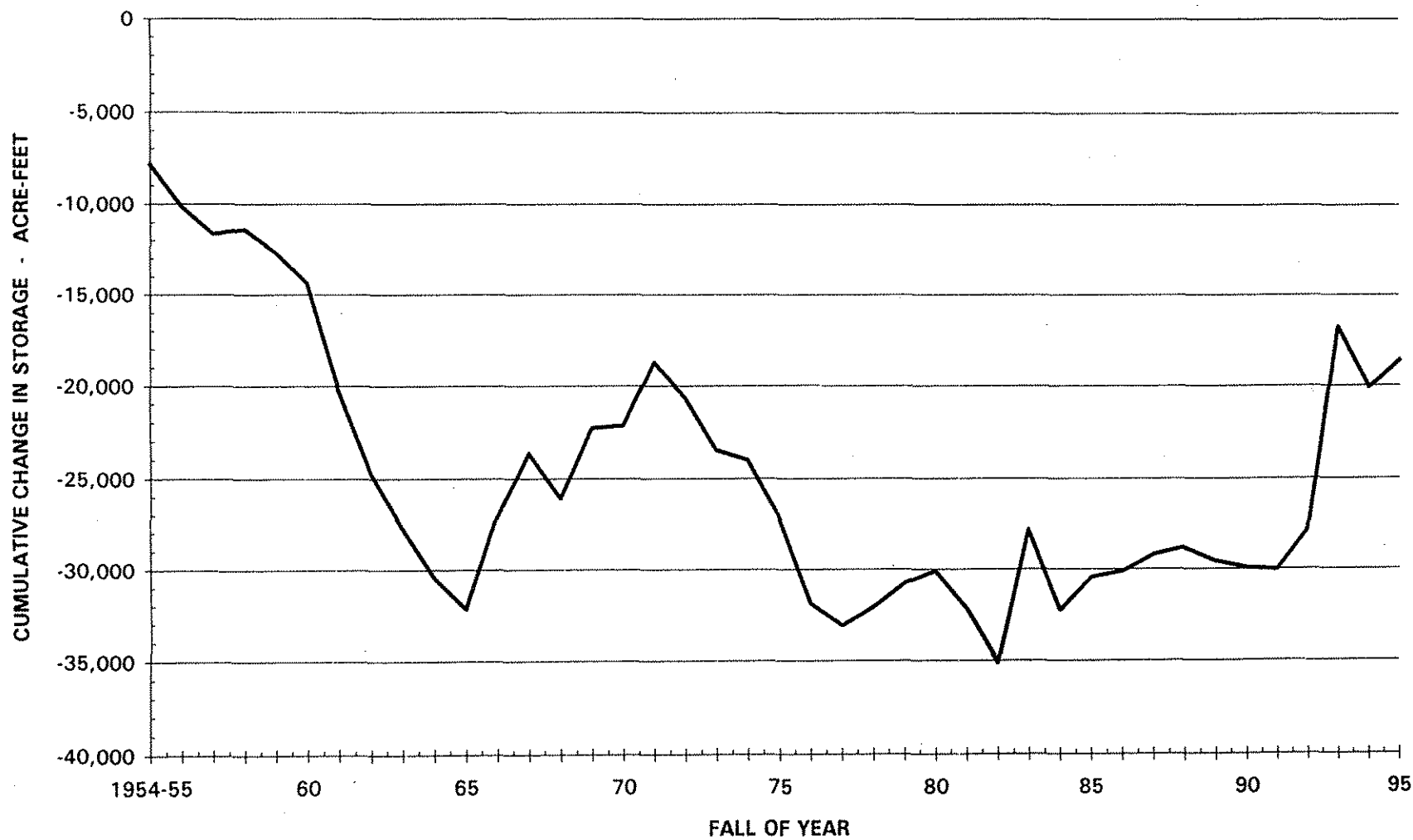


Figure 3

SYLMAR BASIN - CUMULATIVE CHANGE IN GROUNDWATER STORAGE FROM 1929



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Figure 4

SAFE YIELD FACT SHEET

VERDUGO BASIN

VERDUGO BASIN  
BACKGROUND DATA ON HYDROLOGY

I. DESCRIPTION OF BASIN

- A. Total Watershed Area - (12,800 acres or 20.0 sq. mi.)
- B. Valley Fill Basin - (4,400 acres or 6.9 sq. mi.)
- C. Tributary Hill and Mountains - (8,400 acres or 13.1 sq. mi.)
- D. Maximum Depth of Water-Bearing Materials - (500 ft.)
- E. Volume of Stored Groundwater - (108,000 AF; as of Fall 1994)
- F. Amount of Groundwater Underflow to Monk Hill Basin - (300 AF/yr.) and to San Fernando Basin (70 AF/yr.)

II. SURFACE HYDROLOGY\*<sup>1</sup>

- A. Average Precipitation on Valley Fill Area - (29-yr. avg. = 8,500 AF/yr. or 23.2 in./yr)
- B. Average Precipitation on Hill and Mountain Areas - (29-yr. avg = 16,200 AF/yr. or 23.1 in./yr.)
- C. Hill and Mountain Runoff - (29-yr. avg. = 1,000 AF/yr.)
- D. Surface Runoff from Impervious Areas on Valley - (29-yr. avg. = 2,800 AF/yr.)
- E. Recharge from Precipitation and Runoff - (3,590 AF/yr.)

III. AVERAGE RECHARGE TO BASIN

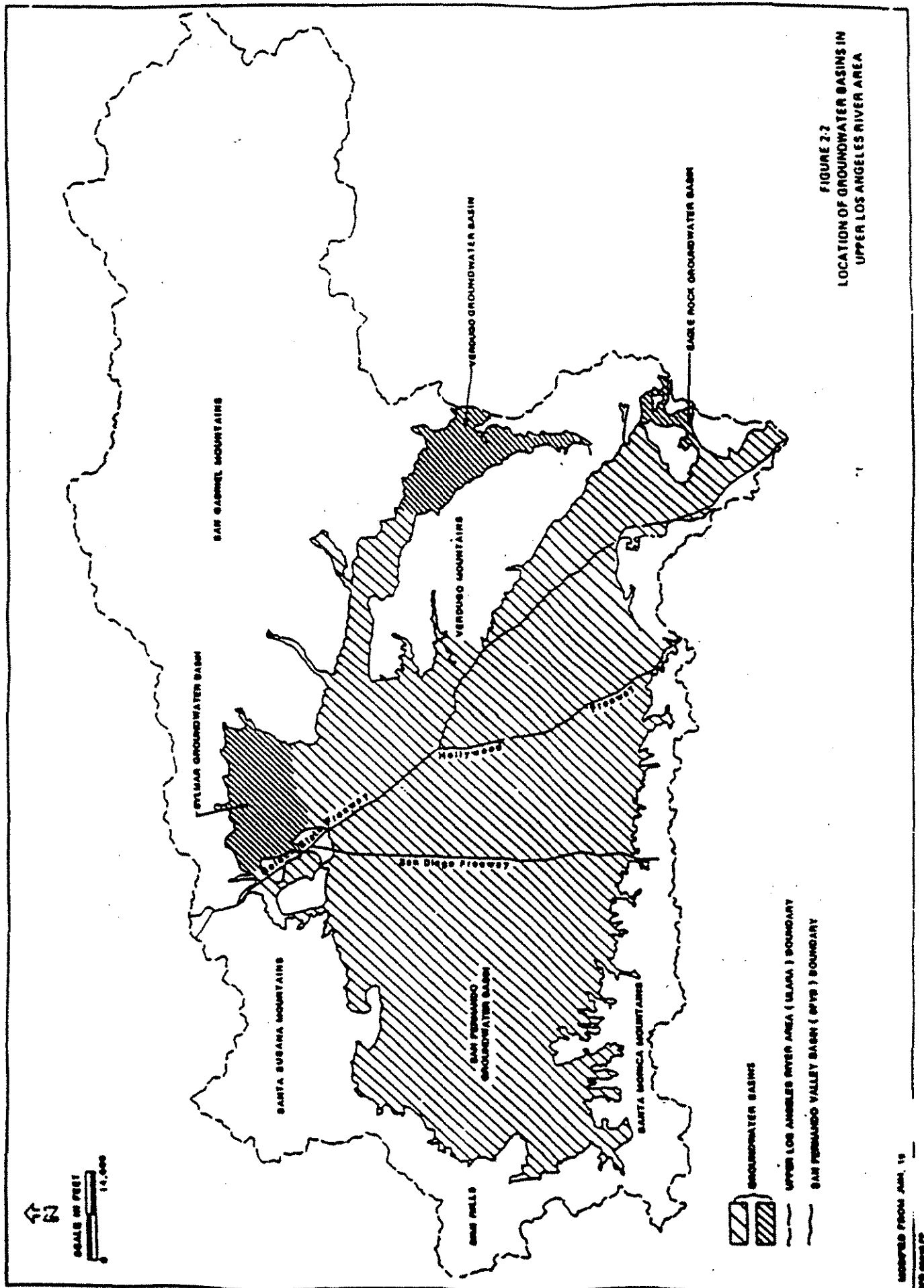
- A. Total Recharge (Safe Yield) - (7,150 AF/yr.)
- B. Sources of Recharge
  - 1. Native and Safe Yield - from Precipitation on Valley Area and Runoff - (3,590 AF/yr; 50% of total)
  - 2. Recharge (return flow) of Delivered Imported Water - (3,560 AF/yr; 50% of total)

