State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES
Southern District

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

OCTOBER 1, 1977 - SEPTEMBER 30, 1978

District Report

June 1979

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)
		1.2335	cubic dekametres (dam^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)
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)

FOREWORD

The Department of Water Resources as interim Watermaster for the Upper Los Angeles River Area (ULARA) is pleased to submit this report of water supply conditions in ULARA during the 1977-78 water year. It was prepared in accordance with the agreement between the Cities of Los Angeles, Glendale, Burbank, and San Fernando and the State, effective July 1, 1976. This agreement, together with Part 4, Division 2, of the California Water Code, authorized this publication and the Department's administration of the Watermaster service area.

The final Judgment in the case of the City of Los Angeles vs. City of San Fernando was entered on January 26, 1979, and Melvin Blevins of the Los Angeles Department of Water and Power was appointed Watermaster effective that date. Agreement has been reached to transfer record keeping from the State to the new Watermaster. This will be the final report prepared by the State for this Watermaster area.

This report includes information on ground water extractions and levels, use of imported water, recharge operations, water quality conditions, and other pertinent information pursuant to the agreement between the parties and the State.

The Watermaster wishes to acknowledge and express appreciation for the assistance and support received from the many public and private organizations and individuals whose contributions were essential to this report.

Jack J. Coe, Chief
Southern District
and Watermaster
Reg. C. E. No. 8075

TABLE OF CONTENTS

TABLES (Con'd.)

PLATES

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES
Southern District

Jack J. Coe . . . . . Chief, Southern District

Richard E. Angelos . . . . . Chief, Water Projects Branch

Harry Hashimoto . . . . . Chief, Watermaster and Special Studies Section

This investigation was conducted and the report was prepared by

Leonard C. Nagler . . . . . Deputy Watermaster
Rudy Angerbauer . . . . . Deputy Watermaster

assisted by

Raymond Woo . . . . . Assistant Engineer Water Resources
Joseph F. Scott . . . . . Water Resources Technician II
Tom Smith . . . . . Water Resources Technician II
John Stanley . . . . . Water Resources Technician II
Phyllis J. Yates . . . . . Research Writer
Margot Hottum . . . . . Graduate Student Assistant
Dean H. Wilson . . . . . Head, Drafting Services
Mila C. Dery . . . . . Management Services Technician
Vance Dean . . . . . Data Processing Technician, Range B
Melba P. Apante . . . . . Senior Word Processing Technician
Faith I. Zessman . . . . . Composer Operator-Vari-Typer
Lorenzo Y. Tokuyama . . . . . Student Assistant
Oscar Tapia . . . . . Student 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 132 900 hectares (328,500 acres), composed of 49 700 hectares (122,800 acres) of valley fill, referred to as the ground water basins, and 83 200 hectares (205,700 acres) of hills and mountains. ULARA is bounded on the north by the Santa Susana Mountains and on the east by the San Rafael Hills, which separate it from the San Gabriel Basin. To the south, the Santa Monica Mountains separate it from the Los Angeles Basin; to the west lie 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 45 325 hectares (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 and Verdugo Mountains, on the south by the Santa Monica Mountains, and on the northwest and west by the Santa Susana Mountains and Simi Hills.

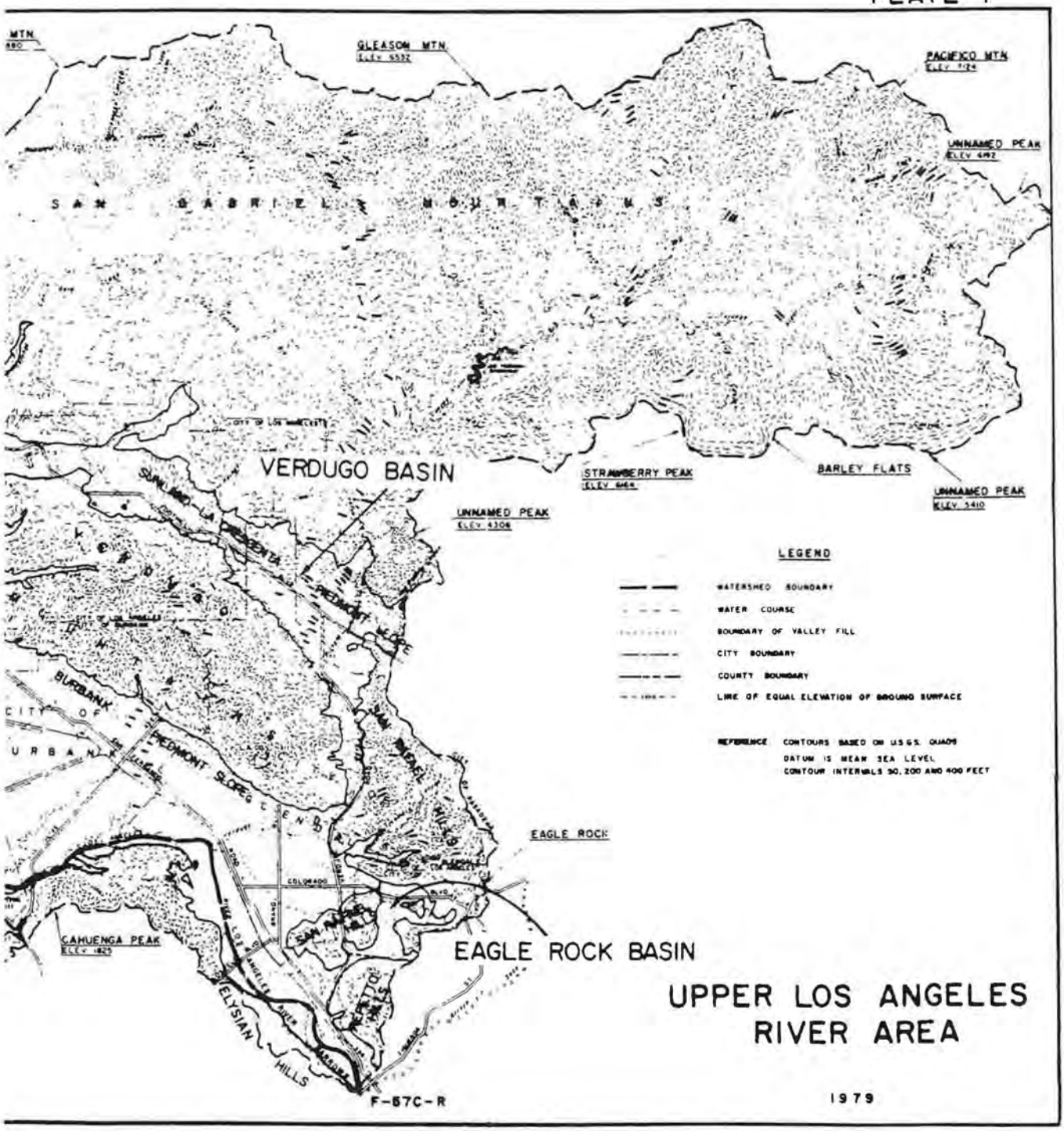
The Sylmar Basin, in the northerly part of ULARA, consists of 2 266 hectares (5,600 acres) and comprises 4.6 percent of the total valley fill. It is bounded on the north and east by the San Gabriel Mountains. On the south, it is separated from the San Fernando Basin by the eroded limb of the Little Tujunga syncline and the Mission Hills. On the west are the Santa Susana Mountains.

The Verdugo Basin, north and east of the Verdugo Mountains in ULARA, consists of 1 781 hectares (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 324 hectares (800 acres) and consists of 0.6 percent of the total valley fill.


SYLMAR BASIN
UNNAMED PEAK
ELEVATION 3870
OAT MTN LOOKOUT
ELEV 3747
SANTA SUSANA MOUNTAINS
MISSION HILLS
CITY OF SAN FERNANDO
SANTA SUSANA PASS
CHATSWORTH PEAK
ELEV 2824
PACOIMA HILLS
NORTHRIDGE HILLS
BURRO FLATS
SAN FERNANDO BASIN
CITY OF LOS ANGELES
CHATSWORTH HILLS
VAN NUYS PLAIN
LARKEY MESA
WOODLAND HILLS
CHALK HILL
LOS ANGELES RIVER
SANTA MONICA MOUNTAINS
UNNAMED PEAK
ELEV 1868
SAN VINCENTE MTN
ELEV 1941
SCALE
KILOMETRES
0 1 2 3 4 5 6
0 1 2 3 4 5 6
MILES

PLATE 1



UPPER LOS ANGELES RIVER AREA

F-67C-R

1979

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 pre-trials 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 location 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 basins; all sources of water, whether they be diverted, extracted, or imported, etc. This was the basis for the Judgment.

The City of Los Angeles filed an appeal 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 within 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 appealed to 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.

Final Judgment was entered on January 26, 1979. Copies of the final judgment are available from the ULARA Watermaster, Post Office Box 111, Los Angeles, CA 90051.

Watermaster Service

Watermaster Service is administered by the Department of Water Resources (DWR) under Article 2, Chapter 2.5, Division 1 and Part 4, Division 2, of the California Water Code. Section 4025 authorizes DWR to form Watermaster Service Areas. Pursuant to Section 4026, such areas are created from time to time as rights to water are ascertained and determined. Particularly where ground water is concerned, such rights are usually ascertained or determined by court decree.

The ULARA Watermaster Service Area was formed on April 19, 1968.

In the Judgment of March 14, 1968, the Court appointed DWR as Watermaster to keep the Court fully advised in the premises and to assist the Court in the administration and enforcement of the provisions of the Judgment. The California Supreme Court decision of August 1, 1975, reversed the trial court judgment. Pending a final judgment, the parties to the original trial court judgment agreed that DWR should continue to act as Watermaster on an interim basis. The costs of the Interim Watermaster service are shared one-half by the parties and the other half by the State. Melvin Blevins of LADWP was appointed Watermaster.

The DWR as Interim Watermaster for ULARA performed the responsibilities as required in the agreement between parties, dated March 10, 1977, with an effective date of July 1, 1976. This work included keeping records on all ground water extraction data (Appendix A) and other information, on a monthly basis, and the preparation of annual reports for the water years 1976-77 and 1977-78.

In preparing the 1977-78 annual report, DWR 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. Watermaster administrative budgets and costs

6. Ownership and location of new wells

Summary of 1977-78 Operating Conditions

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

Rainfall in the valley fill area was 215 percent of normal as compared to 89 percent of normal the year before. Runoff increased by 617 percent, increasing by 1,016 percent the amount of water conserved by LACFCD in its spreading basins.

Ground water extractions increased in the San Fernando Basin this year but decreased in the Sylmar and Verdugo Basins.

For ULARA, gross imports increased by 124 659 cubic dekametres (101,061 acre-feet), or 28 percent. While the import total shows an increase, imported Colorado River water decreased by about7 189 dekametres (5,828 acre-feet) and Northern California water increased by 3 892 dekametres (3,155 acre-feet). Exports of Owens River water increased by 123 145 cubic dekametres (99,834 acre-feet) or 86 percent.

Sewage export was 133 959 cubic dekametres (108,601 acre-feet) in 1977-78, a decrease of 3 percent.

Water levels at key wells have dropped since the early 1940's from 0-3.05 metres (0-10 feet) in Canoga Park to 24.38-30.48 metres (80-100 feet) in the area between the Cities of Glendale and Burbank. Levels have not changed as drastically in Verdugo Basin. Sylmar Basin levels have dropped by 15.24-18.29 metres (50-60 feet) since the early 1940's. In 1977-78 the water levels rose in all portions of the basin except the western portion where there was no significant change.

Expenditures for Watermaster Service amounted to $0.46 per acre-foot of ground water extracted. This was an increase of $0.29 per acre-foot over the previous year, largely because no report was published in 1976-77. However, the 1977-78 expenses reflect the cost of both the 1976-77 and 1977-78 reports.

TABLE 1

SUMMARY OF OPERATING CONDITIONS
1976-77 AND 1977-78

Item	Water year 1976-77	1977-78
Parties	24	24
Active pumpers	18	18
Active nonpumpers (within valley fill)	0	0
Watermaster expenses (fiscal year)	$24,358.00	$37,770.00
Watermaster expenses per acre-foot pumped	$ 0.17	$ 0.46
Valley rainfall, in inches[c/]	14.19	35.43
Spreading operations, in acre-feet[a/b/]		
LACFCD	5,039	51,181
Los Angeles, City of	3,158	34,268
Extractions, in acre-feet*	140,019	81,398
Gross imports, in acre-feet*		
Colorado River water	29,005	23,177
Northern California water	26,118	29,273
Owens River water	302,881	406,615
Total	358,004	459,065
Delivered to hill and mountain areas, in acre-feet	48,686	e/
Exports, in acre-feet		
Owens River water [d/]	115,640	215,474
Sewage	111,510	108,601

a/ Breakdown of spreading operations as to sources of water is shown in Table 5.
b/ One acre-foot = 1,2335 cubic dekametres.
c/ One inch = 25.4 millimetres.
d/ 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.
e/ Not required for 1977-78.
* Excluding Eagle Rock Basin

II. WATER SUPPLY CONDITIONS

ULARA depends on many water sources to meet the demand created by rapid growth of industry and population. At present, the water supply of ULARA consists of: precipitation on the watershed which includes portions of the San Gabriel, Verdugo, Santa Monica, and Santa Susana Mountains; ground water that is in storage in the four basins; imports from the Mono Basin-Owens River system; imports from the Colorado River; and imports from Northern California made available by the State Water Project.

Precipitation

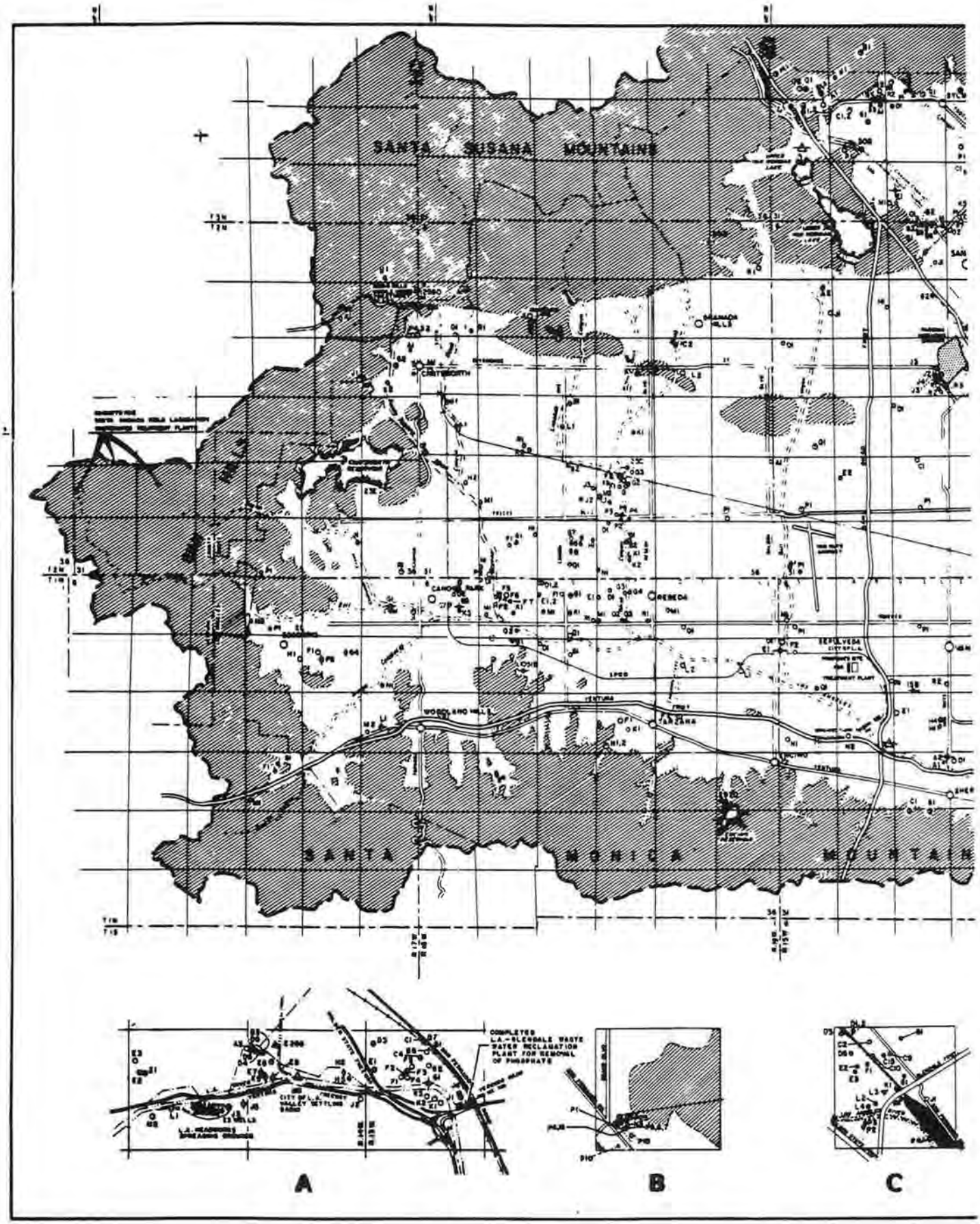
ULARA has the climate of an interior valley and is hotter in the summer and wetter in the winter than the coastal areas.

