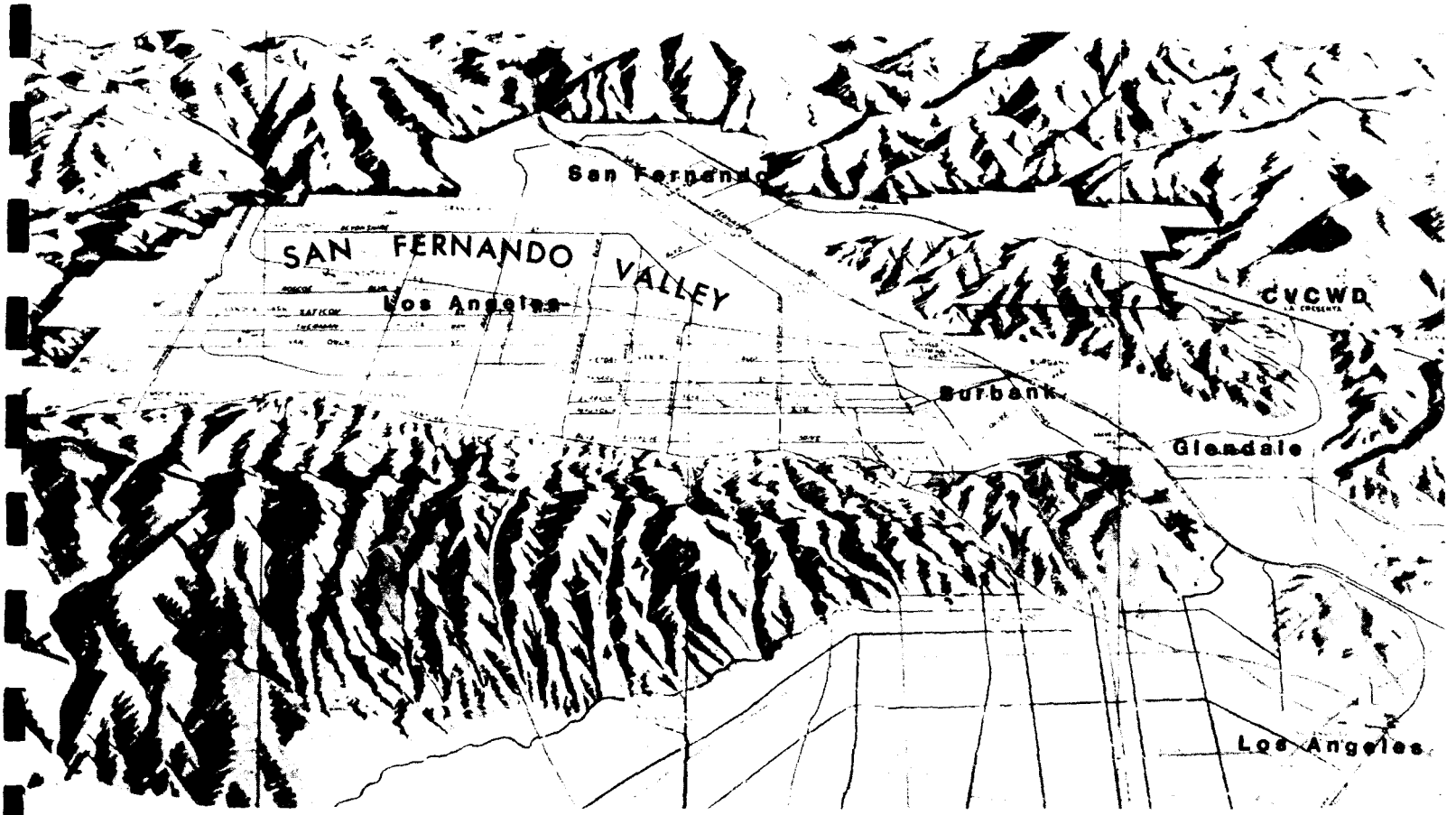
UPPER LOS ANGELES RIVER AREA WATERMASTER

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

WATERMASTER SERVICE IN THE UPPER LOS ANGELES RIVER AREA LOS ANGELES COUNTY

OCTOBER 1, 1979 - SEPTEMBER 30, 1980



MAY 1981

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Cover picture furnished by California Division of Mines & Geology

CONVERSION FACTORS

English to Metric System of Measurement

Quantity	English unit	Multiply by	To get metric equivalent
Length	inches (in)	25.4	millimetres (mm)
		.0254	metres (m)
	feet (ft)	.3048	metres (m)
	miles (mi)	1.6093	kilometres (km)
Area	square inches (in^2)	6.4516×10^{-4}	square metres (m^2)
	square feet (ft^2)	.092903	square metres (m^2)
	acres	4046.9	square metres (m^2)
		.40469	hectares (ha)
		.40469	square hectometres (hm^2)
		.0040469	square kilometres (km^2)
	square miles (mi^2)	2.590	square kilometres (km^2)
Volume	gallons (gal)	3.7854	litres (l)
		.0037854	cubic metres (m^3)
	million gallons (10^6 gal)	3785.4	cubic metres (m^3)
	cubic feet (ft^3)	.028317	cubic metres (m^3)
	cubic yards (yd^3)	.76455	cubic metres (m^3)
	acre-feet (ac-ft)	1233.5	cubic metres (m^3)
		.0012335	cubic hectometres (hm^3)
		1.233×10^{-6}	cubic kilometres (km^3)
Volume/Time (Flow)	cubic feet per second (ft^3/s)	28.317	litres per second (l/s)
		.028317	cubic metres per second (m^3/s)
	gallons per minute (gal/min)	.06309	litres per second (l/s)
		6.309×10^{-5}	cubic metres per second (m^3/s)
	million gallons per day (mgd)	.043813	cubic metres per second (m^3/s)
	miners inch*	.70792 (.56634)	litres per second (l/s)
Mass	pounds (lb)	.45359	kilograms (kg)
	tons (short, 2,000 lb)	.90718	tonne (t)
		907.18	kilograms (kg)
Power	horsepower (hp)	0.7460	kilowatts (kW)
Pressure	pounds per square inch (psi)	6894.8	pascal (Pa)
Temperature	Degrees Fahrenheit (°F)	$\frac{tF - 32}{1.8} = tC$	Degrees Celsius (°C)

*Section 24 of Water Code = 1/40 of second foot.
() 1/50 of second foot commonly used in Southern California

FOREWORD

As Watermaster for the Upper Los Angeles River Area (ULARA), I am pleased to submit this report of the water supply conditions in ULARA during the 1979-80 water year. It was prepared in accordance with the provisions of the Final Judgment, signed by the Honorable Harry L. Hupp of the Superior Court on January 26, 1979.

This report describes the water rights in each basin, lists the allowable pumping for the water year 1980-81, and indicates the water in storage to the credit of each party as of October 1, 1980. In addition, this report includes background information on the history of the San Fernando Case; information as to each basin and the ULARA in total on water supply, ground water extractions, ground water levels, quantities of imported water use, recharge operations including amounts thereof, water quality conditions; and other pertinent information occurring during the water year pursuant to the provisions of the Judgment.

I wish to acknowledge and express appreciation to all parties that have provided information and data which were essential to the completion of this report.

Sincerely,

Melvin L Blevins

MELVIN L. BLEVINS
Hydrologic Engineer and ULARA Watermaster
(Reg. C.E. No. 12863)

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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 1469
111 North Hope Street
Los Angeles, CA 90012
Telephone: (213) 481-6195

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

ULARA WATERMASTER REPORT FOR WATER YEAR 1979-80

Report Prepared By:

Melvin L. Blevins . . . . . Hydrologic Engineer and Watermaster

Gene Coufal . . . . . Hydrologic Engineering Associate and Staff

Robert Haw . . . . . Hydrologic Engineering Assistant and Staff

Moseis R. Garcia . . . . . Sr. Hydrologic Engineering Aide and Staff

Other Watermaster Staff

Eric Bock . . . . . Hydrologic Engineering Associate

Mark Aldrian . . . . . Hydrologic Engineering Assistant

Virginia Jones . . . . . Hydrologic Engineering Assistant

I. INTRODUCTION

upper Los Angeles River Area (ULARA) encompasses all the watershed of the Los Angeles River and its tributaries above a point in the river designated as Los Angeles County Flood Control District (LACFCD) Gaging Station F-57C-R, near the junction of the Los Angeles River and the Arroyo Seco (Plate 1). ULARA encompasses 328,500 acres, composed of 122,800 acres of valley fill, referred to as the ground water basins, and 205,700 acres of hills and mountains. ULARA is bounded on the north and northwest by the Santa Susana Mountains; on the north and northeast by the San Gabriel Mountains; on the east by the San Rafael Hills, which separate it from the San Gabriel Basin; on the south by the Santa Monica Mountains, which separate it from the Los Angeles Basin; and on the west by the Simi Hills.

ULARA has four distinct ground water basins. The water supplies of these basins are separate and are replenished by deep percolation from rainfall and from a portion of the water that is delivered for use within these basins. The four ground water basins in ULARA are the San Fernando, Sylmar, Verdugo, and Eagle Rock Basins (Plate 1).

The San Fernando Basin, the largest of the four basins, consists of 112,000 acres and comprises 91.2 percent of the total valley fill. It is bounded on the east and northeast by the San Rafael Hills, Verdugo Mountains, and San Gabriel Mountains; on the north by the San Gabriel Mountains and the eroded south limb of the Little Tujunga syncline which separates it from the Sylmar Basin; on the northwest and west by the Santa Susana Mountains and Simi Hills; and on the south by the Santa Monica Mountains.

The Sylmar Basin, in the northerly part of ULARA, consists of 5,600 acres and comprises 4.6 percent of the total valley fill. It is bounded on the north and east by the San Gabriel Mountains; on the west by a topographic divide in the valley fill between the Mission Hills and the San Gabriel Mountains; on the southwest by the Mission Hills; on the east by the Upper Lopez Canyon Saugus formation along the east bank of the Pacoima Wash; and on the south by the eroded south limb of the Little Tujunga syncline, which separates it from the San Fernando Basin.

The Verdugo Basin, north and east of the Verdugo Mountains in ULARA, consists of 4,400 acres and comprises 3.6 percent of the total valley fill. It is bounded on the north by the San Gabriel Mountains, on the east by a ground water divide separating it from the Monk Hill Subarea of the Raymond Basin, on the southeast by the San Rafael Hills, and on the south and southwest by the Verdugo Mountains.

The Eagle Rock Basin, the smallest of the four basins, is in the extreme southeast corner of ULARA. It comprises 800 acres and consists of 0.6 percent of the total valley fill.

History of Adjudication

ULARA was established by the JUDGMENT AFTER TRIAL BY COURT in Superior Court Case No. 650079, entitled The City of Los Angeles, a Municipal Corporation, Plaintiff, vs. City of San Fernando, et al., Defendants, signed March 14, 1968 by the Honorable Edmund M. Moor, Judge of the Superior Court. Prior to the judgment, numerous pretrials were held subsequent to the filing of the action by the City of Los Angeles in 1955 and before the trial commenced on March 1, 1966.

On March 19, 1958, an Interim Order of Reference was entered by the Court directing the State Water Rights Board, now known as the State Water Resources Control Board (SWRCB), to study the availability of all public and private records, documents, reports, and data relating to a proposed order of reference in the case. The Court subsequently entered on June 11, 1958 an "Order of Reference to State Water Rights Board to Investigate and Report upon the Physical Facts (Section 2001, Water Code)."

A final Report of Referee was approved on July 27, 1962 and filed with the Court. The Report of Referee made a complete study of the geology, insofar as it affects the occurrence and movement of ground water and the surface and ground water hydrology of the area. In addition, investigations were made of the history of the horizontal and vertical locations of the beds, banks, and channels of the Los Angeles River and its tributaries; the areas, limits, and directions of flow of all ground water within the area; the quality of the ground water in the basin; and all sources of water, whether they be diverted, extracted, or imported, etc. Said Report of Referee served as the principal basis for geological and hydrological facts for the original Trial Court Judgment in 1968 and Decision of the Supreme Court in 1975 (14 Cal 3d 199) and the Trial Court Judgment on remand on January 26, 1979.

The City of Los Angeles filed an appeal from the Judgment of the Trial Court with the Court of Appeals, which held a hearing on November 9, 1972, and issued its opinion on November 22, 1972. The opinion, prepared by Judge Compton and concurred in by Judges Roth and Fleming, reversed, with direction, the original judgment handed down by Judge Moor. In essence, the City of Los Angeles was given rights to all water in ULARA including the use of the underground basins. The defendants, however, were given the right to capture "return water," which is water purchased from the Metropolitan Water District of Southern California (MWD) that percolates into the basin.

A petition for rehearing was filed on December 7, 1972, but was denied by the Court of Appeals. On January 2, 1973, the defendants filed a petition for hearing with the State Supreme Court. The Court on March 2, 1973 advised the parties it would hear the case. The hearing was held on January 14, 1975.

On May 12, 1975, the California Supreme Court issued its decision on the 20-year San Fernando Valley water litigation. This decision, which became final on August 1, 1975, upheld the Pueblo Water Rights of the City of Los Angeles to all ground water in the San Fernando Basin derived from precipitation within ULARA. The City of Los Angeles' Pueblo Water Rights were not allowed to extend to the ground waters of the Sylmar and Verdugo Basins.

The City of Los Angeles was also given rights to all San Fernando Basin ground water derived from water imported by it from outside ULARA and either spread or delivered within ULARA. The Cities of Glendale and Burbank each were given rights to all San Fernando Basin ground water derived from water that each imports from outside ULARA and delivered within ULARA. San Fernando was not a member of MWD until the end of 1971, and had never prior thereto imported any water from outside ULARA.

The Final Judgment, signed by the Honorable Harry L. Hupp of the Superior Court, was entered on January 26, 1979. Copies of the Final Judgment are available from the ULARA Watermaster, Post Office Box 111, Room 1469, Los Angeles, California 90051. The water rights set forth in the judgment are consistent with the opinion of the Supreme Court described above. In addition, the Final Judgment includes provisions and stipulations regarding the calculation of imported return water credit, stored water credit, and arrangements for a physical solution for certain parties as suggested by the Supreme Court. The extraction rights are to be as follows:

San Fernando Basin

Native Water. Los Angeles has an exclusive right to extract and utilize all the native waters which, under the judgment, are evaluated to be 43,660 acre-feet per year.

Imported Return Water. Los Angeles, Glendale, Burbank, and San Fernando each have a right to extract from the San Fernando Basin the following amounts:

Los Angeles:	20.8 percent of all delivered water (including reclaimed water) to valley fill lands of San Fernando Basin.
San Fernando:	26.3 percent of all imported and reclaimed water delivered to valley fill lands of San Fernando Basin.

Burbank: 20.0 percent of all delivered water (including reclaimed water) to San Fernando Basin and its tributary hill and mountain areas.

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

Physical Solution Water. Several parties are granted limited rights to extract water chargeable to the rights of others upon payment of specified charges. The parties and their maximum physical solution quantities are as follows:

As to Los Angeles' Water:

Glendale	5,500 acre-feet per year
Burbank	4,200 acre-feet per year
Van de Kamp	120 acre-feet per year
Toluca Lake	100 acre-feet per year
Sportsmens Lodge	25 acre-feet per year

As to Glendale's Water:

Forest Lawn	400 acre-feet per year
Southern Service Co. (now Environmentals Inc.)	75 acre-feet per year

As to Burbank's Water:

Valhalla	300 acre-feet per year
Lockheed	25 acre-feet per year

As to San Fernando's Water:

San Fernando may extract ground water from the Sylmar Basin in a quantity sufficient to utilize its San Fernando Basin import return water credit, and Los Angeles shall reduce its Sylmar Basin extractions by an equivalent amount and receive an offsetting entitlement for additional San Fernando Basin extractions.

Stored Water. Los Angeles, Glendale, Burbank, and San Fernando each have rights to store water in the San Fernando Basin and the right to extract equivalent amounts.

Sylmar Basin

Native Water. San Fernando and Los Angeles have rights of 3,580 and 1,560 acre-feet per year, respectively, to extract native water of Sylmar Basin. Private parties Meurer Engineering and Kisag Moordigian have overlying rights to extract and use on their lands overlying the Sylmar Basin all native water reasonably necessary for the acreage owned by them to meet beneficial uses.

Imported Return Water. Los Angeles and San Fernando have a right to extract imported return water equal to 35.7 percent of the preceding water year's imported water delivered to lands overlying Sylmar Basin.

Stored Water. Los Angeles and San Fernando each have a right to store water in the Sylmar Basin.

Physical Solution Water - Refer to physical solution provisions under San Fernando Basin as to San Fernando's water.

Verdugo Basin

Glendale and Crescenta Valley own mutually prescriptive rights to extract 3,856 acre-feet and 3,294 acre-feet per year, respectively.

Eagle Rock Basin

Native Water. The Eagle Rock Basin has no significant native safe yield.

Imported Return Water. Los Angeles has the right to extract or cause to be extracted the recharge to the basin.

Physical Solution Water. Foremost and Deep Rock have rights to extract water chargeable to Los Angeles.

Watermaster Service

In preparing the 1979-80 annual report, Watermaster collected and reported all information affecting and relating to the water supply and disposal within ULARA. Such information includes the following items:

1. Water supply

    a. Precipitation and runoff
    b. Imports and exports

2. Water use and disposal

    a. Extractions
        (1) Used in valley fill area
        (2) Exported from each basin

b. Water outflow
   (1) Surface
   (2) Subsurface
   (3) Sewers

3. Water levels

4. Water quality

5. Ownership and location of new wells

Administrative Committee

Section 8, Paragraph 8.3 of the ULARA judgment established an Administrative Committee for the purpose of advising the Watermaster in the administration of his duties. The duly appointed members of the Committee, as of September 30, 1980, are:

City of Burbank

Martindale Kile, Jr.
Ronald O. Snyder (Alternate)

City of Glendale

Steven J. Meyerhofer
Norman C. Koontz (Alternate)

City of Los Angeles

Duane L. Georgeson
Bruce W. Kuebler (Alternate)

City of San Fernando

Fred L. Morgan
Rick Navarro (Alternate)

Crescenta Valley County Water District

Robert K. Argenio
Robert Sloan (Alternate)

Private Parties

Charles Meurer
Roger Meurer
Kisag Moordigian

Martindale (Dale) Kile, Jr., is President of the Committee and Steven Meyerhofer is Vice President.

The Administrative Committee may be convened by the Watermaster at any time in order to seek its advice. In addition, the Committee is responsible for reviewing with the Watermaster the proposed annual report.

During the 1979-80 water year the Administrative Committee met on December 11, 1979, April 8 and 29, 1980, and May 12, 1980. The following items were discussed at these meetings:

1. Status of Watermaster activities within ULARA.

2. Storage of water and storage space available in San Fernando Basin.

3. DWR proposals regarding storage of State water in San Fernando Basin.

4. Storage agreement for San Fernando Basin between parties and MWD.

5. Status of State DWR-Watermaster payments.

6. Administrative Committee members update.

7. Proposed policies and procedures for Watermaster service in the ULARA.

8. Annual report for 1978-79.

Summary of 1979-80 Operating Conditions

Table 1 compares statistics for this period of record and the prior water year.

Rainfall on the valley fill area was 184 percent of normal as compared to 132 percent of normal the year before. Surface runoff leaving the valley at Gage F-57C-R for 1979-80 was incomplete due to missing data for March and April, 1980. The amount conserved by the LACFCD in its spreading basins was 47,852 acre-feet, an increase of 26 percent over last year. Total precipitation falling on the San Fernando Valley and its tributary hill and mountain areas was nearly 923,000 acre-feet for the water year 1979-80.

Ground water extractions decreased in the San Fernando, Sylmar, and Verdugo Basins and increased in the Eagle Rock Basin. Total ULARA extractions amounted to 72,925 acre-feet as compared to a safe yield of 104,040 acre-feet. Extractions used within ULARA decreased by 18 percent (4,857 acre-feet) from last year.

For ULARA, gross imports increased by 12,689 acre-feet, or 2 percent, while imports used within ULARA increased by 3 percent (9,427 acre-feet). Exports of Owens River water increased by

TABLE 1

SUMMARY OF OPERATING CONDITIONS
1978-79 AND 1979-80

Item	Water Year 1978-79	Water Year 1979-80
1. Parties	24	24
2. Active pumpers	19	19
3. Active nonpumpers (within valley fill)	0	0
4. Valley rainfall, in inches	21.76	30.25
5. Spreading operations, in acre-feet[a/]		
a. LACFCD	38,052	47,852
b. Los Angeles, City of	34,408	25,691
6. Extractions, in acre-feet	75,483	72,925
a. Used in ULARA	26,909	22,052
7. Gross imports, in acre-feet		
a. MWD water	55,287	62,477
b. Owens River water[b/]	472,255	477,754
Total	527,542	540,231
8. Exports in acre-feet		
a. Owens River water	252,281	255,543
9. Imports used in ULARA, in acre-feet	275,261	284,688
10. Total delivered water used in ULARA, in acre-feet	302,170	306,740
11. Reclaimed water, in acre-feet	10,644	15,215
12. Sewage export, in acre-feet	109,683	113,288

a/ Breakdown of spreading operations as to sources of water is shown in Table 5. Values include native and imported water.

b/ This value represents the summation of the gross amount of water delivered to and exported from ULARA. It does not include operational releases, reservoir evaporation, and water spread during the year.

3,262 acre-feet, or 1 percent. Total imports and extractions used within ULARA were 2 percent greater (4,570 acre-feet) than last year.

Sewage export was 113,288 acre-feet in 1979-80, an increase of 3 percent. Total reclaimed water used in ULARA (cooling towers, etc.) remained about the same, but the total increased from 10,644 acre-feet to 15,215 acre-feet, an increase of 43 percent. Most of the reclaimed water is discharged to the Los Angeles River.

A total of 73,543 acre-feet of water, 53,300 native and 20,243 Owens River, was spread during the year, which was a 1 percent increase from last year.

Summary of Allowable Pumping for 1980-81

Table 1A gives a summary of allowable pumping for the Cities of Los Angeles, Burbank, Glendale, and San Fernando and Crescenta Valley County Water District. Stored water is also shown as a credit for these parties as of October 1, 1980.

TABLE 1A

SUMMARY OF ALLOWABLE PUMPING FOR ENSUING YEAR 1980-81
(In Acre-Feet)

	Extractions			Stored Water Credit*
	Native	Import Credit	Total	
San Fernando Basin				
Los Angeles	43,660	38,600	82,260	134,383
Burbank	-	4,837	4,837	8,117
Glendale	-	4,368	4,368	5,844
San Fernando	-	56	56	32
Sylmar Basin				
Los Angeles	1,560	2,274	3,834	-
San Fernando	3,580	-	3,580	-
Verdugo Basin				
Crescenta	-	-	3,294	-
Glendale	-	-	3,856	-

* As of October 1, 1980

Note: Calculation of these values shown in more detail in Tables 10 and 11.