IV. HISTORIC GROUNDWATER PUMPING

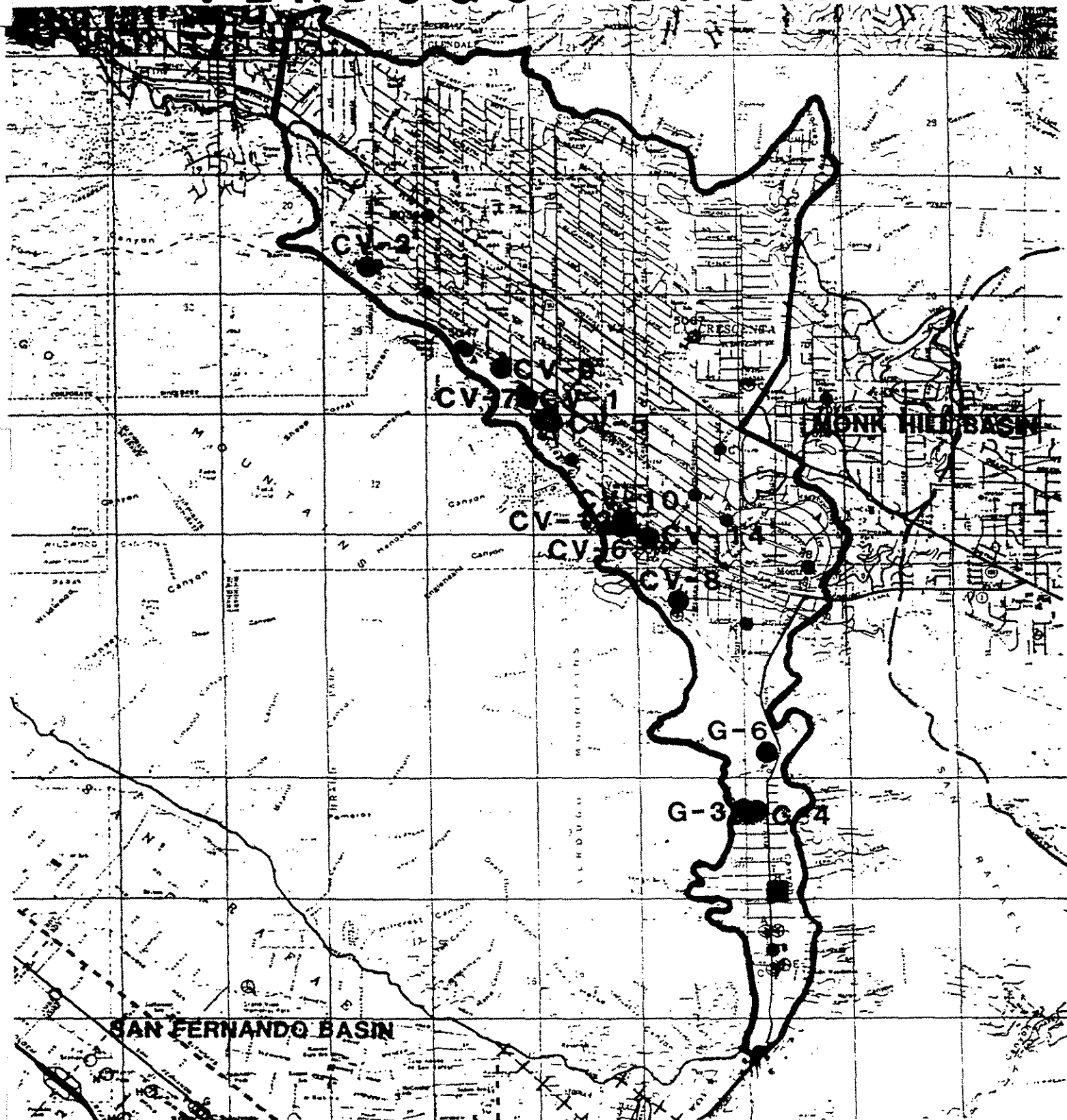
- A. City of Glendale:
  - 1. Period 1928-29 to 1967-68 - (106,520 AF or 2,660 AF/yr.)
  - 2. Period 1968-69 to 1993-94 - (63,234 AF or 2,432 AF/yr.)
- B. Crescenta Valley County Water District (CVCWD):
  - 1. Period 1928-29 to 1967-68 - (71,360 AF or 1,780 AF/yr.)
  - 2. Period 1968-69 to 1993-94 - (66,804 or 2,569 AF/yr.)
- C. Private Parties
  - 1. Last pumping by any private party was in 1964-65.

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<sup>1</sup> \*29 year period used in Safe-Yield calculation and is a Standard Base Period



# VERDUGO BASIN



- VERDUGO BASIN BOUNDARY
- G-3 ● CITY OF GLENDALE WELL
- CV-8 ● C.V.C.W.D. WELL
- GLENDALE TEST WELL NO. 7 (3971B)

GROUNDWATER PUMPING AND RISING WATER OUTFLOW  
VERDUGO BASIN

(acre-feet)

Water Year	Safe Yield	Total Extractions	Safe Yield - Extractions	Rising Water Outflow*
1971-1972	7,150	6,666	484	2,050
72-73	7,150	6,260	890	1,706
73-74	7,150	6,397	753	1,772
1974-1975	7,150	5,455	1,695	1,333
75-76	7,150	4,962	2,188	2,170
76-77	7,150	4,173	2,977	1,683
77-78	7,150	3,747	3,403	1,168
78-79	7,150	3,508	3,642	2,470
1979-1980	7,150	3,307	3,843	5,150
80-81	7,150	4,262	2,888	5,780
81-82	7,150	5,608	1,542	3,710
82-83	7,150	5,186	1,964	5,330
83-84	7,150	5,560	1,590	4,000
1984-1985	7,150	5,834	1,316	2,710
85-86	7,150	5,493	1,657	2,470
86-87	7,150	4,874	2,276	2,100
87-88	7,150	4,364	2,786	3,548
88-89	7,150	4,349	2,801	1,995
1989-1990	7,150	4,232	2,918	1,182
90-91	7,150	3,845	3,305	1,157
91-92	7,150	3,264	3,886	1,412
92-93	7,150	3,547	3,603	3,335
1993-1994	7,150	5,036	2,114	1,387
Total	164,450	109,929	54,521	59,618
23-Year Avg.	7,150	4,780	2,370	2,592

\* First calculated in 1971-1972 based on LACFCD Gaging Station F-252R, located in the Verdugo Channel. Calculation appears in annual ULARA Watermaster Report.

\*\*Large increase in 79-80 is probably due to a change in the method of measurement.

DEPARTURE FROM SAFE YIELD PUMPING  
VERDUGO BASIN

(acre-feet)

Water Year	Safe Yield	Total Extractions*	Departure from Safe Yield		
			Annual	Cumulative (starting 54-55)	Cumulative (beginning 68-69)
1954-1955	7,150	4,077	3,073	1,870	
55-56	7,150	3,971	3,179	5,049	
56-57	7,150	3,967	3,183	8,232	
57-58	7,150	4,584	2,566	10,798	
58-59	7,150	5,161	1,989	12,787	
1959-1960	7,150	5,156	1,994	14,781	
60-61	7,150	5,189	1,961	16,742	
61-62	7,150	4,509	2,641	19,383	
62-63	7,150	5,178	1,972	21,355	
63-64	7,150	5,102	2,048	23,403	
1964-1965	7,150	5,436	1,714	25,117	
65-66	7,150	5,501	1,649	26,766	
66-67	7,150	5,843	1,307	28,073	
67-68	7,150	5,668	1,482	29,555	
68-69	7,150	6,717	433	29,988	433
1969-1970	7,150	6,916	234	30,222	667
70-71	7,150	6,476	674	30,896	1,341
71-72	7,150	6,666	484	31,380	1,825
72-73	7,150	6,260	890	32,270	2,715
73-74	7,150	6,397	753	33,023	3,468
1974-1975	7,150	5,455	1,695	34,718	5,163
75-76	7,150	4,962	2,188	36,906	7,351
76-77	7,150	4,173	2,977	39,883	10,328
77-78	7,150	3,747	3,403	43,286	13,731
78-79	7,150	3,508	3,642	46,928	17,373
1979-1980	7,150	3,307	3,843	50,771	21,216
80-81	7,150	4,262	2,888	53,659	24,104
81-82	7,150	5,608	1,542	55,201	25,646
82-83	7,150	5,186	1,964	57,165	27,610
83-84	7,150	5,560	1,590	58,755	29,200
1984-1985	7,150	5,834	1,316	60,071	30,516
85-86	7,150	5,493	1,657	61,728	32,173
86-87	7,150	4,874	2,276	64,004	34,449
87-88	7,150	4,364	2,786	66,790	37,235
88-89	7,150	4,349	2,801	69,591	40,036
1989-1990	7,150	4,232	2,918	72,509	42,954
90-91	7,150	3,845	3,305	75,814	46,259
91-92	7,150	3,264	3,886	79,700	50,145
92-93	7,150	3,547	3,603	83,303	53,748
1993-1994	7,150	5,036	2,114	85,417	55,862
Total	286,000	199,380	86,620		
40-Year Avg.	7,150	4,985	2,166	2,135	2,149

\*CVCWD and City of Glendale extractions.