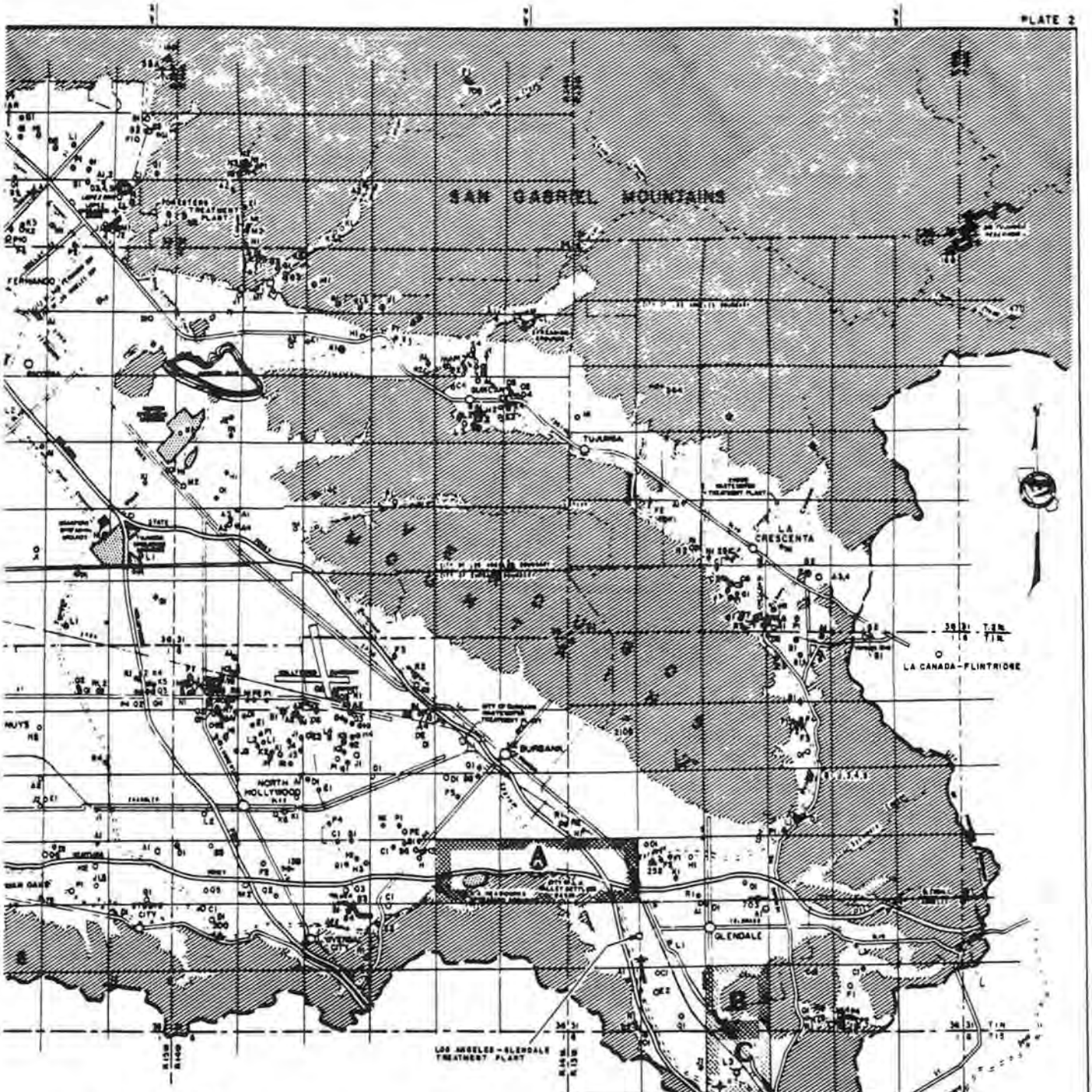
Precipitation varies considerably throughout ULARA, depending on topography and elevation. Mean seasonal precipitation ranges from about 355.6 millimetres (14 inches) at the western end of the San Fernando Valley to 889.0 millimetres (35 inches) in the San Gabriel Mountains. Approximately 80 percent of the annual rainfall occurs from December through March.

Precipitation in the valley is evaluated separately from that in 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 evaluate the ground water recharge. (See Plate 2 for location of precipitation stations.)

The 1977-78 water year experienced above average rainfall. The valley floor received 899.92 millimetres (35.43 inches) of rain, whereas the mountains received approximately 1 316.48 millimetres (51.83 inches). The weighted average of both valley and mountain areas was 1 138.94 millimetres (44.84 inches) a rise of 732.03 millimetres (28.82 inches) from last year. The 90-year (1881-1971) average precipitation for the valley and mountains is 417.83 millimetres (16.45 inches) and 542.29 millimetres (21.35 inches), respectively. Table 2 presents a record of rainfall at 22 key precipitation stations which were used to develop the 90-year average rainfall and are described in the Report of Referee.


SANTA SUSANA MOUNTAINS
SANTA MONICA MOUNTAINS
COMPLETED L.A.-GLENDALE WASTE WATER RECLAMATION PLANT FOR REMOVAL OF PHOSPHATE
A
B
C



LEGEND

- CLIMATIC STATION
- SURFACE WATER GAGING STATION
- SURFACE WATER SAMPLING POINT
- KEY WELL USED FOR HYDROGRAPH
- KEY WELL USED FOR SAMPLING
- ACTIVE WELL
- INACTIVE WELL
- CAPPED OR ABANDONED WELL
- OBSERVATION OR TEST WELL
- SURFACE AND GRAVITY DIVERSION
- LINED CHANNEL
- UNLINED CHANNEL

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT
UPPER LOS ANGELES RIVER AREA
WATERMASTER SERVICE

LOCATION OF WELLS AND HYDROLOGIC STATIONS

SCALE
KILOMETRES 0 1 2
MILES 0 1 2

1979

TABLE 2. PRECIPITATION[a/]
(inches)[b/]

LACFCD Number	Station Name	90-year mean	1976-77 Precipitation	1977-78 Precipitation	1977-78 Percent of 90-year mean
11C	Upper Franklin Canyon Reservoir[c/]	18.31	17.56	43.92	240
13B	Hollywood-Blix[d/]	16.69	15.29	38.20	229
14C	Roscoe-Merrill[d/]	15.40	15.70	38.82	252
15A	Van Nuys	15.07	13.17	36.69	243
17	Sepulveda Canyon-Mulholland Highway	19.07	16.71	44.98	236
21B	Woodland Hills[d/]	14.39	13.40	37.31	259
23B-E	Chatsworth Reservoir[d/]	14.57	11.86	33.80	232
25C	Northridge-LADWP[d/]	14.52	12.02	31.44	217
29D	Granada Hills	17.33	13.26	[e/]	
30B	Sylmar[d/]	16.66	15.98	39.37	236
33A-E	Pacoima Dam	18.72	19.56	39.10	209
47D	Clear Creek-City School	30.59	20.98	73.08	239
53D	Colby's Ranch	29.75	18.82	61.86	208
54C	Loomis Ranch-Alder Creek	20.47	14.40	39.30	192
210B	Brand Park	18.71	16.80	41.90	224
251C	LaCrescenta[d/]	23.50	17.00	52.25	222
259D	Chatsworth-Twin Lakes	17.88	13.36	36.05	202
364	Haines Canyon-Lower	24.06	20.29	[f/]	
703	Glendale-McIntyre[c/ d/]	17.65	15.48	[f/]	
705	Pacoima Cyn-City Road Gauge	23.44	20.50	[f/]	
470 **	Tujunga-Mill Creek Summit	20.83	17.15	[f/]	
1074E	Little Gleason[c/]	24.65	17.56	58.94	239

Weighted average for valley stations - 35.43 inches (1977-78)
Weighted average for mountain stations - 51.83 inches (1977-78)

a/ Data furnished by Los Angeles County Flood Control District (LACFCD).
b/ One inch = 25.4 millimetres.
c/ 11C substituted for Franklin Canyon Station No. 12.
703 for Glendale Station 295G
1074E for Santa Clara Ridge Station No. 419.
d/ Valley Station
e/ Incomplete record (1977-78)
f/ Discontinued
** Reported in 1976-77 as Station 1029B.

Runoff and Outflow from ULARA

The drainage area of ULARA contains 133 100 hectares (329,000 acres), of which 83 600 hectares (206,700 acres) are hills and mountains. The drainage system, in turn, is made up of the Los Angeles River and its tributaries. Surface flow in spring originates as: storm runoff from the hills and mountains; storm runoff from the impervious areas of the valley; 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 U. S. Geological Survey (USGS). The Watermaster has selected six key gaging stations which, in effect, record major runoff from hydrologic areas in ULARA.

Table 3 summarizes the monthly runoff for these gaging stations and compares the 1976-77 water year with the 1977-78 year. The changes in runoff reflect the increase in rainfall in the valley and the increase in rainfall in the mountains.

TABLE 3
MONTHLY RUNOFF AT SELECTED GAGING STATIONS
(In acre-feet)[a]

Station	Water Year	Month Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total
F-57C-R	1976-77	3338	3467	2838	18950	1010	7570	435	16350	738	1040	9960	317	66,013
Los Angeles River	1977-78	454	548	21557	42969	100936	156710	24728	7987	1267	1474	1639	6394	366,663
F-252-R	1976-77	353	216	373	1271	253	468	93	827	73	50	311	30	4,318
Verdugo Channel	1977-78	108	73	1402	2401	11896	8295	341	66	15	72	48	22	24,739
E285-R	1976-77	1062	859	758	1883	636	1080	657	1710	684	706	1480	649	12,164
Burbank Storm Drain	1977-78	732	651	1970	2484	7925	10987	5913	922	727	778	799	797	34,685
F-300-R	1976-77	1153	1902	1590	11580	524	4230	244	9350	218	177	5770	111	36,849
L. A. River Tujunga Ave.	1977-78	84	159	10570	30047	77737	151444	47284	3632	1069	938	1151	4990	329,105
F-168-R	1976-77	332	146	16	464	237	278	219	1360	154	21	142	181	3,550
Big Tujunga Dam	1977-78	474	85	311	4894	18244	38608	11409	6297	6453	1855	1053	897	90,580
118B-R	1976-77	105	54	19	11	0	0	169	110	38	0	0	2	508
Pacoima Dam	1977-78	0	0	0	2412	8651	15493	5614	2673	2139	1610	344	300	39,236

a 1 acre-foot = 1,233 cubic dekametres

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 waste water 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 2. The mean daily discharge rates for these six gaging stations during 1977-78 are summarized in Appendix B.

The Watermaster has attempted to compute 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 or industrial and reclaimed waste water discharges. The Watermaster utilized the procedures outlined in the Report of Referee for estimating the approximate flow rates and sources of water passing gaging Station F-57C-R. A similar request 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 and the low flows in the Burbank-Western storm drain which includes waste water.

When the City of Los Angeles diverts water at the Headworks spreading grounds, all the rising water is diverted.

When there is no diversion, a portion of the rising water may percolate upstream from Station F-57C-R.

TABLE 4
SEPARATION OF SURFACE FLOW AT STATIONS F-57C-R AND F-252-R
(in acre-feet)b/

Period	Base low flow		Surface runoff		Total measured outflow
	Rising water	Waste discharge	Owens River	Net storm	
Station F57C-R					
1971-72	3,602a/	8,219	0	35,049	46,870
1972-73	4,596a/	8,776	0	100,587	113,959
1973-74	2,694a/	6,366	0	79,818	88,878
1974-75	427a/	7,318	0	56,396	64,141
1975-76	261a/	6,741	0	32,723	39,725
1976-77	839a/	7,128	0	58,046	66,013
1977-78	1,331a/	7,449	0	357,883	366,663
29-year average 1929-57	6,810	770	1,580	30,790	39,950
Station F252-R					
1971-72	2,050	0	0	2,513	4,563
1972-73	1,706	0	0	7,702	9,408
1973-74	1,772	0	0	5,613	7,385
1974-75	1,333	0	0	4,255	5,588
1975-76	2,170	0	0	2,380	4,550
1976-77	1,683	0	0	2,635	4,318
1977-78	1,168	0	0	23,571	24,739

a/ May include rising water past rubber dam at Headworks Spreading Grounds, Verdugo Channel, and L. A. River Narrows.
b/ 1 acre-foot = 1.2335 cubic dekametres.

The surface runoff obtained from the hydrographs of Station F-57C-R consists of net storm runoff and Owens River water. The separation of surface runoff into these two components is 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.

The accelerated 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.

To somewhat overcome the rapid outflow due to urbanization, Pacoima and Hansen Dams, originally built for flood protection, are currently being utilized to regulate storm flows to recapture the flow in downstream spreading basins operated by LACFCD, as well as the City of Los Angeles.

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 2 shows the location of these spreading basins. The spreading grounds operated by LACFCD are utilized for spreading native water, whereas 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 1977-78 water year.

Ground Water Table Elevations

During the 1977-78 water year, the Watermaster collected and processed data to determine prevailing ground water conditions in ULARA during the spring and fall of 1978. Plates 3 and 4, which were provided by the Los Angeles Department of Water and Power, show these conditions. Change in ground water surface elevation from fall of 1977 to fall of 1978 as presented in Plate 5 reflects the effects of variations in spreading, ground water extractions, and rainfall.

TABLE 5

SPREADING OPERATIONS

(in acre-feet)[b/]

Month	Native Water Spread by Los Angeles County Flood Control District				Water Spread by City of Los Angeles				
	Spreading Basins				Tujunga Spreading Grounds		Headworks Spreading Grounds		
	Branford	Hansen	Lopez	Pacoima	Native water	Owens River water	Owens River water	Reseda wells	Ground water effluent in L. A. River[a/]
1977									
October	0	0	0	0	0	0	0	0	172
November	1	0	0	0	0	0	0	0	125
December	253	0	0	563	0	0	0	0	92
1978									
January	450	4,286	48	2,294	1,804	0	0	0	0
February	664	4,215	23	3,114	4,197	0	0	0	0
March	662	5,776	0	5,165	200	2,937	0	0	0
April	91	4,954	0	4,905	0	8,034	0	0	0
May	3	3,409	33	2,064	1,660	2,112	0	0	283
June	8	2,863	242	1,371	4,069	0	0	0	720
July	0	1,205	90	971	891	0	0	0	510
August	1	728	9	0	0	626	0	0	929
September	9	687	0	25	0	4,538	0	0	369
Totals	2,142	28,122	445	20,472	12,821	18,247	0	0	3,200

a/ Includes industrial discharge, ground water effluent, and surface runoff diverted from Los Angeles River to Headworks Spreading Grounds.

b/ One acre-foot = 1.2335 cubic dekametres

Due to increased rainfall in the water year 1977-78, a major rise in water levels occurred in the vicinity of the Hansen Spreading Grounds (60'), the Headworks Spreading Grounds (60'), the Verdugo Basin (20') and rises in every portion of the eastern part of the basin. The western portion of the basin had no significant change in water levels.