II. WATER SUPPLY CONDITIONS

The present water supply of ULARA consists of ground water recharge from hill and mountain runoff and direct precipitation on the valley floor area. This includes runoff from precipitation falling on portions of the San Gabriel, Verdugo, Santa Monica, and Santa Susana Mountains; imports from the Mono Basin-Owens River system; imports from the Colorado River; imports from Northern California made available by the State Water Project; and reclaimed water.

Precipitation

ULARA has the climate of an interior valley and is hotter in the summer and wetter in the winter than the coastal areas.

Precipitation varies considerably throughout ULARA, depending on topography and elevation. Mean seasonal precipitation ranges from about 14 inches at the western end of the San Fernando Valley to 35 inches in the San Gabriel Mountains. Approximately 80 percent of the annual rainfall occurs from December through March.

The 1979-80 water year experienced above average rainfall. The valley floor received 30.25 inches of rain, whereas the mountains received approximately 35.76. The weighted average of both valley and mountain areas was 33.66 inches, an increase of 9.59 inches from last year. The 100-year (1881-1981) average precipitation for the valley and mountains is 16.48 inches and 21.91 inches, respectively. Table 2 presents a record of rainfall at 18 key precipitation stations which were used to develop the 100-year average rainfall and are described in the Report of Referee.

In the safe yield evaluation, precipitation on the valley is determined separately from that on the hills and mountains. The valley is made up of the four ground water basins, whereas the hills and mountains comprise the remaining areas in ULARA. Precipitation in the hills and mountains is evaluated to relate the runoff from the watersheds of Big Tujunga, Pacoima Creek, and Sycamore Canyon to the runoff records which are included in this report and also to calculate the ground water recharge. (See Plate 4 for location of precipitation stations.)

Runoff and Outflow from ULARA

The drainage area of ULARA contains 328,500 acres, of which 205,700 acres are hills and mountains. The drainage system, in turn, is made up of the Los Angeles River and its tributaries. Surface flow originates as storm runoff from the hills and mountains; storm runoff from the impervious areas of the valley;

TABLE 2

PRECIPITATION[a]
(Inches)

Station				1979-80	
LACFCD Number	Name	100-Year Mean	1978-79 Precipitation	Precipitation	Percent of 100-Year Mean
11D	Upper Franklin Canyon Reservoir	18.50	23.44	36.92	200
13C	Hollywood-Blix[b]	16.63	20.79	32.95	198
14C	Roscoe-Merrill[b]	14.98	20.73	27.95	187
15A	Van Nuys[b]	15.30	21.85	32.45	212
17	Sepulveda Canyon-Mulholland Highway	19.82	27.06	41.04	207
21B	Woodland Hills[b]	14.60	22.51	30.53	209
23B-E	Chatsworth Reservoir[b]	15.19	18.93	27.77	183
25C	Northridge-LADWP[b]	15.16	21.81	24.83	164
29D	Granada Hills	17.33	[c]		
30B	Sylmar[b]	17.91	21.40	[c]	
33A-E	Pacoima Dam	19.64	23.32	29.55	150
47D	Clear Creek-City School	33.01	31.43	49.37	150
53D	Colby's Ranch	29.04	29.70	44.10	152
54C	Loomis Ranch-Alder Creek	18.62	20.29	28.87	155
210B	Brand Park	18.13	23.60	34.00	188
251C	LaCrescenta[b]	23.31	26.17	38.61	166
259D	Chatsworth-Twin Lakes	18.70	22.52	30.51	163
293B-E	Los Angeles Reservoir[b]	17.32	21.12	27.08	156
1074E	Little Gleason	24.34	30.77	[c]	
1190	Pacoima Canyon-North Park Ranger Station	23.06	26.98	38.00	165

Weighted average for valley stations - 30.25 inches (1979-80)
Weighted average for mountain stations - 35.76 inches (1979-80)

a/ Data furnished by Los Angeles County Flood Control District (LACFCD)
b/ Valley Station
c/ Discontinued. Station 30B replaced by 293B-E and Station 1074E replaced by 1190.

operational spills of imported water; industrial and sanitary waste discharges; and rising water.

A number of stream-gaging stations are maintained throughout ULARA, either by LACFCD or United States Geological Survey (USGS). The Watermaster has selected six key gaging stations which, in effect, record runoff from hydrologic areas in ULARA.

Table 3 summarizes the monthly runoff for these gaging stations and compares the 1978-79 water year with the 1979-80 year. The changes in runoff reflect the increase in rainfall in the valley and in the mountains.

Station F-57C-R registers all surface outflow from ULARA.

Station F-252-R registers flow from Verdugo Canyon plus flows from Dunsmore and Pickens Canyons.

station E-285-R registers flow from the westerly slopes of the Verdugo Mountains and some flow east of Lankershim Boulevard. It also records any releases of reclaimed wastewater discharged by the City of Burbank.

Station F-300-R registers all flow west of Lankershim Boulevard plus outflow from Hansen Dam that is not spread. These records also include releases from Sepulveda Dam, which may include extractions from Reseda wells.

Station F-168-R registers all releases from Big Tujunga Dam, which collects runoff from Tujunga Canyon northeast of the dam. Runoff below this point flows to Hansen Dam.

Station 118B-R registers all releases from Pacoima Dam that originate in Pacoima Canyon. Runoff below this point flows to the Lopez and Pacoima spreading grounds and on down to the Los Angeles River.

The locations of these key gaging stations are shown on Plate 4. The mean daily discharge rates for these six gaging stations during 1979-80 are summarized in Appendix B.

The Watermaster has computed the surface flow of the Los Angeles River at Gaging Station F-57C-R as to the sources, i.e., storm runoff from precipitation, Owens River water, rising water, and industrial and reclaimed wastewater discharges. The Watermaster utilized the procedures outlined in the Report of Referee for estimating the approximate flow rates and sources of water

TABLE 3

MONTHLY RUNOFF AT SELECTED GAGING STATIONS
(in acre-feet)

Station	Water Year	Month												Total
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
F-57C-R	1978-79	3170	9270	6660	48460	16680	31430	4310	6290	3390	3260	3030	3150	139,100
Los Angeles River	1979-80	6490	4760	5500	45480	176400	incl.	incl.	4160	1510	1950	2710	1910	incl.
F-252-R	1978-79	12	19	1220	incl.	incl.	997	228	incl.	incl.	incl.	455	468	incl.
Verdugo Channel	1979-80	677	528	579	2760	3860	1030	574	507	594	616	355	822	12,902
E285-R	1978-79	589	878	1060	2310	1130	2060	556	845	565	603	921	868	12,385
Burbank Storm Drain	1979-80	977	875	850	3420	9090	3380	990	665	754	422	439	624	22,486
F-300-R	1978-79	1760	9160	5300	36880	11470	21540	3080	1970	1900	2180	1680	1390	98,310
L.A. River Tujunga Ave.	1979-80	3350	3100	2680	29400	115700	incl.	incl.	incl.	incl.	incl.	incl.	incl.	incl.
F-168-R	1978-79	849	748	1320	4170	4580	6640	5630	3160	1410	838	340	294	29,979
Big Tujunga Dam	1979-80	555	784	194	2709	incl.	incl.	incl.	incl.	incl.	incl.	incl.	incl.	incl.
118B-R	1978-79	242	232	478	418	320	3874	3334	2031	+	+	+	1091	12,020
Pacoima Dam	1979-80	6	+	+	893	13015	6120	1733	3405	722	3	+	+	25,897

passing Gaging Station F-57C-R. A similar calculation was made for Station F-252-R. A summary of the procedures used follows, and a tabulation of the computed flows is shown in Table 4.

The base low flows were separated from the surface runoff by the use of the hydrographs of Station F-57C-R. Base flows consist of rising water and industrial waste plus reclaimed water. Separation of base flow from surface runoff is based on the following assumptions:

> Rising water equals base low flow minus the sum of industrial waste and reclaimed water. Industrial wastes are estimated from City of Los Angeles waste permits, Los Angeles-Glendale reclamation plant discharges, and low flows in the Burbank-Western storm drain which includes wastewater.
>
> When the City of Los Angeles diverts water at the Headworks spreading grounds, most of the rising water is diverted.
>
> when there is no diversion, a portion of the rising water may percolate upstream from Station F-57C-R.

Historically, the surface runoff obtained from the hydrographs of Station F-57C-R consisted primarily of storm runoff and Owens River water. The last releases of Owens River water into the Los Angeles River occurred in February 1971 due to the San Fernando earthquake. Releases in the future are expected to be minimal, but if they do occur, separation of surface runoff will be based on the following assumptions:

> Net storm runoff equals surface runoff minus Owens River water.
>
> If the Headworks diversion structure is used, all releases of Owens River waters are diverted to the Headworks spreading grounds. If the Headworks diversion structure does not divert water, all releases of Owens River waters are considered as passing Station F-57C-R.

Ground Water Recharge

Local precipitation can have a marked influence on the ground water supply and water in storage. However, there is a wide variation in the annual amount of runoff as a result of changes in both precipitation and retentive characteristics of the watershed.

Continued urban development in ULARA has resulted in much of the rainfall being collected and routed into paved channels, which discharge into the Los Angeles River, and subsequently being carried out of the basin.

TABLE 4

SEPARATION OF SURFACE FLOW AT STATIONS F-57C-R AND F-252-R
(In Acre-Feet)

Period	Base Low Flow		Storm Runoff	Total Measured Outflow
	Rising Water	Waste Discharge		
Station F57C-R				
1971-72	3,602[a]	8,219	35,049	46,870
1972-73	4,596[a]	8,776	100,587	113,959
1973-74	2,694[a]	6,366	79,818	88,878
1974-75	427[a]	7,318	56,396	64,141
1975-76	261[a]	6,741	32,723	39,725
1976-77	839[a]	7,128	58,046	66,013
1977-78	1,331[a]	7,449	357,883	366,663
1978-79	2,840[a]	16,450	119,810	139,100
1979-80	5,500[d]	16,500[d]	[b]	[b]
29-year average 1929-57	6,810	770	30,790	39,950
Station F252-R[c]				
1971-72	2,050	0	2,513	4,563
1972-73	1,706	0	7,702	9,408
1973-74	1,772	0	5,613	7,385
1974-75	1,333	0	4,255	5,588
1975-76	2,170	0	2,380	4,550
1976-77	1,683	0	2,635	4,318
1977-78	1,168	0	23,571	24,739
1978-79	2,470	0	[b]	[b]
1979-80	5,150[c]	0	7,752	12,902

a/ May include rising water past rubber dam at Headworks Spreading Grounds, Verdugo Channel, and Los Angeles River Narrows.

b/ Incomplete record.

c/ Verdugo Basin. Large increase in 1979-80 due to more accurate measurements.

d/ Estimated.

To somewhat overcome the rapid overflow due to urbanization, Pacoima and Hansen Dams, originally built for flood protection, were utilized to regulate storm flows to recapture the flow in downstream spreading basins operated by LACFCD, as well as the City of Los Angeles. Operation of Hansen Dam for the purpose of spreading water for recharge has become increasingly more difficult due to the sand and gravel that has accumulated within the forebay of the dam.

LACFCD operates the Branford, Hansen, Lopez, and Pacoima spreading grounds. The City of Los Angeles, in turn, operates the Tujunga and Headworks spreading grounds. Plate 1 shows the locations of these spreadings basins. The spreading grounds operated by LACFCD are utilized for spreading native water and imported water under contract. The spreading grounds operated by the City of Los Angeles are utilized to spread Owens River and native waters, ground water, and the discharge from the Reseda wells. Table 5 summarizes the spreading operations for the 1979-80 water year.

Ground Water Table Elevations

During the 1979-80 water year, the Watermaster collected and processed data to determine prevailing ground water conditions in ULARA during the spring and fall of 1980. Plates 5 and 6 show these conditions. Change in ground water surface elevation from fall of 1979 to fall of 1980 as presented in Plate 7 reflects the effects of variations in spreading, ground water extractions, and rainfall.

TABLE 5

SPREADING OPERATIONS
(In Acre-Feet)

Month	Native Water Spread by Los Angeles County Flood Control District Spreading Basins				Water Spread by City of Los Angeles				
					Tujunga Spreading Grounds		Headworks Spreading Grounds		
	Branford	Hansen	Lopez	Pacoima	Native Water	Owens River Water	Owens River Water	Reseda Wells	Surface Runoff[a]
1979									
Oct.	37	0	0	13	0	0	0	0	0
Nov.	28	0	0	12	0	151	0	0	240
Dec.	17	0	0	0	0	0	0	0	387
1980									
Jan.	113	119	0	1,589	0	0	0	0	61
Feb.	82	140	375	3,489	0	2,199	0	0	0
Mar.	57	6,984	504	5,019	0	7,478	0	0	0
Apr.	31	9,086	218	1,494	0	3,519	0	0	928
May	7	5,843	0	2,989	0	3,747	0	0	692
June	7	3,504	0	666	0	1,559	0	0	974
July	5	2,011	0	312[b]	0	0	0	0	659
Aug.	7	1,804	0	0	0	0	0	0	863
Sept.	6	1,596	0	0	0	1,278	0	0	644
Totals	397	31,087	1,097	15,583	0	19,931	0	0	5,448

a/ Includes industrial discharge, ground water effluent, and surface runoff diverted from Los Angeles River

b/ Owens River water

Due to above normal rainfall in the water year 1979-80, a rise of approximately 10 feet in water levels occurred in the eastern part of the San Fernando Basin due to increased spreading and decreased pumping. Water levels did not change appreciably in the Sylmar Basin this past year because extractions were slightly less than safe yield, but the general trend is a declining water level due to extractions exceeding safe yield for nine of the past twelve years (1969-1980). Continued rise in water levels are occurring in the Verdugo Basin because extractions are less than safe yield.

Figures 1 and 2 depict the water levels at key wells; their approximate locations are indicated by numbers shown on map on Figure 2.

Water Reclamation

Water reclamation could provide a source of water for irrigation, industrial, and recreational uses. Six wastewater reclamation plants are in operation in ULARA. A tabulation of operating water reclamation plants is shown on Table 6.

Construction of the Sepulveda Basin Water Reclamation Plant began in November 1980, with completion expected in the spring of 1984. A portion of the effluent from the 40 million gallons per day (mgd) plant will be used to irrigate the Sepulveda Basin recreation area and the residual will be discharged to the Los Angeles River. In the future this residual discharge may be used for industrial cooling, freeway landscape irrigation, and ground water recharge.

The City of Los Angeles, along with other local agencies, is participating in the development of a regional water reclamation study entitled "Orange and Los Angeles Counties Water Reuse Study." The objective of this report is to prepare a coordinated water reclamation plan for these two areas. This study is estimated to be completed in 1982. A mid-course report describing the status of studies to date was completed and circulated for comments in the summer of 1980.

Water Quality

Water resources management must take into account water quality as well as water supply. The total dissolved solids (TDS) concentration in water is the quality indicator that is generally used. A comparison of the TDS content in the various water sources is shown in Figure 3. Representative mineral analyses of imported, surface, and ground waters for 1979-80 are contained in Table 7.

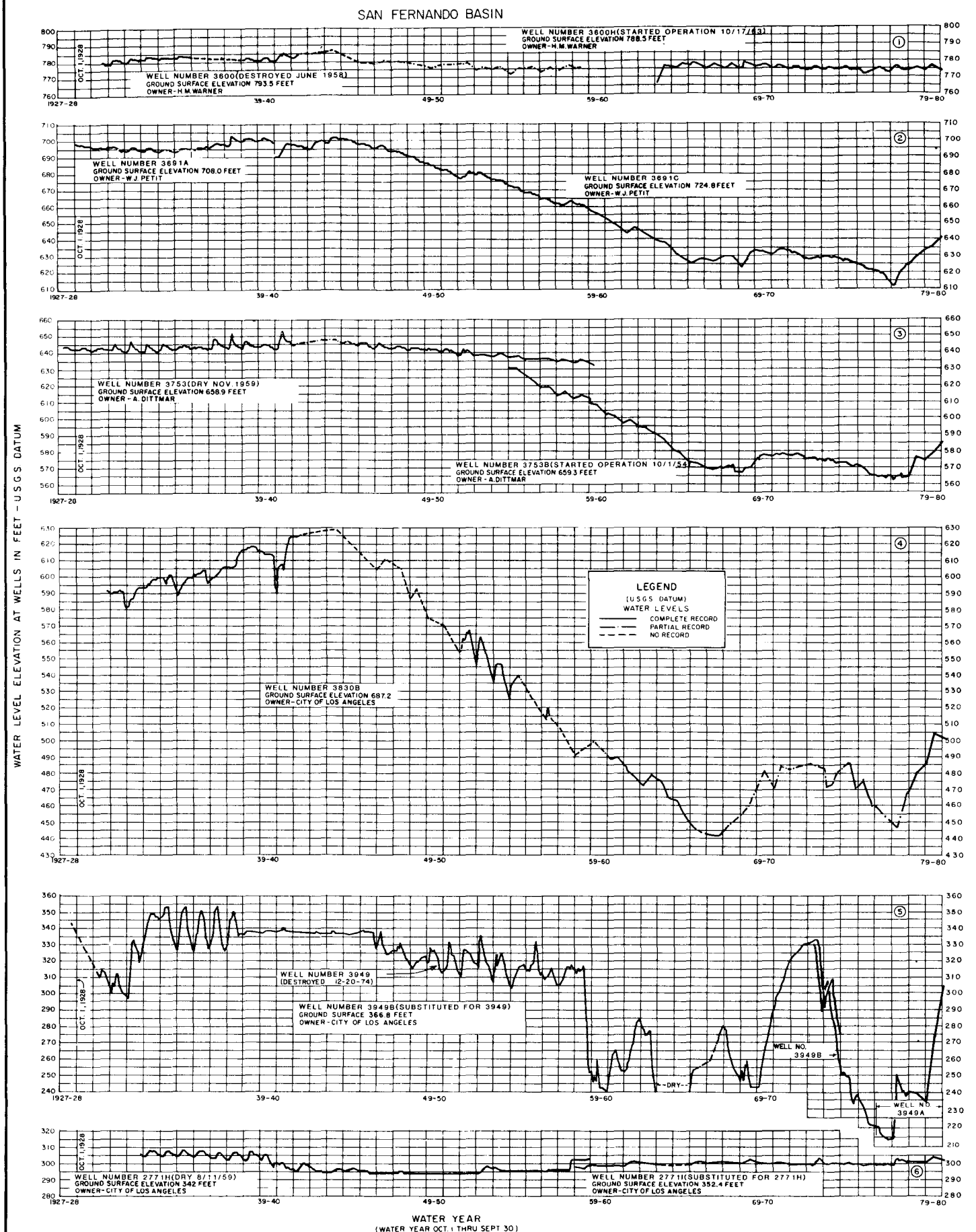

Figure 1—FLUCTUATION OF WATER LEVEL ELEVATION AT WELLS IN THE SAN FERNANDO BASIN

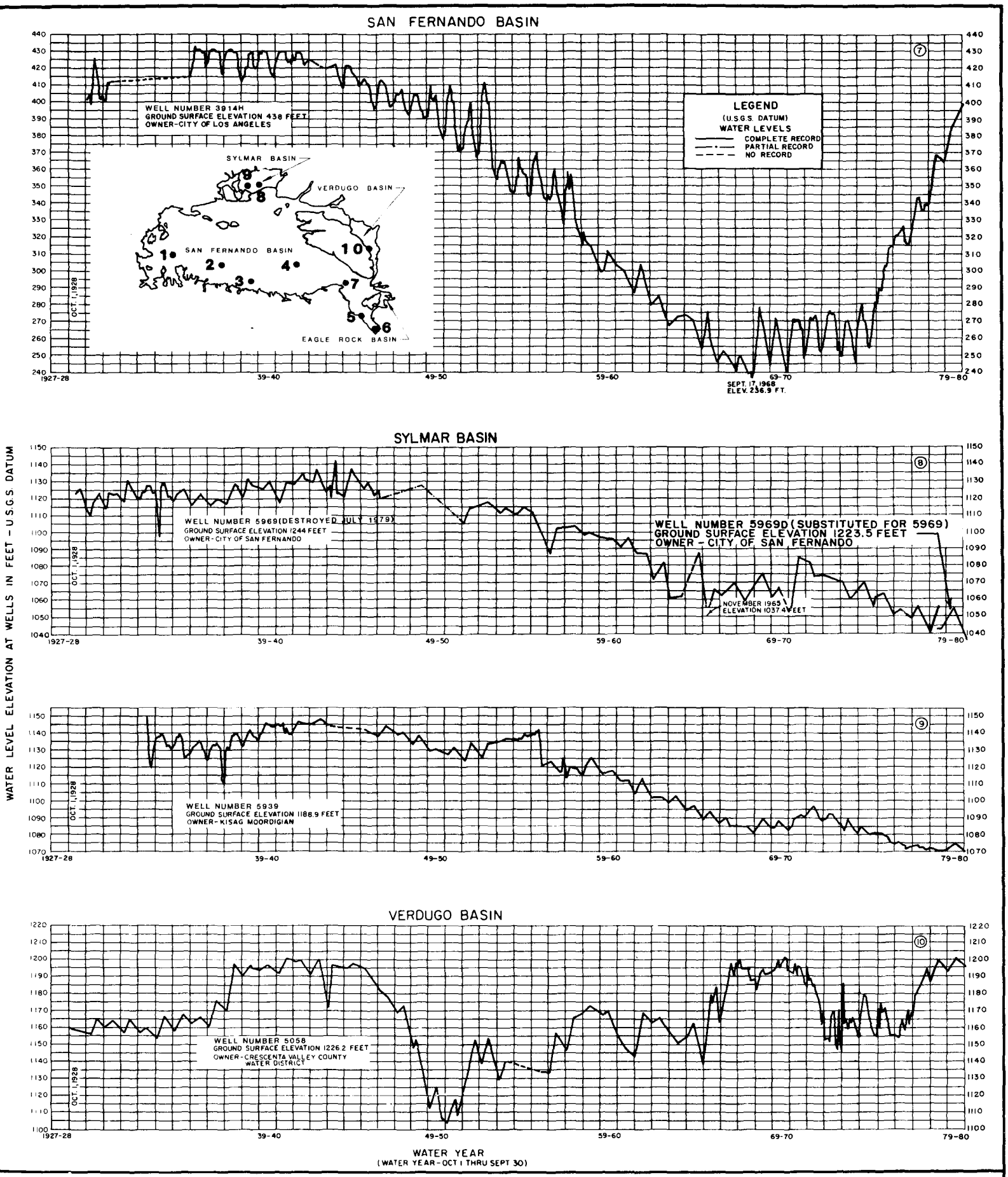

Figure 2 – FLUCTUATION OF WATER LEVEL ELEVATION AT WELLS IN THE SAN FERNANDO, SYLMAR AND VERDUGO BASINS

TABLE 6

WATER RECLAMATION PLANTS, 1979-80
(In Acre-Feet)