CUMULATIVE CHANGE IN STORAGE  
VERDUGO BASIN

(acre-feet)

Water Year	Change in Storage				Total Groundwater Storage
	Annual	Cumulative 28-29 to 93-94	Cumulative 54-55 to 93-94	Cumulative 68-69 to 93-94	
66-67	3,240	16,550	26,060		112,140
67-68	(2,490)	14,060	23,570		109,650
68-69	2,130	16,190	25,700	2,130	111,780
1969-1970	100	16,290	25,800	2,230	111,880
70-71	(630)	15,660	25,170	1,600	111,250
71-72	(7,050)	8,610	18,120	(5,450)	104,200
72-73	740	9,350	18,860	(4,710)	104,940
73-74	(380)	8,970	18,480	(5,090)	104,560
1974-1975	30	9,000	18,510	(5,060)	104,590
75-76	(1,300)	7,700	17,210	(6,360)	103,290
76-77	320	8,020	17,530	(6,040)	103,610
77-78	5,190	13,210	22,720	(850)	108,800
78-79	3,600	16,810	26,320	2,750	112,400
1979-1980	1,740	18,550	28,060	4,490	114,140
80-81	(2,870)	15,680	25,190	1,620	111,270
81-82	(2,660)	13,020	22,530	(1,040)	108,610
82-83	2,990	16,010	25,520	1,950	111,600
83-84	(2,810)	13,200	22,710	(860)	108,790
1984-1985	(3,220)	9,980	19,490	(4,080)	105,570
85-86	130	10,110	19,620	(3,950)	105,700
86-87	(3,024)	7,086	16,596	(6,974)	102,676
87-88	(931)	6,155	15,665	(7,905)	101,745
88-89	(2,532)	3,623	13,133	(10,437)	99,213
1989-1990	(1,852)	1,771	11,281	(12,289)	97,361
90-91	(5,945)	(4,174)	5,336	(18,234)	91,416
91-92	285	(3,889)	5,621	(17,949)	91,701
92-93	12,601	8,712	18,222	(5,348)	104,302
1993-1994	3,575	12,287	21,797	(1,773)	107,877

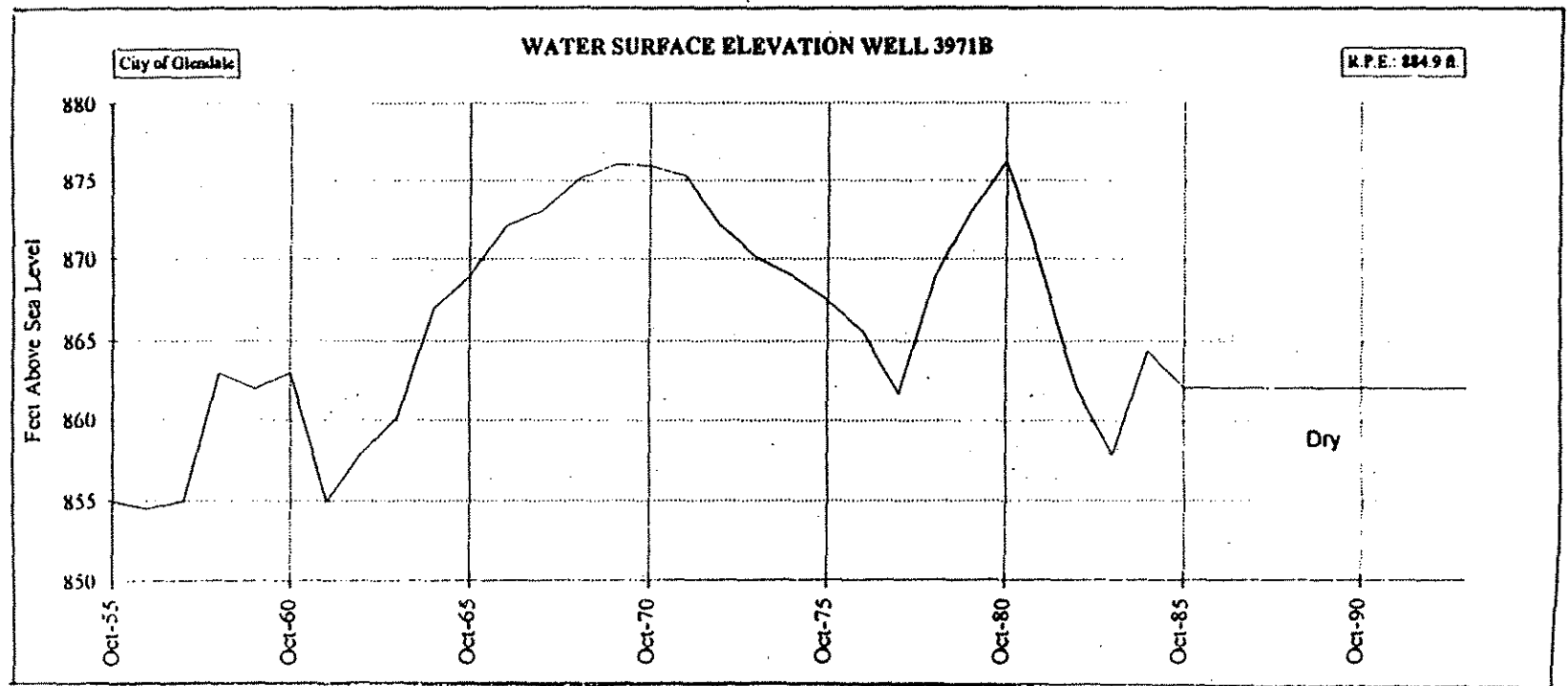
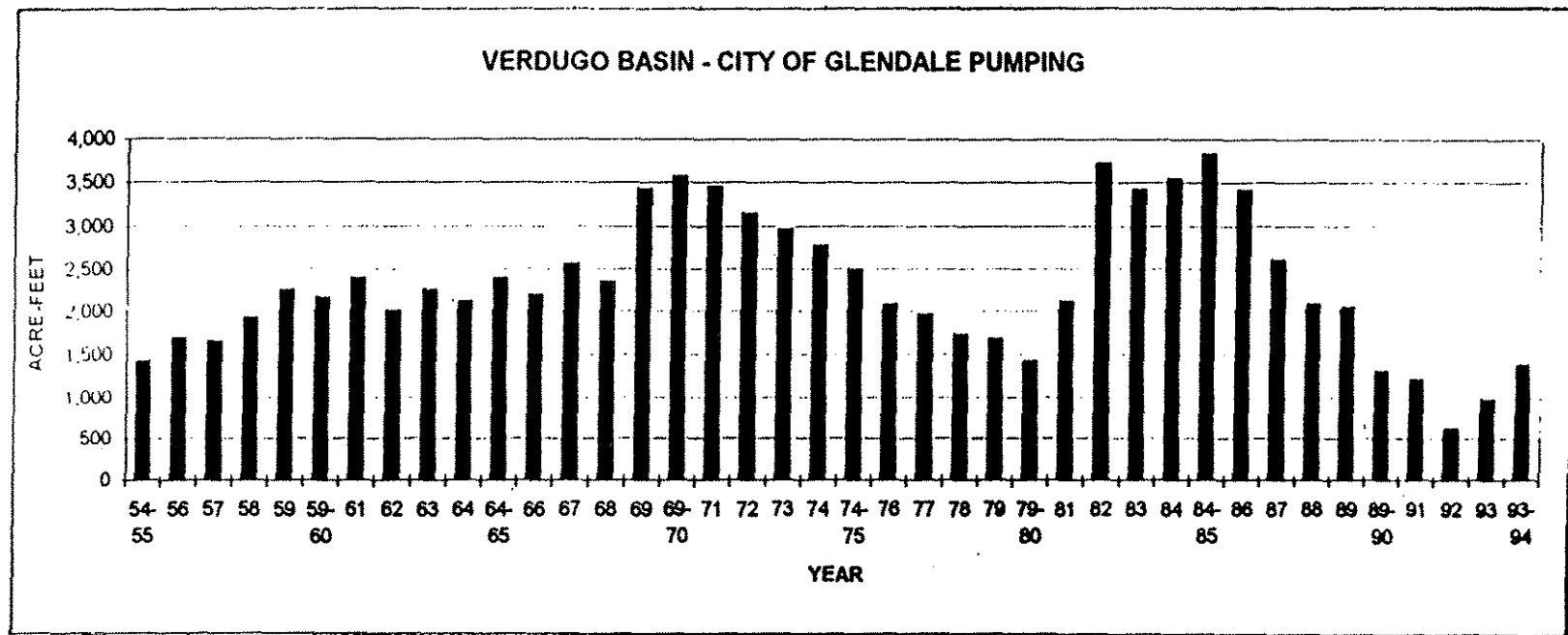
Averages of Cumulative Change in Groundwater Storage:

Period 1928-29 to 1967-68: 352

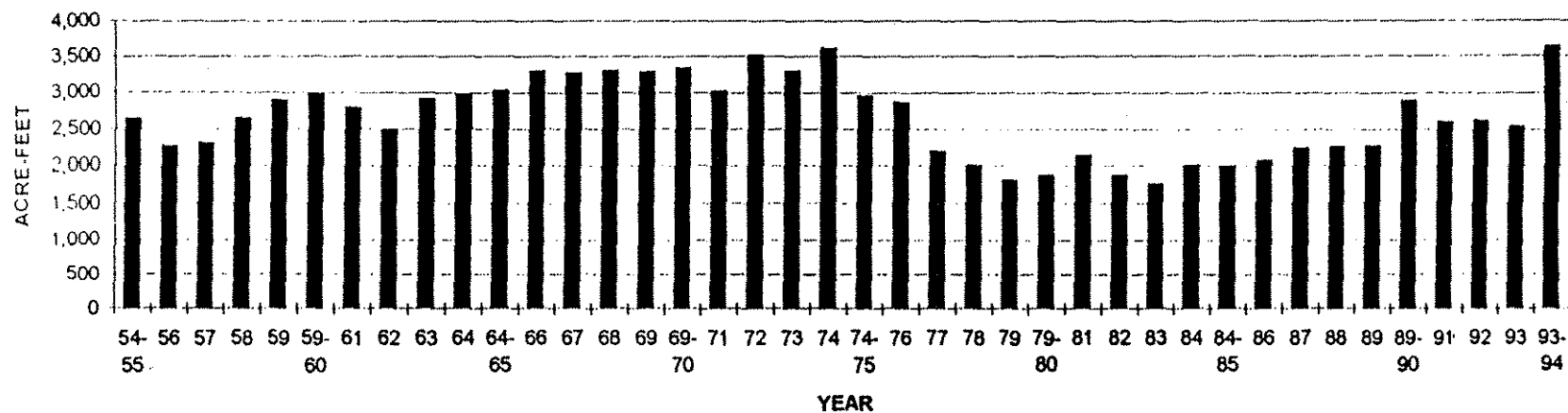
Period 1928-29 to 1993-94 186

Period 1954-55 to 1993-94: 545

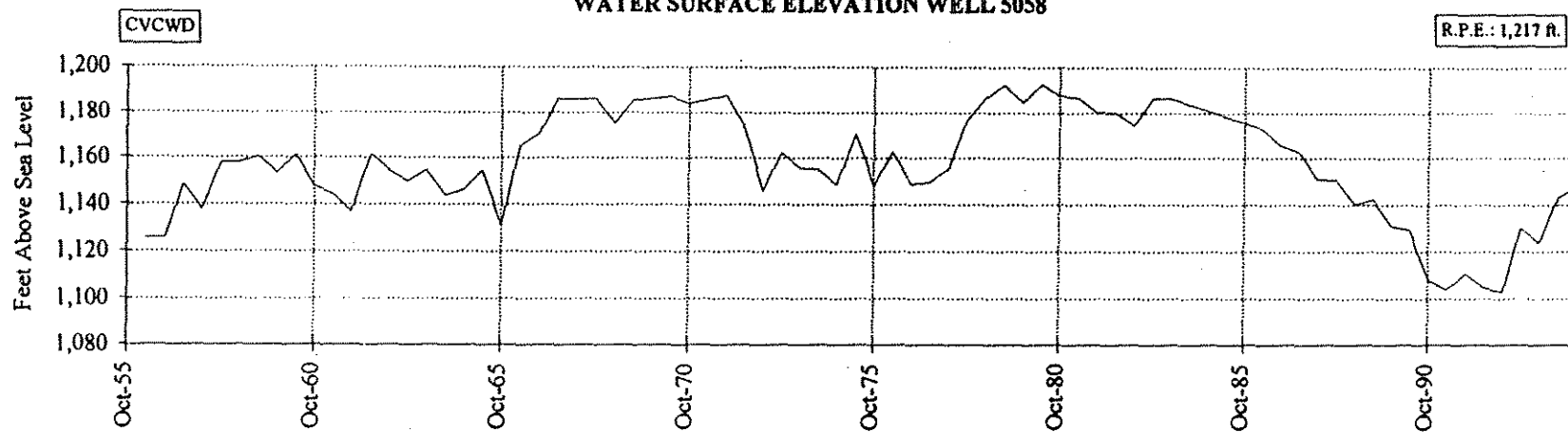
Period 1968-69 to 1993-94: (68)