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

Water Reclamation

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

The design of the Sepulveda Basin Water Reclamation Plant has been completed. It provides for a plant capacity of 1.75 cubic

TABLE 6

WATER RECLAMATION PLANTS, 1977-78

Plant	Quantity treated in acre-feet[a/]
San Fernando Basin	
City of Burbank	7,171[b/]
Los Angeles-Glendale	2,721[c/]
Indian Hills Mobile Homes[f/]	21[d/]
Rocketdyne (Santa Susana Field Laboratory)	45.6[e/]
The Independent Order of Foresters[g/]	17.5[d/]
Verdugo Basin	
Crescenta Valley County Water District	101.53[d/]

a/ One acre-foot = 1.233 cubic dekametres.
b/ Total water delivered to Burbank cooling towers, 1,494 acre-feet, includes 50 percent evaporation and the rest to Los Angeles River.
c/ Operational during July, August, September 1978 only due to repairs. Total water delivered to cooling towers in Glendale 86 acre-feet, includes 50 percent evaporation and the rest to Los Angeles River.
d/ Used for land irrigation
e/ Area I - 6.7 acre-feet; Area II - 6.6 acre-feet; Area III - 32.3 acre-feet.
f/ Water supply from nearby well.
g/ Water supply from pipeline from LADWP.

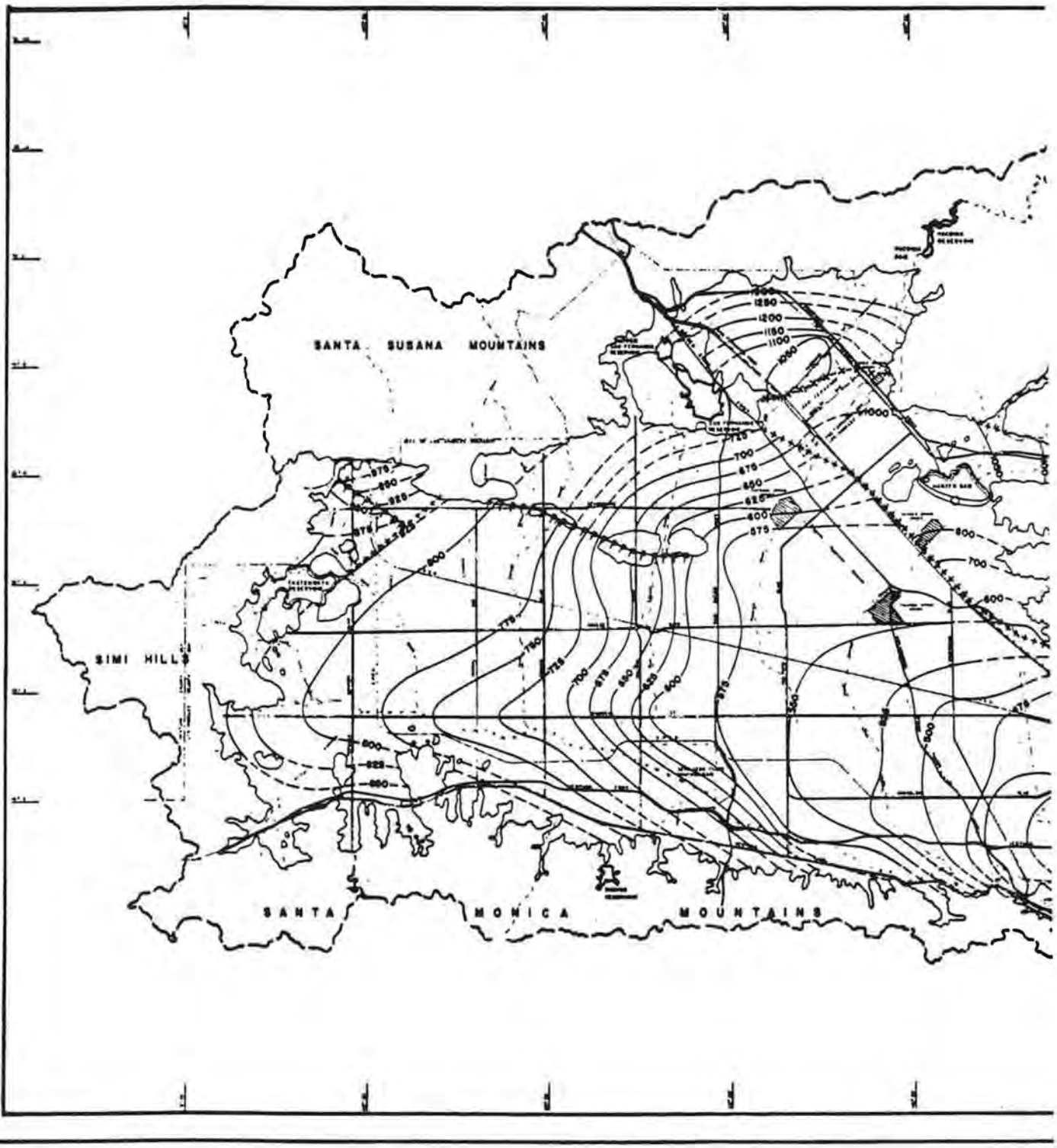
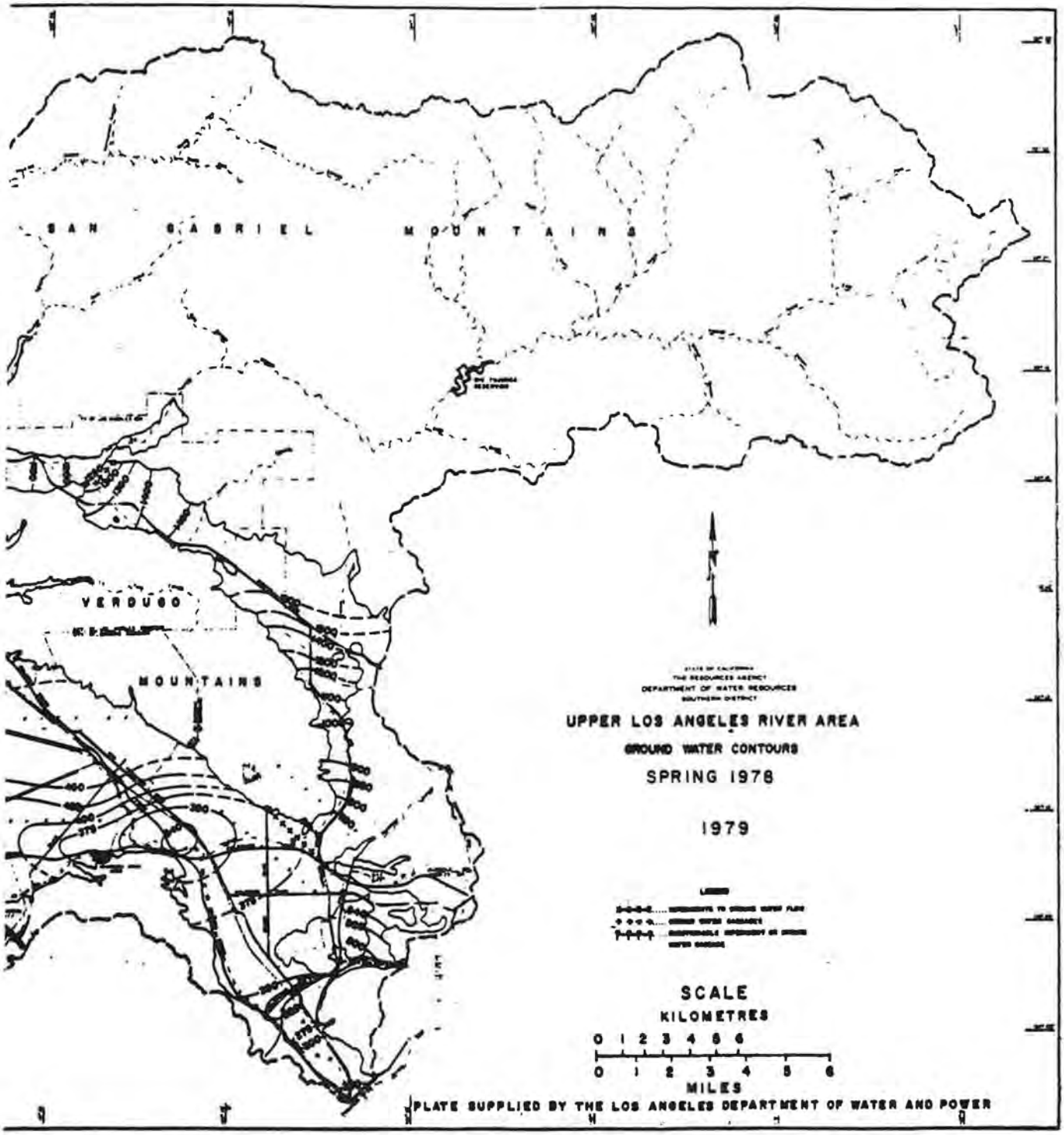

SANTA SUSANA MOUNTAINS
SIMI HILLS
SANTA MONICA MOUNTAINS

PLATE 3


SAN GABRIEL MOUNTAINS
VERDUGO
MOUNTAINS
UPPER LOS ANGELES RIVER AREA
GROUND WATER CONTOURS
SPRING 1978
1979
SCALE
KILOMETRES
0 1 2 3 4 5 6
0 1 2 3 4 5 6
MILES
PLATE SUPPLIED BY THE LOS ANGELES DEPARTMENT OF WATER AND POWER

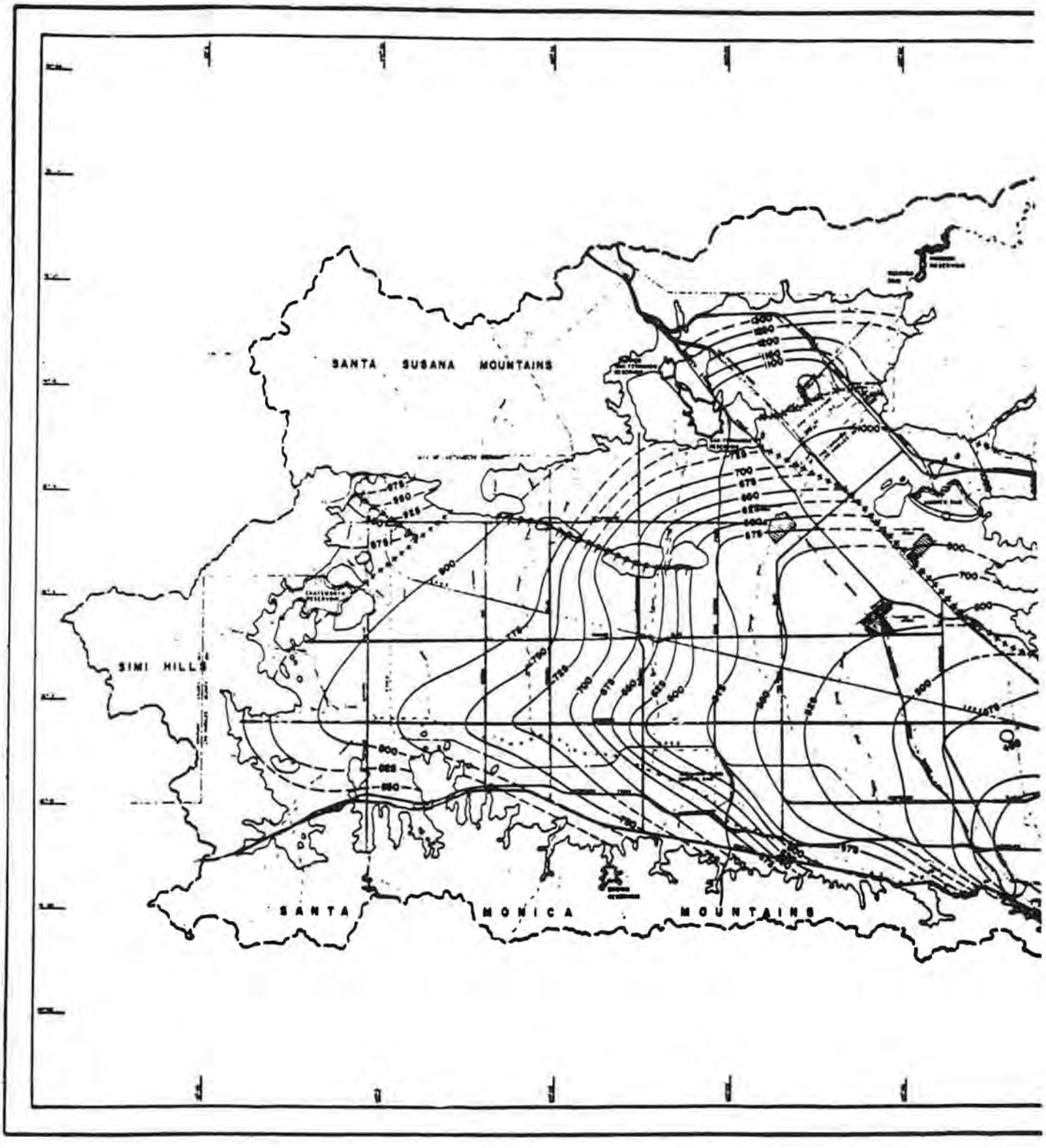
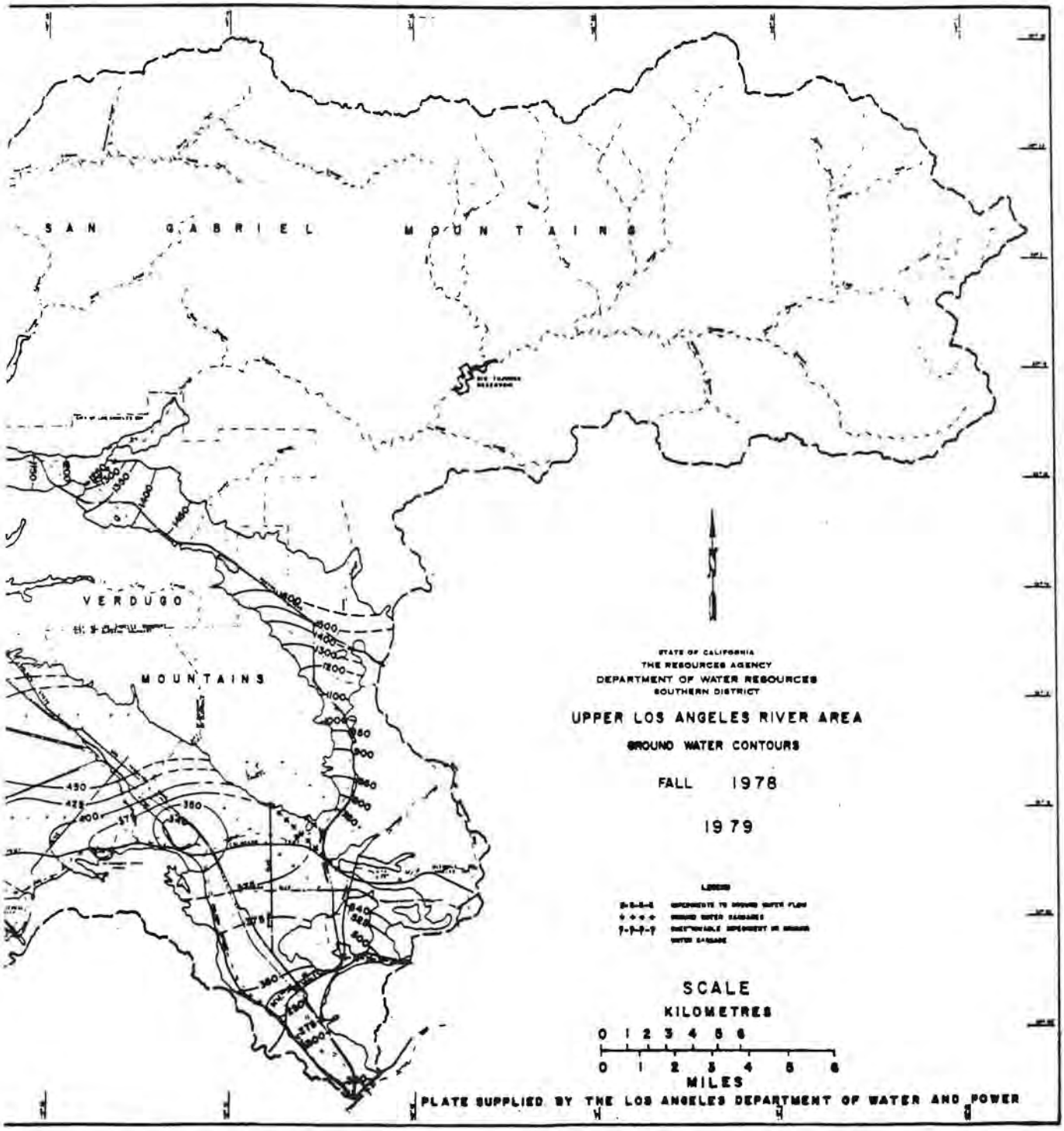