Plant	Treated	Used
San Fernando Basin		
City of Burbank	7,695	1,960[a/]
Los Angeles-Glendale	7,326	310[b/]
Indian Hills Mobile Homes[d/]	21	21[c/]
Rocketdyne (Santa Susana Field Laboratory)	50	50[c/]
The Independent Order of Foresters[e/]	13.8	13.8[c/]
Verdugo Basin		
Crescenta Valley County Water District	108.7	108.7[c/]

a/ Total water delivered to Burbank cooling towers includes 50 percent evaporation and the rest to Los Angeles River

b/ Total water delivered to phosphate plant in Glendale includes 50 percent evaporation and the rest to Los Angeles River

c/ Land irrigation

d/ Water supply from nearby well

e/ Water supply from pipeline from LADWP

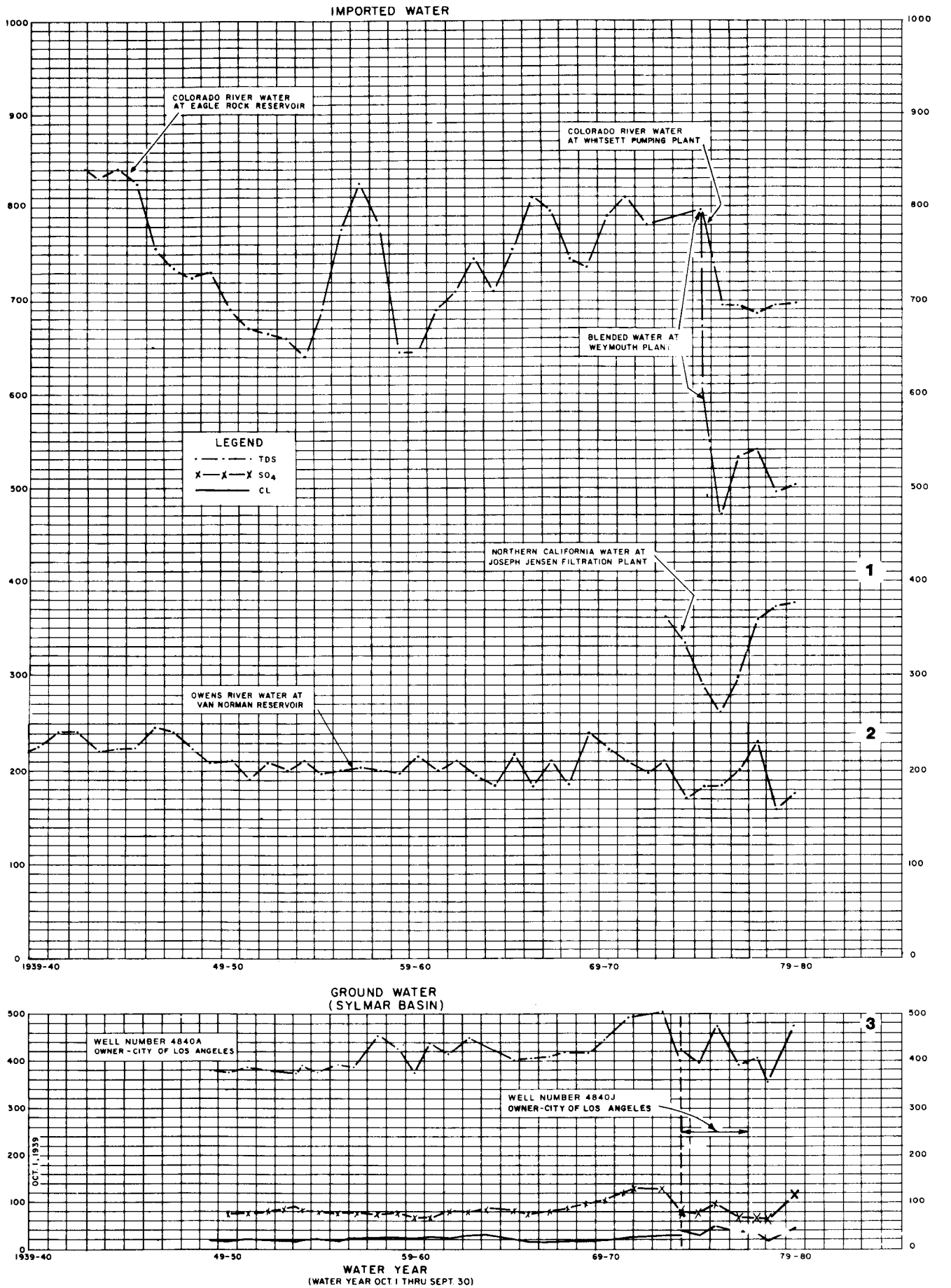

Figure 3— MINERAL CONSTITUENTS OF WATER SOURCES IN THE ULARA

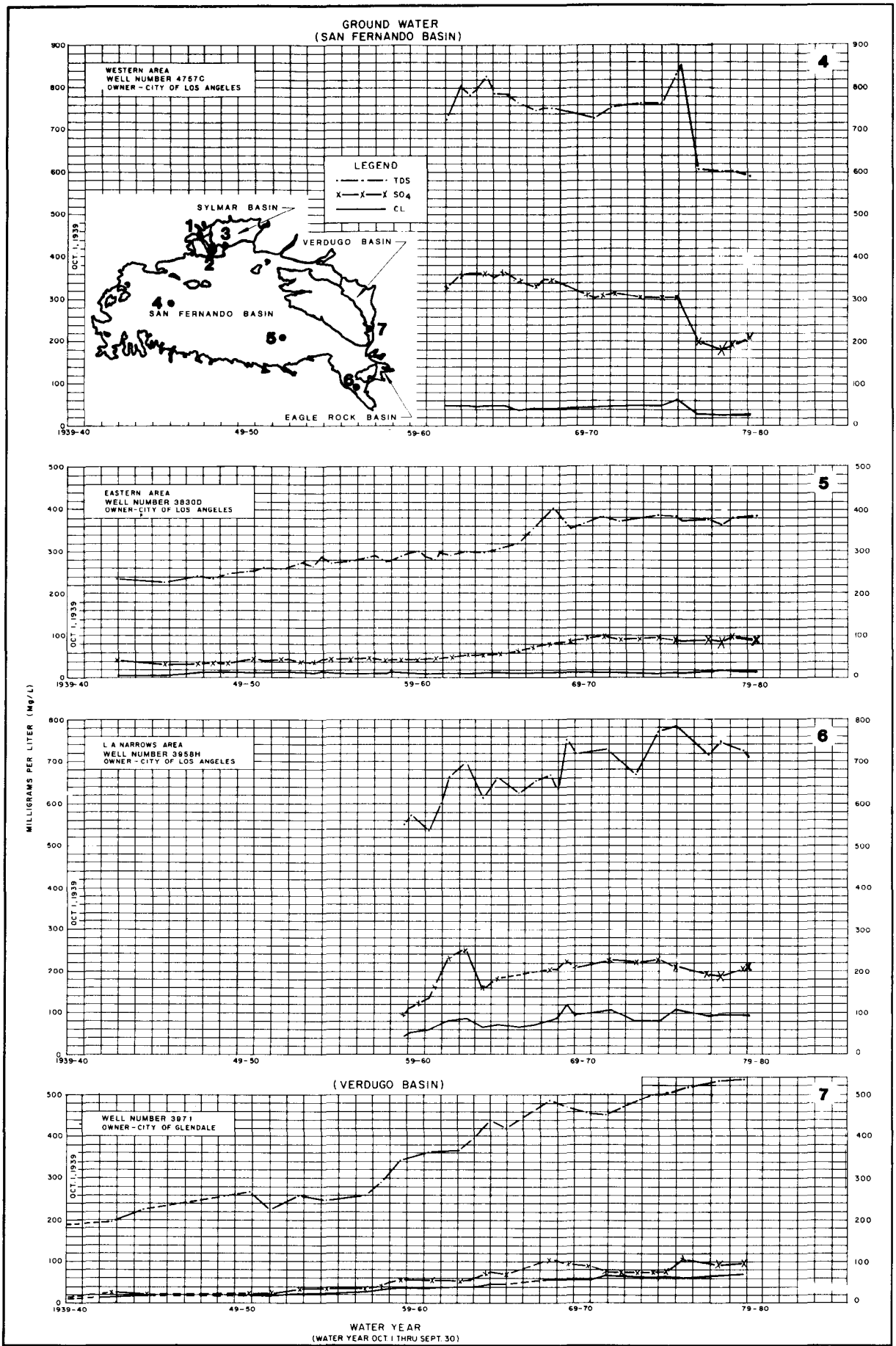

Figure 3(Cont.) — MINERAL CONSTITUENTS OF WATER SOURCES IN THE ULARA

TABLE 7

REPRESENTATIVE MINERAL ANALYSES OF WATER

Well Number or Source	Date Sampled	ECx10^6 at 25°C	PH	Mineral Constituents in Milligrams per liter (mg/l) / Milliequivalents per liter (me/l)											TDS Total Dissolved Solids mg/l	Total Hardness as $CaCO_3$ mg/l
				Ca	Mg	Na	K	CO_3	HCO_3	SO_4	Cl	NO_3	F	B		
Imported Waters																
Blended State Project and Colorado River water at Eagle Rock Reservoir	79-80	850	8.01	55 2.74	22 1.81	86 3.74	3.7 0.09	0 0	102 1.67	193 4.02	81 2.29	2.4 0.04	0.28 0.01	0.21 0.06	515	227
Owens River water at Upper Van Norman Reservoir Inlet	79-80	283	7.89	22 1.10	4.0 0.33	29 1.26	3.2 0.08	0 0	97 1.59	23 0.48	13 0.37	1.3 0.02	0.52 0.03	0.40 0.11	177	72
State Project Water at Joseph Jensen Filtration Plant (Influent)	79-80	611	7.70	50 2.50	18 1.50	48 2.09	3.1 0.08	0 0	108 1.77	124 2.58	44 1.24	0.58 0.01	0.39 0.02	0.38 0.11	378	197
Surface Water																
Los Angeles River at Sepulveda Blvd.	11/21/79	1,400	8.36	132 6.59	46 3.78	104 4.52	6.0 0.15	0 0	238 3.90	340 7.08	102 2.88	3.0 0.05			868	520
	4/9/80	1,740	8.21	192 9.58	73 6.00	125 5.44	7.3 0.19	0 0	210 3.44	665 13.85	102 2.88	3.5 0.06			1,079	780
Los Angeles River at Burbank-Western Wash	11/21/79	1,350	7.35	60 3.00	26 2.14	148 6.43	12 0.31	0 0	114 1.87	240 5.00	151 4.26	5.5 0.10			837	256
	4/9/80	1,080	7.53	51 2.54	25 2.06	128 5.57	14 0.36	0 0	135 2.21	208 4.33	112 3.16	6.0 0.10			670	232
Los Angeles River at Colorado Blvd.	11/21/79	900	7.88	88 4.39	30 2.47	58 2.52	6.0 0.15	0 0	200 3.28	175 3.65	54 1.52	2.0 0.03			558	344
	4/9/80	950	8.28	95 4.74	31 2.55	86 3.74	6.4 0.16	0 0	192 3.15	244 5.08	74 2.09	5.1 0.08			589	362
Burbank Reclamation Plant Discharge to Burbank-Western Wash	8/6/80	950	7.08	- -	- -	112 4.87	- -	0 0	- -	- -	94 2.65	1.03 0.02	0.80 0.04	- -	573	-
L. A.-Glendale Reclamation Plant Discharge to L. A. River	9/80	642	6.80	49 2.45	17 1.42	133 5.78	13 0.33	0 0	181 2.97	163 3.40	122 3.44	4.9 0.08	1.1 0.06	0.9 0.25	642	-
Groundwaters																
(San Fernando Basin - Western Portion)																
4757C (Reseda No. 6)	11/27/79	953	7.20	120 6.00	29 2.39	45 1.96	2.0 0.05	- -	250 4.10	208 4.33	29 0.82	7.4 0.12	0.36 0.02	0.32 0.09	591	420
(San Fernando Basin - Eastern Portion)																
3830D (No. Hollywood No. 19)	7/25/80	618	7.41	74 3.69	20 1.65	28 1.22	3.2 0.08	- -	188 3.08	89 1.85	18 0.51	3.9 0.06	0.50 0.03	0.19 0.05	383	264
3841C (Burbank No. 6A)	11/29/79	-	8.00	52 2.61	8.8 0.72	33 1.44	3.5 0.09	0 0	207 3.39	45 0.94	18 0.50	- -	0.50 0.03	- -	292	173
3913H (Grandview No. 16)	4/27/78	580	8.10	52 2.61	10.8 0.89	55 2.39	3.6 0.09	0 0	188 3.08	43 0.90	66 1.86	- -	0.50 0.03	- -	376	175
(San Fernando Basin - L. A. Narrows)																
3958H (Pollock No. 6)	10/17/79	1,180	7.00	114 5.69	39 3.21	88 3.83	2.8 0.07	- -	265 4.34	205 4.27	94 2.65	3.9 0.06	0.26 0.01	0.38 0.11	713	445
(Sylmar Basin)																
4840J (Mission No. 5)	7/10/79	768	7.60	90 4.49	18 1.48	41 1.78	5.1 0.13	- -	205 3.36	118 2.46	43 0.70	4.2 0.07	0.27 0.01	0.28 0.08	476	296
5959 San Fernando No. 3	1/10/79	550	7.50	65 3.25	20 1.64	28 1.22	2.3 0.06	0 0	232 3.80	68 1.42	25 0.70	- -	0.5 0.03	0.19 0.05	364	245
(Verdugo Basin)																
3971 (Glorietta No. 3)	7/14/78	820	6.80	88 4.42	31.5 2.59	32 1.39	2.6 0.07	0 0	194 3.18	96 2.00	70 1.97	- -	0.2 0.01	- -	534	351

Imported Water

A. Owens River-Mono Basin water is sodium bicarbonate in character and is the highest quality water available to ULARA. Its TDS concentration averaged about 210 milligrams per liter (mg/l) for 30 years before 1969, the highest record being 320 mg/l on April 1, 1946, and the lowest, 150 mg/l on September 17, 1941. Average TDS concentration for 1979-80 was 177 mg/l, which was higher than the 160 mg/l for 1978-79. This increase in TDS was caused by a decreased export of stream flows (90 TDS average) and a greater export of pumped ground waters (195 TDS average) from the Owens Valley.

B. Colorado River water is predominantly sodium-calcium sulfate in character, changing to sodium sulfate after treatment to reduce total hardness. Samples taken at the Burbank turnout between 1941 and 1975 indicated a TDS concentration high of 875 mg/l in August 1955 and a low of 625 mg/l in April 1959. The average TDS over the 34-year period was approximately 740 mg/l. Tests conducted at the Whitsett Intake Pumping Plant showed an average TDS of 698 mg/l for 1979-80, an increase of less than 1 percent from last year.

C. Northern California water (State Water Project water) is sodium bicarbonate-sulfate in character. It generally contains less TDS and is softer than local and Colorado River water. Since its arrival in Southern California in April 1972, the water had a high TDS concentration of 390 mg/l and a low of 247 mg/l. Tests of Northern California water are taken at the Joseph Jensen Filtration Plant. Average TDS concentration during 1979-80 was 378 mg/l, an increase of 1 percent from last year.

D. Colorado River and Northern California water were first blended at the Weymouth Plant in May 1975. In the 1979-80 period, TDS had an average value of 502 mg/l which was a 1 percent increase from 1978-79. Blending ratios vary at the Weymouth Plant and tests are taken from the effluent.

Surface Water

Surface runoff contains salts dissolved from rocks in the tributary areas. Surface water is sodium-calcium, sulfate-bicarbonate in character. In 1979-80, low flows in the Los Angeles River above the Los Angeles Narrows had an average TDS

content of 670 mg/l and a total hardness of 230 mg/l, an increase and decrease over last year of 3 and 15 percent, respectively.

Ground Water

Ground water in ULARA is moderately hard to very hard. The character of ground water from the major water-bearing formations is of two general types, each reflecting the composition of the surface runoff in the area. In the western part of ULARA, it is calcium sulfate-bicarbonate in character, while in the eastern part, including Sylmar and Verdugo Basins, it is calcium bicarbonate. TDS decreased in the western part of the San Fernando Basin by 2 percent over 1978-79; increased by less than 1 percent in the eastern part; increased by 33 percent in the Sylmar Basin; and no comparison data was available for the Verdugo Basin.

Ground water is generally within the recommended limits of the United State Public Health Service Drinking Water Standards, except perhaps for wells in the western end of the San Fernando Basin having excess concentrations of sulfate and those in the lower part of the Verdugo Basin having abnormally high concentrations of nitrate.

Following the discovery of trichloroethene (TCE) in four San Gabriel Valley wells in January 1980, and at the request of the State Department of Health Services (SDHS), a survey of Los Angeles City wells for TCE was initiated on January 17, 1980 by DWP. The survey was again expanded to include tetrachloroethene (PCE) on July 21, 1980. The survey was again expanded to include carbon tetrachloride (CTC) on September 26, 1980. By September 30, 1980, there had been 80 wells tested for TCE; 67 wells tested for PCE; and 25 wells tested for CTC. During this test period, 16 wells exceeded the SDHS action level (5 ppb) for TCE. These wells included Crystal Springs Nos. 45 and 46; Headworks Nos. 26, 27, and 28; North Hollywood Nos. 5, 11, 13, 21, 27, 28, 29, 31, 41, and 42; and Whitnall No. 1. Pollock Wells Nos. 4 and 6 exceeded the action levels for both TCE and PCE (4 ppb). As testing proceeded over the approximate eight-month period, some wells increased from below to above action level for TCE and some decreased from above to below the action level for TCE. The highest values measured during the DWP survey were 31 ppb for TCE and 31 ppb for PCE through September 30, 1980. Testing for these constituents is continuing. The blend of water served to consumers has not exceeded the SDHS action levels of 5 ppb for TCE, 4 ppb for PCE, and 5 ppb for CTC since testing began for these constituents by DWP.

water delivered to for use in ULARA is either imported water, local ground water, local surface diversions, reclaimed, or a mixture of local and imported water, depending on the area and water system operation. During the 1979-80 water year, the total amount delivered to water users in ULARA was 306,740 acre-feet. Of this total, 22,052 acre-feet was pumped and used within ULARA and the remaining 284,688 acre-feet was imported. Refer to Figure 5 for a monthly breakdown. The basin contains 525 wells, of which 133 are active and 392 are inactive, observation, test, capped, etc.

The original trial court adjudication of ground water rights in ULARA (no longer in effect) restricted all ground water extractions, effective October 1, 1968. On that date, extractions were restricted to approximately 104,000 acre-feet per water year. This amounted to a reduction of approximately 50,000 acre-feet below the previous six-year average. The State Supreme Court's decision, as implemented in the Final Judgment entered on January 26, 1979, provides a similar restriction in ground water pumping. Refer to the previous section entitled "History of Adjudication" for details of allowed pumping.

Sparkletts Drinking Water Corporation and Deep Rock Water Company are the only parties that extract water from the Eagle Rock Basin.

Figure 4 illustrates the annual ground water extractions and total water imported in ULARA, beginning with the 1944-45 water year. Note the change from 1968-69 through the present.

It can also be noted that for 10 years before pumping was restricted, imports exceeded extractions from 50,000 to 90,000 acre-feet per year and that, for the water years 1968-69 to 1979-80, the difference increased to between 110,000 and 200,000 acre-feet.

Figure 5 provides an analysis of the monthly relationship between rainfall, ground water extractions, and imported supply. Data relates to all ULARA and not to any one specified ground water basin. The precipitation values were obtained from stations on the valley floor (Table 2).