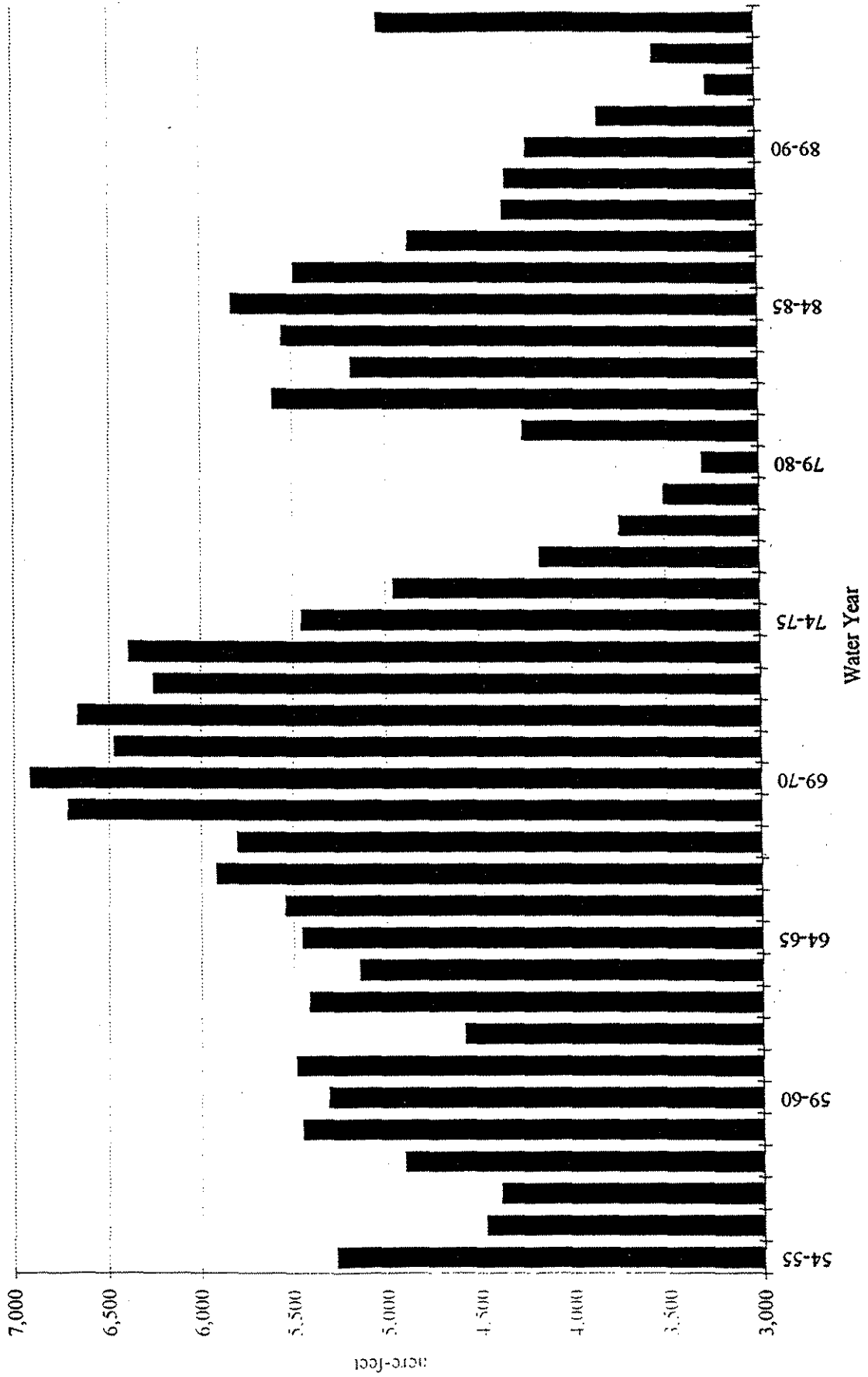
## VERDUGO BASIN-CVCWD PUMPING



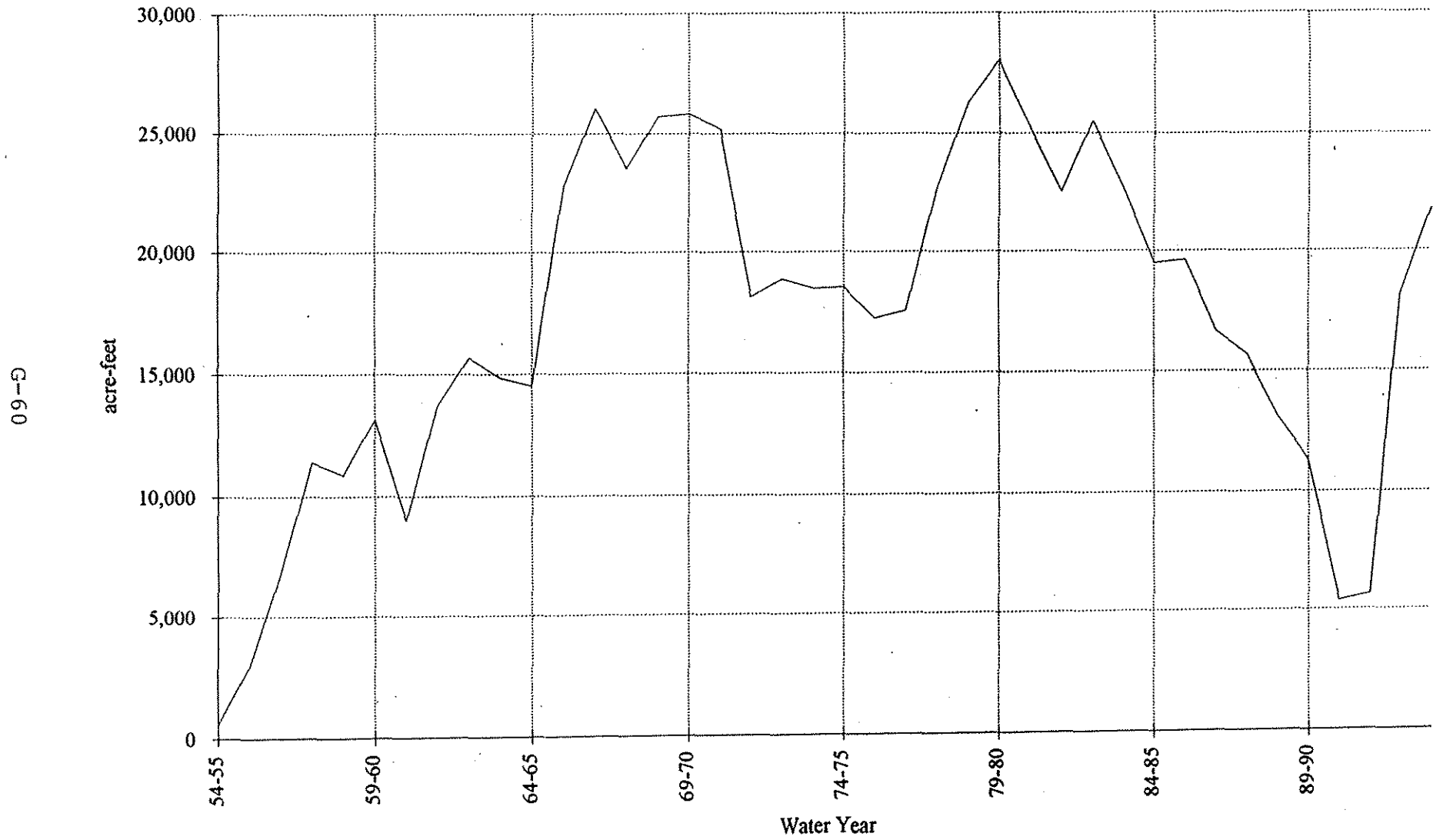
## WATER SURFACE ELEVATION WELL 5058



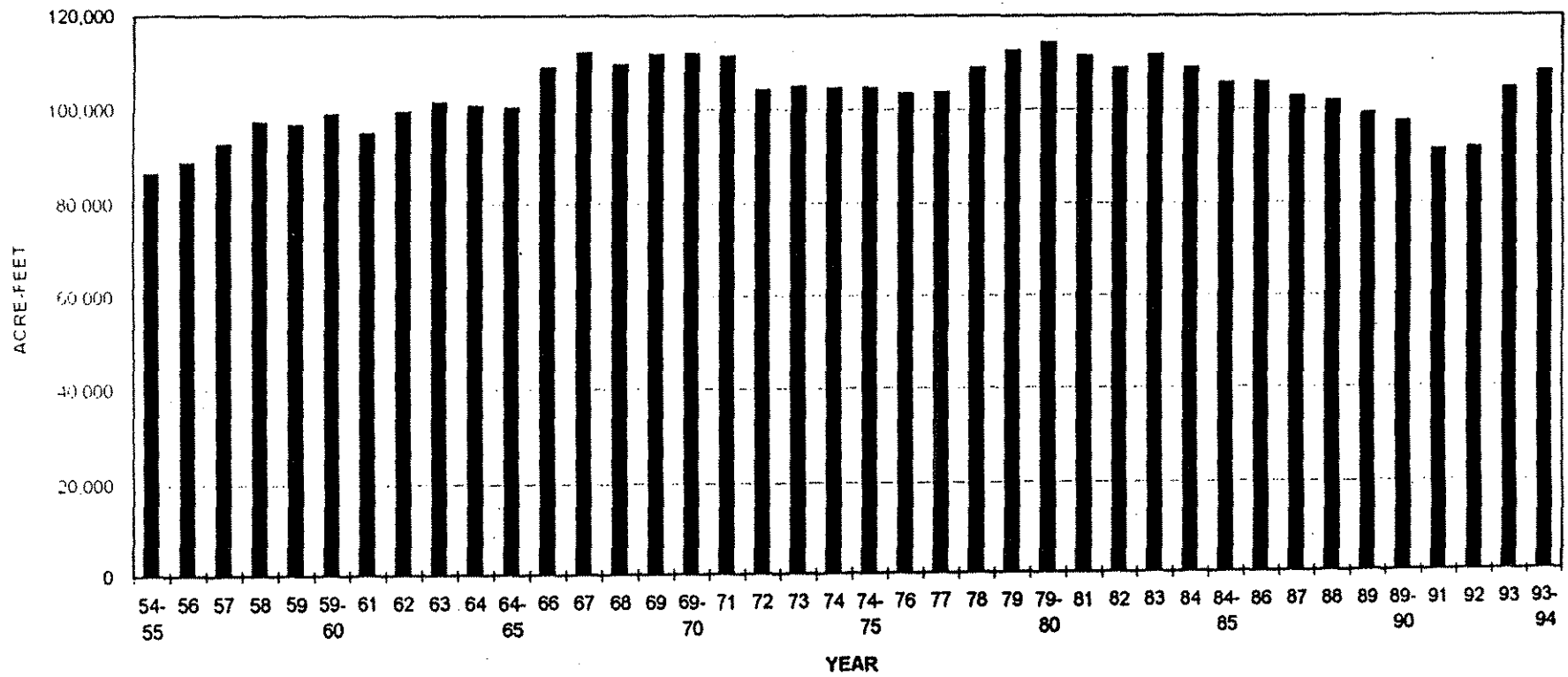
# TOTAL VERDUGO BASIN PUMPING



# CUMULATIVE CHANGE IN STORAGE - VERDUGO BASIN (1955-1994)



## TOTAL GROUNDWATER STORAGE IN VERDUGO BASIN



SAFE YIELD FACT SHEET

EAGLE ROCK

**EAGLE ROCK BASIN**  
**BACKGROUND DATA ON HYDROLOGY AND WATER RIGHTS**

**I. DESCRIPTION OF GROUNDWATER BASIN**

- A. Total Watershed Area – (3,717 acres or 5.8 sq. mi.) – Plates 1 and 2
- B. Basin Area – (807 acres or 1.3 sq. mi.) – Plates 2 and 3 – Forebay Area (Free Water Table) is 536 Acres – Fig. 1
- C. Tributary Hill and Mountains – (2,910 acres or 4.5 sq. mi.) – Plate 2
- D. Maximum Depth of Water-bearing Materials – (up to 125 ft.) – Fig. 2
- E. Volume of Stored Groundwater – (5,850 AF; as of Oct. 1958) – Original Work by SWRB.
- F. Amount of Groundwater Underflow from ER Basin to SF Basin – 50 AF/yr. – (See Fig. 2)

**II. SURFACE HYDROLOGY**

- A. Average Precipitation on Valley Fill Area – (85 yr. avg. = 1,140 AF/yr. or 17.0 in./yr.)
- B. Average Precipitation on Hill and Mountain Areas – (85-yr. avg. = 4,360 AF/yr. or 18.0 in./yr.).
- C. Hill and Mountain Runoff – Included with SF Basin 29-yr. avg. = 34,400 AF/yr.).
- D. Recharge from Precipitation and Runoff – (Zero AF/yr.) – ULARA Judgment – 1979.

**III. AVERAGE RECHARGE TO BASIN**

- A. Total Recharge (SafeYield) – (up to 500 AF/yr.) – ULARA Judgment – 1979 – Recharge from delivered water only – (4,000 AF/yr.) (0.208) (536 AC. ÷ 807 AC.) is 552 AF/yr.
- B. Sources of Recharge
  - 1. Native Safe Yield – from Precipitation on Valley Area and Runoff – (Zero AF/yr.) – ULARA Judgment – 1979.

VI. CHANGE IN GROUNDWATER STORAGE

- A. Cumulative Change in Storage – (Minus 108 AF) – (1928-29 to 1959-60 Period)
- B. Estimated Annual Change in Storage – (Period 1940-57; 17-yr. avg. is Minus 6.4 AF).
- C. Estimated Annual Change in Storage – (Period 29-yr. avg.) – 1928-57 is Minus 3.7 AF) – (See Table 2.)

VII. WATER QUALITY – (See Table 3)

- A. Forebay above Raymond Fault (3987G)
  - 1. TDS – 822 PPM
  - 2.  $\text{NO}_3$  – 0.4 PPM
  - 3. Cl – 94 PPM
- B. Deep Rock Artesian Well (3987D)
  - 1. TDS – 380 PPM
  - 2.  $\text{NO}_3$  – 27 PPM
  - 3. Cl – 45 PPM
- C. Upper Aquifer – Below Raymond Fault (3977B)
  - 1. TDS – 1236 PPM
  - 2.  $\text{NO}_3$  – 0 PPM
  - 3. Cl – 124 PPM

718a – Eagle Rock Basin

Table 1

<b>EAGLE ROCK BASIN</b>					
Historic Groundwater Pumping and Delivered Water					
Values - AF/yr.					
Delivered Water					
Water Years	Owens Water	MWD Water	Total	Hill & Mountain Delivered Water	Sparkletts Historic Pumping*
78-79	2,499	1,187	3,686	1,981	160
1979-80	1,600	2,060	3,660	1,982	173
80-81	1,272	2,823	4,095	2,213	173
81-82	2,421	1,312	3,733	2,023	175
82-83	428	3,309	3,737	1,968	169
83-84	430	3,275	3,705	2,355	159
1984-85	153	4,819	4,972	2,884	70
85-86	346	4,222	4,568	2,829	172
86-87	1,176	3,255	4,431	3,041	171
87-88	0	4,454	4,454	2,465	173
88-89	0	4,297	4,297	2,323	169
1989-90	0	4,000	4,000	2,000	169
90-91	0	3,386	3,386	1,771	169
<b>Total</b>	<b>10,325</b>	<b>42,399</b>	<b>52,724</b>	<b>29,835</b>	<b>2102</b>
<b>13-Yr. Average</b>	<b>794</b>	<b>3,261</b>	<b>4,056</b>	<b>2,295</b>	<b>162</b>
1993-94	0	3,762	3,762	*	189
1994-95	0	3,869	3,869	*	198
1995-96	0	4,268	4,268	*	208
<b>Total</b>	<b>0</b>	<b>11,899</b>	<b>11,899</b>	<b>*</b>	<b>595</b>
<b>3-Yr. Average</b>	<b>0</b>	<b>3,966</b>	<b>3,966</b>	<b>2,200</b>	<b>198</b>

\* Not determined anymore

\*\*Deep Rock Pumping was zero for the Period 1978-79 thru 1995-96.