SANTA SUSANA MOUNTAINS
SIMI HILLS
SANTA MONICA MOUNTAINS

PLATE 4


SAN GABRIEL MOUNTAINS
VERDUGO
MOUNTAINS
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT
UPPER LOS ANGELES RIVER AREA
GROUND WATER CONTOURS
FALL 1978
1979
LEGEND
SCALE
KILOMETRES
0 1 2 3 4 5 6
0 1 2 3 4 5 6
MILES
PLATE SUPPLIED BY THE LOS ANGELES DEPARTMENT OF WATER AND POWER

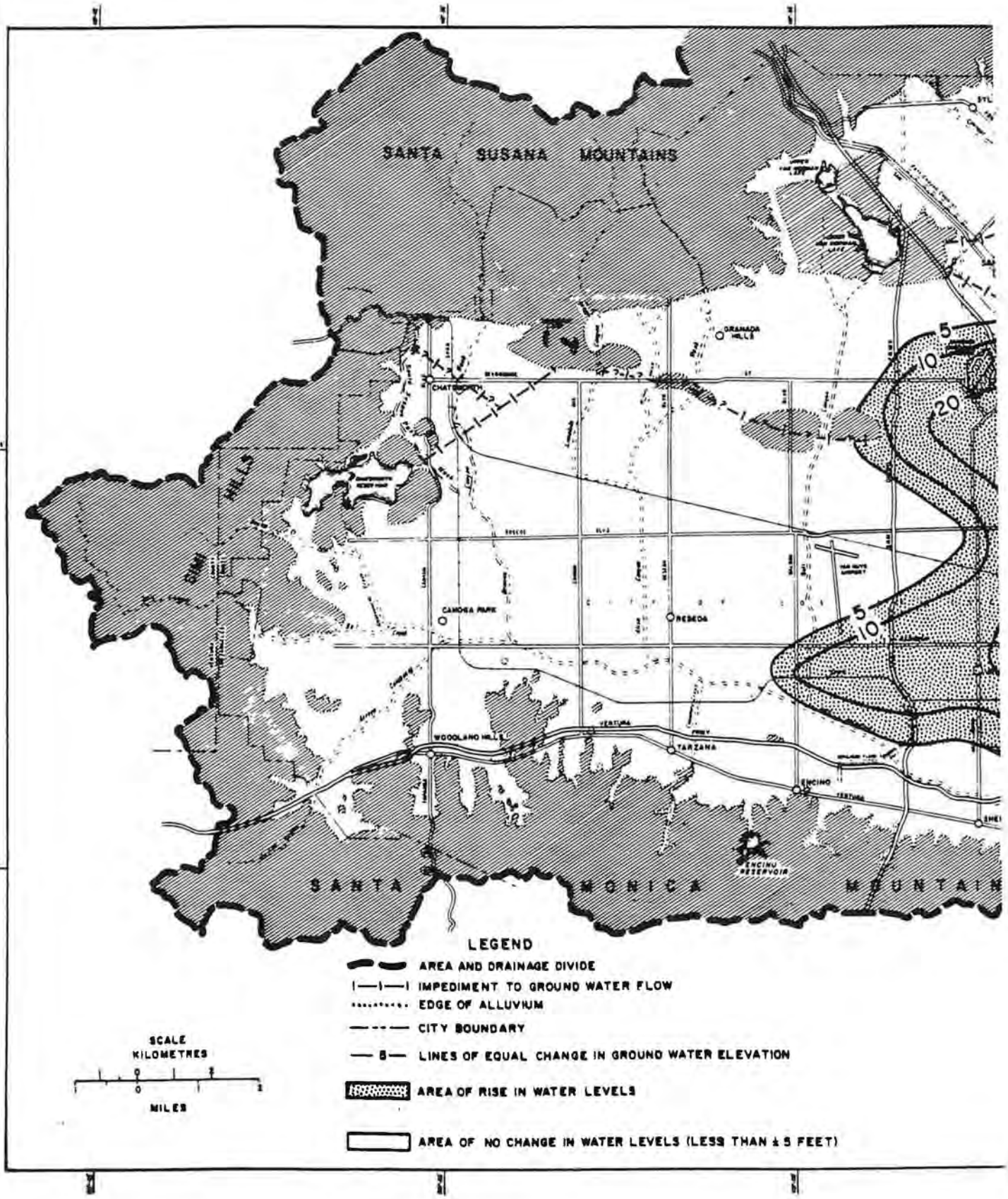
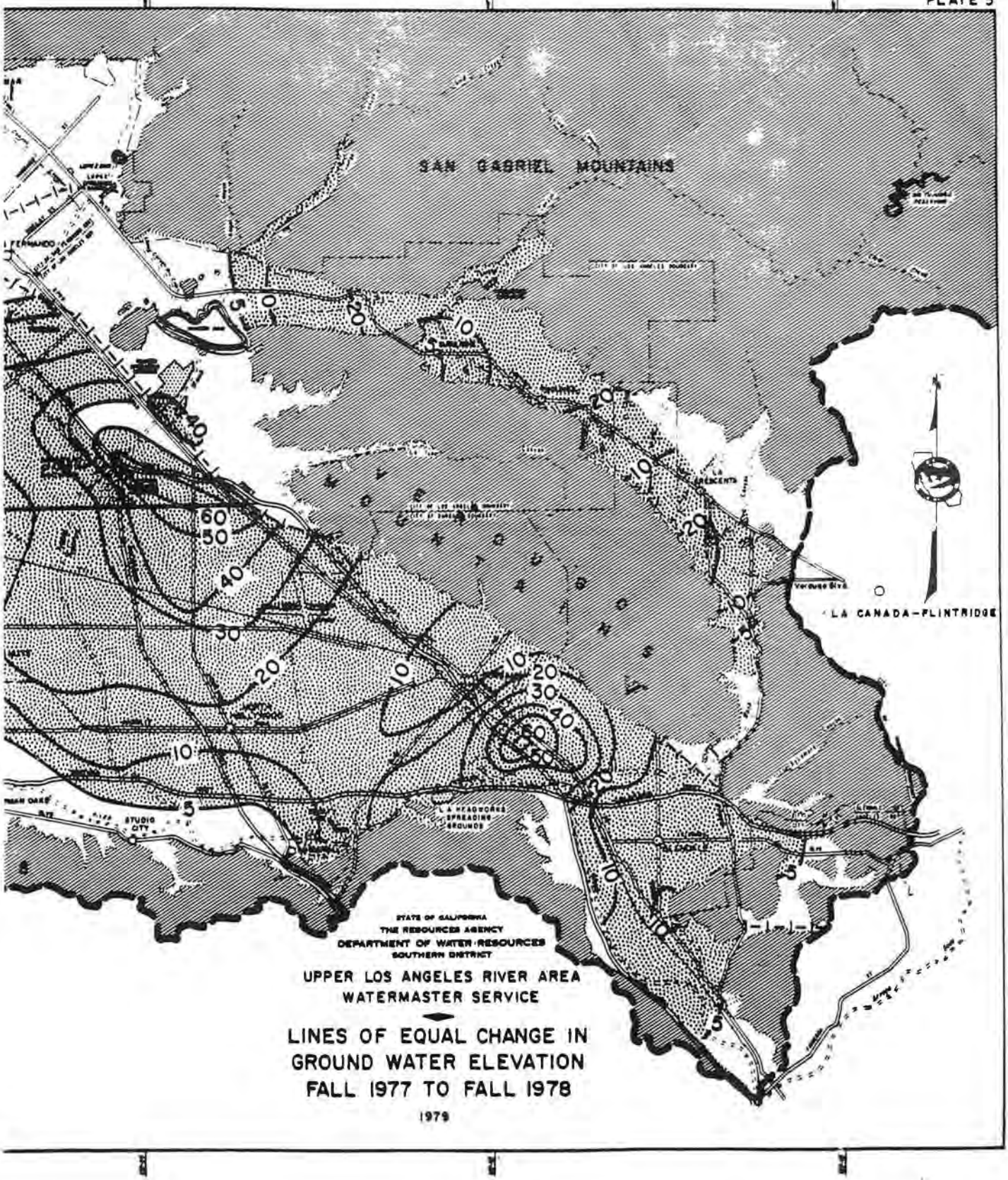

SANTA SUSANA MOUNTAINS
GRANADA HILLS
CHATSWORTH
SIMI HILLS
CANOGA PARK
RESEDA
WOODLAND HILLS
TARZANA
ENCINO
ENCINO RESERVOIR
SANTA MONICA MOUNTAIN
5
10
20
5
10
LEGEND
AREA AND DRAINAGE DIVIDE
IMPEDIMENT TO GROUND WATER FLOW
EDGE OF ALLUVIUM
CITY BOUNDARY
LINES OF EQUAL CHANGE IN GROUND WATER ELEVATION
AREA OF RISE IN WATER LEVELS
AREA OF NO CHANGE IN WATER LEVELS (LESS THAN ± 5 FEET)
SCALE
KILOMETRES
0
2
0
2
MILES

PLATE 5



STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT

UPPER LOS ANGELES RIVER AREA
WATERMASTER SERVICE

LINES OF EQUAL CHANGE IN GROUND WATER ELEVATION FALL 1977 TO FALL 1978

1979

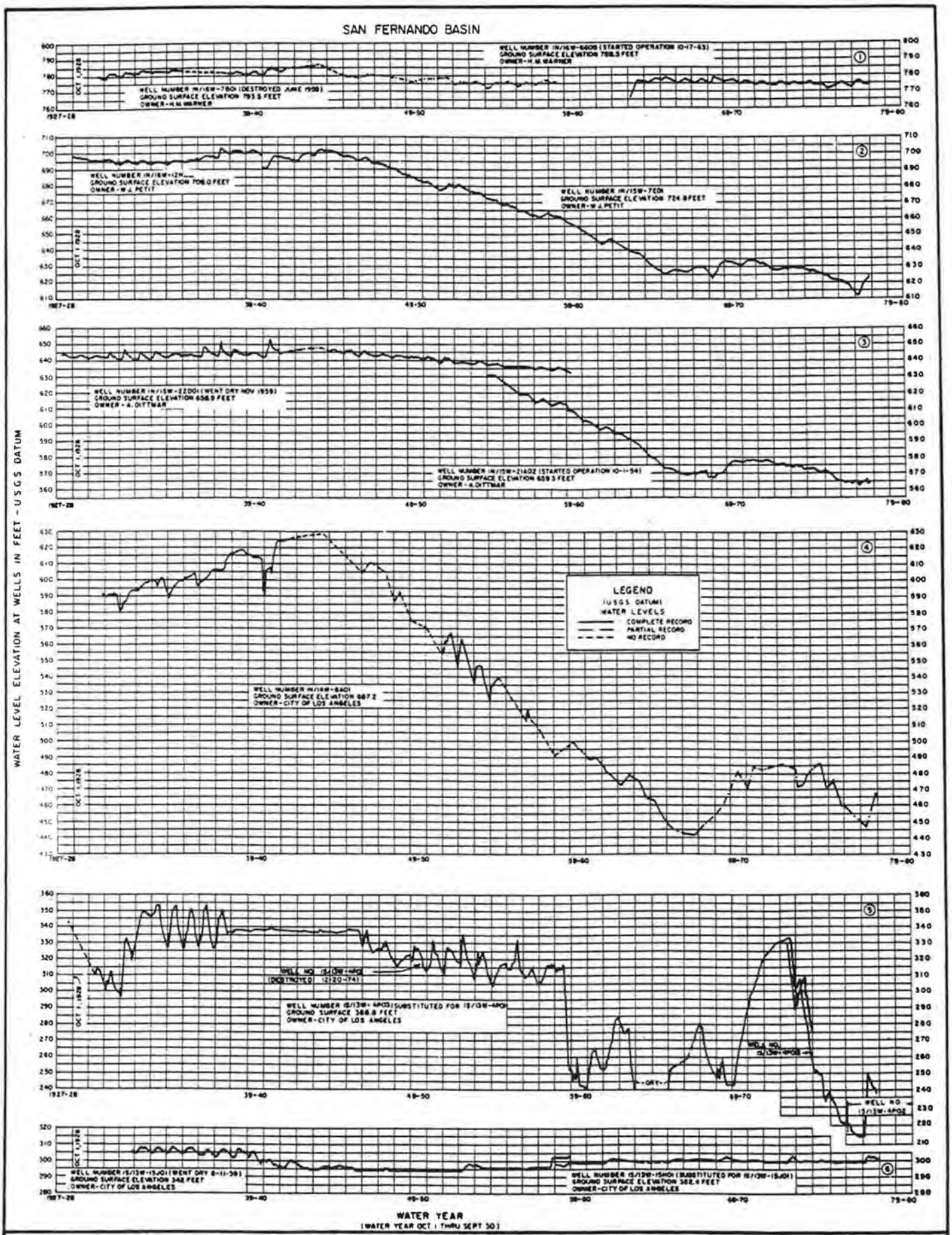


Figure 1 — FLUCTUATION OF WATER LEVEL ELEVATION AT WELLS IN THE SAN FERNANDO BASIN

DEPARTMENT OF WATER RESOURCES, SOUTHERN DISTRICT, 1979

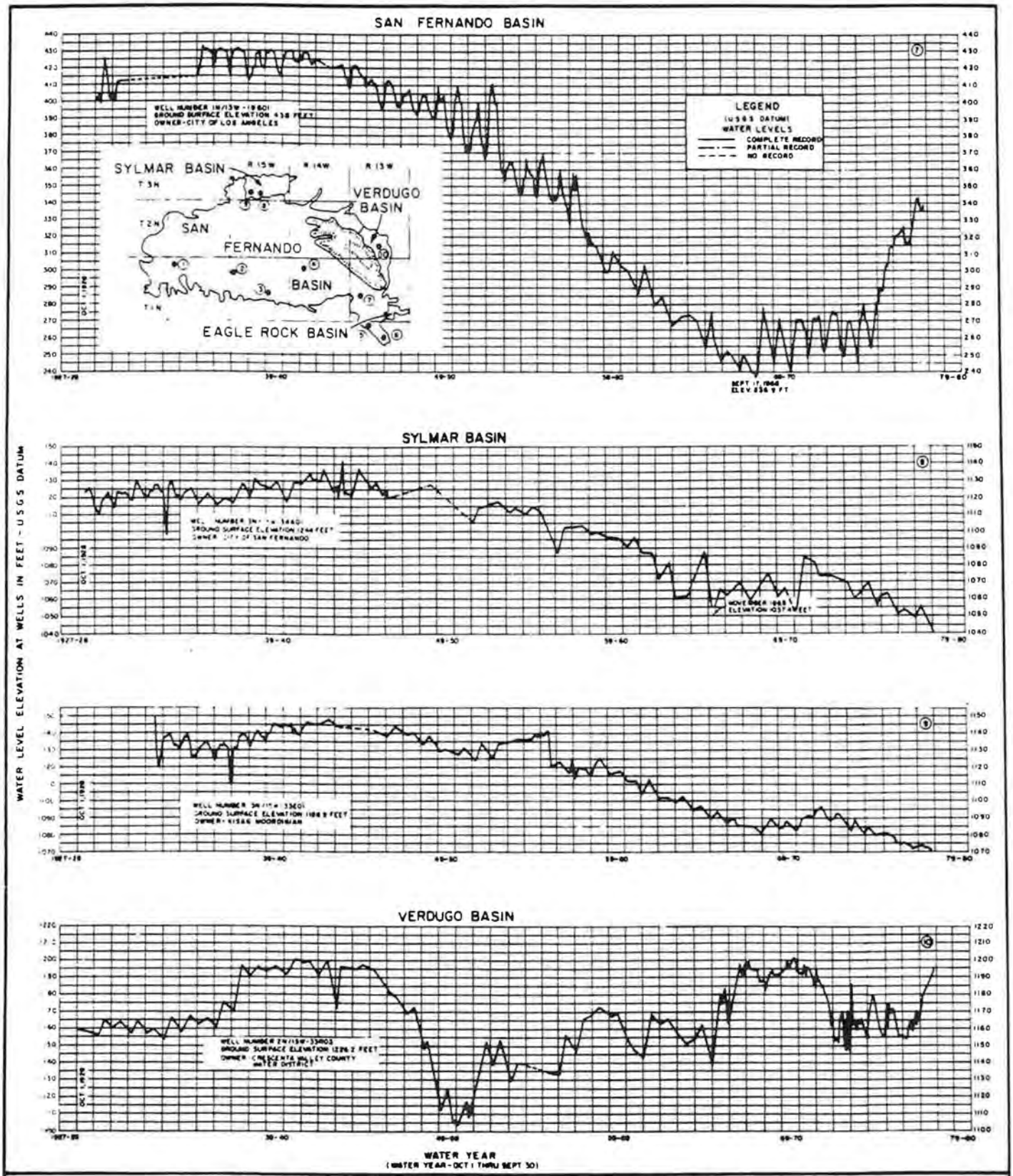


Figure 2 – FLUCTUATION OF WATER LEVEL ELEVATION AT WELLS IN THE SAN FERNANDO, SYLMAR AND VERDUGO BASINS

DEPARTMENT OF WATER RESOURCES, SOUTHERN DISTRICT, 1979

metres per second (40 million gallons per day--mgd), with treated effluent to be used for irrigation of the Sepulveda Basin recreation area and perhaps for ground water recharge. The project will not proceed until the Environmental Protection Agency (EPA) completes an assessment of the facility's needs and the approval of State and Federal construction grants has been received.