Ground Water Extractions

Appendix A is the record of ground water extractions for the 1979-80 water year. A total of 63,337 acre-feet was pumped from the San Fernando Basin; 6,102 acre-feet from the Sylmar Basin; and 3,307 acre-feet from the Verdugo Basin. The respective safe yield values for these three basins are 90,680, 6,210, and 7,150 acre-feet. Pumping in the Verdugo Basin is less than safe yield

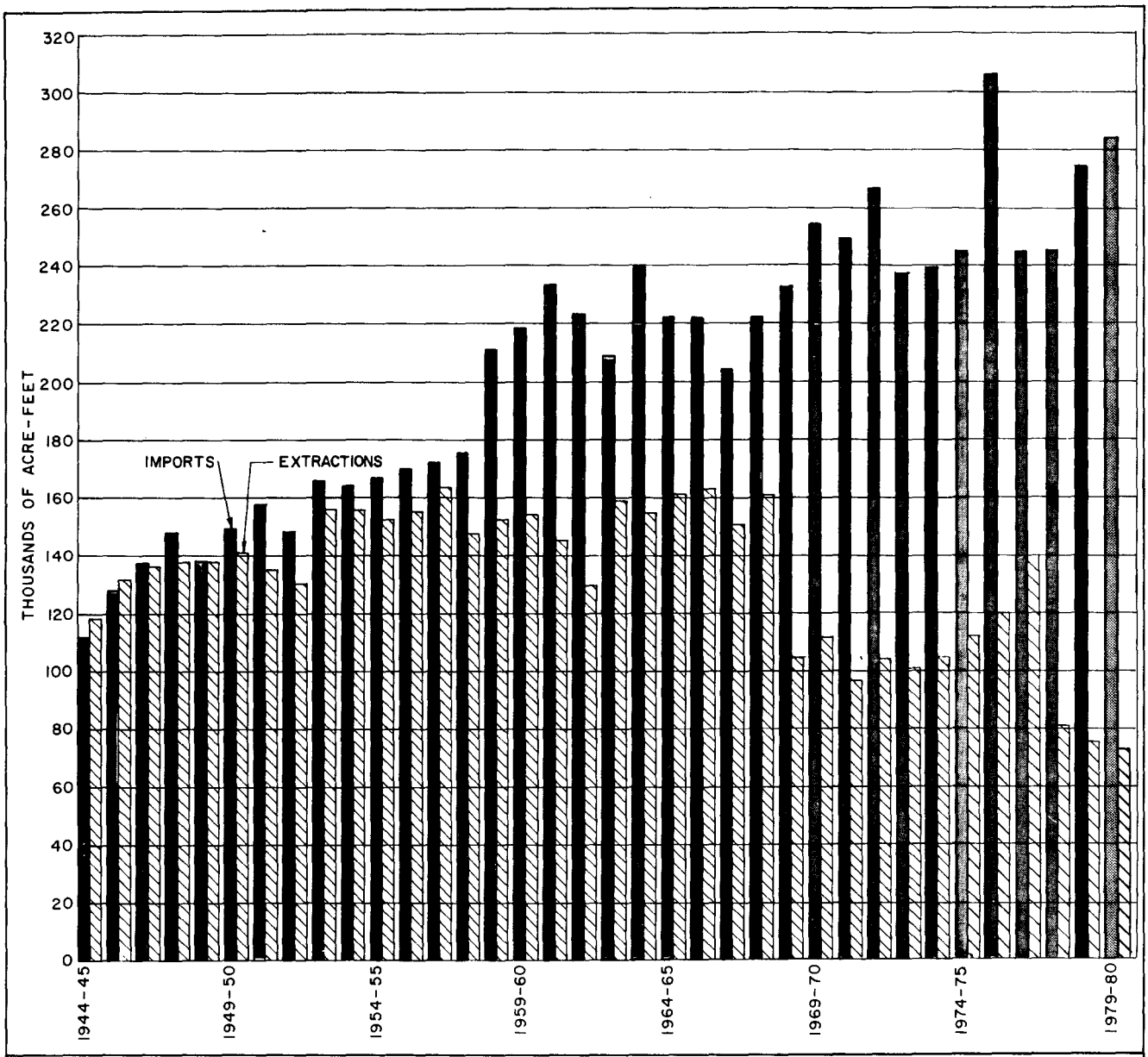

Figure 4- GROUND WATER EXTRACTIONS AND USE OF IMPORTED WATER IN UPPER LOS ANGELES RIVER AREA

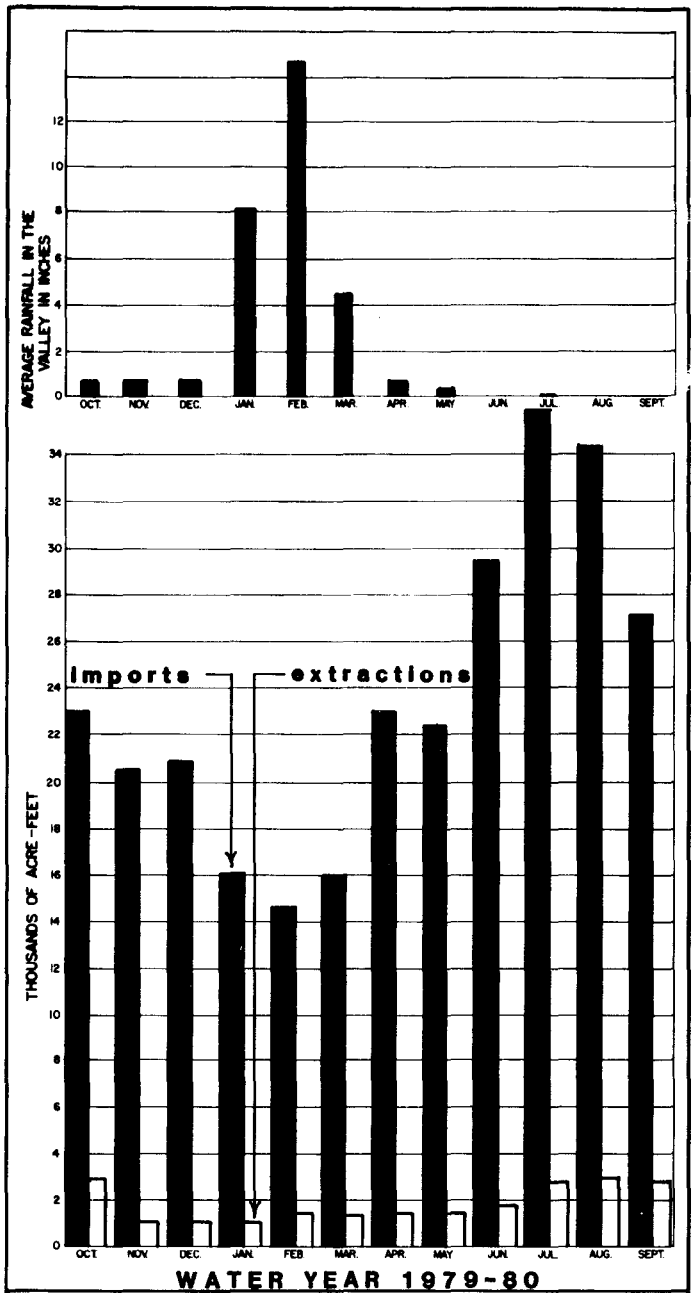

Figure 5 – MONTHLY WATER DEMAND AND AVERAGE RAINFALL IN UPPER LOS ANGELES RIVER AREA

(Used Within ULARA)

due to water quality problems. Construction of water system facilities, by the City of Glendale, in the Verdugo Basin are presently under way to allow pumping to be increased to safe yield.

Imports and Exports of Water

Residential, commercial, and industrial expansions in ULARA require the importation of additional water supplies to supplement that provided by the ground water basins.

The imported supplies to ULARA are from the City of Los Angeles' Owens-Mono Basin aqueduct and through the MWD distribution system, which consists of California and Colorado River Aqueduct waters.

Exports from ULARA, exclusive of sewage, are limited to the City of Los Angeles, which exports imported and ground water. Table 8 summarizes the nontributary imports and exports from ULARA. Ground water imports and exports in and out of ULARA are listed in Table 9.

Physical Data by Basins

The Watermaster has collected and summarized data in Table 9 which show the water supply and disposal in each of the basins.

The information for Table 9 was submitted by the parties. In instances where estimates were made by the parties, such as water delivered to hill and mountain areas, sewage exported, etc., these were based upon methods consistent with previous estimates computed by SWRCB for the San Fernando Valley reference. The Watermaster also made computations of subsurface outflows based on similar computations made by SWRCB.

Pumping by private parties is summarized in Table 9A.

San Fernando Basin Allowable Extractions

Table 10 lists San Fernando Basin extraction rights for the Cities of Burbank, Glendale, Los Angeles, and San Fernando for the water year 1980-81. Table 11 shows San Fernando Basin stored water as of October 1, 1979 and October 1, 1980. All rights are based on the City of Los Angeles vs. City of San Fernando, et al., judgment, dated January 26, 1979.

Facts Relevant to Ground Water Storage Capacity*

San Fernando Basin. The total ground water storage capacity of San Fernando Basin is approximately 3,200,000 acre-feet, with a regulatory storage capacity of 350,000 acre-feet

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* Information obtained from the City of Los Angeles vs. City of San Fernando, et al., Findings of Fact and Conclusions of Law dated January 26, 1979.

TABLE 8

ULARA IMPORTS AND EXPORTS

Source and Agency	Quantity, in acre-feet			
	1978-79		1979-80	
Imports				
MWD water[a/]				
Burbank, City of	20,633		21,547	
Crescenta Valley County Water District	2,225		2,151	
Glendale, City of	21,638		23,678	
Los Angeles, City of	1,188		3,759	
La Canada Irrigation District	786		758	
Las Virgenes Municipal Water District (nonparty)	8,817		10,370	
San Fernando, City of	0		214	
	55,287		62,477	
Owens River water				
Los Angeles, City of	472,255[b/]		477,754[b/]	
Total	527,542	527,542	540,231	540,231
Exports				
Owens River water				
Los Angeles, City of	252,281	-252,281	-255,543	-255,543
Net Import		275,261		284,688

[a/] Colorado River and Northern California waters combined.

[b/] This value represents the summation of the gross amount of water delivered to and exported from ULARA. It does not include operational releases, reservoir evaporation, and water spread during the year.

TABLE 9

1979-80
SUMMARY OF WATER SUPPLY AND DISPOSAL
SAN FERNANDO BASIN
(In Acre-Feet)

Water Source and Use	City of Burbank	City of Glendale	City of Los Angeles	City of San Fernando	All Others	Total
Extractions						
Total quantity extracted	677	934	57,375	0	4,351*	63,337
Used in valley fill	d/	d/	6,502	d/	d/	d/
Imports						
MWD water	21,547	23,678	1,699	214	10,370	57,508
Owens River water	--	--	470,224	--	--	470,224
Ground water from Sylmar Basin	--	--	3,111	2,722	0	5,833
Ground water from Verdugo Basin	--	0	--	--	--	0
Reclaimed water	1,960 e/	310 e/	--	--	--	2,270
Exports						
Ground water:						
to Verdugo Basin	--	0	0	--	0	0
out of ULARA	--	--	50,873	--	--	50,873
Owens River water:						
to Eagle Rock Basin	--	--	1,600	--	--	1,600
out of ULARA	--	--	255,543	--	0	255,543
MWD:						
to Verdugo Basin	--	3,082	0	--	0	3,082
Total net delivered water	24,184	21,840 a/	224,393	2,936	14,721	288,074
Water delivered to hill and mountain areas						
Ground water	d/	d/	0	0	0	d/
Owens River water	--	--	37,135	--	--	37,135
MWD water	d/	d/	1,681	0	10,370	12,051
Verdugo Basin water	--	d/	--	--	--	d/
Water outflow						
Surface	--	--	--	--	--	incl.
Subsurface	--	--	--	--	--	180
Sewers	13,924 c/	16,673	76,870	1,826	--	109,293

* See Table 9A for parties included.
a/ Total delivered water to the City of Glendale was 26,356 AF. Verdugo Basin metered sales times 105 percent equaled 4,516 AF. Therefore, the San Fernando Basin delivered water was 21,840 AF (26,356 AF minus 4,516 AF). Refer to Section 5.2.1.3 of Judgment.
b/ At Station F-57C-R where 29-year mean (1929-57) base low flow is 7,580 acre-feet.
c/ Includes reclaimed water discharged into Burbank-Western storm channel by Burbank.
d/ These values are no longer calculated as per Judgment.
e/ Delivered to cooling towers of steam plant in Burbank and phosphate plant in Glendale. Assumed 50 percent evaporation and 50 percent to Los Angeles River.

Note: Colorado River and Northern California waters now combined and listed as MWD water.

TABLE 9

1979-80
SUMMARY OF WATER SUPPLY AND DISPOSAL
SYLMAR BASIN
(in acre-feet)

Water Sources and Use	City of Los Angeles	City of San Fernando	All Others	Total
Extractions				
Total quantity	3,111	2,991	0	6,102
Used in valley fill	0	269	0	269
Imports				
Owens River water	6,746	--	--	6,746
Exports				
Groundwater: to San Fernando Basin	3,111	2,722	0	5,833
Water delivered to hill and mountain area				
Owens River water	375	--	--	375
Water outflow				
Surface	--	--	--	5,000[g/]
Subsurface: to San Fernando Basin[f/]	--	--	--	--
Sewers	780	180	0	960

f/ Computation not possible, well destroyed.

g/ Surface outflow is not measured. Calculated average surface outflow by Mr. Laverty - SF Exhibit 57.

TABLE 9

1979-80
SUMMARY OF WATER SUPPLY AND DISPOSAL
VERDUGO BASIN
(in acre-feet)

Water Source and Use	Crescenta Valley County Water District	City of Glendale	La Canada Irrigation District	City of Los Angeles	Total
Extractions					
Total quantity	1,873	1,434	0	0	3,307
Used in valley fill	1,809	k/	0	0	1,809
Imports					
MWD water	2,151	3,082	758	0	5,991
Owens River water	--	--	--	784	784
Groundwater from:					
San Fernando Basin	--	0	--	--	0
Exports					
Groundwater to:					
San Fernando Basin	--	0	--	--	0
Water delivered to hill and mountain areas					
MWD water	73	k/	0	0	73
Owens River water	--	--	--	259	259
Groundwater from:					
Verdugo Basin	64	k/	--	0	64
San Fernando Basin	--	0	0	0	0
Water outflow					
Surface	--	--	--	--	12,902
Subsurface:					
to Monk Hill Basin	--	--	--	--	300 i/
to San Fernando Basin	--	--	--	--	70
Sewage	0	985 j/	0	170	1,155

h/ Information obtained from Station F-252C-R.
i/ Based on 29-year average (1929-57).
j/ Measured.
k/ These values are no longer required.

TABLE 9

1979-80
SUMMARY OF WATER SUPPLY AND DISPOSAL
EAGLE ROCK BASIN
(in acre-feet)

Water source and use	City of Los Angeles	Deep Rock[o/] Water Company	Sparkletts Drinking[o/] Water Corporation	Total
Extractions				
Total quantity	0	5	173	178
Used in valley fill	0	0	0	0
Imports				
Owens River	1,600	--	--	1,600
MWD water	2,060	--	--	2,060
Groundwater	0	0	0	0
Exports				
Groundwater	0	5	173	178
Water delivered to hill and mountain areas				
MWD water	1,190	--	--	1,190
Owens River water	792	--	--	792
Water outflow				
Surface [m/]	--	--	--	--
Subsurface [n/]	--	--	--	--
Sewers	1,880	0	0	1,880

m/ Information not available.

n/ Estimated in Supplement No. 2 to Report of Reference for dry years 1960-61. Currently, data not available for direct evaluation.

o/ Deep Rock Water Company and Sparklets Drinking Water Corporation under a stipulated agreement with the City of Los Angeles; extract limited to 500 AF/Year, and export given amount.

TABLE 9A

1979-80
PUMPING BY PRIVATE PARTIES
SAN FERNANDO BASIN

(In Acre-Feet)

	Party	Amount
1.	Conrock Co.	1,810
2.	Forest Lawn Cemetery Assn.	270
3.	Harper, Cecelia De Mille	1
4.	Livingston-Graham, Inc.	431
5.	Mena, John and Barbara	1
6.	Sears, Roebuck and Company	24
7.	Southern Service Company*	37
8.	Sportsmens Lodge, Inc.	10**
9.	Toluca Lake Property Owners Assn.	52***
10.	Valhalla Memorial Park	300
11.	Walt Disney Productions	1,415
12.	Total	4,351

* Now Environmentals Inc.
** 0.7 AF consumptively used
*** 30 AF consumptively used

Items 1, 4, 6 & 11 = Nonconsumptive use parties
Items 2, 7, 8, 9 & 10 = Physical solution parties
Items 3 & 5 = Pumping without rights

TABLE 10

1980-81
SAN FERNANDO BASIN EXTRACTION RIGHTS
(in acre-feet)

Item	Cities of			
	Burbank	Glendale	Los Angeles	San Fernando
	(1)	(2)	(3)	(4)
1. Delivered water 1979-80	24,184	21,840	224,393	--
2. Import delivered 1979-80	--	--	--	214
3. Delivered to hill & mountain 1979-80	--	--	38,816	--
4. Delivered to valley fill 1979-80	--	--	185,577	--
5. Percent recharge	20%	20%	20.8%	26.3%
6. Return water extraction right 1980-81	4,837	4,368	38,600	56
7. Native safe yield	0	0	43,660	0
8. Total extraction right 1980-81	4,837	4,368	82,260	56

Items 1, 2, & 3	=	Table 9
Item 4	=	Item 1 minus Item 3
Item 5	=	Article 5.2.1.3, page 17 of Judgment
Item 6, cols. (1) and (2)	=	Item 1 x Item 5
col. (3)	=	Item 4 x Item 5
col. (4)	=	Item 2 x Item 5
Item 7	=	Article 4.2.4, page 11 of Judgment
Item 8	=	Item 6 + Item 7
--	=	Data not required

TABLE 11

STORED WATER
SAN FERNANDO BASIN
(in acre-feet)

	Cities of			
	Burbank	Glendale	Los Angeles	San Fernando
	(1)	(2)	(3)	(4)
1978-79				
1. Stored water as of Oct. 1, 1978	782	554	38,154	17
2. Delivered water 1977-78	22,513	19,617	162,028	57
3. Return water extraction right 1978-79	4,503	3,923	33,702	15
4. Native safe yield	0	0	43,660	0
5. Total extraction right for 1978-79	4,503	3,923	77,362	15
6. Extractions for year	1,338	1,865	56,693	0
7. Physical solution extractions	(201)	(441)	34	--
8. Spread water	0	0	31,945	0
9. Stored water as of Oct. 1, 1979	3,947	2,612	90,092	32
1979-80				
10. Delivered water 1978-79	24,234	20,830	183,404	--
11. Return water extraction right 1979-80	4,847	4,166	38,148	0
12. Native safe yield	0	0	43,660	0
13. Total extraction right for 1979-80	4,847	4,166	81,808	0
14. Extractions for year	677	934	57,122*	0
15. Physical solution extractions	(300)	(307)	31	0
16. Spread water	0	0	20,243	0
17. Stored water as of Oct. 1, 1980 **	8,117	5,844	134,383	32

Items 3 & 11 = Items 2 & 10 x percent recharge
Items 5 & 13 = Items 3 + 4 & 11 + 12 respectively
Item 9 = Items 1 + 5 - 6 - 7 + 8
Items 7 & 15 = All subtracted from Los Angeles
col. (1) = Valhalla pumping.
col. (2) = Forest Lawn & Environmental Inc. pumping
col. (3) = Toluca Lake & Sportsmens' Lodge pumping. Only consumptive use portion charged to L.A.
Item 15 = Items 9 + 13 - 14 - 15 + 16
* = Excludes 128 AF (Crystal Springs) + 125 AF (Pollock). Discharged to L.A. River while testing for T.C.E.
** = Does not include return flow occurring during water year 1979-80.

required by the judgment. As of 1954-55, the temporary surplus in the basin has been exhausted by the overextraction of approximately 520,000 acre-feet.

Sylmar Basin. Sylmar Basin consists of confined aquifers with ground water storage space of approximately 310,000 acre-feet.

Verdugo Basin. The ground water storage capacity of Verdugo Basin is approximately 160,000 acre-feet.

Change in Ground Water Storage

San Fernando Basin. The change in storage for 1979-80 was +99,970 acre-feet, and the cumulative change in storage from 1954-55 through 1979-80 was -171,930 acre-feet.

Sylmar Basin. The change in storage for 1979-80 was +670 acre-feet, and the cumulative change in storage from 1954-55 through 1979-80 was -22,850 acre-feet.

Verdugo Basin. The change in storage for 1979-80 was +1,740 acre-feet, and the cumulative change in storage from 1954-55 through 1979-80 was +28,060 acre-feet.

Appendix A

GROUND WATER EXTRACTIONS

1979-80 WATER YEAR
GROUND WATER EXTRACTIONS

(ACRE-FEET)