TABLE B-1-S

CHANGE IN GROUND WATER STORAGE IN THE VALLEY  
FILL FOR PERIOD 1928-29 THROUGH 1959-60

## EAGLE ROCK SUBAREA

Year	: Pressure Surface : : Elevation for : : Well 3986B : : in feet :	: Change : : In Feet :	: Estimated Annual : : Change : : in Storage, : : Acre-Feet :	: Cumulative : : Change : : in Storage, : : Acre-Feet :
1928-29	519	-1	- 54	- 54
29-30	518	-1	- 54	-108
1930-31	517	-1	- 54	-162
31-32	520	+3	+162	0
32-33	519	-1	- 54	- 54
33-34	518	-1	- 54	-108
34-35	518	0	0	-108
1935-36	518*	0	0	-108
36-37	519*	+1	+ 54	- 54
37-38	522*	+3	+162	+108
38-39	521*	-1	- 54	+ 54
39-40	520*	-1	- 54	0
1940-41	522*	+2	+108	+108
41-42	521*	-1	- 54	+ 54
42-43	520	-1	- 54	0
43-44	521	+1	+ 54	+ 54
44-45	521	0	0	+ 54
1945-46	519	-2	-108	- 54
46-47	520	+1	+ 54	0
47-48	519*	-1	- 54	- 54
48-49	516*	-3	-162	-216
49-50	516*	0	0	-216
1950-51	516*	0	0	-216
51-52	518	+2	+108	-108
52-53	517	-1	- 54	-162
53-54	519	+2	+108	- 54
54-55	518	-1	- 54	-108
1955-56	517	-1	- 54	-162
56-57	518	+1	+ 54	-108
57-58	519	+1	+ 54	- 54
58-59	517	-2	-108	-162
59-60	518	+1	+ 54	-108
17-Year Average				
1940-57			-6.1	
29-Year Average				
1928-57			-3.7	

\*Elevation of water table adjusted or taken from measurements to reflect nonpumping conditions (See pages B-4 and B-5)

# MINERAL ANALYSES OF GROUND WATER-EAGLE ROCK SUBAREA

(c)																	
Well Number	Date Sampled	ECx10 <sup>6</sup> at 25°C	pH	Mineral Constituents in								Parts per Million Equivalents per Million					:Total : : Dis- : Source :solved: of :Solids:Analysis : ppm :
				Ca	Mg	Na	K	CO <sub>3</sub>	HCO <sub>3</sub>	SO <sub>4</sub>	Cl	NO <sub>3</sub>	F	B	ABS		
3977B <sup>a</sup>	9-17-63	1825	7.3	<u>194</u> 9.72	<u>79</u> 6.51	<u>102</u> 4.43	<u>1.1</u> 0.03	<u>0</u> 0	<u>721</u> 11.81	<u>266</u> 5.55	<u>124</u> 3.50	<u>0</u> 0	<u>0.8</u> 0.04	<u>0.18</u>	<u>0.5</u>	1236	SWRB
3986F <sup>a</sup>	9-19-63	1289	7.8	<u>122</u> 6.09	<u>79</u> 6.51	<u>44</u> 1.90	<u>1.6</u> 0.04	<u>0</u> 0	<u>312</u> 5.12	<u>257</u> 5.36	<u>110</u> 3.10	<u>42</u> 0.68	<u>0.7</u> 0.04	<u>0.05</u>	<u>0.0</u>	937	SWRB
	3-3 -64	1120	8.1	<u>134</u> 6.68	<u>67</u> 5.49	<u>46</u> 2.00	<u>1.2</u> 0.03	<u>0</u> 0	<u>329</u> 5.40	<u>264</u> 5.51	<u>106</u> 3.00	<u>31</u> 0.50	<u>0.2</u> 0.01	<u>0.09</u>		980	SWRB
3987G <sup>a</sup>	9-17-63	1220	7.2	<u>86</u> 4.29	<u>56</u> 4.64	<u>80</u> 3.47	<u>2.5</u> 0.06	<u>0</u> 0	<u>341</u> 5.59	<u>192</u> 3.99	<u>94</u> 2.66	<u>0</u> 0	<u>0.4</u> 0.02	<u>0.10</u>	<u>1.3</u>	822	SWRB
3987D <sup>b</sup>	8-4-64	638	7.3	<u>48</u> 2.40	<u>24</u> 1.97	<u>52</u> 2.26	<u>0.1</u> 0.03	<u>0</u> 0	<u>240</u> 3.94	<u>53</u> 1.10	<u>45</u> 1.27	<u>27</u> 0.44	<u>0.9</u> 0.05	<u>0.08</u>	<u>0.0</u>	380	SWRB

<sup>a</sup> Test hole drilled by Referee in 1963.

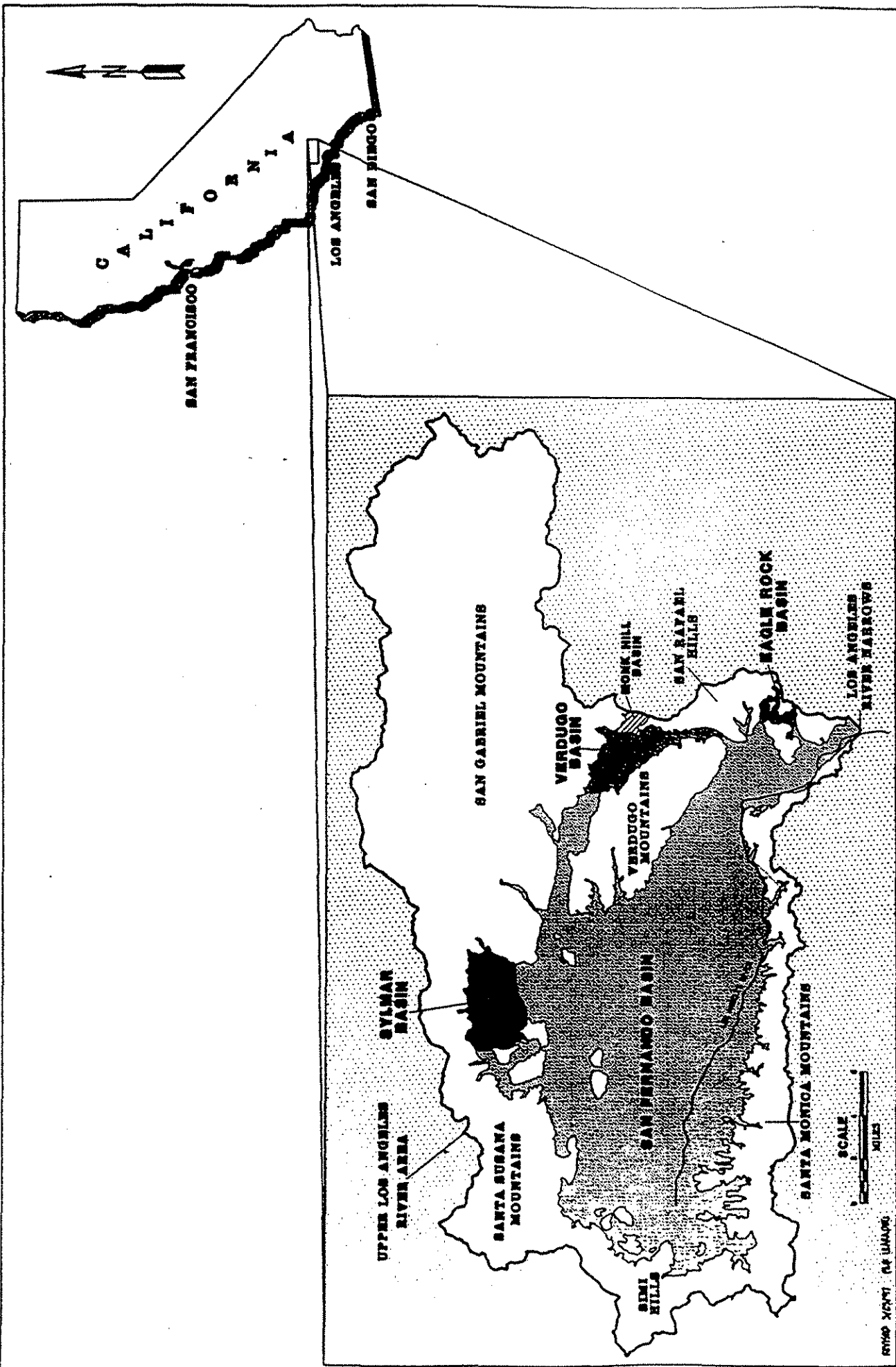
<sup>b</sup> Deep Rock Artesian Water Company well.