The City of Los Angeles, along with other State and local agencies, is participating in the development of a regional water reclamation study in Southern California. The objective of this study is to prepare a coordinated water reclamation plan for the Los Angeles and Orange County areas. This study is estimated to be completed in 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 1977-78 are contained in Table 7.

Imported Water

A. Owens River-Mono Basin water is sodium bicarbonate in character. Its TDS concentration averaged about 210 milligrams per litre (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 1977-78 was 230 mg/l, slightly higher than the 200 mg/l for 1976-77.

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 are conducted at the Whitsett Intake Pumping Plant which showed an average TDS of 679 mg/l for 1977-78.

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 the Northern California water are taken at the Joseph Jensen Filtration Plant. Average TDS concentration during 1977-78 was 356 mg/l.

D. Colorado River and Northern California water were first blended at the Weymouth Plant in May 1975. In the 1977-78 period, TDS had an average value of 552 mg/l. Blending ratios vary at the Weymouth Plant and tests are taken from the effluent. Imports

of Northern California water in ULARA were increased from 32 217 cubic dekametres (26,118 acre-feet, 1976-77) to 36 108 cubic dekametres (29,273 acre-feet, 1977-78).

Surface Water

Surface runoff contains salts dissolved from rocks in the tributary areas. Surface water is sodium-calcium, sulfate-bicarbonate in character. In 1977-78, low flows in the Los Angeles River above the Los Angeles Narrows had an average TDS content of 380 mg/l and a total hardness of 130 mg/l.

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.

Ground water is generally within the recommended limits of the United States 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.

Ground Water Contamination by Gasoline

In the 1977-78 period, there was no trace of odor or taste of gasoline from the pumped water near the Forest Lawn Cemetery.

The Regional Water Quality Control Board, Los Angeles Region considered the case closed following its findings in the final report on this problem dated December 1976.

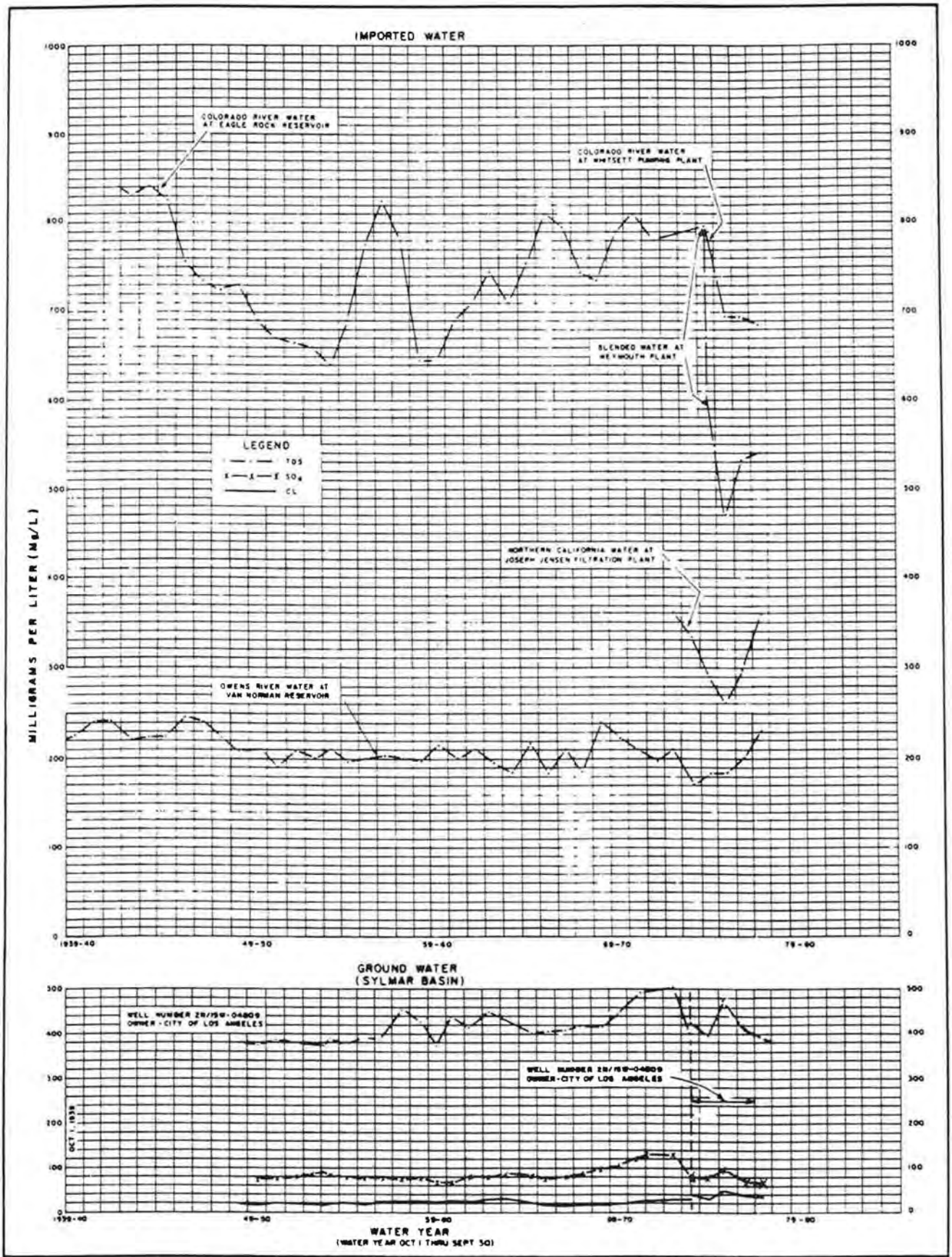


Figure 3— MINERAL CONSTITUENTS OF WATER SOURCES IN THE ULARA

DEPARTMENT OF WATER RESOURCES, SOUTHERN DISTRICT, 1979

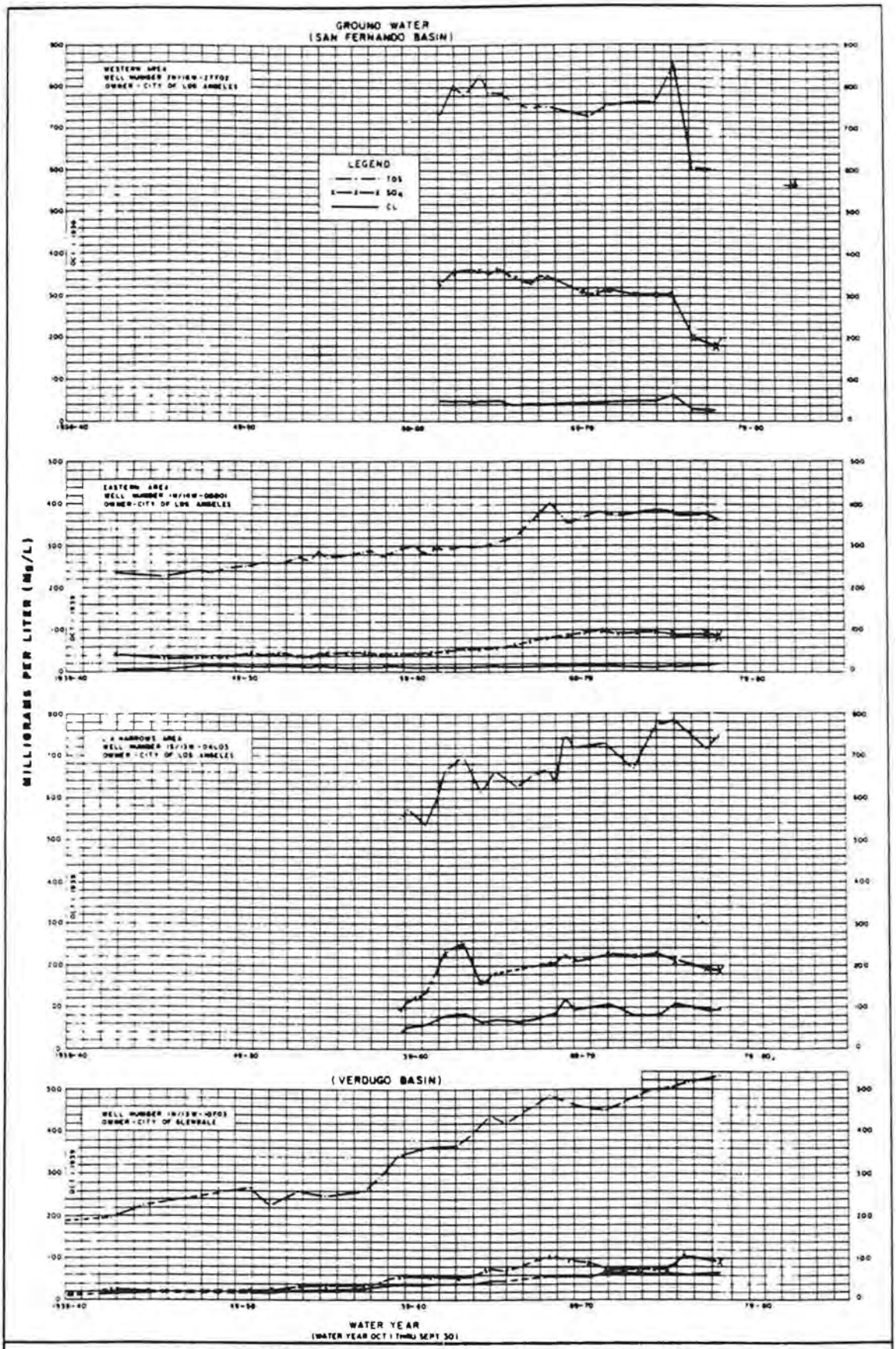


Figure 3(Cont.) — MINERAL CONSTITUENTS OF WATER SOURCES IN THE ULARA

DEPARTMENT OF WATER RESOURCES, SOUTHERN DISTRICT, 1979

TABLE 7

REPRESENTATIVE MINERAL ANALYSES OF WATER

Well number or source	Date sampled	$EC \times 10^6$ at 25°C	pH	Mineral constituents in milligrams per liter (mg/l) / milliequivalents per liter (me/l): Ca	Mg	Na	K	CO_3	HCO_3	SO_4	Cl	NO_3	F	B	Total dissolved solids mg/l	Total hardness as $CaCO_3$ mg/l
Imported Waters																
Blended State Project and Colorado River water at Eagle Rock Reservoir	1977-78 (average)	1025	8.08	73 / 3.65	27 / 4.50	102 / 4.43	4.1 / 0.11	0.9 / 0.03	147 / 2.41	265 / 2.76	87 / 2.45	1.6 / 0.03	0.30 / 0.02	0.15 / 0.01	642	294
Owens River water at Upper Van Norman Reservoir Inlet	1977-78 (average)	388	8.16	17 / 1.35	6.2 / 1.03	40 / 1.74	3.9 / 0.10	1.1 / 0.04	150 / 2.46	10 / 0.31	18 / 0.51	0.7 / 0.01	0.60 / 0.03	0.49 / 0.04	230	98
State Project Water at Joseph Jensen Filtration Plant (effluent)	1977-78 (average)	600	8.03	46 / 2.30	17.00 / 1.40	499 / 2.17	2.98 / 0.08	1.0 / 0.03	125.9 / 2.06	103.6 / 2.15	58.56 / 1.65	0.44 / 0.007	0.27 / 0.014	0.16 / –	356	186
Surface Waters																
Los Angeles River at Sepulveda Blvd.	11-2-77	1140	9.21	85 / 4.25	41 / 6.83	109 / 4.74	5.2 / 0.13	12.4 / 0.41	155 / 2.55	308 / 3.21	92 / 2.59	1.2 / 0.02	–	–	380	148
	1-6-78	1840	8.07	148 / 7.40	83 / 13.83	106 / 4.61	4.6 / 0.12	2.1 / 0.07	362 / 5.93	672 / 7.01	88 / 2.48	20 / 0.32	–	–	710	300
Los Angeles River at Burbank-Western Wash	11-2-77	1740	7.72	93 / 4.65	35 / 5.83	234 / 10.17	18 / 0.46	0.3 / 0.01	123 / 2.01	420 / 4.38	185 / 5.21	44 / 0.71	–	–	378	104
	1-6-78	1090	7.65	62 / 3.10	26 / 4.33	122 / 5.30	11 / 0.28	0.4 / 0.01	164 / 2.69	278 / 2.90	87 / 2.45	43 / 0.69	–	–	264	135
Los Angeles River at Colorado Blvd.	11-2-77	1460	8.29	96 / 4.80	36 / 6.00	170 / 7.39	12 / 0.31	1.8 / 0.06	191 / 3.14	136 / 1.50	139 / 1.92	34 / 0.55	–	–	386	160
	1-6-78	852	8.33	85 / 4.25	28 / 4.67	54 / 2.35	4.4 / 0.11	2.4 / 0.08	217 / 1.54	200 / 2.08	43 / 1.21	20 / 0.32	–	–	326	181
Ground Waters																
(San Fernando Basin - Western Portion)																
2N/16W-27J02 (Reseda No. 20 4757)	11-6-77	952	7.22	120 / 6.00	30 / 5.00	11 / 1.20	1.7 / 0.04	0.1 / 0.004	158 / 2.6	180 / 1.88	30 / 0.85	32 / 0.52	0.33 / 0.02	0.30 / 0.02	600	425
(San Fernando Basin - Eastern Portion)																
1N/14W-09H01 (No. Hollywood No. 170 08100)	7-6-78	577	7.40	69 / 1.45	16 / 2.67	26 / 1.13	2.5 / 0.06	0.3 / 0.01	207 / 1.19	81 / 0.86	20 / 0.56	20 / 0.32	0.50 / 0.01	0.13 / 0.01	464	236
(San Fernando Basin - L. A. Narrows)																
1S/13W-03L01 (Pollock No. 4 3958)	10-13-77	1100	7.78	112 / 5.60	39 / 6.50	58 / 2.54	2.9 / 0.07	1.0 / 0.03	327 / 5.17	190 / 1.98	97 / 2.73	13 / 0.21	0.28 / [illegible]	0.11 / 0.01	744	440
	6-6-78	1190	7.05	108 / 5.40	47 / 6.17	24 / 1.04	2.4 / 0.06	0.2 / 0.01	299 / 4.89	228 / 2.38	108 / 1.04	10 / 0.19	0.25 / 0.01	0.51 / 0.05	750	422
(Sylmar Basin)																
2N/15W-08J01 (Mission No. 5* 3840)	10-20-77	618	7.70	72 / 3.60	18 / 1.50	26 / 1.15	3.6 / 0.09	0.6 / 0.02	243 / 3.98	69 / 0.72	36 / 1.01	13 / 0.21	0.31 / 0.02	0.14 / 0.01	402	254
	5-15-78	606	7.38	70 / 3.50	17 / 2.83	25 / 1.09	3.2 / 0.08	0.3 / 0.01	229 / 3.75	69 / 0.72	28 / 0.79	11 / 0.18	0.38 / 0.02	0.24 / 0.02	392	242
(Verdugo Basin)																
1N/13W-10F01 (Glorietta No. 3)	7-14-78	820	7.4	88 / 4.42	31.5 / 2.59	25 / 1.09	2.6 / 0.07	– / –	194 / 3.18	96 / 2.00	70 / 1.97	—	0.2 / 0.01	–	514	351

*Substituted for Mission No. 1

III. WATER USE AND DISPOSAL

Water delivered for use in ULARA is either imported water, local ground water, local surface diversions, or a mixture, depending on the area and water system operation. During the 1977-78 water year, the net amount delivered to water purveyors in ULARA was approximately 400 874 cubic dekametres (324,989 acre-feet). Of this total, approximately 100 404 cubic dekametres (81,398 acre-feet) were extracted and the remaining 300 469 cubic dekametres (243,591 acre-feet) were net imports. The Basin contains 532 wells, of which 109 are active and 423 are inactive, observation, test, capped, etc.