LACFCD Well Number	Owners Designation	Extractions Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
						San Fernando Basin								
City of Burbank														
3841C	6A	127.34	5.67	0.00	1.31	0.00	0.00	0.00	0.00	0.00	1.47	9.48	0.00	145.27
3882P	7	0.00	0.00	0.00	0.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81
3851C	10R	47.45	0.00	0.00	2.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.14
3851J	11A	52.10	0.00	0.00	3.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.27
3851E	12	54.39	0.00	0.00	13.33	10.03	0.00	9.20	0.00	0.00	0.00	6.08	0.00	93.03
3851K	13A	148.00	0.00	0.00	1.13	17.41	0.00	0.00	0.00	0.00	1.16	7.95	0.00	175.65
3850K	14A	55.82	0.00	0.00	9.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65.68
3882T	15	0.00	0.00	0.00	1.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.56
3841F	17	0.00	0.00	0.00	14.96	0.00	0.00	0.00	0.00	0.00	0.84	5.26	0.00	21.06
3841G	18	59.61	0.00	0.00	1.72	0.00	0.00	0.00	0.00	0.00	1.34	6.00	0.00	68.67
	Party Total	544.71	5.67	0.00	50.54	27.44	0.00	9.20	0.00	0.00	4.81	34.77	0.00	677.14
Conrock Co.														
4916A	2	81.55	60.64	59.81	44.94	46.15	58.43	79.25	74.65	64.15	81.89	64.06	78.24	793.76
4916	3	116.44	88.57	70.64	57.17	50.93	91.56	105.16	96.96	93.25	84.57	71.25	89.68	1016.18
	Party Total	197.99	149.21	130.45	102.11	97.08	149.99	184.41	171.61	157.40	166.46	135.31	167.92	1809.94
Forest Law Cemetery Assn.														
3947A	2	5.69	5.23	1.05	1.74	0.94	1.02	9.40	0.07	3.30	19.39	15.42	17.67	80.92
3947B	3	6.89	4.07	5.33	2.01	2.60	2.10	11.19	16.79	13.39	26.04	19.64	21.83	131.88
3958K	7	0.01	1.36	2.36	1.10	1.53	1.29	5.48	6.06	4.43	11.10	10.96	11.47	57.45
	Party Total	12.59	10.66	9.04	4.85	5.07	4.41	26.07	22.92	21.12	56.53	46.02	50.97	270.25
City of Glendale														
3924N	STPT1	51.18	21.38	10.94	9.38	25.11	14.96	2.48	6.18	26.56	10.22	15.33	13.12	206.84
3924R	STPT2	0.09	0.25	0.35	0.80	0.15	0.48	0.33	0.47	0.79	5.71	5.10	1.08	15.60
GVENT	GVENT	32.84	33.76	34.07	66.29	50.64	45.42	49.10	53.71	49.72	89.01	99.13	111.71	711.40
	Party Total	84.11	55.39	45.36	76.47	75.90	60.86	51.91	60.36	77.07	100.94	119.56	125.91	933.84
Harper, Cecelia DeMille														
4940A	North	0.10E	0.10E	0.10E	0.10E	0.10E	0.10E	0.10E	0.10E	0.10E	0.10E	0.10E	0.10E	1.20
Livingston-Graham, Inc.														
4916IB	SnVal	55.62	42.09	38.86	32.98	24.31	40.86	23.77	32.56	36.10	40.45	29.48	33.73	430.81
City of Los Angeles														
3914L	CS-45	0.00	0.00	0.02	12.19	0.00	0.00	0.00	0.00	0.00	0.00	75.62*	0.00	87.83
3914M	CS-46	321.67	315.87	313.59	30.99	0.00	0.00	0.00	0.00	0.00	0.00	52.66*	0.00	1034.78
3914S	CS-50	0.00	0.00	0.00	6.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.50
	CS Total	321.67	315.87	313.61	49.68	0.00	0.00	0.00	0.00	0.00	0.00	128.28	0.00	1129.11
3831H	E-1	240.66	10.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	251.08
3831G	E-3	218.69	9.66	0.14	78.83	1.91	0.00	17.49	32.55	249.82	250.74	238.45	59.89	1158.17
3821F	E-4	221.58	127.00	0.00	17.19	51.15	172.91	165.01	61.13	0.00	185.54	253.97	238.62	1494.10
3831F	E-5	144.81	12.19	0.18	114.62	40.68	0.00	39.23	0.00	125.60	89.28	177.99	282.44	1027.02
3821H	E-6	106.98	0.11	0.00	17.13	48.28	0.00	130.79	164.79	0.00	180.30	248.72	236.30	1133.40
3811F	E-10	0.00	0.16	0.00	14.99	0.00	154.00	45.68	0.00	0.00	0.00	60.10	220.69	495.62
	E Total	932.72	159.54	0.32	242.76	142.02	326.91	398.20	258.47	375.42	705.86	979.23	1037.94	5559.39
3894BB	H-25	154.06	202.23	197.18	90.52	223.58	339.37	328.40	363.43	352.96	367.61	369.10	357.74	3346.18
3893L	H-26	130.58	0.21	217.17	113.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	461.78
3893K	H-27	0.00	0.21	197.52	101.15	112.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	411.58
3893M	H-28	0.00	0.00	0.00	0.00	60.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.77
3893N	H-29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.53	0.00	0.00	27.53
3893P	H-30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.26	0.00	0.00	44.26
	H Total	284.64	202.65	611.87	305.49	397.05	339.37	328.40	363.43	352.96	439.40	369.10	357.74	4352.10
3800	NH-2	236.94	51.49	0.00	43.78	0.00	0.00	116.25	99.01	71.49	308.04	302.16	78.79	1307.95
3780A	NH-4	15.68	31.86	0.00	30.14	27.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	105.41
3810S	NH-5	155.60	34.09	18.00	54.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	262.28
3770	NH-7	0.14	105.67	0.00	38.34	0.00	0.00	0.00	0.00	0.00	127.37	125.32	48.42	445.26
3810	NH-11	0.00	0.00	0.00	36.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
3810A	NH-13	121.40	8.49	0.00	36.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	166.30
3810B	NH-14A	26.74	12.08	0.00	10.22	0.00	0.00	0.00	19.56	203.47	300.97	294.84	212.40	1080.28
3790B	NH-15	46.72	0.00	0.00	10.22	32.30	0.00	0.00	0.00	192.88	260.58	257.92	136.75	937.37
3820D	NH-16	0.00	0.28	0.00	11.62	0.00	0.00	24.68	0.00	0.00	279.36	356.89	189.35	862.18
3820C	NH-17	274.63	13.89	0.00	13.02	0.00	10.06	0.00	0.00	229.71	346.21	339.79	44.33	1271.64
3820B	NH-18	271.72	14.60	0.00	11.87	0.00	0.00	36.00	0.00	0.00	0.00	217.45	81.73	633.37
3830D	NH-19	35.24	134.64	0.00	48.21	85.29	0.00	0.00	12.47	227.73	330.70	233.17	0.00	1107.45
3830C	NH-20	0.00	0.00	0.00	26.93	0.00	0.00	0.00	0.00	0.00	248.26	269.45	35.88	580.52
3830B	NH-21	0.00	0.18	0.00	15.52	2.09	0.00	0.00	0.00	196.24	283.79	117.79	0.00	615.61
3790C	NH-22	26.38	108.06	0.00	46.72	181.02	0.00	104.00	97.02	0.00	0.00	190.04	312.12	1065.36
3790D	NH-23	291.94	59.25	83.43	57.83	2.98	0.00	117.36	108.91	24.04	341.62	142.24	0.00	1229.60
3800C	NH-24	264.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	264.97
3790F	NH-25	315.08	64.46	91.53	50.60	0.00	0.00	128.81	210.38	88.57	253.24	249.93	86.89	1539.49
3790E	NH-26	0.11	0.00	0.00	59.30	2.80	0.00	0.00	0.00	57.78	368.96	236.80	94.58	820.33
3820F	NH-27	152.60	0.23	0.00	7.55	0.00	0.00	159.18	73.21	0.00	216.19	95.94	0.00	704.90
3810K	NH-28	292.77	15.68	0.00	40.63	0.00	0.00	0.00	0.00	0.00	00.00	0.00	0.00	349.08
3810L	NH-29	54.68	14.44	0.00	55.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	124.68
3800D	NH-30	216.94	0.00	0.00	25.07	0.00	0.00	0.00	0.00	0.00	326.93	319.17	234.21	1122.32
3810T	NH-31	191.58	0.00	83.01	57.90	12.01	0.00	119.54	111.02	0.00	130.56	129.87	0.00	835.49
3770C	NH-32	0.16	0.00	0.00	47.91	43.66	0.00	0.00	0.00	0.00	185.75	171.74	62.03	511.25
3780C	NH-33	188.32	11.48	0.00	46.05	51.97	0.00	0.00	0.00	0.00	188.41	175.90	64.16	726.29
3790G	NH-34	106.54	0.00	0.00	48.51	0.00	0.00	0.00	0.00	228.79	334.94	317.63	319.79	1356.20
3830N	NH-35	0.00	0.14	0.00	53.77	29.41	0.00	0.00	0.00	0.00	190.61	78.83	0.00	352.76
3790H	NH-36	0.14	0.00	0.00	25.94	87.21	0.00	0.00	0.00	0.00	158.31	173.88	0.00	445.48
3790J	NH-37	328.74	0.00	0.00	27.11	0.00	0.00	0.00	0.00	0.00	0.00	280.35	450.14	1086.34
3810M	NH-38	347.84	0.32	0.00	49.38	196.47	0.00	0.00	0.00	0.00	500.12	495.14	492.04	2081.31
3810N	NH-39	0.00	0.14	0.00	50.51	62.97	0.00	0.00	0.00	0.00	493.67	489.19	63.06	1159.54
3810P	NH-40	37.97	74.13	0.00	46.88	58.47	0.00	0.00	0.00	0.00	0.00	293.16	58.45	569.06
3810Q	NH-41	276.45	0.00	0.00	48.71	62.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	388.11
3810R	NH-42	0.00	211.18	0.00	56.18	89.58	0.00	0.00	0.00	0.00	430.47	162.12	0.00	949.53
	NH Total	4278.02	966.78	275.97	1289.16	1028.91	10.06	805.82	731.58	1520.70	6605.06	6516.71	3065.12	27093.89

* Discharge to L.A. River. Water quality testing for T.C.E.

1979-80 WATER YEAR
GROUND WATER EXTRACTIONS

(ACRE-FEET)

LACFCD Well Number	Owners Designation	Extractions Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
						San Fernando Basin Contd.								
City of Los Angeles - contd.														
3904J	CS-52(#1)	2.96	3.45	2.86	1.13	2.40	1.46	2.59	4.53	3.79	4.27	4.00	3.84	37.28
3904J	CS-52(#2)	2.69	3.08	2.55	1.01	2.15	1.30	2.32	4.06	3.39	3.82	3.58	3.43	33.38
	CS Total	5.65	6.53	5.41	2.14	4.55	2.76	4.91	8.59	7.18	8.09	7.58	7.27	70.66
3959E	P-4	79.66	72.43	56.02	40.75	0.00	0.00	0.00	0.00	0.00	0.00	28.42 **	0.00	277.28
3948C	P-5	74.38	54.51	8.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	136.94
3958H	P-6	158.86	155.19	161.85	90.68	0.00	0.00	0.00	0.00	0.00	0.00	96.63 **	0.00	663.21
3958J	P-7	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11
	P Total	312.90	282.03	226.13	131.43	0.00	0.00	0.00	0.00	0.00	0.00	125.05	0.00	1077.54
4992A	TGPLT	0.00	40.45	51.88	62.67	105.69	133.24	106.77	99.24	99.36	106.52	96.92	72.41	975.15
3863H	V-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	149.38	149.38
3853F	V-2	0.00	105.23	30.28	86.50	1.79	64.46	216.90	221.74	206.73	204.66	214.58	203.31	1556.18
3863J	V-4	217.38	93.02	113.50	23.97	0.00	67.36	194.10	237.33	226.68	131.59	130.97	62.49	1498.39
3863L	V-11	217.52	203.77	212.08	44.97	203.24	327.92	303.45	310.95	303.01	309.07	306.75	297.22	3039.95
3853G	V-13	0.00	0.07	0.00	0.00	0.73	0.00	19.79	18.34	0.00	0.00	20.80	21.05	80.78
3843M	V-16	179.23	72.31	95.32	19.90	0.00	0.00	151.36	186.76	175.30	171.65	72.34	0.02	1124.19
3854F	V-22	59.80	4.78	0.00	18.82	0.00	0.00	24.17	51.45	100.23	23.60	37.26	0.00	320.11
3844R	V-24	242.82	10.77	122.87	33.10	32.99	74.82	245.62	246.76	221.74	228.88	170.32	0.00	1630.69
	V Total	916.75	489.95	574.05	227.26	238.75	534.56	1155.39	1273.33	1233.69	1069.45	953.02	733.47	9399.67
3820E	W-1	0.00	0.00	0.00	10.24	0.00	0.00	0.00	0.00	0.00	185.61	140.41	0.00	336.26
3821B	W-2	12.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.44
3821C	W-3	220.66	0.14	0.00	87.26	129.80	0.00	199.08	308.75	295.16	293.96	285.13	276.65	2096.59
3821D	W-4	254.52	0.23	0.00	103.74	60.74	35.72	69.40	144.65	359.99	363.06	356.06	345.16	2093.27
3821E	W-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	130.37	367.29	359.60	857.26
3831J	W-6A	335.17	30.85	0.00	27.55	50.32	373.60	131.93	0.00	0.00	0.00	0.00	0.00	949.42
3832K	W-7	78.90	0.09	0.00	52.16	0.00	120.48	0.00	0.00	0.00	0.00	0.00	0.00	251.63
3832L	W-8	104.91	17.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	122.43
3832M	W-9	82.30	46.12	0.00	33.63	40.08	0.00	99.93	133.43	0.00	0.00	0.00	0.00	435.49
3842E	W-10	52.14	0.05	0.00	36.13	1.03	0.00	13.04	47.96	130.35	128.38	125.41	28.05	562.54
	W Total	1141.04	95.00	0.00	350.71	281.97	529.80	513.38	634.79	785.50	1101.38	1274.30	1009.46	7717.33
	City of Los Angeles Total	8193.39	2558.80	2059.24	2661.30	2198.94	1876.70	3312.87	3369.43	4374.81	10035.76	10450.19	6283.41	57374.84
Mena, John and Barbara														
4973J	4973J	0.08E	0.08E	0.08E	0.08E	0.08E	0.08E	0.08E	0.08E	0.08E	0.08E	0.08E	0.08E	0.96
Sears Roebuck and Company														
7945	3945	1.23	2.20	1.15	0.00	0.72	0.72	1.78	0.59	4.27	3.21	5.39	2.04	23.50
Southern Service Company*														
3934A	Meter 1	1.17	0.99	0.96	0.88	0.88	0.52	0.83	0.01	1.54	1.16	1.14	2.05	12.33
3934A	Meter 2	1.54	1.12	0.87	0.49	0.72	1.05	1.92	1.63	1.10	1.79	0.90	1.04	14.57
3934A	Meter 3	0.66	1.02	0.58	0.87	0.00	0.36	1.24	1.95	0.69	0.95	1.40	0.66	10.37
	Party Total	3.37	3.13	2.41	2.24	1.60	1.92	3.99	3.59	3.33	3.90	3.44	4.45	37.37
Sportsmens Lodge, Inc.														
3745A	1	0.01E	0.01E	0.01E	0.01E	0.01E	0.01E	0.01E	0.01E	5.82	1.08	1.09	2.22	10.29
Toluca Lake Property Owners Assn.														
3845F	3845F	5.15	2.23	3.51	6.53	1.81	1.29	2.39	3.41	3.70	7.37	7.07	7.58	52.04
Valhalla Memorial Park														
3830M	2	6.92	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.07
3840K	4	7.90	18.26	24.22	5.53	0.00	0.81	1.50	22.10	51.66	53.69	59.65	47.61	292.93
	Party Total	14.82	18.41	24.22	5.53	0.00	0.81	1.50	22.10	51.66	53.69	59.65	47.61	300.00
Walt Disney Productions														
3874E	East	0.85	0.00	0.00	52.98	73.90	61.06	3.09	105.80	120.56	0.00	58.97	139.48	616.69
3874F	West	141.89	73.37	81.60	3.00	0.00	1.96	91.71	0.00	75.83	147.12	155.35	26.72	798.55
	Party Total	142.74	73.37	81.60	55.98	73.90	63.02	94.80	105.80	196.39	147.12	214.32	166.20	1415.24
	Basin Total	9255.91	2921.35	2396.03	2998.72	2506.96	2200.77	3712.88	3792.56	4931.85	10621.50	11106.47	6892.42	63337.42

* Now Environmentals Inc. ** Discharged to L.A. River. Water quality testing for T.C.E.

						Sylmar Basin								
City of Los Angeles														
Plant	Mission	0.00	0.00	0.00	0.00	428.29	335.03	315.75	318.51	296.63	443.18	501.01	472.52	3110.92
Meurer Engineering Co.														
5998	3	0.01E	0.01E	0.01E	0.01E	0.01E	0.01E	0.01E	0.01E	0.01E	0.01E	0.01E	0.01E	0.12
City of San Fernando														
5969D	2A	155.68	0.00	3.17	8.80	6.71	19.24	18.24	0.00	0.54	217.49	213.78	54.25	697.90
5959	3	72.55	165.33	172.19	174.88	164.28	175.66	160.10	177.93	158.85	126.91	113.50	56.89	1719.07
5968	7A	44.07	53.61	55.48	50.32	48.36	45.23	56.93	59.56	52.99	51.56	34.28	21.95	574.34
	Party Total	272.30	218.94	230.84	234.00	219.35	240.13	235.27	237.49	212.38	395.96	361.56	133.09	2991.31
	Basin Total	272.31	218.95	230.85	234.01	647.65	575.17	551.03	556.01	509.02	839.15	862.58	605.62	6102.35

1979-80 WATER YEAR
GROUND WATER EXTRACTIONS

(ACRE-FEET)

LACFCD Well Number	Owners Designation	Extractions Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Verdugo Basin														
Crescenta Valley County														
5058B	1	0.01	0.00	0.00	0.01	0.01	0.00	0.90	1.57	1.44	5.45	2.38	2.03	13.80
5036A	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.03
5058H	5	13.57	0.01	0.00	0.01	0.01	0.00	0.43	0.06	0.04	0.14	0.39	0.37	15.03
5058	6	0.00	0.00	0.00	0.00	0.00	0.04	0.01	0.27	9.32	3.65	5.14	0.24	18.67
5047B	7	0.01	0.00	0.00	0.01	0.00	0.01	0.77	0.51	13.76	36.29	11.33	0.00	62.69
5069J	8	14.97	9.25	16.26	13.62	36.99	33.54	42.85	45.57	45.09	50.24	47.94	44.78	401.10
5047D	9	2.28	0.01	0.00	0.01	0.08	0.00	1.04	1.72	6.25	9.28	9.05	6.80	36.52
5058D	10	62.03	55.42	67.97	41.11	16.01	15.54	40.75	24.05	75.63	78.66	31.37	54.17	562.71
5058J	12	1.19	0.10	0.39	0.01	0.01	0.75	1.08	0.08	0.12	2.09	60.83	20.96	87.61
5069F	14	57.44	56.29	56.94	52.29	45.13	48.08	48.05	49.70	49.42	44.31	39.58	48.44	595.67
--	Pick	5.57	5.47	5.94	5.93	5.39	6.24	7.45	7.78	7.32	7.51	7.47	7.08	79.15
	Party Total	157.07	126.55	147.50	113.00	103.63	104.20	143.33	131.31	208.39	237.63	215.48	184.89	1872.98
City of Glendale														
3961,71	GL 3-4	0.00	0.00	0.00	0.00	0.00	0.00	29.50	59.51	92.91	82.49	21.77	80.63	366.81
3970	GL -6	157.97	135.93	158.11	123.83	48.63	55.35	52.68	0.00	0.00	83.81	107.94	143.41	1067.66
	Party Total	157.97	135.93	158.11	123.83	48.63	55.35	82.18	59.51	92.91	166.30	129.71	224.04	1434.47
	Basin Total	315.04	262.48	305.61	236.83	152.26	159.55	225.51	190.82	301.30	403.93	345.19	408.93	3307.45
Eagle Rock Basin														
Deep Rock Water Co.														
--	3	0.46	0.39	0.37	0.51	0.32	0.41	0.37	0.38	0.39	0.38	0.35	0.38	4.71
Sparkletts Drinking Water														
3987A	1	7.99	6.52	6.48	7.05	6.51	6.76	7.52	7.04	7.43	8.62	7.95	7.44	87.31
3987B	2	7.52	6.07	6.27	6.89	6.39	6.65	7.33	7.08	7.27	8.96	7.97	7.28	85.68
	Party Total	15.51	12.59	12.75	13.94	12.90	13.41	14.85	14.12	14.70	17.58	15.92	14.72	172.99
	Basin Total	15.97	12.98	13.12	14.45	13.22	13.82	15.22	14.50	15.09	17.96	16.27	15.10	177.70
	ULARA Total	9859.23	3415.76	2945.61	3484.01	3320.09	2949.31	4504.64	4553.89	5757.26	11882.54	12330.51	7922.07	72924.92

Appendix B

MEAN DAILY DISCHARGE
AT
KEY SURFACE RUNOFF
GAGING STATIONS

GAGING STATION SUMMARY

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
HYDRAULIC DIVISION

Station Location and Description LOS ANGELES RIVER above ARROYO SECO for Water-Year 1929 1930

Station No. F57CR

Drainage Area 511 Square Miles (P.M. Ward / C. Crandall Observer)

Gage Read 15 min N.

Rating Table No. 69-31

H. ELDEEB

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY			FEBRUARY			MARCH			DAY
	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	
1	3.78		62.0	0.71		51.5	.63		40.2	.66		44.8	1.30		291.0				1
2	3.78		62.0	0.70		50.0	.62		37.2	.63		41.2	1.18		188.0				2
3	3.78		62.1	0.75		57.5	.67		39.1	.60		36.1	1.17		181.0				3
4	3.80		65.0	0.74		56.0	.64		41.4	.59		35.0	1.15		169.0				4
5	3.81		66.7	0.73		54.5	.65		43.4	.71		51.4	1.05		123.0				5
6	3.80		65.0	0.73		54.5	.63		40.3	.70		50.0	1.00		108.0				6
7	3.80		65.0	1.22		216.0	.66		45.2	1.13		159.0	0.92		86.5				7
8	3.81		67.7	1.78		966.0	.67		45.5	.91		84.3	0.83		70.2				8
9	3.82		68.7	0.68		47.4	.64		41.9	3.27		4,850.0	0.86		75.4				9
10	3.82		68.5	0.72		53.0	.64		42.3	1.60		6830	0.84		72.0				10
11	3.82		68.5	0.70		50.0	.62		38.8	2.70		28700	0.84		72.0				11
12	3.85		62.7	0.72		53.0	.57		33.3	1.78		958.0	1.84		72.0				12
13	3.75		54.5	0.67		48.6	.58		34.2	1.55		608.0	2.90		3,380.0				13
14	3.71		51.5	0.66		48.6	.60		36.5	1.60		689.0	3.46		5,040.0				14
15	3.78		62.7	0.63		40.4	.60		36.7	1.19		183.0	4.64		9,090.0				15
16	3.77		62.5	0.58		34.3	.61		37.7	1.18		189.0	6.61		16,800.0				16
17	3.78		62.5	0.77		63.0	.62		39.9	1.21		207.0	5.93		14,000.0				17
18	3.75		57.5	0.63		41.1	.56		34.4	1.18		186.0	4.51		8,600.0				18
19	3.77		64.1	0.55		30.7	.59		35.3	1.03		117.0	4.85		9,880.0				19
20	3.82		67.5	0.54		27.5	.60		36.5	0.95		95.2	3.86		6340.0				20
21	3.84		68.4	0.62		39.5	1.15		122.0	0.92		82.5	3.15		4,080.0				21
22	3.80		66.0	0.60		36.8	1.04		119.0	0.96		97.8	1.97		1,2900				22
23	3.75		57.5	0.56		32.4	.91		85.0	0.88		78.9	1.90		1170.0				23
24	3.79		71.8	0.60		36.8	1.65		801.0	0.88		78.9	1.97		1,300.0				24
25	3.84		377.0	0.60		36.5	1.48		510.0	0.85		75.7	1.97		1,300.0				25
26	3.83		378.2	0.65		43.2	0.80		65.5	0.85		73.7	1.97		1,310.0				26
27	3.72		72.2	0.60		36.2	0.72		54.4	1.01		111.0	1.96		1280.0				27
28	3.76		53.1	0.45		20.7	0.60		48.9	2.54		2490.0	1.96		1280.0				28
29	3.77		50.1	0.57		33.0	1.68		42.3	4.00		6820.0	1.96		1280.0				29
30	3.75		54.8	0.61		41.8	0.46		44.0	1.64		739.0							30
31	3.80		57.5				0.65		42.7	1.49		530.0							31
1	3274.4			2398.5			2770.9			22929.5			88918.1						1
2	106			79.9			89.4			740			3070						2
3	6490			4760			5500			45,480			176,400						3
4	812			966			801			6820			16800						4
5	50.1			20.7			33.3			35			70.2						5

DAY	APRIL			MAY			JUNE			JULY			AUGUST			SEPTEMBER			DAY
	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	
1				0.84		72.	0.61		37.8	0.57		33.1	0.56		32.4	0.73		54.5	1
2				1.06		125	0.58		34.2	0.62		38.9	0.61		37.9	0.78		62.	2
3				0.81		66.7	0.59		35.3	0.59		35.3	0.49		24.4	0.74		56.4	3
4				0.79		63.5	0.54		29.6	0.60		36.5	0.57		33.	0.62		39.8	4
5				0.80		65.	0.57		33.	0.56		31.9	0.60		36.5	0.54		29.6	5
6				0.81		66.7	0.47		22.2	0.51		26.3	0.65		43.2	0.48		23.1	6
7				0.77		61.1	0.54		29.6	0.53		28.4	0.65		43.2	0.45		20.3	7
8				0.75		57.5	0.48		23.1	0.53		28.3	0.65		43.2	0.48		23.1	8
9				0.98		104.	0.55		30.7	0.50		24.8	0.61		37.8	0.50		25.	9
10				1.02		114.	0.61		37.8	0.42		17.5	0.55		30.7	0.51		26.1	10
11				0.59		35.3	0.60		36.5	0.55		30.7	0.61		37.8	0.52		27.3	11
12				0.56		31.9	0.58		34.2	0.41		16.8	0.64		42.1	0.52		27.3	12
13				0.60		36.5	0.51		25.8	0.44		19.4	0.62		39.2	0.51		26.1	13
14				0.61		38.5	0.40		15.3	0.52		26.9	0.62		39.2	0.50		25.	14
15				0.68		47.4	0.34		11.6	0.55		31.	0.60		36.5	0.50		25.	15
16				0.67		45.9	0.38		14.2	0.57		32.9	0.51		25.6	0.54		29.6	16
17				1.12		148.	0.38		14.2	0.58		34.7	0.51		26.1	0.56		31.9	17
18				1.36		358.	0.37		13.5	0.60		36.1	0.52		27.1	0.58		34.2	18
19				0.86		76.3	0.33		11.	0.57		33.4	0.59		35.8	0.58		34.2	19
20				0.58		34.2	0.35		12.2	0.55		30.8	0.59		34.9	0.55		30.7	20
21				0.71		51.5	0.41		16.5	0.59		35.2	0.63		41.2	0.50		25.0	21
22				0.88		78.9	0.41		16.5	0.63		40.4	0.69		48.6	0.50		25.0	22
23				0.65		43.2	0.46		21.7	0.61		38.	0.73		54.4	0.49		24.1	23
24				0.55		31.	0.46		21.4	0.56		32	0.73		53.8	0.53		28.4	24
25				0.49		24.1	0.54		29.7	0.61		37.2	0.75		56.8	0.54		29.6	25
26				0.50		24.6	0.56		31.9	0.60		36.7	0.83		70.2	0.56		31.9	26
27				0.57		33.4	0.55		31.2	0.57		32.6	0.83		70.6	0.58		34.2	27
28				0.63		40.5	0.52		27.8	0.60		36.6	0.85		73.3	0.58		34.2	28
29				0.64		41.9	0.56		31.9	0.63		41.	0.86		74.9	0.60		36.5	29
30				0.62		38.6	0.55		30.6	0.57		33.4	0.79		62.9	0.64		41.9	30
31				0.64		41.9				0.52		27.3	0.71		51.5				31
1				2097.1			761			984.1			1364.8			962			1
2				67.6			25.4			31.7			44.			32.1			2
3				4160			1510			1950			2710			1910			3
4				358			37.8			41			74.9			62			4
5				24.1			11.			16.8			24.4			20.3			5

REMARKS:

1. Total CFS
2. Average Daily Flow in CFS
3. Total Monthly Flow in A.F.
4. Maximum Average Daily Flow in CFS
5. Minimum Average Daily Flow in CFS

YEARLY TOTALS

Maximum stage	feet at	on	Discharge		Second-feet.
Minimum stage	feet at	on	Discharge		Second-feet.