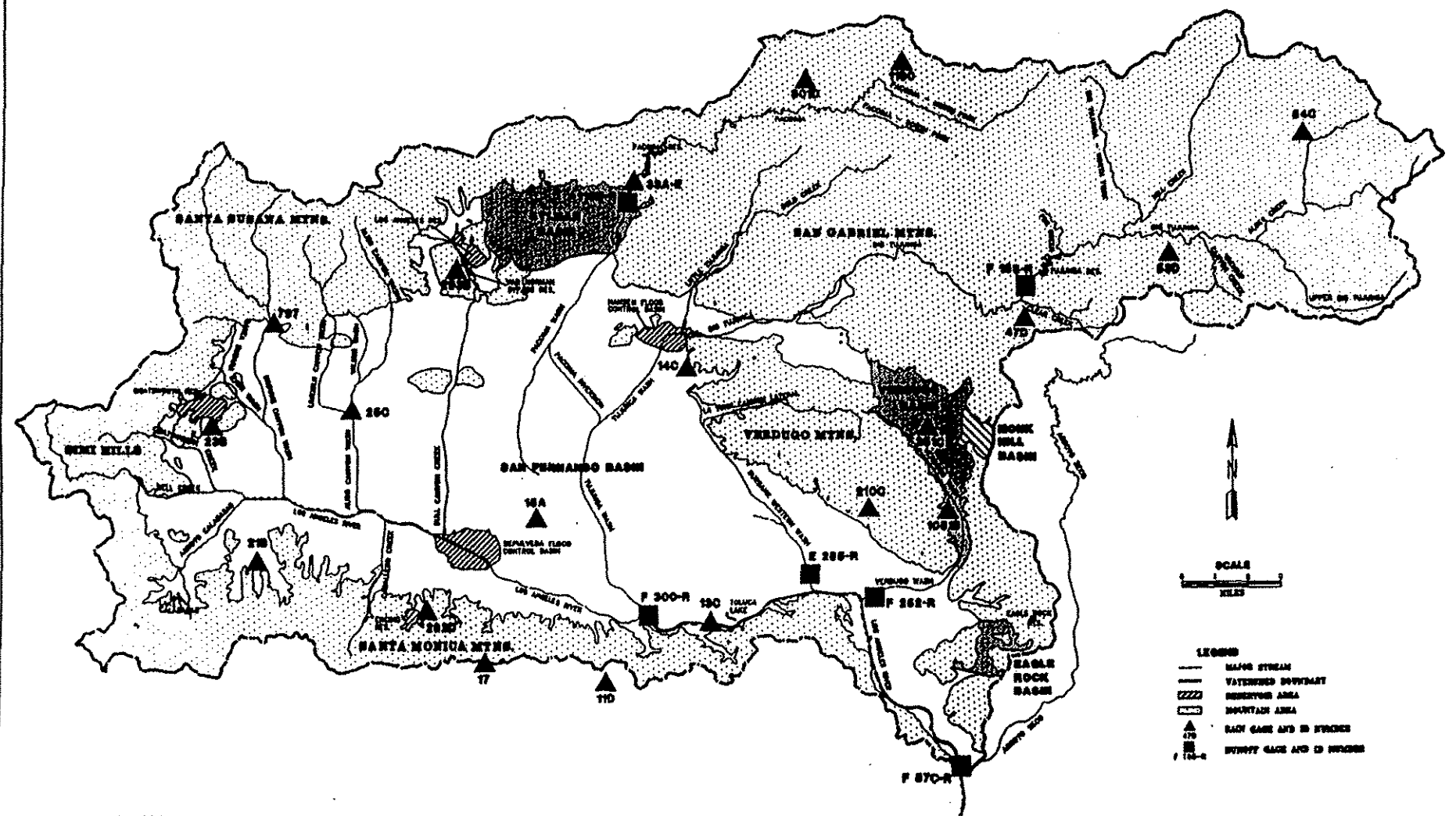
<sup>c</sup> TDS values relate to the permeability of the formation and Colorado River Water

Table 3

Upper Los Angeles River Area:  
Vicinity and Location Map

1995-96 Water Year  
ULARA Watermaster  
Report



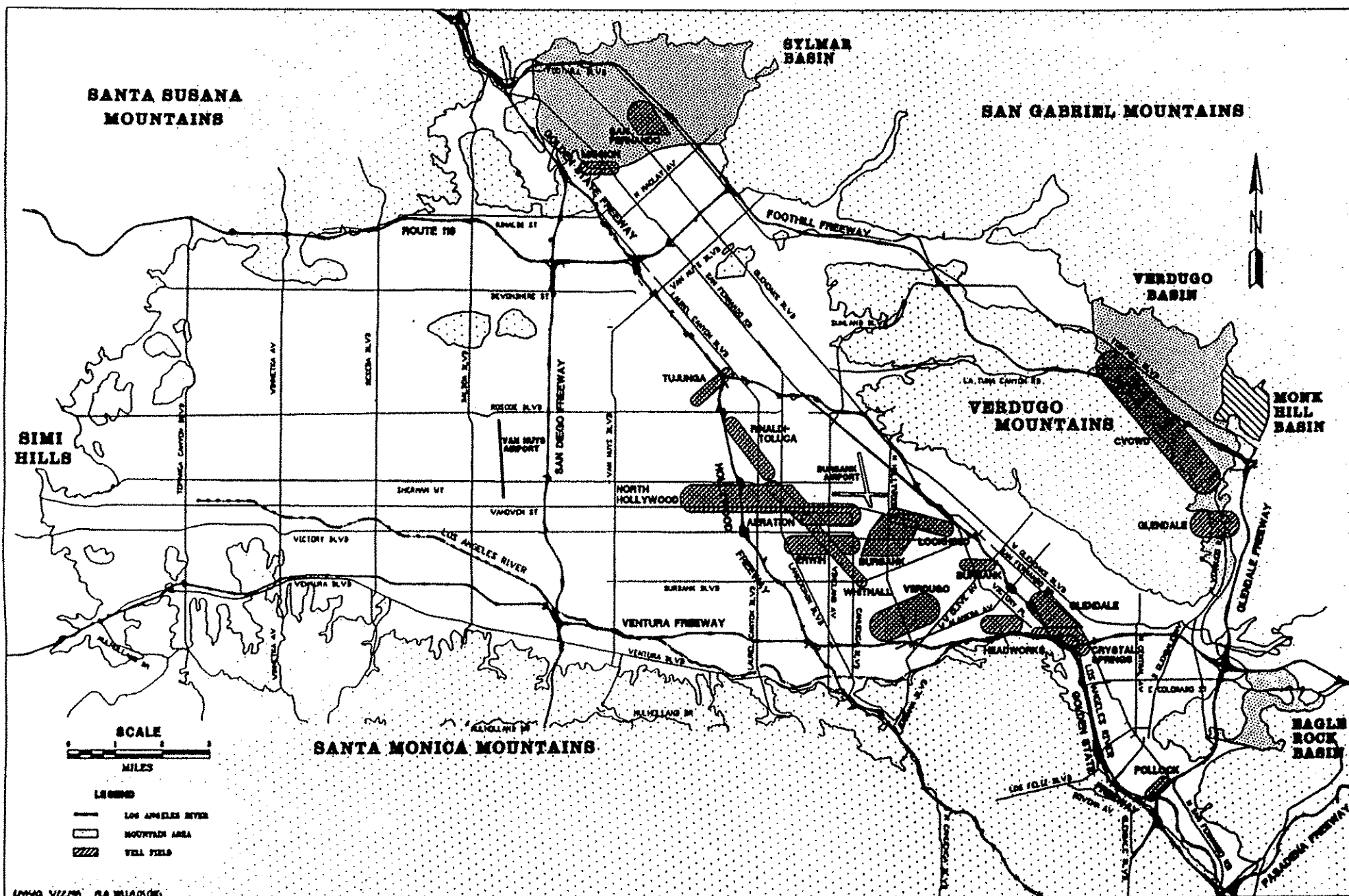


WATER YEAR 1995-96

**1995-96 Water Year  
ULARA Watermaster  
Report**

## Upper Los Angeles River Area: Locations of Rain and Runoff Measuring Stations

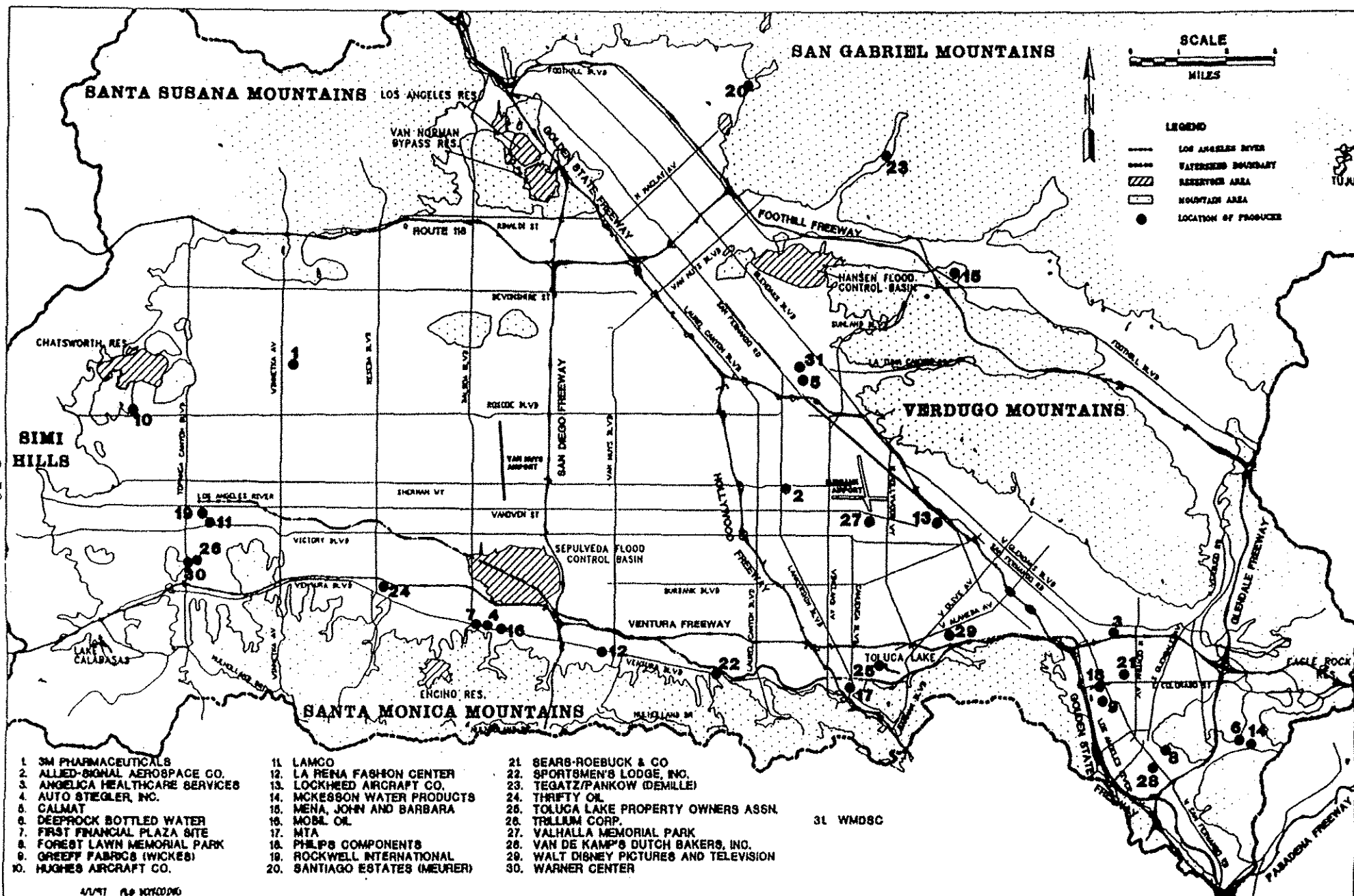
PLATE  
2



# 1995-96 Water Year ULARA Watermaster Report

## Upper Los Angeles River Area: Well Field Locations

PLATE



1995-96 Water Year  
ULARA Watermaster  
Report









## Upper Los Angeles River Area: Locations of Individual Producers

PLATE  
4



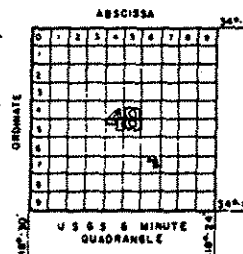
39

# LEGEND

-  LOCATION OF WELL
-  UPPER LOS ANGELES RIVER AREA WATERSHED BOUNDARY
-  BOUNDARY OF CLAY CAP
-  BOUNDARY OF HYDROLOGIC SUBAREA
-  LOCATION OF GEOLOGIC CROSS SECTION. (See Plate 25)
-  BOUNDARY OF VALLEY FILL
-  LINE OF EQUAL ELEVATION OF GROUND SURFACE
-  EAGLE ROCK SUBAREA