The adjudication of ground water rights in ULARA restricted all ground water extractions, effective October 1, 1968. On that date, extractions were restricted to approximately 128 284 cubic dekametres (104,000 acre-feet) per water year. This amounted to a reduction of approximately 61 675 cubic dekametres (50,000 acre-feet) below the previous 6-year average.

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 74 010 to 111,015 cubic dekametres (60,000 to 90,000 acre-feet) per year and that, for the water years 1968-69 to 77-78, the difference increased to between 160 355 and 246 700 cubic dekametres (130,000 and 200,000 acre-feet).

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

Ground Water Extractions

Because of the August 1, 1975, Supreme Court Decision, the State DWR as Interim Watermaster exercises no control over the ground water extractions. Appendix A is the record of ground water extractions for the 1977-78 water year.

Imports and Exports of Water

Residential, commercial, and industrial expansion in ULARA requires 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 consist of California and Colorado River Aqueduct waters.

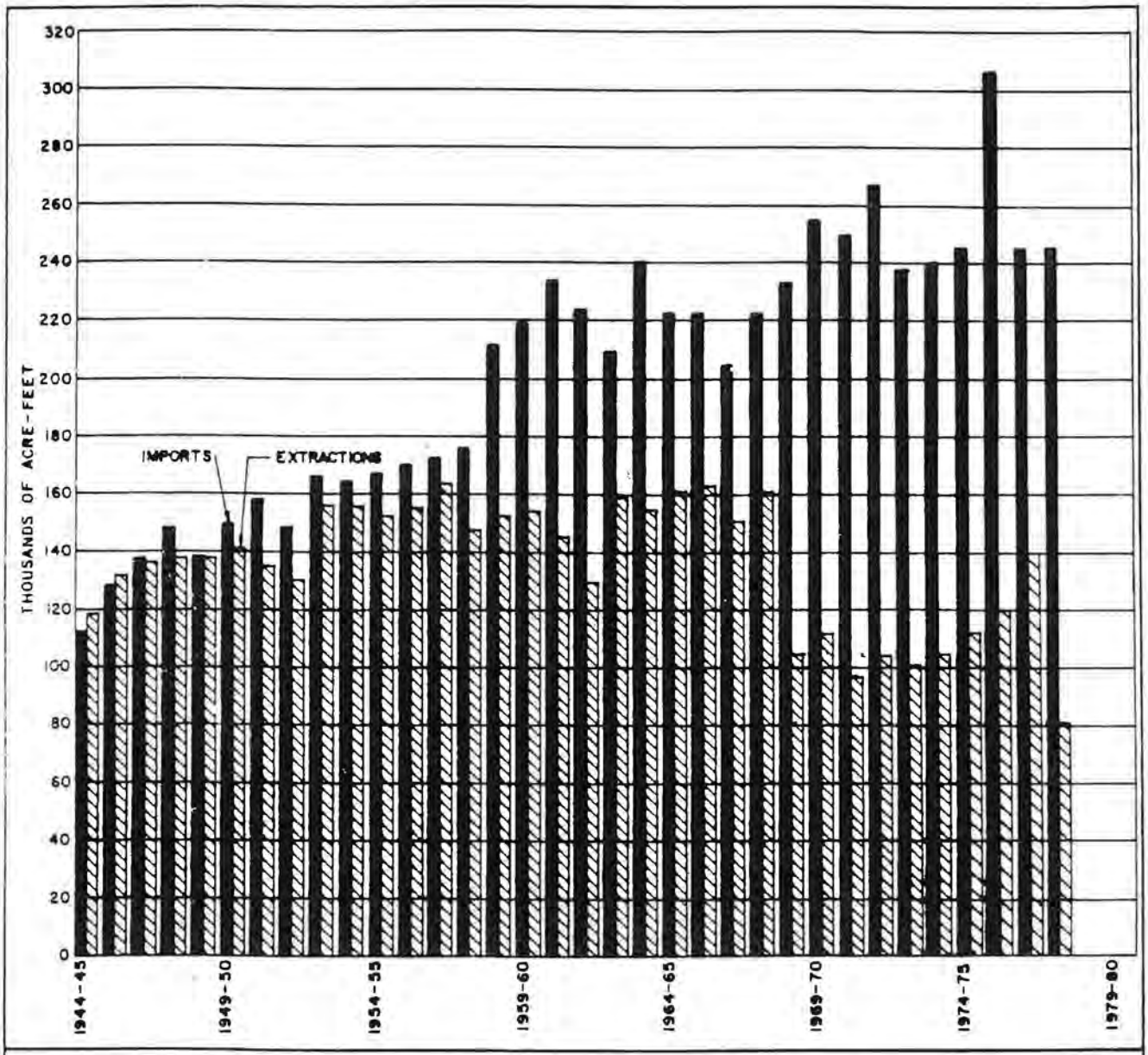


Figure 4- GROUND WATER EXTRACTIONS AND USE OF IMPORTED WATER IN UPPER LOS ANGELES RIVER AREA

DEPARTMENT OF WATER RESOURCES, SOUTHERN DISTRICT, 1979

TABLE 8
ULARA IMPORTS AND EXPORTS

Source and Agency	Quantity, in acre-feet[a] 1976-77		1977-78	
Imports				
Colorado River water				
Burbank, City of	4,485		9,017	
Crescenta Valley County Water District	1,305		1,200	
Glendale, City of	10,047		8,753	
Los Angeles, City of	12,517		3,608	
La Canada Irrigation District	586		542	
Las Virgenes Municipal Water District (nonparty)	0[d]		0	
San Fernando, City of	65		57	
	29,005		23,177	
Northern California water				
Burbank, City of	8,584		8,235	
Crescenta Valley County Water District	350		638	
Glendale, City of	8,311		9,970	
La Canada Irrigation District	156		266	
Las Virgenes Municipal Water District (nonparty)	6,813		9,700	
San Fernando, City of	0		0	
Los Angeles, City of	1,904		464	
	26,118		29,273	
Owens River water				
Los Angeles, City of*	302,881[b/c]		406,615[c]	
Total	358,004[b]	358,004	459,065	459,065
Exports				
Owens River water				
Los Angeles, City of	115,640[b]	-115,640	215,474	-215,474
Net Import		242,364[b]		243,591

a/ One acre-foot = 1,2335 cubic dekametres.
b/ The previous value published was revised to reflect the actual measured data rather than the estimated value provided for the last three months of the 1975-76 water year.
c/ 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.
d/ 1976-77 value was 2,132 AF and reported as 0 in the 1976-77 annual report.
* Excludes Eagle Rock Basin

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, (hill and mountain areas are no longer reported in 1977-78) 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.

Some of the figures in Table 9 are estimates due to lack of information at the time of submittal. However, the actual figures based on measured values were subsequently submitted to the Watermaster for the permanent records and are available upon request.

TABLE 9
1977-78
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	3,767	3,502	59,085	0	4,189[b/]	70,543[a/b/]
Used in valley fill	[e/]	[e/]	6,193	0	4,189[b/]	10,382[b/]
Imports						
Colorado River water	9,017	8,753	2,135	57	0	19,962
Owens River water	--	--	399,797	--	--	399,797
Northern Calif. water	8,235	9,970	275	0	9,700	28,180
Ground water from Sylmar Basin	--	--	4,192	2,818	0	7,010
Ground water from Verdugo Basin	--	475	--	--	--	475
Reclaimed water	1,494[f/]	86[f/]	--	--	--	1,580
Exports						
Ground water:						
to Verdugo Basin	--	0	0	--	0	0
out of ULARA	--	--	52,892	--	--	52,892
Owens River water:						
to Eagle Rock Basin	--	--	1,508	--	--	1,508
out of ULARA	--	--	215,474	--	0	215,474
Colorado River:						
to Verdugo Basin	--	1,482	0	--	0	1,482
Northern Calif. water:						
to Verdugo Basin	--	1,687	0	--	--	1,687
Total net delivered water	22,513	19,617	195,610	2,875	13,881	254,504
Water delivered to hill and mountain areas						
Ground water	212	[e/]	0	0	0	212
Owens River water	--	--	32,099	--	--	32,099
Colorado River water	520	[e/]	1,314	0	--	1,834
Northern Calif. water	474	[e/]	169	0	9,700	10,343
Verdugo Basin water	--	[e/]	--	--	--	[e/]
Water outflow						
Surface	--	--	--	--	--	366,663[c/]
Subsurface	--	--	--	--	--	213[g/]
Sewers	12,503[d/]	15,102	75,170	1,775	--	104,550

* One acre-foot = 1.2335 cubic dekametres.
a/ No production from Reseda wells.
b/ Small amount pumped by RWQCB and City of Los Angeles from several observation wells.
c/ At Station F-57C-R where 29-year mean (1929-75) base low flow is 7,580 acre-feet.
d/ Includes reclaimed water discharged into Burbank-Western storm channel by City of Burbank.
e/ These values are no longer required.
f/ Delivered to cooling towers of steam plants in Burbank and Glendale. Assumed 50 percent evaporation and 50 percent to Los Angeles River.
g/ Data supplied by the LADWP.

TABLE 9
1977-78
SUMMARY OF WATER SUPPLY AND DISPOSAL
SYLMAR BASIN
(in acre-feet)*

Water source and use	City of Los Angeles	City of San Fernando	All others	Total
Extractions				
Total quantity	4,192	2,917 k/	0	7,109
Used in valley fill	0	279 k/	0	279
Imports				
Owens River water	6,068	--	--	6,068
Exports				
Ground water: to San Fernando Basin	4,192	2,818	0	7,010
Water delivered to hill and mountain areas				
Owens River water	310	--	--	310
Water outflow				
Surface	--	--	--	5,000 i/
Subsurface: to San Fernando Basin h/	--	--	--	--
Sewers	760	150	0	910

h/ Computation not possible, well destroyed.
i/ Surface outflow is not measured. Calculated average surface outflow by Mr. Laverty - SF Exhibit 57.
k/ City of San Fernando reported 3,097 AF; 279 used valley fill. The difference in the reported values is assumed to be the result of slightly different reporting periods. The State Watermaster's report is from Oct. 1, 1977 to Sept. 30, 1978. All other errors, meter readings, meters broken, losses, etc. are assumed to be common.
* One acre-foot = 1.2335 cubic dekametres.

TABLE 9
1977-78
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	2,005	1,742	0	0	3,747
Used in valley fill	1,931	r/	0	0	1,931
Imports					
Colorado River water	1,200	1,482	542	0	3,224
Owens River water	--	--	--	750	750
Northern Calif. water	638	1,687	266	0	2,591
Ground water from:					
San Fernando Basin	--	0	--	--	0
Exports					
Ground water to:					
San Fernando Basin	--	475	--	--	475
Water delivered to hill and mountain areas					
Colorado River water	45p/	r/	0	0	45
Owens River water	--	--	--	246	246
Northern Calif. water	24p/	r/	0	0	24
Ground water from:					
Verdugo Basin	64	r/	--	0	64
San Fernando Basin	--	0	0	0	0
Water outflow					
Surface	--	--	--	--	4,555m/
Subsurface:					
to Monk Hill Basin	--	--	--	--	300n/
to San Fernando Basin	--	--	--	--	63o/
Sewage	0	1,281	0	0	1,281

m/ Information obtained from Station F-252C-R.
n/ Based on 29-year average (1929-57).
o/ Based on data submitted and calculated by LADWP
p/ From Foothill Feeder System assume: 35% State water and 65% Colorado River water
r/ These values are no longer required.
* One acre-foot = 1.2335 cubic dekametres.

TABLE 9
1977-78
SUMMARY OF WATER SUPPLY AND DISPOSAL
EAGLE ROCK BASIN v/ w/
(in acre-feet)*

Water source and use	City of Los Angeles	Deep Rock v/ Water Company	Sparkletts Drinking v/ Water Corporation	Total
Extractions				
Total quantity	0	5	149	154
Used in valley fill	0	0	0	0
Imports				
Owens River	1,508	--	--	1,508
Colorado River	1,473	--	--	1,473
Ground water	0	0	0	0
Northern Calif. water	189	0	0	189
Exports				
Ground water	0	5	149	154
Water delivered to hill and mountain areas				
Colorado River water	1,177	--	--	1,177
Owens River water	373	--	--	373
Northern Calif. water	151	--	--	151
Water outflow				
Surface s/	--	--	--	--
Subsurface t/	--	--	--	--
Sewers	1,860	0	0	1,860

s/ Information not available.
t/ Estimated in Supplement No. 2 to Report of Reference for dry years 1960-61. Currently, data not available for direct evaluation.
v/ Deep Rock Water Company and Sparkletts Drinking Water Corporation under a Stipulated Agreement with the City of Los Angeles extract; limited to 500 AF/yr, and export given amount.
* 1 acre-foot = 1.2335 cubic dekametres.
w/ Basin totals are not included in Summary Tables 1 and 8.

Appendix A

GROUND WATER EXTRACTIONS

TABLE A-1
1977-78 WATER YEAR
GROUND WATER EXTRACTIONS

(ACRE-FEET)