H.E. H.E. H.E. H.E. H.E.

GAGING STATION SUMMARY

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
HYDRAULIC DIVISION

Station Location and Description *LOS ANGELES RIVER at TUJUNGA AVENUE* for Water-Year 19*79* 19*80*

Station No. *F300-R*

Drainage Area *101* Square Miles ([illegible] Observer) Gage Read .... Rating Table No. ....

[illegible]

DAY	OCTOBER Gage Height	Adj.	Discharge	NOVEMBER Gage Height	Adj.	Discharge	DECEMBER Gage Height	Adj.	Discharge	JANUARY Gage Height	Adj.	Discharge	FEBRUARY Gage Height	Adj.	Discharge	MARCH Gage Height	Adj.	Discharge
1	1.14		23.8	1.16		24.4	.76		13.2	.61		9.7	3.18		194.0			
2	1.16		24.4	1.17		24.8	.75		13.0	.55		8.4	1.89		56.6			
3	[illegible]		26.5	1.24		27.2	.73		12.5	.59		9.3	1.56		40.0			
4	[illegible]		25.8	1.22		26.6	.73		12.5	.60		9.5	1.51		37.8			
5	1.23		26.9	1.22		26.5	.74		12.8	.67		11.1	1.50		37.4			
6	1.14		23.7	1.24		27.2	.73		12.5	.57		9.3	1.49		37.0			
7	1.16		24.6	2.91		142.0	.73		12.7	1.72		47.5	1.49		37.0			
8	[illegible]		23.1	3.78		848.0	.80		14.2	1.18		25.0	1.48		36.6			
9	[illegible]		22.1	1.38		32.7	.75		13.0	5.01		2950.0	1.49		37.0			
10	[illegible]		21.5	1.14		23.8	.73		12.5	3.45		398.0	1.49		37.0			
11	1.08		21.8	1.08		21.8	.71		12.0	4.41		1830.0	1.49		37.0			
12	1.12		23.1	0.78		18.8	.64		10.4	3.58		570.0	1.50		37.4			
13	[illegible]		21.5	0.99		19.2	.68		11.3	3.48		430.0	4.77		2490.0			
14	[illegible]		[illegible]	0.99		19.1	.72		12.3	2.85		134.0	5.11		3160.0			
15	1.47		[illegible]	0.92		17.2	.72		12.3	2.37		87.8	5.92		5090.0			
16	[illegible]		[illegible]	0.93		17.5	.74		12.7	2.34		85.6	7.32		9440.0			
17	1.16		[illegible]	1.47		36.1	.67		11.1	2.29		81.9	7.06		8530.0			
18	1.12		23.1	0.95		18.0	.70		11.8	2.24		78.5	5.53		4100.0			
19	[illegible]		[illegible]	0.87		16.4	.70		11.8	2.11		69.5	5.95		5180.0			
20	3.56		[illegible]	0.87		15.9	.70		11.8	2.03		64.5	5.40		3790.0			
21	[illegible]		[illegible]	0.87		15.9	1.49		36.8	1.95		59.8	4.88		2690.0			
22	[illegible]		[illegible]	0.86		15.7	.94		17.9	1.88		55.8	4.65		2260.0			
23	1.30		[illegible]	0.86		15.7	.62		10.0	1.74		48.4	4.54		2060.0			
24	[illegible]		[illegible]	0.89		16.6	3.61		612.0	1.68		45.5	4.44		1890.0			
25	[illegible]		[illegible]	0.88		16.2	3.40		338.0	1.63		43.2	4.35		1730.0			
26	[illegible]		147.0	0.91		17.0	0.70		11.6	1.54		39.2	4.25		1570.0			
27	1.22		26.4	0.93		17.5	0.84		15.2	1.76		49.5	4.14		1390.0			
28	[illegible]		23.1	0.88		16.2	0.84		15.2	4.62		2200	4.05		1250.0			
29	[illegible]		21.8	0.86		15.7	0.88		16.2	5.56		4190.0	3.95		1090.0			
30	[illegible]		[illegible]	0.85		15.4	0.77		14.0	3.67		696.0	X		X			
31	[illegible]		[illegible]	X		X	0.80		14.2	3.50		463.0	X		X			
1	[illegible]			1564.9			1353.5			14810			58334.8					
2	[illegible]			52.2			43.7			478			2010.					
3	3350			3100			2680			29,400			115,700					
4	544			848			612			[illegible]			9440					
5	21.5			15.4			10			8.4			36.6					

DAY	APRIL Gage Height	Adj.	Discharge	MAY Gage Height	Adj.	Discharge	JUNE Gage Height	Adj.	Discharge	JULY Gage Height	Adj.	Discharge	AUGUST Gage Height	Adj.	Discharge	SEPTEMBER Gage Height	Adj.	Discharge
1				e														
2						32.5												
3																		
4																		[illegible]
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12									6.8									
13																		
14																		
15						25.7												
16																		
17												17.2						
18																		
19																		
20																		
21																		
22						33.0												
23																		
24																		
25																		
26									23.9									
27																		
28																		
29						[illegible]												
30																		
31	X		X	e			X		X							X		X
1																		
2																		
3																		
4																		
5																		

REMARKS:

YEARLY TOTALS

1. Total CFS
2. Average Daily Flow in CFS
3. Total Monthly Flow in A.F.
4. Maximum Average Daily Flow in CFS
5. Minimum Average Daily Flow in CFS

Maximum stage		feet at		on	Discharge		Second-feet.
Minimum stage		feet at		on	Discharge		Second-feet.

GAGING STATION SUMMARY

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
HYDRAULIC DIVISION

Station Location and Description: Verdugo Wash at Estelle — for Water-Year 19 79 19 80

Station No.: F252-R

Drainage Area: 26.8 Square Miles (P.M. Wood / A - H.EL DEEB Observer)

Gage Read: Continuous

Rating Table No.: 47-I

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY			FEBRUARY			MARCH			DAY
	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	
1	.24		7.3	.23		6.2	.19		2.5	.21		3.9	0.15		1.4	0.30		14.0	1
2	.25		8.4	.24		7.3	.20		2.8	.21		3.9	0.11		1.2	0.76		251.0	2
3	.25		8.4	.24		7.3	.20		2.8	.21		3.9	0.21		3.9	0.61		55.7	3
4	.25		8.4	.24		7.3	.19		2.5	.21		3.9	0.21		3.9	0.46		19.5	4
5	.25		8.4	.24		7.3	.21		3.9	.21		3.9	0.20		3.8	0.24		7.3	5
6	.25		8.4	.24		7.3	.22		5.0	.21		3.9	0.19		2.5	0.32		5.0	6
7	.25		8.4	.39		24.4	.21		3.9	.31		15.2	0.15		2.3	0.31		3.9	7
8	.25		8.4	.41		92.2	.22		5.0	.26		9.3	0.20		2.8	0.30		2.3	8
9	.25		8.4	.29		12.9	.22		6.2	.83		353.0	0.21		3.9	0.20		2.8	9
10	.25		8.4	.30		14.0	.24		7.3	.45		58.0	0.21		3.9	0.20		2.8	10
11	.25		8.4	.29		12.9	.24		7.3	.56		110.0	0.21		3.9	0.18		2.3	11
12	.25		8.4	.29		12.9	.24		7.3	.39		36.3	0.21		3.9	0.17		2.0	12
13	.24		7.3	.29		12.9	.25		8.4	.35		36.4	0.29		12.3	0.18		2.3	13
14	.23		6.7	.27		10.6	.25		8.4	.42		154	0.31		15.7	0.16		1.8	14
15	.22		6.0	.25		8.4	.26		9.5	.22		5.8	0.49		73.7	0.17		2.0	15
16	.21		6.2	.25		8.4	.26		9.5	.21		3.9	0.85		377.0	0.17		2.0	16
17	.23		6.7	.25		8.4	.27		10.6	.27		10.9	0.58		129.0	0.18		2.4	17
18	.22		6.4	.24		7.3	.28		11.8	.24		7.6	0.55		129.0	0.45		59.0	18
19	.23		21.8	.24		7.3	.29		12.9	.18		2.3	0.56		116.0	0.23		6.2	19
20	.58		131.3	.23		6.2	.29		12.7	.18		2.3	0.57		123.0	0.20		5.8	20
21	.21		7.3	.22		5.9	.30		23.7	.20		2.8	0.56		116.0	0.22		5.0	21
22	.21		3.7	.19		2.5	.27		10.6	.21		3.7	0.56		116.0	0.19		2.5	22
23	.21		3.9	.18		2.3	.27		10.6	.18		2.3	0.56		116.0	0.18		2.3	23
24	.21		5.8	.17		2.0	.49		72.2	.18		2.3	0.56		116.0	0.17		2.0	24
25	.21		3.9	.17		2.0	.31		15.2	.21		3.9	0.56		116.0	0.21		7.0	25
26	.22		5.3	.17		2.0	.20		2.8	.21		3.9	0.56		116.0	0.27		10.8	26
27	.22		5.0	.17		2.0	.18		2.3	.21		3.9	0.56		116.0	0.22		5.0	27
28	.22		5.0	.18		2.3	.19		2.5	.66		197.0	0.56		116.0	0.21		3.7	28
29	.21		3.9	.18		2.3	.20		2.8	.90		440.0	0.45		52.9	0.21		3.9	29
30	.21		5.0	.19		2.5	.21		3.9	.21		3.9				0.26		12.8	30
31	.23		6.2				.21		5.0	.17		2.0				0.22		5.0	31
1	3414			266.4			272.1			1391.9			1730.5			516.8			1
2	11			8.9			9.4			44.9			61.8			16.7			2
3	677			528			579			2760			3860.0			1030.0			3
4	131			42.7			72.2			440			307.0			221.0			4
5	39			2.0			2.3			2.0			1.2			1.8			5

DAY	APRIL			MAY			JUNE			JULY			AUGUST			SEPTEMBER			DAY
	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	
1	0.25		8.4	0.25		8.4	0.25		8.4	0.28		11.8	e		3.9	0.26		9.5	1
2	0.25		8.4	0.27		10.6	0.26		9.5	0.29		12.9			3.9	0.27		10.6	2
3	0.26		9.5	0.26		9.5	0.26		9.5	0.29		12.9			2.8	0.27		10.6	3
4	0.27		10.6	0.24		7.3	0.27		10.6	0.29		12.9			2.8	0.27		10.6	4
5	0.30		11.8	0.24		7.3	0.28		11.8	0.29		12.9			2.5	0.27		10.6	5
6	0.29		12.9	0.24		7.3	0.28		11.8	0.29		12.9			2.5	0.27		10.6	6
7	0.28		11.8	0.24		7.3	0.29		12.9	0.28		11.8			2.3	0.27		10.6	7
8	0.26		9.5	0.24		7.3	0.30		14.0	0.28		11.8			1.8	0.28		11.8	8
9	0.26		9.5	0.26		9.5	0.31		16.4	0.28		11.8			1.5	0.28		11.8	9
10	0.26		9.5	0.27		10.9	0.32		18.8	0.28		11.8			1.2	0.28		11.8	10
11	0.26		9.5	0.19		2.5	0.29		12.9	0.27		10.6	e		1.5	0.28		11.8	11
12	0.25		8.4	0.19		2.5	0.26		9.5	0.27		10.6	0.14		1.2	0.28		11.8	12
13	0.25		8.4	0.20		2.8	0.25		8.4	0.29		12.9	0.18		2.3	0.28		11.8	13
14	0.25		8.4	0.20		2.8	0.26		9.5	0.30		14.0	0.21		3.9	0.29		12.9	14
15	0.27		10.6	0.22		5.0	0.27		10.6	0.29		12.9	0.21		3.9	0.29		12.9	15
16	0.25		8.4	0.22		5.0	0.27		10.6	0.28		11.8	0.23		6.2	0.30		14.0	16
17	0.23		7.3	0.22		5.0	0.28		11.8	0.29		12.9	0.25		8.4	0.32		18.8	17
18	0.23		6.2	0.24		7.3	0.26		9.5	0.27		10.6	0.24		7.3	e		18.8	18
19	0.23		6.2	0.26		9.5	0.25		8.4	0.28		11.8	0.24		7.3			18.8	19
20	0.21		7.3	0.29		12.9	0.26		9.5	0.27		10.6	0.26		9.5			18.8	20
21	0.23		6.2	0.28		11.8	0.26		9.5	0.27		10.6	0.26		9.5			18.8	21
22	0.31		16.9	0.28		5.0	0.26		7.5	0.27		10.6	0.25		8.4			16.4	22
23	0.22		5.0	0.33		6.2	0.28		11.8	0.24		7.3	0.26		9.5			16.4	23
24	0.23		6.2	0.23		6.2	0.27		10.6	0.21		3.9	0.26		9.5			16.4	24
25	0.28		11.8	0.28		11.8	0.26		9.5	0.22		5.0	0.26		9.5			16.4	25
26	0.28		11.8	0.28		11.8	0.28		7.3	0.22		5.0	0.27		10.6			16.4	26
27	0.28		11.8	0.29		12.9	0.28		5.0	e		5.0	0.26		9.5			14.0	27
28	0.33		22.3	0.29		12.9	0.28		3.9			6.2	0.25		8.4			14.0	28
29	0.31		7.3	0.29		12.9	0.28		3.9			5.0	0.25		8.4			14.0	29
30	0.24		7.3	0.28		11.8	0.28		3.7			5.0	0.26		9.5	e		12.9	30
31				0.28		11.8				e		5.0	0.26		9.5				31
1	299.2			255.8			299.3			310.8			179.			414.6			1
2	9.6			8.3			10.			10.			5.8			13.8			2
3	574.0			507.0			594			616			355			822			3
4	22.3			12.9			18.8			14			10.6			18.8			4
5	5.0			2.5			3.9			3.9			1.2			9.5			5

	YEARLY TOTALS	
1	6555.8	1
2	17.9	2
3	13,000	3
4	440	4
5	1.2	5

REMARKS:

1. Total CFS
2. Average Daily Flow in CFS
3. Total Monthly Flow in A.F.
4. Maximum Average Daily Flow in CFS
5. Minimum Average Daily Flow in CFS

Maximum stage 3.59 feet at 1730 on 02-16-80 Discharge 6420 Second-feet.

Minimum stage feet at NOT DETERMINED Discharge Second-feet.

GAGING STATION SUMMARY

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
HYDRAULIC DIVISION

Station Location and Description: Burbank - Western Storm Drain @ Riverside Drive for Water-Year 19 79 19 80

Station No.: E285-R

Drainage Area: 25.0 Square Miles (P.M. Wood / R.V. Wood - H. EL DEEB Observer)

Gage Read: ~~Continuous~~ 15 min

Rating Table No.: 59-I

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY			FEBRUARY			MARCH		
	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge
1	0.16		15.7	.12		10.6	.13		11.9	0.13		11.9	e		41.7	0.16		15.7
2	0.16		15.7	.13		11.9	.13		11.9	0.13		11.9			32.6	0.79		315
3	0.19		13.1	.14		13.1	.13		11.9	0.17		13.1			23.5	e		169
4	0.14		13.1	.14		13.1	.12		10.6	0.15		14.6			17.1			41.7
5	0.15		14.6	.14		13.1	.12		10.6	0.17		17.1			14.6			85.7
6	0.16		15.7	.14		13.1	.13		11.9	0.14		13.1			14.6			172.
7	0.16		15.7	.24		29.4	.13		11.9	0.15		14.6			14.6			41.7
8	0.16		15.7	.36		63.3	.14		13.1	0.15		14.2	e		14.6			25.8
9	0.16		15.7	.14		13.1	.14		13.1	0.16		15.0	0.13		11.9			25.8
10	0.16		15.7	.14		13.1	.14		13.1	0.35		55.3	0.12		10.6	e		32.6
11	0.16		15.7	.13		11.9	.14		13.1	0.58		171.0	0.13		11.9	0.23		28.
12	0.16		15.7	.14		13.1	.13		11.9	0.33		54.5	0.14		13.1	0.21		23.5
13	0.16		15.7	.13		11.9	.15		14.6	0.24		30.3	0.64		205	0.19		19.7
14	0.16		15.7	.13		11.9	.15		14.6	0.24		30.3	0.67		228	0.19		19.7
15	0.16		15.7	.13		11.9	.14		13.1	0.17		17.1	0.98		489	0.18		18.5
16	0.17		17.1	.13		11.9	.13		11.9	0.12		10.6	1.79		1490	0.18		18.5
17	0.17		17.1	.14		13.1	.14		13.1	0.10		7.9	0.74		281	0.18		18.5
18	0.15		15.7	.10		7.9	.14		13.1	0.11		9.1	0.69		241	0.53		141
19	0.16		15.7	.10		7.9	.14		13.1	0.10		7.9	0.96		471	0.45		101
20	0.33		55.1	.13		11.9	.14		13.1	0.08		5.6	0.68		235	e		32.6
21	0.14		13.1	.14		13.1	.17		17.1	0.08		5.6	0.67		229			21.2
22	0.14		13.1	.13		11.9	.12		10.6	0.08		5.6	0.58		169			21.2
23	0.14		13.1	.16		15.7	.14		13.1	0.08		5.6	0.47		110.			21.2
24	0.14		13.1	.17		17.1	.32		51.7	0.07		5.0	0.37		68.5			21.2
25	0.14		13.1	.14		13.1	.14		13.1	0.08		5.6	0.31		47.5			32.6
26	0.14		13.1	.14		13.1	.13		11.9	0.08		5.6	0.26		34.9			79
27	0.14		13.1	.14		13.1	.13		11.9	0.09		13.1	0.22		25.8			51
28	0.14		13.1	.14		13.1	.13		11.9	0.83		353.0	0.19		19.7			37.2
29	0.14		13.1	.13		11.9	.13		11.9	e		368.0	0.17		17.1			30.3
30	0.14		13.1	.13		11.9	.13		11.9			72.						21.2
31	0.13		13.1				.13		11.9	e		58				e		19.7
1	492.8			441.2			428.6			1724.7			4582.3			1701.8		
2	15.9			14.7			13.8			55.6			158			54.9		
3	977			875			850			3420			9090			3380		
4	55.1			63.3			51.7			368			1490			315		
5	11.9			7.7			10.6			5			10.6			15.7		

DAY	APRIL			MAY			JUNE			JULY			AUGUST			SEPTEMBER			DAY
	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	
1	e		19.7	0.12		10.6	0.13		11.9	0.10		7.9	0.09		6.7	0.12		10.6	1
2			18.5	0.12		10.6	0.13		11.9	0.09		6.7	0.08		5.6	0.13		11.9	2
3			19.7	0.12		10.6	0.12		10.6	0.08		5.6	0.08		5.6	0.12		10.6	3
4			14.6	0.11		9.1	0.14		13.1	0.05		4.5	0.09		6.7	0.12		10.6	4
5			7.9	0.13		11.9	0.13		11.9	0.05		3.9	0.09		6.7	0.13		11.9	5
6			5.	0.13		11.9	0.13		11.9	0.05		3.9	0.09		6.7	0.12		10.6	6
7			6.7	0.14		13.1	0.14		13.1	0.06		4.5	0.09		6.7	0.11		9.1	7
8			9.1	0.14		13.1	0.13		11.9	0.06		4.5	0.08		5.6	0.13		11.9	8
9			6.7	0.14		13.1	0.14		13.1	0.06		4.5	0.07		5.0	0.13		11.9	9
10			7.9	0.19		20.2	0.14		13.1	0.06		4.5	0.08		5.6	0.13		11.9	10
11			7.9	0.10		7.9	0.14		13.1	0.08		5.6	0.09		6.7	0.13		11.9	11
12			9.1	0.10		7.9	0.15		14.6	0.08		5.6	0.09		6.7	0.13		11.9	12
13			9.1	0.10		7.9	0.19		19.7	0.09		6.7	0.10		7.9	0.12		10.6	13
14			9.1	0.11		9.1	0.19		19.7	0.10		7.9	0.09		6.7	0.11		9.1	14
15			9.1	0.12		10.6	0.18		18.5	0.10		7.9	0.09		6.7	0.13		11.9	15
16			10.6	0.12		10.6	0.18		18.5	0.12		10.6	0.09		6.7	0.13		11.9	16
17			11.9	0.11		9.1	0.16		15.7	0.12		10.6	0.09		6.7	0.13		11.9	17
18			13.1	0.11		9.1	0.15		14.6	0.12		10.6	0.10		7.9	0.13		11.9	18
19			13.1	0.11		9.1	0.15		14.6	0.10		7.9	0.09		6.7	0.10		7.9	19
20			14.6	0.12		10.6	0.16		15.7	0.10		7.9	0.09		6.7	0.11		9.1	20
21			18.5	0.15		14.6	0.13		11.9	0.11		9.1	0.09		6.7	0.11		9.1	21
22			39.4	0.13		11.9	0.12		10.6	0.10		7.9	0.10		7.9	0.12		10.6	22
23			61.5	0.12		10.6	0.13		11.9	0.11		9.1	0.10		7.9	0.11		9.1	23
24			41.7	0.09		6.7	0.13		11.9	0.10		7.9	0.10		7.9	0.11		9.1	24
25			30.3	0.09		6.7	0.12		10.6	0.10		7.9	0.08		5.6	0.11		9.1	25
26			19.7	0.11		9.1	0.10		7.9	0.09		6.7	0.10		7.9	0.11		9.1	26
27			14.6	0.13		11.9	0.09		6.7	0.08		5.6	0.10		7.9	0.11		9.1	27
28			15.7	0.13		11.9	0.09		6.7	0.09		6.7	0.12		10.6	0.10		7.9	28
29			19.7	0.13		11.9	0.09		6.7	0.09		6.7	0.11		9.1	0.11		9.1	29
30	e		14.6	0.12		10.6	0.10		7.9	0.09		6.7	0.11		9.1	0.14		13.1	30
31				0.14		13.1				0.09		6.7	0.12		10.6				31
1	499.1			335.1			380.			212.8			221.5			314.4			1
2	16.6			10.8			12.7			6.9			7.1			10.5			2
3	990			665			754			422			439			624			3
4	61.5			20.2			19.7			10.6			10.6			13.1			4
5	5			6.7			6.7			3.9			5.			7.9			5

REMARKS:

1. Total CFS
2. Average Daily Flow in CFS
3. Total Monthly Flow in A.F.
4. Maximum Average Daily Flow in CFS
5. Minimum Average Daily Flow in CFS

YEARLY TOTALS

1	11,334.3
2	31.
3	22,500
4	1490
5	5.