REFERENCE: CONTOURS BASED ON U.S.S. QUAD  
DATUM IS MEAN SEA LEVEL  
CONTOUR INTERVALS 50 FEET

## GUIDE TO WELL NUMBERING SYSTEM



EXAMPLE WELL # 4867

- 48** Represents number of 6 minute quadrangle
- 6** Represents abscissa (third digit)
- 7** Represents ordinate (fourth digit)
- 67** Represents name or first part of square
- WAB, 10** Represents other wells in square

STATE OF CALIFORNIA  
STATE WATER RIGHTS BOARD

SAN FERNANDO VALLEY REFERENCE

EAGLE ROCK SUBAREA  
LOCATION OF WELLS

SCALE

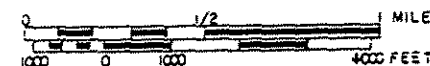
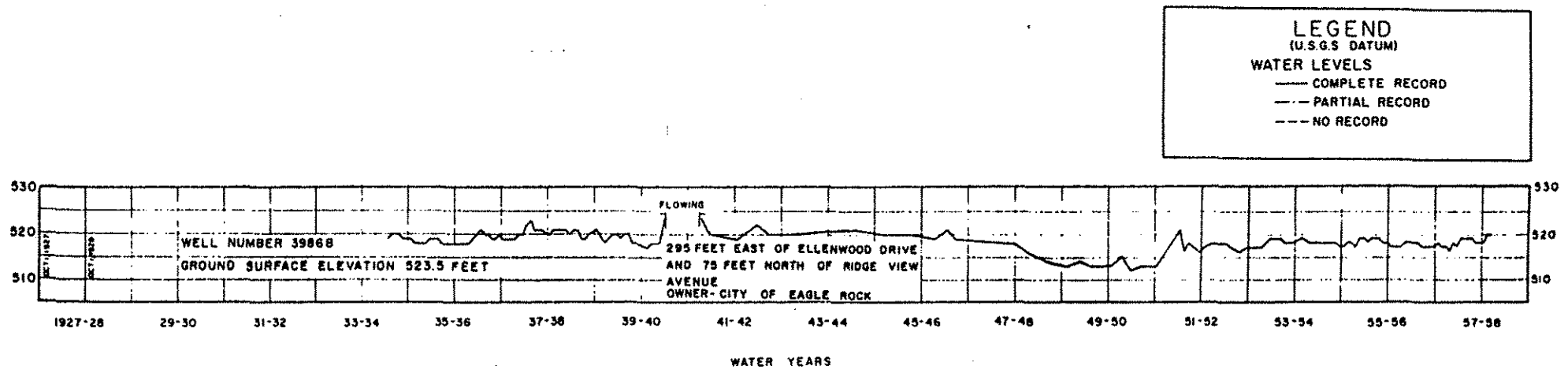


Figure 1



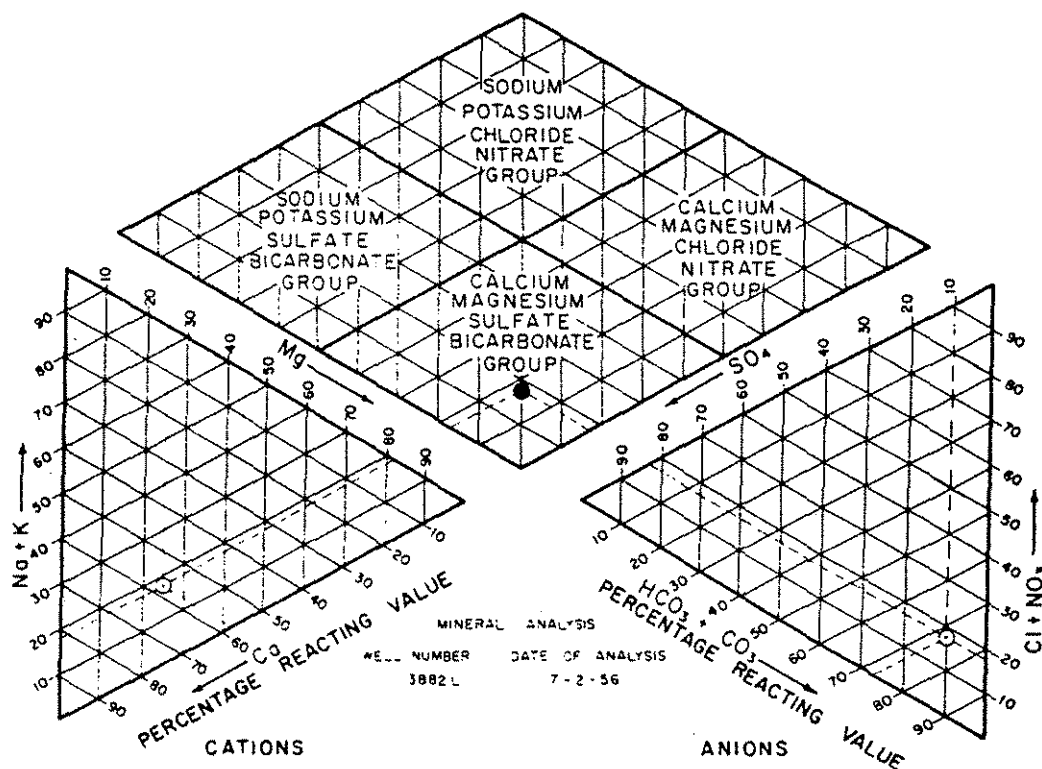
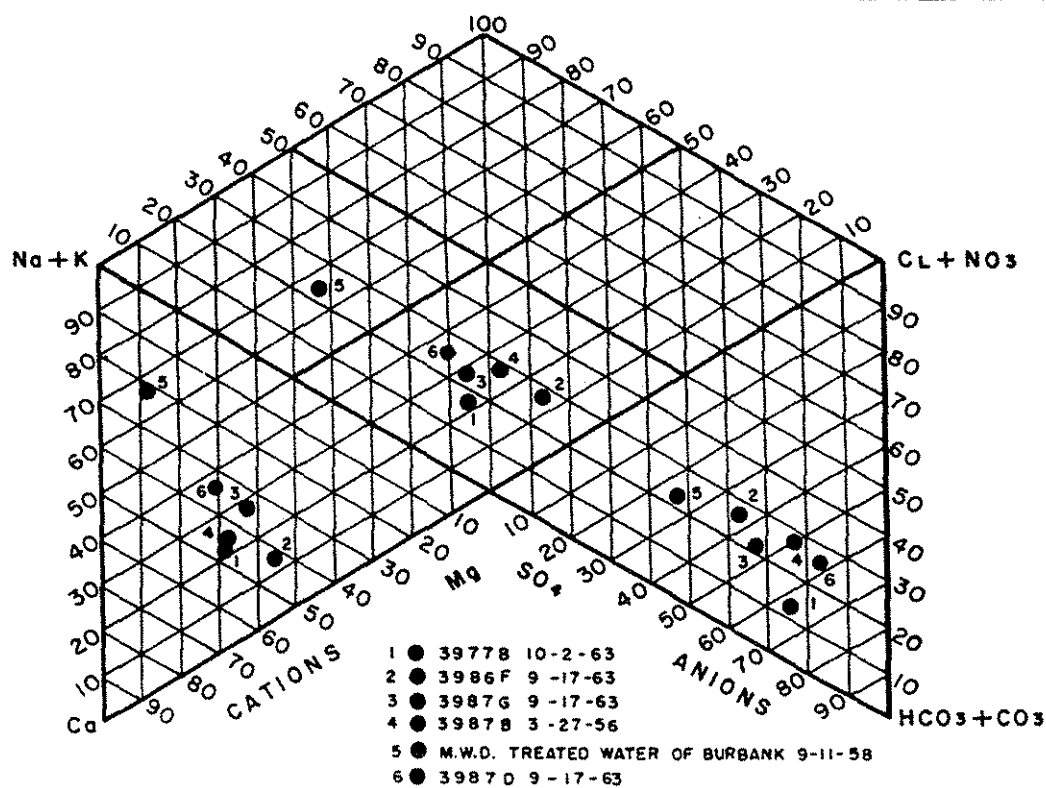
G-76



EAGLE ROCK SUBAREA

Figure 3

Figure 4



EXAMPLE OF TRILINEAR PLOT AND DETERMINATION OF TYPE OF WATER

LEGEND  
○ Computed from mineral analysis of water from well No. 3882L  
● Mineral character of water determined by intersection

EAGLE ROCK SUBAREA  
MINERAL CHARACTER OF WATER