STATE WELL NUMBER	OWNERS DESIG-NATION	PRODUCTION 1977 OCT	1977 NOV	1977 DEC	1978 JAN	1978 FEB	1978 MAR	1978 APR	1978 MAY	1978 JUN	1978 JUL	1978 AUG	1978 SEP	TOTAL	PARTY IDENT
SAN FERNANDO BASIN															
CITY OF BURBANK															6550
1N/14W-09A01S	14A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.89	3.61	270.44	282.87	45.55	615.78	
1N/14W-09R04S	17	0.00	0.00	6.12	8.58	0.00	0.00	0.00	7.95	0.00	187.06	49.43	0.00	237.14	
1N/14W-09G02S	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	155.77	96.50	252.27	
1N/14W-09M01S	10-P	4.80	0.00	8.42	0.00	0.00	0.33	0.00	13.59	0.00	178.85	172.74	18.63	395.36	
1N/14W-09M04S	11A	5.58	0.00	0.00	0.00	7.57	106.24	41.65	8.98	0.00	225.14	197.62	67.51	662.29	
1N/14W-09K02S	13A	13.45	0.00	8.69	0.00	0.00	0.00	0.00	17.44	16.92	224.51	144.32	138.91	563.64	
1N/14W-09L04S	1A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	131.03	190.80	0.00	321.83	
1N/14W-09Q01S	6A	17.06	0.00	7.71	10.84	0.00	0.00	0.00	21.90	0.00	101.40	265.75	85.54	718.20	
1N/14W-11Q01S	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.24E	0.00	0.00	3.24	
1N/14W-14R04S	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.03	0.00	0.00	5.03	
PARTY TOTALS:		40.89	0.00	28.34	17.42	7.57	106.57	41.65	82.75	20.53	1507.12	1459.30	452.64	3766.78	
CONROCK CO.															6888
2N/14W-30A01S	4926-	12.74	12.26	18.14	5.45	9.12	10.03	11.72	11.18	15.33	9.59	14.93	18.37	134.78	
2N/14W-30A03S	2	71.89	72.34	59.91	38.31	58.16	78.42	74.69	91.58	67.54	89.98	94.62	31.28	828.64	
2N/14W-30A04S	3	48.12	47.54	37.10	24.79	36.30	58.23	65.27	65.17	48.06E	6.40E	8.88	142.33	579.34	
PARTY TOTALS:		132.75	132.19	187.15	68.55	103.58	146.68	151.68	167.85	130.93	105.97	189.55	183.98	1542.78	
FOREST LAWN CEMETERY ASSN ET AL															6448
1N/13W-33N01S	2	12.83	12.73	7.61	0.58	1.97	1.94	4.83	15.67	16.95	17.95	14.45	8.58	115.29	
1N/13W-33N02S	1	13.83	15.97	8.89	0.75	2.35	2.79	4.58	18.34	21.91	21.70	24.91	18.34	154.36	
1N/13W-33N03S	4	10.53	10.81	6.27	1.58	1.34	0.88	0.88	11.49	14.24	13.78	14.87	10.28	93.43	
1S/13W-04R01S	7	0.04	3.84	0.02	0.08	0.00	0.00	0.01	5.24	10.64	17.26	14.17	11.20	57.64	
PARTY TOTALS:		37.23	41.77	22.79	2.83	5.66	4.73	8.62	50.74	63.74	66.61	67.80	48.40	420.72	
CITY OF GLENDALE															6690
	GVENT	131.96	52.48	0.00	23.32	0.00	71.18	124.60	312.11	204.39	710.75	818.78	489.49	2889.06	
1N/13W-19J01S	STPT1	27.92	48.13	55.61	45.31	39.95	24.61	15.36	31.27	37.49	31.85	58.76	41.41	449.67	
1N/13W-19J04S	STPT2	42.46	11.33	0.96	1.25	0.58	6.80	1.15	5.04	27.29	40.82	19.04	6.77	163.49	
PARTY TOTALS:		202.34	111.94	56.57	69.88	40.53	52.59	141.11	348.42	269.17	783.42	888.58	537.67	3502.22	
HARPER, CECELIA DE MILLE															6715
2N/14W-05A02S	CEREG	0.68	1.26	0.34	0.05	0.09	0.86	0.73	0.28	0.28	0.14	0.11	0.17	4.83	
LIVINGSTON-GRAHAM, INC.															6750
2N/14W-19Q01S	SNVAL	50.88	58.27	44.88	28.60	33.29	37.67	52.85	112.44	1.17	55.13	64.41	52.11	582.82	
CITY OF LOS ANGELES, SAN FERNANDO															6788
1N/13W-19F02S	CS-45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.38	155.14	145.78	139.30	539.60	
1N/14W-05N01S	NH-16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	86.39	0.00	0.00	21.30	107.69	
1N/14W-05P01S	NH-18	359.25	23.21	0.00	0.00	0.00	0.00	0.00	72.75	294.70	208.61	0.00	0.00	958.52	
1N/14W-05P02S	NH-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	267.45	189.53	0.00	0.00	456.98	
1N/14W-06K01S	NH-39	0.23	0.00	132.19	0.00	0.00	133.77	0.00	92.29	39.51	193.73	467.40	441.00	1500.12	
1N/14W-06K02S	NH-40	80.17	288.41	142.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	423.23	
1N/14W-06K03S	NH-41	355.00	364.81	284.04	0.00	218.76	132.51	0.00	88.41	170.55	331.63	454.61	430.76	2831.08	
1N/14W-06K04S	NH-42	83.93	125.60	30.03	0.00	0.00	0.00	0.00	31.60	211.89	249.21	28.99	0.00	781.33	
1N/14W-06L01S	NH-24	335.47	45.71	0.00	0.00	0.00	0.00	0.00	35.38	0.00	189.65	0.00	0.00	606.21	
1N/14W-06N01S	NH-2	268.09	17.65	0.00	0.00	0.00	0.00	0.00	58.24	0.00	117.26	299.56	187.14	947.94	
1N/14W-06N02S	NH-30	117.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54.25	0.00	0.00	172.09	
1N/14W-06P01S	NH-5	191.99	26.15	0.00	0.00	0.00	0.00	0.00	57.94	0.00	75.43	12.28	0.00	364.19	
1N/14W-06P02S	NH-31	0.00	0.00	0.00	0.00	0.00	0.00	21.83	0.00	0.00	142.98	23.26	0.00	188.07	
1N/14W-06Q01S	NH-13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.69	67.58	118.84	0.00	0.00	228.11	
1N/14W-06Q02S	NH-14A	119.72	0.00	0.00	0.00	0.00	0.00	0.00	135.83	45.50	52.88	18.09	0.00	370.34	
1N/14W-06Q05S	NH-29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	118.60	194.79	0.00	10.10	323.49	
1N/14W-06Q07S	NH-38	98.06	419.88	381.49	0.00	230.26	148.28	0.00	0.00	227.34	382.85	0.00	0.00	1796.68	
1N/14W-06R01S	NH-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.02	121.37	0.00	0.00	187.39	
1N/14W-06R05S	NH-27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	117.79	98.44	46.78	0.00	0.00	263.01	
1N/14W-06R07S	NH-28	328.15	44.24	0.00	0.00	0.00	0.00	0.00	78.59	221.19	245.84	163.91	10.45	1004.37	

Note: 1 acre-foot = 1.2335 cubic dekameters

TABLE B-1
1977-78 WATER YEAR
GROUND WATER EXTRACTIONS
(CONTINUED)
(ACRE-FEET)

STATE WELL NUMBER	OWNERS DESIG-NATION	PRODUCTION 1977 OCT	NOV	DEC	1978 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL	PARTY IDENT
SAN FERNANDO BASIN															
CITY OF LOS ANGELES, SAN FERNANDO (CONTINUED)															6700
1N/14W-07A01S	W-1	0.00	248.34	261.87	0.00	151.12	248.55	97.84	154.34	71.21	213.29	155.65	93.85	1712.26	
1N/14W-07J01S	E-10	0.00	158.85	113.64	0.00	67.29	8.34	42.17	71.97	103.83	189.34	95.27	29.94	791.64	
1N/14W-08A01S	NH-21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	149.54	249.69	177.14	0.00	0.00	536.17	
1N/14W-08A02S	NH-20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	84.71	136.78	0.00	7.35	228.84	
1N/14W-08A03S	NH-35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.24	51.24	108.81	0.00	0.00	240.49	
1N/14W-08B01S	NH-19	259.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.58	179.90	0.00	0.00	517.01	
1N/14W-08D01S	W-2	127.41	256.15	246.17	0.00	65.73	253.26	99.61	150.06	49.27	0.00	0.00	49.22	1302.88	
1N/14W-08E01S	W-3	90.81	222.13	212.35	0.00	118.30	2.78	67.83	58.41	36.46	158.83	134.80	69.06	1162.18	
1N/14W-08F01S	W-4	363.82	345.64	361.82	374.29	192.31	244.97	93.71	116.28	51.79	247.91	0.00	0.00	2641.74	
1N/14W-08J01S	E-5	0.00	221.53	213.22	0.00	0.00	0.00	112.01	78.20	180.23	190.15	225.67	35.17	1248.18	
1N/14W-08J03S	E-7	0.00	178.47	173.65	0.00	0.00	0.00	95.55	63.69	154.34	194.46	110.90	25.99	937.27	
1N/14W-08J04S	E-1	0.00	113.84	27.94	0.00	0.00	0.00	56.89	79.48	97.84	146.90	85.86	21.69	630.84	
1N/14W-08L01S	W-5	110.88	217.36	228.36	0.00	0.00	0.00	75.57	29.48	167.45	48.38	28.74	123.78	1021.12	
1N/14W-08L02S	E--	0.00	146.04	140.13	0.00	0.00	0.00	42.24	107.82	131.89	138.71	122.58	32.37	920.98	
1N/14W-08P01S	W-7	128.93	182.51	134.71	0.00	0.00	0.00	58.13	34.96	98.27	95.26	137.53	58.00	881.29	
1N/14W-15N01S	W-2	80.30	194.58	174.84	0.00	98.77	6.22	36.57	49.13	77.38	87.67	93.28	18.14	907.92	
1N/14W-15P01S	W--	79.34	133.83	154.25	0.00	184.29	6.84	94.40	34.39	92.33	112.78	102.64	20.29	936.41	
1N/14W-16A01S	W-9	58.85	121.79	189.84	0.00	3.10	38.11	41.87	37.63	59.71	36.58	66.85	23.19	589.84	
1N/14W-16F01S	W-6	376.24	358.01	263.41	0.00	0.00	0.00	0.00	0.00	305.24	229.52	488.37	108.33	2041.14	
1N/14W-16E01S	W-10	0.00	41.67	0.00	0.00	58.15	0.87	0.60	41.27	47.77	113.36	58.55	4.59	370.83	
1N/14W-17A01S	W-8	188.61	55.21	0.00	0.00	85.17	7.42	78.75	140.98	166.21	95.95	114.66	0.00	886.98	
1N/14W-19F03S	CS-44	271.49	281.38	271.24	176.31	229.64	15.52	0.00	0.00	0.00	0.00	0.00	0.00	1245.62	
1N/14W-21B01S	V-13	0.00	18.73	0.00	0.00	0.00	0.00	14.26	8.81	42.63	2.73	0.00	0.00	82.36	
1N/14W-21C01S	V-16	0.00	152.53	142.95	0.00	82.55	99.79	44.79	17.98	188.45	78.18	152.64	16.28	980.16	
1N/14W-21G01S	V-24	144.51	175.81	188.80	0.00	188.47	136.36	114.14	76.63	198.67	92.65	114.03	22.29	1331.47	
1N/14W-21H01S	V-22	0.00	61.09	0.00	0.00	51.84	3.56	51.54	7.42	50.39	37.83	54.22	10.81	328.70	
1N/14W-24D03S	H-26	273.26	247.66	262.60	80.60	133.17	56.06	19.10	148.42	178.89	245.69	267.98	98.24	1944.27	
1N/14W-24D04S	H-27	272.41	197.59	251.65	301.29	65.24	64.55	79.45	128.96	174.10	179.66	222.18	101.61	2032.69	
1N/14W-24D05S	H-28	0.00	288.25	291.14	0.00	212.88	3.65	0.00	332.87	357.94	487.29	336.17	95.84	2339.16	
1N/14W-24D06S	H-29	194.65	213.52	214.55	0.00	80.33	225.14	121.79	36.88	278.75	383.77	383.24	412.28	2536.82	
1N/14W-24F06S	H-25	216.99	186.45	0.00	0.00	54.02	64.16	19.47	156.36	242.22	283.93	277.27	192.54	1613.41	
1N/14W-24H03S	CS-52	4.37	5.71	5.53	7.38	1.83	2.74	4.80	5.97	7.42	6.54	8.24	4.92	67.45	
1N/15W-01K02S	NH-34	266.21	36.16	0.00	0.00	139.74	86.32	0.00	108.84	0.00	45.91	0.00	0.00	703.18	
1N/15W-01K04S	NH-36	0.00	257.02	0.00	0.00	180.44	0.00	0.00	0.00	337.14	85.93	0.00	0.00	860.53	
1N/15W-01K05S	NH-37	0.00	183.63	0.00	0.00	27.57	131.64	0.00	0.37	169.78	243.25	452.43	438.87	1587.54	
1N/15W-01P04S	NH-25	376.19	52.87	0.00	0.00	0.00	0.00	0.00	0.00	44.51	226.81	0.00	0.00	699.58	
1N/15W-01Q02S	NH-22	155.26	18.14	0.00	0.00	0.00	0.00	0.00	0.00	48.00	123.12	138.09	0.00	483.51	
1N/15W-01Q03S	NH-23	121.99	0.00	0.00	0.00	0.00	0.00	0.00	60.73	0.00	146.09	23.30	0.00	304.11	
1N/15W-01Q04S	NH-26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.82	47.82	
1N/15W-02P01S	NH-7	212.48	28.86	0.00	7.14	0.00	0.00	0.00	57.88	27.53	89.37	99.63	0.00	521.93	
1N/15W-02Q02S	NH-32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.82	41.99	0.00	0.00	110.72	
1N/15W-02P01S	NH-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	69.24	81.43	0.00	150.67	
1N/15W-02P02S	NH-33	214.53	0.00	0.00	0.00	0.00	0.00	0.00	100.41	0.00	113.00	18.46	0.00	447.20	
2N/14W-12C01S	TGPLT	89.12	76.52	34.44	37.47	19.77	67.65	139.16	157.58	148.62	149.84	143.96	136.61	1202.54	
2N/14W-13D05S	LNGNR	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	
2N/14W-13E03S	FTHL3	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	
2N/14W-13E04S	FTHL2	62.63	60.06	56.42	2.60	23.39	0.00	0.00	0.00	0.00	0.14	0.00	0.00	205.64	
2N/14W-14A01S	FNNK1	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	
1S/13W-04K01S	P-7	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.07	0.05	0.07	0.00	0.28	
1S/13W-04L02S	P-4	92.40	89.53	91.83	91.14	0.00	0.02	0.02	0.00	0.02	0.07	95.25	85.86	546.14	
1S/13W-04L03S	P-6	188.24	185.49	186.29	189.58	0.00	0.02	0.05	151.33	183.65	184.23	175.28	144.38	1278.64	
1S/13W-04L04S	P-5	188.36	189.18	99.62	185.72	0.00	0.02	0.07	189.64	125.00	124.31	128.87	98.71	948.20	
PARTY TOTALS:		7341.25	7244.58	5789.14	1293.44	2790.15	2224.86	1737.78	3943.58	7026.52	9225.83	6678.95	3865.77	59006.69	
MENA, JOHN AND BARBARA															6805
2N/14W-11N01S	4973J	0.00E	0.00E	0.00E	0.00E	0.00E	0.00E	0.00E	0.00E	0.00E	0.00E	0.00E	0.00E	0.00	
SEARS ROEBUCK AND COMPANY															6900
1N/13W-20P01S	3945-	2.73	2.13	0.77	0.15	0.84	1.01	2.50	1.57	0.39	9.18	2.33	3.11	22.67	
SOUTHERN SERVICE COMPANY															6900
1N/13W-29F01S	METR1	0.85	1.47	0.84	1.19	1.01	1.46	0.86	1.00	1.06	1.31	1.67	1.47	14.33	
1N/13W-29F01S	METR2	1.28	1.28	1.48	0.95	0.88	1.13	0.90	1.08	1.29	0.76	1.63	0.94	13.44	
1N/13W-29F01S	METR3	0.72	0.58	1.04	0.93	0.83	1.02	0.78	1.34	1.04	0.94	1.08	1.51	11.79	
PARTY TOTALS:		2.85	3.29	3.37	3.07	2.72	3.61	2.54	3.52	3.41	3.01	4.38	3.92	39.52	

Note: 1 acre-foot = 1.2335 cubic dekameters

TABLE B-1
1977-78 WATER YEAR
GROUND WATER EXTRACTIONS
(CONTINUED)
(ACRE-FEET)

STATE WELL NUMBER	OWNERS DESIG-NATION	1977 OCT	NOV	DEC	1978 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL	PARTY IDENT.
SAN FERNANDO BASIN															
SPORTSMENS LODGE, INCORPORATED															6920
1N/15W-25D01S	1	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.17	
TOLUCA LAKE PROPERTY OWNERS ASSN															6940
1N/14W-26B01S	3845F	3.33	2.20	1.68	0.08	0.53	0.39	0.05	0.00	0.00	0.00	0.00E	0.00E	8.26	
VALHALLA MEMORIAL PARK															6950
1N/14W-04N03S	4	16.01	6.38	7.23	0.00	0.00	1.56	0.87	19.78	34.78	32.00	50.65	28.88	198.14	
WALT DISNEY PRODUCTIONS															6970
1N/14W-23F01S	EAST	3.50	105.28	62.96	94.97	4.44	8.11	76.19	79.28	0.80	0.00	123.16	24.53	574.34	
1N/14W-23E02S	WEST	65.38	21.33	0.00	0.00	61.64	81.95	0.00	55.52	107.70	144.64	12.54	121.63	672.33	
PARTY TOTALS:		68.88	126.53	62.96	94.97	66.08	82.06	76.19	134.80	107.78	144.64	135.70	144.16	1246.67	
AREA TOTALS:		7945.86	7772.49	6067.80	1579.14	3857.89	2647.78	2215.58	4865.66	7658.63	11929.14	9461.58	5322.82	78420.43	
SYLMAR BASIN															
BROWN, CHARLES T															6540
3N/15W-36K03S	1	0.02E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	
CITY OF LOS ANGELES															6770
2N/15W-04	S MISSN	289.58	280.62	287.95	287.14	262.67	291.92	285.47	356.20	485.17	443.89	476.15	445.11	4191.87	
PLUMB AND MERSH															6850
3N/15W-25G01S	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															6880
3N15W27D01S	7-A	45.14	47.89	23.41	0.00	0.00	5.90	7.12	63.73	28.42	12.53	31.49	20.33	285.96	
3N/15W-34A01S	4	18.57	12.64	15.29	13.44	20.48	18.83	19.22	49.26	36.06	28.26	13.89	20.81	265.15	
3N/15W-34R02S	2 A	180.89	178.58	129.88	154.51	166.35	182.25	178.11	50.54	143.85	227.24	226.63	100.83	1918.86	
3N/15W-34C01S	3	12.52	2.29	52.75	32.51	3.94	4.70	3.66	126.34	122.26	67.02	29.44	112.26	569.69	
PARTY TOTALS:		256.32	241.40	221.33	200.46	190.77	211.68	208.11	289.87	330.59	335.05	300.65	253.43	3039.66	
AREA TOTALS:		545.93	522.03	509.29	487.61	453.45	503.61	491.59	646.08	815.77	778.95	776.81	698.55	7231.67	