Maximum stage 4.65 feet at 1715 on 02-16-80 Discharge 7560 Second-feet.

Minimum stage 0.12 feet at 0310 on 07-07-80 Discharge 1.7 Second-feet.

GAGING STATION SUMMARY

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
HYDRAULIC DIVISION

Station Location and Description: Pacoima Dam Flume in Pacoima Canyon for Water-Year 1979 1980

Station No.: F118 BR

Drainage Area: 28.2 Square Miles (P.M. Wood Observer)

Gage Read: Continuous

Rating Table No.: 44 I

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY			FEBRUARY			MARCH			DAY	APRIL			MAY			JUNE			JULY			AUGUST			SEPTEMBER			DAY
	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge		Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	Gage Height	Adj.	Discharge	
1	b		0.2	b		+			+			+			.2	1.21	-0-	101	1	.90	-0-	71	.80	+.1	.3	6.8	-.14	39.4										1
2	"		0.2	"		"			"			"			.2	1.1		99.7	2	.90	-0-	71	.79	+.1	.3	6.6	-.14	37.7										2
3			0.2												.2	1.31	-0-	117	3	.90	-0-	71	.79	+.1	.3	6.5	-.14	36.8										3
4			0.2										1.1		51.7	1.31	-0-	117	4	.90	-0-	71	.79	+.1	.3	6.4	-.14	35.0										4
5			0.2										1.1		51.7	1.40	-0-	126	5	.90	-0-	71	.79	+.1	.3	1.1		32.8										5
6			0.2										1.55	-.05	105	1.1		118	6	.90	-0-	71	.78	+.1	.3	6.2	-.14	34.4										6
7			0.2										1.30	-.05	100	2.10	-0-	147	7	.90	-0-	71	.78	+.1	.3	6.1	-.14	33.6										7
8			0.2										1.15	-.05	95	2.09	-0-	146	8	.90	-0-	71	.78	+.1	.3	6.0	-.14	32.8										8
9			0.2										1.13		93	2.05	-0-	190	9	.90	-0-	71	.78	+.1	.3	5.7	-.14	30.4										9
10			0.2										1.07		87.2	1.1		136	10	1.1		28.6	1.1		15.3	5.6	-.14	29.6										10
11			0.1										1.1		37.0	1.18	-0-	98	11			.1	.70	+.1	.4	1.1		18.4										11
12			0.1												.2	1.18	-0-	98	12			.1	.70	+.1	.4													12
13			0.1												.2	1.1		92.9	13			.1	.70	+.1	.4													13
14			0.1												.2	1.1		83.7	14			.1	.73	+.1	.4	9.6												14
15			0.1												.2	1.30	-0-	110	15			.1	.74	+.1	.4	0.4												15
16			0.1										1.1		33.6	1.30	-0-	110	16			.1	1.1		55.3						+						16
17			0.1										4.66	-.05	980	1.30	-0-	110	17			.1	.90	+.07	69.7						+						17
18			0.1										4.76	-.05	998	1.30	-0-	110	18			.1	.90	+.07	54.7						+						18
19			0.1										1.1		886	1.30	-0-	110	19			.1	.92	+.07	66.5						+						19
20			0.1			+			+	4.50	-.05	937	1.1		87.6	1.1		87.6	20			.1	.93	+.07	67.4						+						20
21			+			+			65	1.1		485	.81	-0-	68.3	21			.1	.93	+.07	67.4						+						21
22			+			+	1.30	-.04	126	4.58	-.05	765	.87	-0-	68.3	22			.1	1.1		50.8						+						22
23			+			+	1.30	-.04	126	1.1		757	.87	-0-	68.3	23			.1	.63	+.08	40.2						+						23
24			+			+	1.30	-.04	126	1.1		736	.88	-0-	69.2	24			.1	.65	+.09	41.1						+						24
25			+			+	1.1		17	4.12	-.05	702	.88	-0-	69.2	25	1.1		11.2	.66	+.10	41.1						+						25
26			+			+			1	1.1		189	.88	-0-	69.2	26	.38	+.02	54.8	.67	+.11	41.1						+						26
27			+			+			+	1.1		128	.88	-0-	69.2	27	.38	+.02	24.8	.69	+.12	42.0						+						27
28			+			+			+	1.1		102	.88	-0-	69.2	28	1.1		24.2	.70	+.14	41.1						+						28
29			+			+			+	1.21	-.04	101	.88	-0-	69.2	29	1.1		51.4	.70	+.14	41.1						+						29
30	x		+	b		+			+				.90	-0-	71	30	.80	+.07	68.3	.70	+.14	41.1						+						30	YEARLY TOTALS
31	b		+						+				.90	-0-	71	31				.69	+.14	40.2						+						31	
1	3.0		+			+			+	1.1		1.1	6561.9			30856			1	873.7			1716.5			363.8			1.5			1.1			1.1			1	
2	0.1		+			+			+	4.5			226			99.5			2	29.1			55.4			12.1			+			1.1			1.1			2	
3	5.95		+			+			+	893			13015			6120			3	1733			3405			722			3.0			1.1			1.1			3	
4	3.2		+			+			+	106			980			197			4	71			68.3			39.4			0.1			1.1			1.1			4	
5	+		+			+			+	1.1			0.2			68.3			5	0.1			40.2			0.1			+			1.1			1.1			5	

Maximum stage 5.85 feet at 2400 on 2-16-80 Discharge 977 Second-feet.

Minimum stage + feet at TRACE on Discharge Second-feet.

REMARKS: b. recorder inoperative

1. Total CFS
2. Average Daily Flow in CFS
3. Total Monthly Flow in A.F.
4. Maximum Average Daily Flow in CFS
5. Minimum Average Daily Flow in CFS

GAGING STATION SUMMARY

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT
HYDRAULIC DIVISION

Station Location and Description ..... BIG TUJUNGA DAM OUTFLOW .....

..... for Water-Year 19 79 19 80

Station No. F 168 R

Drainage Area ..... 82.7 ..... Square Miles (..... R.J. SARASUA ..... Observer)

Gage Read EVERY 15 MINUTES

Rating Table No. 78 II

DAY	OCTOBER Gage Height	Adj.	Discharge	NOVEMBER Gage Height	Adj.	Discharge	DECEMBER Gage Height	Adj.	Discharge	JANUARY Gage Height	Adj.	Discharge	FEBRUARY Gage Height	Adj.	Discharge	MARCH Gage Height	Adj.	Discharge
1			12 1			12 9			12				11		35			
2			12 1			12 7			12									
3			9 4			12 9			12									
4			9 2			11 7			12									
5			8 5			10 9			12									
6			7 5			10 1			10.4									
7			7 3			11 2			12									
8			7 2			11 9			12									
9			7 1			11 9			12									
10			6 8			17			3.4									
11			5 6			28 4			2									
12			5 5			29 1			2									
13			7 7			27 1			2									
14			7 5			29 8			2									
15			7 0			18 4			2			16 6						
16			6 8			10 2			2			47 5						
17			6 5			9 6			2			47 5						
18			6 4			9 2			2			47 5						
19			7 2			8 9			2			47 5						
20			7 5			8 5			2			47 5						
21			8 4			8 2			2			47 5						
22			9 6			8 6			2	1 1		43 2						
23			10 1			7 6			2			50 1						
24			9 7			7 7			2			50 5						
25			10 2			7 6			2			50 1						
26			10 6			7 5			2			50 1						
27			8			7 6			2			50 5						
28			8 3			7 5			2			50 5						
29			8 8			7 8			2	1 1		51 3						
30			8 8			7 7			2	1 1		51 1						
31			8 3						2			129						
1	179.7									1255.7								
2	6			3.2						44.1								
3	555			784			194			2709								
4	17			39.8			6.2			47.3								
5	5.5			7.7			2.2			0.2								

DAY	APRIL Gage Height	Adj.	Discharge	MAY Gage Height	Adj.	Discharge	JUNE Gage Height	Adj.	Discharge	JULY Gage Height	Adj.	Discharge	AUGUST Gage Height	Adj.	Discharge	SEPTEMBER Gage Height	Adj.	Discharge
1																		
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		
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22																		
23																		
24																		
25																		
26																		
27																		
28																		
29																		
30																		
31																		
1																		
2																		
3																		
4																		
5																		

REMARKS:

1. Total CFS
2. Average Daily Flow in CFS
3. Total Monthly Flow in A.F.
4. Maximum Average Daily Flow in CFS
5. Minimum Average Daily Flow in CFS

YEARLY TOTALS

Maximum stage	feet at	on	Discharge	Second-feet.
Minimum stage	feet at	on	Discharge	Second-feet.

Appendix C

WELLS DRILLED AND DESTROYED

WELLS DESTROYED 1979-80

Party	LACFCD Well No.	Owner No.
Harold Bailey	3592	
Kibbe	3773C	
Dezere Derycke	4835	

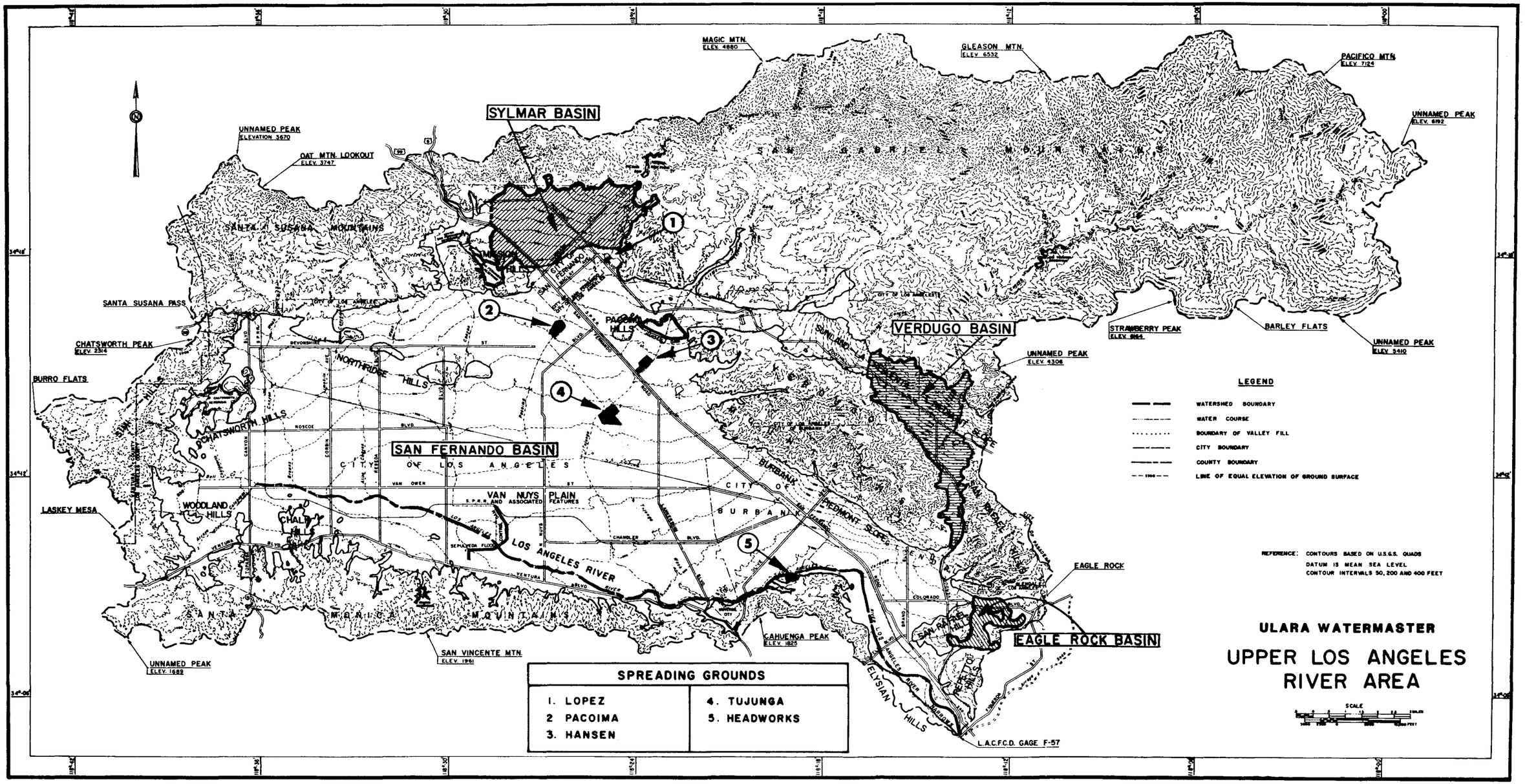
WELLS DRILLED 1979-80

NONE

Appendix D

PLATES

PLATE 1

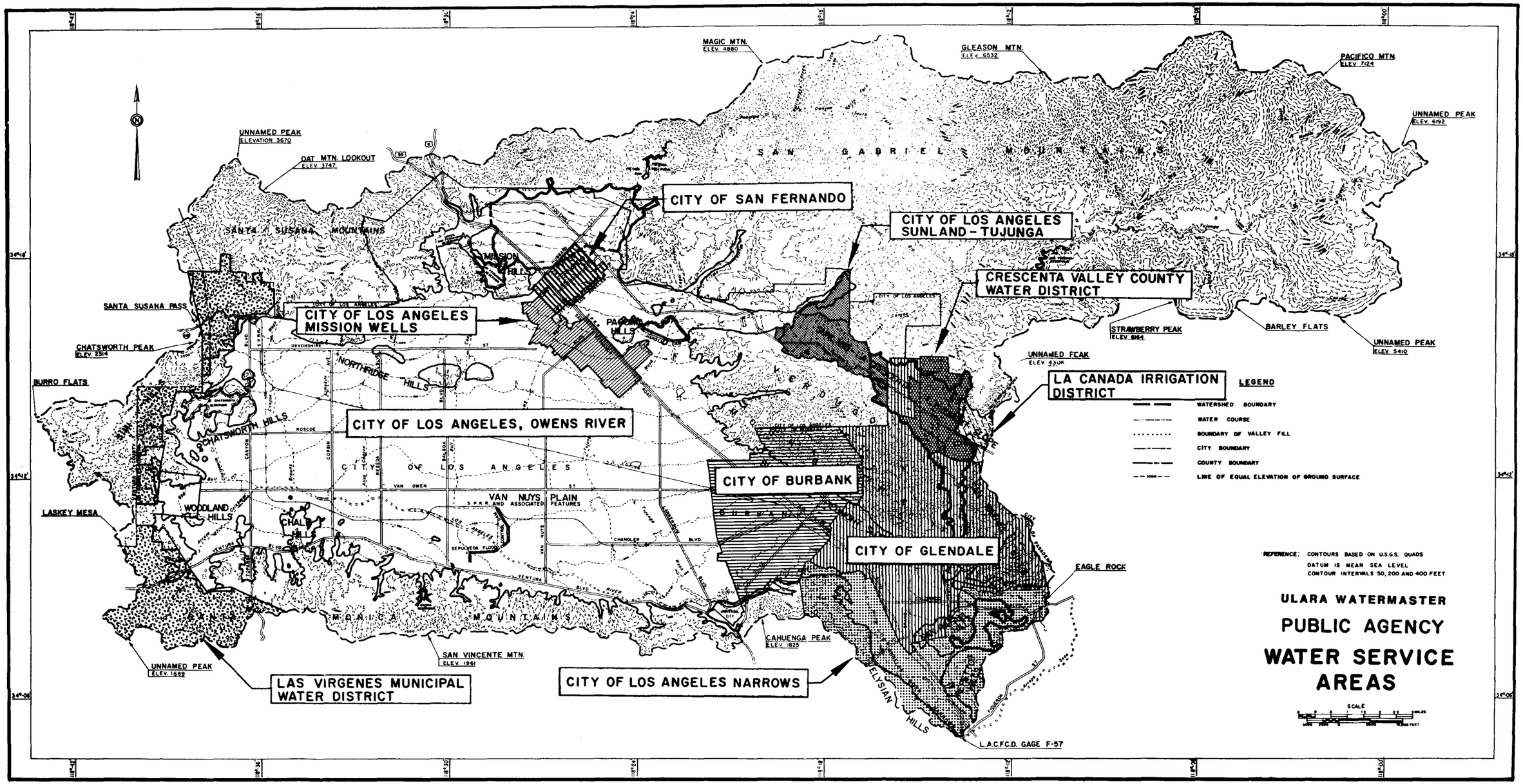


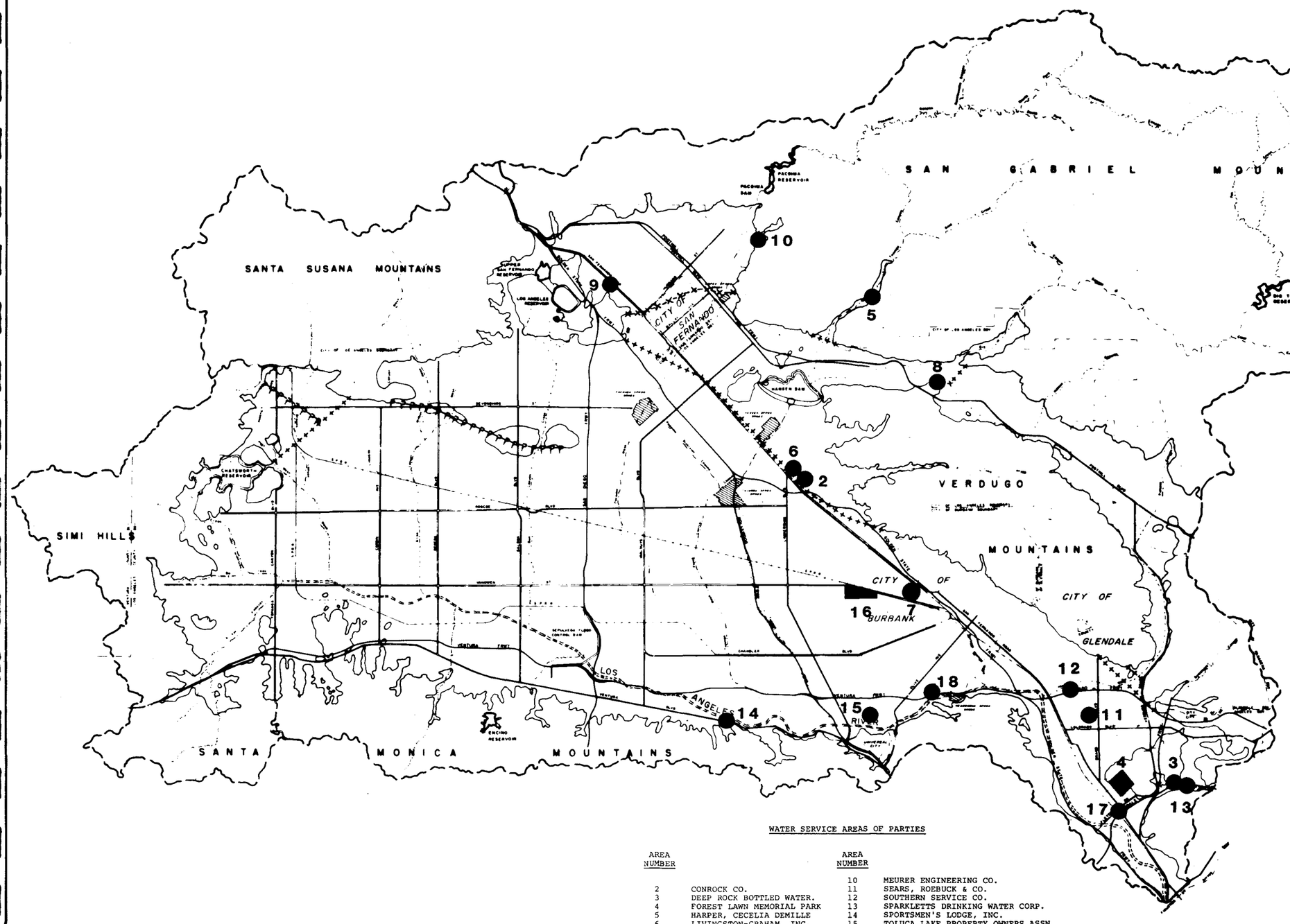
SPREADING GROUNDS	
1. LOPEZ	4. TUJUNGA
2 PACOIMA	5. HEADWORKS
3. HANSEN	

ULARA WATERMASTER

UPPER LOS ANGELES RIVER AREA

PLATE 2


MAGIC MTN.
ELEV. 4880
GLEASON MTN.
ELEV. 6532
PACIFICO MTN.
ELEV. 7124
UNNAMED PEAK
ELEV. 6192
UNNAMED PEAK
ELEVATION 3670
OAT MTN. LOOKOUT
ELEV. 3747
SAN GABRIEL MOUNTAINS
CITY OF SAN FERNANDO
CITY OF LOS ANGELES
SUNLAND - TUJUNGA
CRESCENTA VALLEY COUNTY
WATER DISTRICT
SANTA SUSANA MOUNTAINS
MISSION HILLS
SANTA SUSANA PASS
CITY OF LOS ANGELES
MISSION WELLS
PACOIMA HILLS
STRAWBERRY PEAK
ELEV. 5964
BARLEY FLATS
UNNAMED PEAK
ELEV. 5410
CHATSWORTH PEAK
ELEV. 2314
DEVONSHIRE ST
NORTHRIDGE HILLS
UNNAMED PEAK
ELEV. 4304
LA CANADA IRRIGATION
DISTRICT
BURRO FLATS
CHATSWORTH HILLS
ROSCOE
CITY OF LOS ANGELES, OWENS RIVER
CITY OF LOS ANGELES
VAN OWEN ST
VAN NUYS PLAIN
S.P.R.R. AND ASSOCIATED FEATURES
CITY OF BURBANK
WOODLAND HILLS
CHALK HILLS
LASKEY MESA
SEPULVEDA FLOOD
CHANDLER BLVD
VENTURA BLVD
CITY OF GLENDALE
EAGLE ROCK
SANTA MONICA MOUNTAINS
SAN VINCENTE MTN.
ELEV. 1961
CAHUENGA PEAK
ELEV. 1825
UNNAMED PEAK
ELEV. 1589
LAS VIRGENES MUNICIPAL
WATER DISTRICT
CITY OF LOS ANGELES NARROWS
ELYSIAN HILLS
L.A.C.F.C.D. GAGE F-57
LEGEND
WATERSHED BOUNDARY
WATER COURSE
BOUNDARY OF VALLEY FILL
CITY BOUNDARY
COUNTY BOUNDARY
LINE OF EQUAL ELEVATION OF GROUND SURFACE
REFERENCE: CONTOURS BASED ON U.S.G.S. QUADS
DATUM IS MEAN SEA LEVEL
CONTOUR INTERVALS 50, 200 AND 400 FEET
ULARA WATERMASTER
PUBLIC AGENCY
WATER SERVICE
AREAS
SCALE
118°-42'
118°-36'
118°-30'
118°-24'
118°-18'
118°-12'
118°-06'
118°-00'
34°-48'
34°-42'
34°-36'



ULARA WATERMASTER

UPPER LOS ANGELES RIVER AREA

WATER SERVICE AREAS OF INDIVIDUAL PRODUCERS SEPTEMBER 1980

SCALE

0 4000 8000 12000 16000

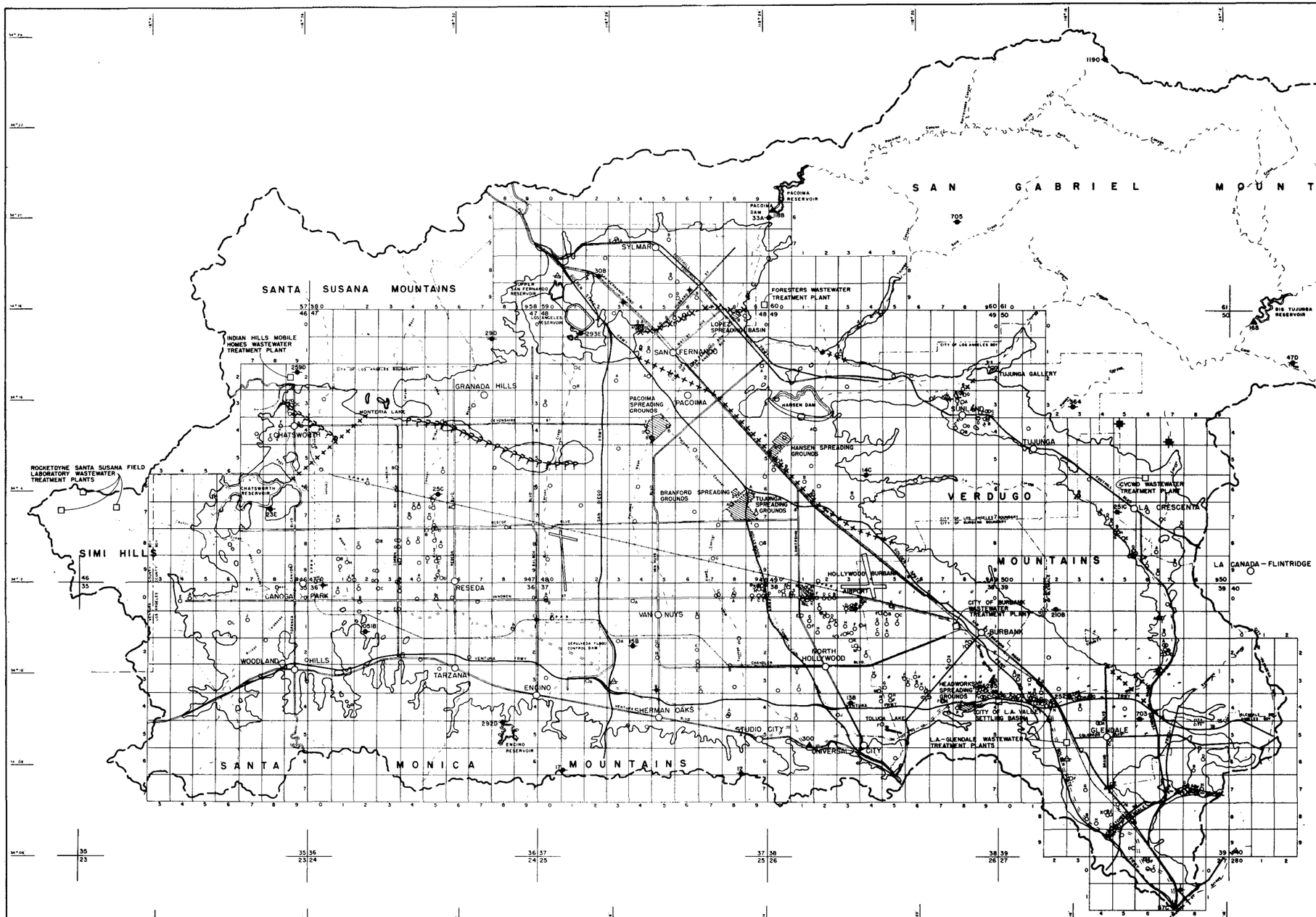
FEET

LEGEND

- E-E-E-E IMPEDIMENTS TO GROUND WATER FLOW
- + + + + GROUND WATER CASCADES
- ?-?-?-? QUESTIONABLE IMPEDIMENT OR GROUND WATER CASCADE

WATER SERVICE AREAS OF PARTIES

AREA NUMBER		AREA NUMBER	
2	CONROCK CO.	10	MEURER ENGINEERING CO.
3	DEEP ROCK BOTTLED WATER.	11	SEARS, ROEBUCK & CO.
4	FOREST LAWN MEMORIAL PARK	12	SOUTHERN SERVICE CO.
5	HARPER, CECELIA DEMILLE	13	SPARKLETTS DRINKING WATER CORP.
6	LIVINGSTON-GRAHAM, INC.	14	SPORTSMEN'S LODGE, INC.
7	LOCKHEED AIRCRAFT CORP.	15	TOLUCA LAKE PROPERTY OWNERS ASSN.
8	MENA, JOHN & BARBARA	16	VALHALLA MEMORIAL PARK
9	MOORDIGIAN, KISAG	17	VAN DE KAMP'S DUTCH BAKERS, INC.
		18	WALT DISNEY PRODUCTIONS



ULARA WATERMASTER

UPPER LOS ANGELES RIVER AREA

LOCATION OF WELLS AND HYDROLOGIC STATIONS

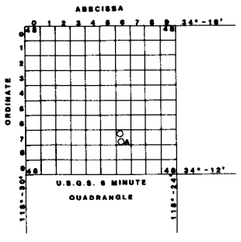
SCALE

0 4000 8000 12000 16000 FEET

LEGEND

- X-X-X-X.... IMPEDIMENTS TO GROUND WATER FLOW
- +-+-+-+.... GROUND WATER CASCADES
- ?-?-?-?.... QUESTIONABLE IMPEDIMENT OR GROUND WATER CASCADE
- CLIMATIC STATION
- SURFACE WATER GAGING STATION
- SURFACE WATER SAMPLING POINT
- KEY WELL USED FOR HYDROGRAF
- KEY WELL USED FOR SAMPLING
- ACTIVE, OBSERVATION, OR TEST WELL
- SURFACE AND GRAVITY DIVERSION

GUIDE TO WELL NUMBERING SYSTEM



EXAMPLE WELL NO. 4867

- 48 Number of 6 min. quad.
- 6 Abscissa (third digit)
- 7 Ordinate (forth digit)
- ○ First well in square
- A Other wells in square

Revised - 12/75 3/80 7/81

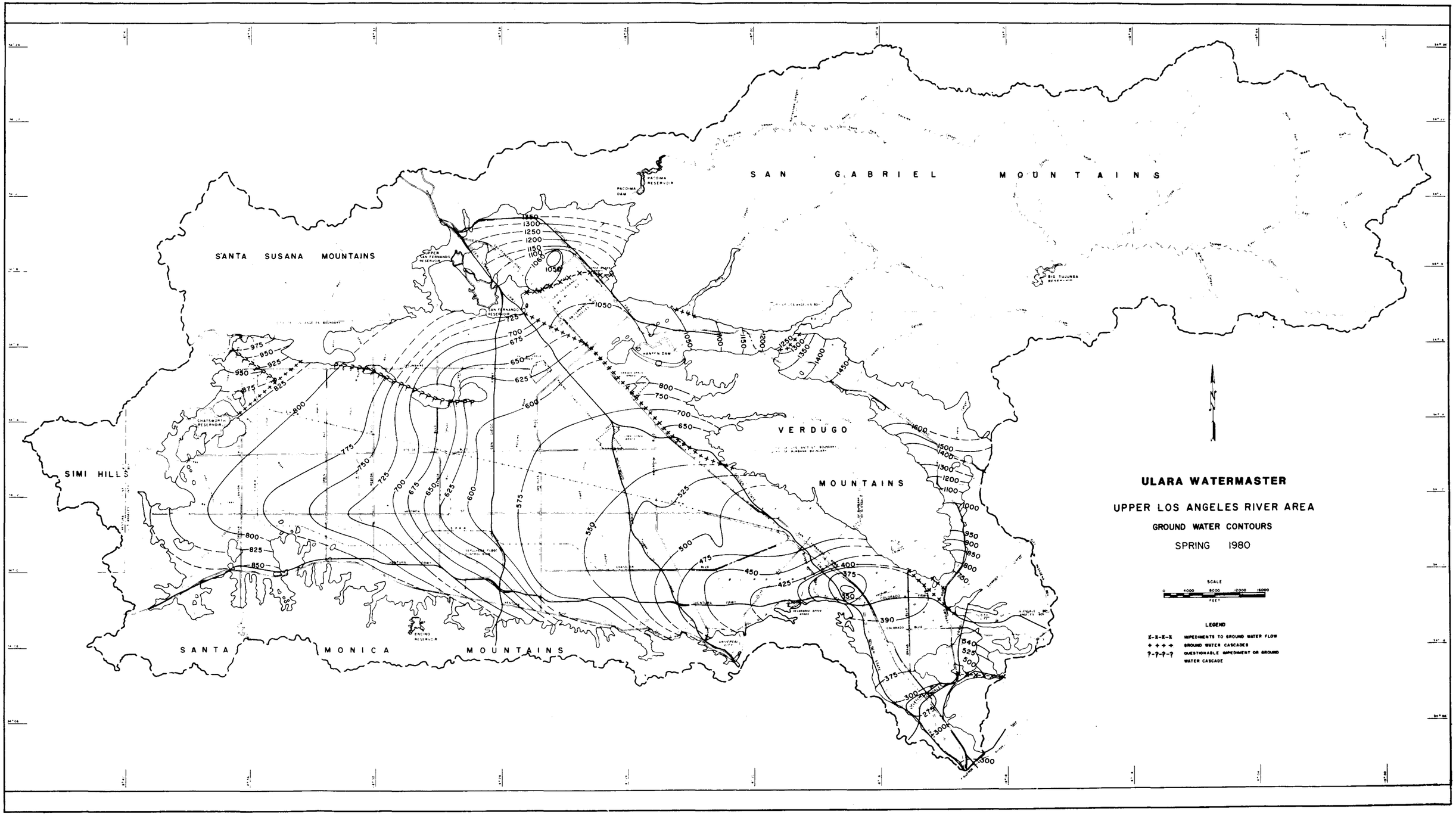
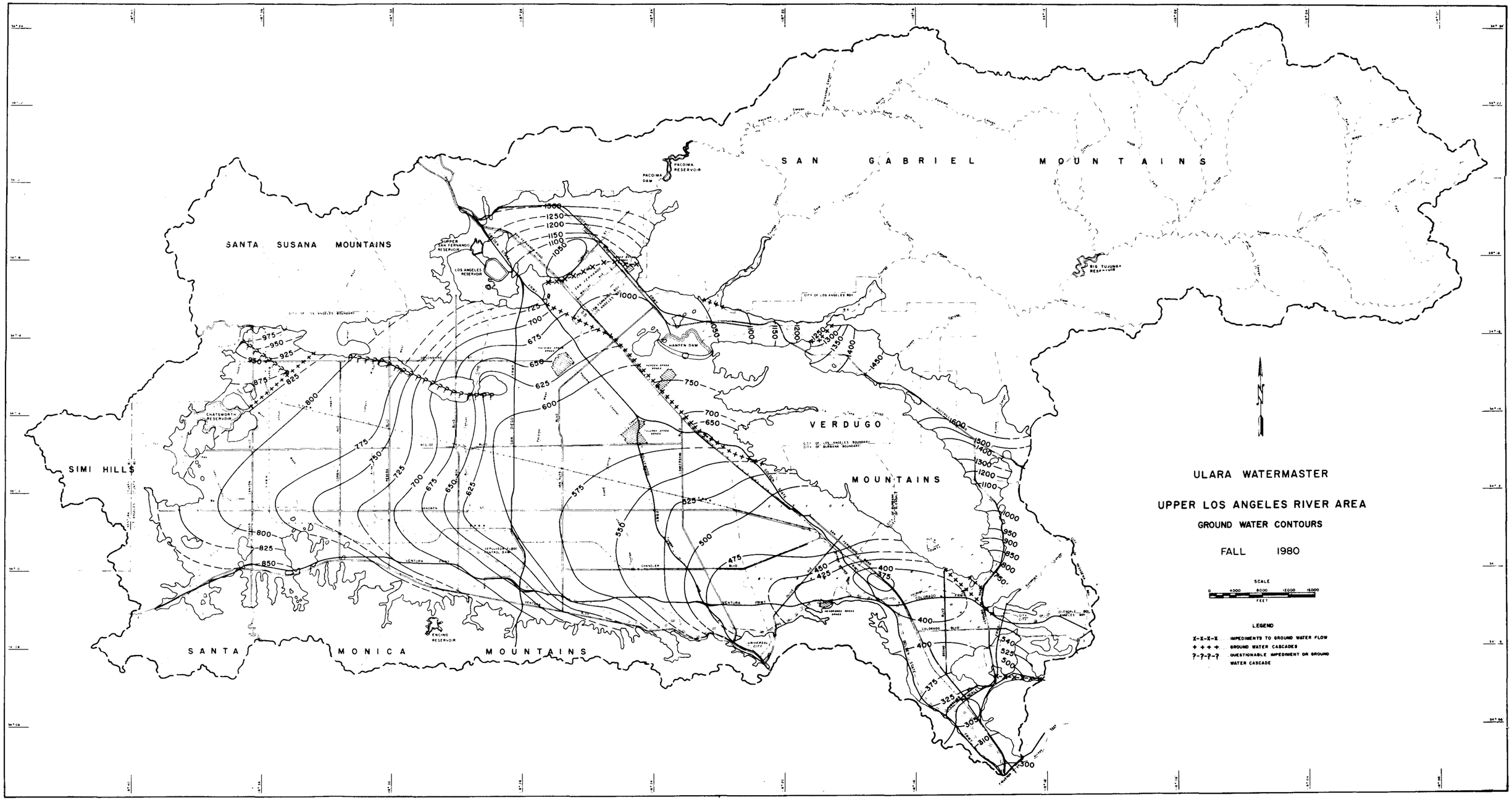

SAN GABRIEL MOUNTAINS
SANTA SUSANA MOUNTAINS
SIMI HILLS
SANTA MONICA MOUNTAINS
VERDUGO MOUNTAINS
PACOIMA DAM
PACOIMA RESERVOIR
UPPER SAN FERNANDO RESERVOIR
SAN FERNANDO RESERVOIR
HANSEN DAM
BIG TUJUNGA RESERVOIR
CHATSWORTH RESERVOIR
ENCINO RESERVOIR
1350
1300
1250
1200
1150
1100
1050
1000
950
900
850
800
750
700
650
600
550
500
450
400
375
350
300
275
1600
1500
1400
1300
1200
1100
1000
950
900
850
800
750
725
700
675
650
625
600
575
550
525
500
475
450
425
400
390
375
350
300
1450
1400
1350
1300
1250
1200
1150
1100
1050
1000
975
950
925
900
875
850
825
800
775
750
725
700
675
650
625
600
575
550
540
525
500
475
450
425
400
375
350
300
275
300
ULARA WATERMASTER
UPPER LOS ANGELES RIVER AREA
GROUND WATER CONTOURS
SPRING 1980
SCALE
0 4000 8000 12000 16000
FEET
LEGEND
X-X-X-X IMPEDIMENTS TO GROUND WATER FLOW
+ + + + GROUND WATER CASCADES
?-?-?-? QUESTIONABLE IMPEDIMENT OR GROUND WATER CASCADE

PLATE 6



ULARA WATERMASTER

UPPER LOS ANGELES RIVER AREA

GROUND WATER CONTOURS

FALL 1980

SCALE

0 4000 8000 12000 16000

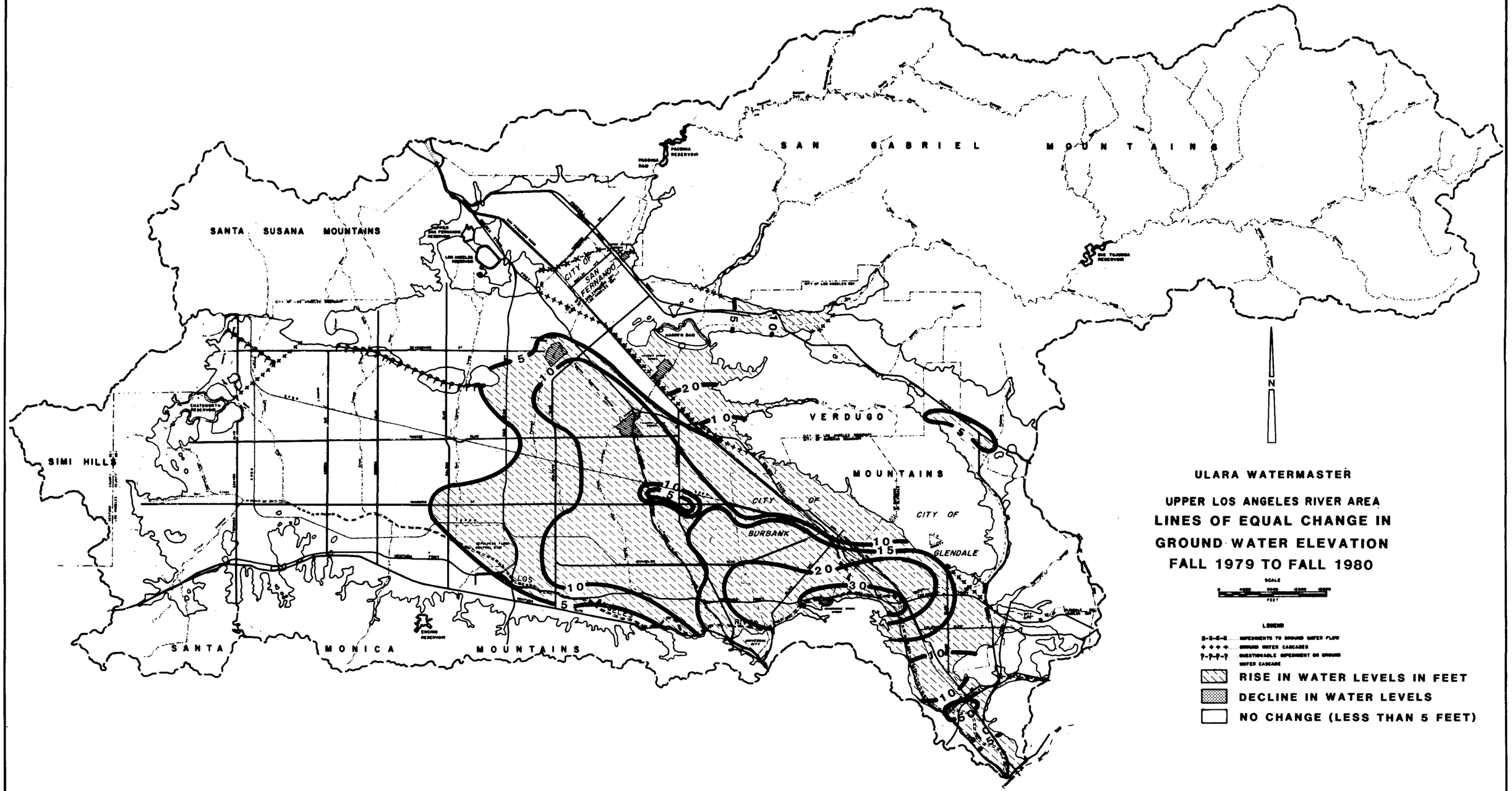
FEET

LEGEND

X-X-X-X IMPEDIMENTS TO GROUND WATER FLOW

+ + + + GROUND WATER CASCADES

?-?-?-? QUESTIONABLE IMPEDIMENT OR GROUND WATER CASCADE



ULARA WATERMASTER

UPPER LOS ANGELES RIVER AREA

LINES OF EQUAL CHANGE IN GROUND WATER ELEVATION FALL 1979 TO FALL 1980

SCALE

LEGEND

- IMPERMEABLE OR GROUND WATER FLOW
- GROUND WATER CASCADES
- QUESTIONABLE IMPERMENT OR GROUND WATER CASCADE
- RISE IN WATER LEVELS IN FEET
- DECLINE IN WATER LEVELS
- NO CHANGE (LESS THAN 5 FEET)