Note: 1 acre-foot = 1.2335 cubic dekametres

TABLE 8-1
1977-78 WATER YEAR
GROUND WATER EXTRACTIONS
(CONTINUED)
(ACRE-FEET)

STATE WELL NUMBER	OWNERS DESIG-NATION	PRODUCTION 1977 OCT	1977 NOV	1977 DEC	1978 JAN	1978 FEB	1978 MAR	1978 APR	1978 MAY	1978 JUN	1978 JUL	1978 AUG	1978 SEP	TOTAL	PARTY IDENT
VERDUGO BASIN															
CRESCENTA VALLEY COUNTY															6610
DIVERSION	PICK	3.64	3.50	3.59	3.61	3.25	4.37	5.60	6.05	5.85	5.92	5.83	5.62	56.83	
1N/13W-03D05S	8	21.11	42.52	44.19	44.44	23.83	0.86	1.76	40.88	44.18	46.05	42.22	45.31	399.27	
2N/13W-28N01S	9	10.65	0.97	0.15	0.00	0.00	0.00	0.00	14.05	36.23	29.76	12.28	10.18	114.21	
2N/13W-33C01S	7	0.00	6.03	0.79	0.00	0.04	0.80	0.00	3.71	5.78	8.47	4.56	3.80	33.18	
2N/13W-33C03S	1	2.68	1.93	0.00	0.00	2.06	0.80	0.00	7.28	10.94	25.55	26.84	23.98	100.46	
2N/13W-33C06S	5	1.24	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.88	0.36	0.00	0.16	2.17	
2N/13W-33R01S	14	54.04	47.38	48.15	49.49	47.43	54.02	55.93	50.73	49.48	53.08	52.86	47.04	609.63	
2N/13W-33R03S	6	14.52	0.00	0.02	0.03	0.01	0.00	0.00	0.17	0.05	0.01	0.00	0.03	14.84	
2N/13W-33R05S	10	61.04	58.48	41.93	16.12	8.96	3.21	0.20	60.41	57.68	74.22	74.95	45.14	502.74	
2N/13W-33R06S	12	12.87	9.19	5.66	1.22	31.48	44.35	47.17	10.77	1.96	2.02	2.78	1.85	171.26	
PARTY TOTALS:		181.79	170.40	144.47	114.91	117.06	106.81	112.66	194.38	212.15	245.38	221.52	183.11	2004.59	
CITY OF GLENDALE															6680
1N/13W-10A01S	GL-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.42	31.01	21.93	101.36	
1N/13W-10F03S	GL3-4	99.46	94.52	90.52	87.23	84.10	88.62	88.98	15.19	140.56	147.51	142.99	85.89	1165.57	
1N/13W-15L01S	VPCKP	29.55	85.93	89.88	92.66	18.10	63.62	91.39	0.21	3.37	0.00	0.00	0.00	474.71	
PARTY TOTALS:		129.01	180.45	180.40	179.89	102.20	152.24	180.37	15.40	143.93	195.93	174.00	107.82	1741.64	
AREA TOTALS:		310.80	350.85	324.82	294.80	219.26	259.05	293.03	209.78	356.08	441.31	395.52	290.93	3746.23	
BASIN TOTALS:		8756.65	8597.68	6878.50	2361.55	3729.80	3424.54	3002.20	5721.52	8830.48	13149.40	10633.91	6312.30	81398.33	

Note: 1 acre-foot = 1.2335 cubic dekametres

Appendix B

MEAN DAILY DISCHARGE AT KEY SURFACE RUNOFF GAGING STATIONS

1977-78
MEAN DAILY DISCHARGE OF LOS ANGELES RIVER ABOVE ARROYO SECO
In second-feet

Station F57C-R

Day	October	November	December	January	February	March	April	May	June	July	August	September
1	7.2	7.2	7.7	12.2	18.5	13100.0	819.0	265.0	23.1	17.5	13.5	11.1
2	9.2	7.7	7.2	11.0	18.5	6150.0	476.0	217.0	25.0	19.4	18.1	11.1
3	8.2	8.2	6.7	148.0	17.1	1130.0	350.0	246.0	24.1	20.3	29.5	9.2
4	6.7	7.7	7.2	2300.0	16.5	22300.0	329.0	228.0	29.6	16.2	30.1	46.8
5	7.7	28.6	7.2	169.0	1860.0	9950.0	350.0	256.0	24.1	20.3	18.5	617.0
6	7.7	42.8	8.7	130.0	518.0	9150.0	517.0	286.0	30.7	23.1	15.7	130.0
7	7.7	9.2	8.2	85.8	1530.0	1350.0	373.0	265.0	22.2	22.2	13.4	80.8
8	7.7	7.2	7.2	24.6	1050.0	1050.0	350.0	237.0	22.2	19.4	12.7	19.1
9	7.2	7.2	7.2	1620.0	9810.0	1030.0	236.0	256.0	18.5	18.1	16.7	10.2
10	8.2	8.2	8.2	1590.0	12000.0	885.0	293.0	139.0	17.5	20.7	12.7	9.2
11	9.3	5.8	8.2	165.0	2610.0	540.0	246.0	82.7	20.3	40.6	11.6	11.6
12	6.2	5.8	8.7	48.1	4360.0	527.0	219.0	139.0	25.0	22.4	12.2	10.7
13	6.7	5.8	7.7	27.5	2180.0	676.0	209.0	70.2	25.0	30.5	12.2	19.4
14	6.2	5.8	7.7	2680.0	327.0	185.0	228.0	31.9	26.1	13.1	13.5	29.1
15	5.4	6.2	7.7	2480.0	116.0	174.0	2530.0	22.2	18.6	13.0	13.7	1615.0
16	8.2	16.1	7.2	4660.0	116.0	350.0	819.0	21.2	15.8	12.2	27.4	560.0
17	9.2	6.2	130.0	540.0	304.0	139.0	668.0	16.5	20.3	11.1	11.1	218.0
18	7.7	6.2	455.0	220.0	304.0	327.0	350.0	22.2	19.4	10.9	31.6	89.0
19	7.7	5.8	22.4	269.0	293.0	316.0	316.0	16.2	21.2	12.5	11.1	30.2
20	7.2	5.8	8.2	34.1	293.0	304.0	286.0	11.9	21.2	16.5	47.0	52.1
21	6.7	6.7	11.0	19.2	293.0	2330.0	256.0	34.0	22.2	11.5	41.9	38.9
22	6.7	7.7	54.3	30.7	286.0	4140.0	237.0	31.9	18.4	12.8	17.8	37.5
23	6.7	7.7	32.4	30.7	284.0	899.0	228.0	30.7	18.4	11.8	13.0	38.9
24	7.2	7.2	15.0	28.4	284.0	448.0	232.0	35.1	16.5	14.2	29.8	85.9
25	7.2	7.2	122.0	29.6	284.0	362.0	394.0	200.0	13.5	14.9	13.8	62.0
26	8.2	7.2	3090.0	28.2	274.0	284.0	219.0	134.0	14.9	20.1	38.1	48.6
27	6.7	7.7	1210.0	26.1	284.0	219.0	200.0	27.1	13.5	27.9	41.7	50.0
28	7.2	8.7	5290.0	20.1	4160.0	159.0	209.0	62.0	18.6	11.9	41.7	56.0
29	7.2	7.7	161.0	19.4		130.0	200.0	96.5	24.1	25.0	48.6	59.0
30	6.7	8.2	49.5	19.4		440.0	219.0	62.0	23.1	13.5	45.8	70.7
31	7.2		17.5	17.1		1960.0		25.1		11.6	15.6	
Total	229.0	276.5	10868.1	21661.4	50888.8	79008.0	12467.0	4026.8	618.6	562.9	626.7	4221.8
Mean Daily Discharge	7.4	9.2	350.6	698.8	1817.5	2548.6	415.6	129.9	21.1	26.0	20.2	107.4
Max. Daily Discharge	9.3	42.8	5290.0	4660.0	12000.0	22300.0	2530.0	139.0	34.2	30.5	47.6	617.0
Min. Daily Discharge	5.4	5.8	6.7	11.0	16.5	130.0	150.0	16.5	13.5	11.6	11.6	19.4
Runoff in Acre-feet	454.0	548.0	21557.0	42969.0	100916.0	156710.0	24728.0	7987.0	1267.0	1474.0	1619.0	8196.0

Maximum Stage 16.62 feet at 0200 on Feb. 10, 1978 Discharge 52,700 second-feet Total acre-feet 1977-78 [illegible]

1977-78
MEAN DAILY DISCHARGE OF BIG TUJUNGA CREEK BELOW BIG TUJUNGA DAM
In second-feet

Station F-188-R

Day	October	November	December	January	February	March	April	May	June	July	August	September
1	4.2	8.6	.4	19.6	16.4	1500	475	150	118	33.1	2.5	12.7
2	3.8	8.6	.4	19.2	9.1	1280	206	148	112	33.1	2.8	12.9
3	3.8	6.5	.4	9.5	9.1	1270	206	132	116	33.1	3.0	12.9
4	3.7	1.4	.3	.8	9.1	1700	206	128	112	34.4	3.2	13
5	4.0	1.3	.3	30.1	9.1	2360	228	128	116	34.4	3.2	40.3
6	4.7	1.1	.3	50.0	19.4	1690	150	111	120	34.4	3.0	65.3
7	4.7	1.1	.3	50.0	26.8	1140	193	128	122	34.4	12.2	59.9
8	4.0	1.1	.3	50.0	86.9	699	209	128	130	34.4	51.9	46.8
9	3.7	1.0	.3	50.0	462.0	638	230	80.1	128	33.1	50.5	9.2
10	3.7	.9	.4	63.5	3520	366	191	53.2	128	33.1	50.5	5.9
11	4.5	.9	.4	84.0	1200	246	140	72	128	31.8	50.5	2.4
12	5.0	.8	.4	84.0	602	293	148	86	130	31.8	50.5	.4
13	4.2	.8	.4	84.0	513	293	176	86	132	33.1	50.5	.5
14	7.8	.8	.4	84.0	468	293	180	84	132	34.4	50.5	*
15	10.5	.6	.4	456.0	355	293	239	84	134	34.7	32.1	2.2
16	10.5	.6	.4	219	288	212	256	84	134	42.5	.8	.5
17	10.8	.5	.6	177	203	160	216	84	132	24.8	.5	2.8
18	10.8	.5	2.0	128	57.2	160	206	84	126	15.7	.5	2.0
19	10.8	.6	1.1	128	111	160	206	84	120	18.4	.8	6.3
20	11.1	.5	2.4	128	10.5	160	175	84	110	19.7	10	14.3
21	11.1	.5	.9	128	9.2	160	136	84	102	14.6	1.6	13.0
22	11.1	.5	.6	128	81.1	362	170	84	92	50.5	6.5	14.3
23	11.1	.5	.6	80.9	154	309	168	98.5	88	53.2	11.2	14.3
24	11.4	.5	.6	26.2	154	175	152	126	84	51.9	10.3	14.3
25	11.4	.5	.5	26.2	152	142	134	118	82	51.9	9.9	14.3
26	11.4	.4	1.9	26.8	152	142	132	106	80	43.8	9.2	14.3
27	10.7	.4	2.1	26.8	177	117	140	102	77.1	15.4	8.8	14.3
28	8.6	.4	36.9	27.4	341	84	148	104	76	2.4	11.5	14.3
29	8.6	.4	70.3	27.4		86	148	102	59.2	2.4	14.3	14.3
30	8.6	.4	10.7	27.4		226	148	110	33.1	2.4	14.3	14.3
31	8.6	.4	19.6	27.4		769		122		2.4	13.0	
Total	238.9	42.7	156.6	2467.2	9197.9	19,465	5752	3174.8	3253.6	935.3	531.1	452.0
Mean Daily Discharge	7.7	1.4	5.1	79.6	328	628	192	102	108	30.2	17.1	15.1
Max. Mean Daily Discharge	11.4	8.6	70.3	456	3520	3700	475	150	134	53.2	51.9	65.3
Min. Mean Daily Discharge	3.7	0.4	0.3	0.8	9.1	84	132	12	33.1	2.4	0.5	0
Runoff in Acre-feet	473.9	84.7	310.6	4893.5	18,243.8	38,608.1	11,408.9	6297.1	6453.4	1855.1	1053.4	896.5

Maximum Stage 17.30 feet at 0215 on February 10, 1978 Discharge 18,300 second-feet Total acre-feet 1977-78 90,579.1

1977-78
MEAN DAILY DISCHARGE OF VERDUGO WASH AT ESTELLE
In second feet

Station F252R

Day	October	November	December	January	February	March	April	May	June	July	August	September
1	0.5	1.8	1.2	0.7	2.0	106.0	14.0	2.8	+	1.2	0.7	1.5
2	0.5	1.8	1.2	0.7	1.5	242.0	14.0	2.8	+	1.5	0.7	1.5
3	0.5	1.5	1.2	16.2	1.2	97.2	14.0	5.0	0.1	1.5	0.7	1.5
4	1.2	1.5	1.2	117.0	1.0	683.0	14.0	7.3	0.5	1.5	0.7	1.5
5	1.5	9.8	1.5	16.7	114.0	394.0	12.9	2.3	0.2	1.5	0.7	1.2
6	1.5	1.2	1.5	58.1	38.1	320.0	11.8	1.0	0.1	1.5	1.0	0.1
7	1.5	0.7	1.5	11.8	131.0	283.0	9.5	0.7	0.1	1.2	0.7	0.1
8	1.8	0.7	1.8	2.8	117.0	237.0	8.4	0.7	0.1	1.2	0.5	0.1
9	1.8	0.7	1.8	50.8	596.0	194.0	7.3	0.7	0.1	1.5	0.7	0.1
10	2.0	0.7	1.8	209.0	1700.0	159.0	6.2	0.7	0.1	1.5	0.7	0.1
11	2.0	0.7	2.0	2.8	733.0	123.0	5.0	0.7	0.1	1.2	0.7	0.5
12	2.0	0.7	2.0	1.5	387.0	90.8	3.9	0.7	0.1	1.2	0.7	0.5
13	2.0	0.7	2.0	1.5	676.0	66.0	2.8	0.5	0.1	1.0	0.7	0.1
14	2.0	0.7	2.1	200.0	33.2	50.0	2.8	0.5	0.1	1.0	0.7	0.1
15	2.0	0.7	2.1	171.0	33.2	35.6	2.8	0.5	0.1	1.0	0.7	0.2
16	2.0	0.7	2.3	261.0	33.2	30.8	1.3	0.5	0.1	1.2	0.7	0.1
17	2.1	0.7	27.7	6.2	33.2	26.0	2.8	0.5	0.1	1.0	0.7	0.1
18	2.1	0.7	39.6	9.5	38.0	21.2	2.8	0.5	0.1	1.0	1.0	0.7
19	2.5	0.7	1.0	32.5	35.6	16.4	2.8	0.2	0.1	1.0	1.0	0.1
20	2.5	0.7	1.0	6.2	35.6	36.2	2.8	0.2	0.1	1.0	1.0	0.1
21	2.5	0.7	1.2	3.9	42.0	114.0	2.8	0.2	0.1	1.0	0.5	0.1
22	2.5	0.7	1.0	3.9	42.0	202.0	2.8	0.2	0.1	1.0	0.2	0.1
23	2.5	0.7	1.5	3.9	46.0	176.0	2.8	0.2	0.1	1.2	1.0	+
24	2.5	0.7	1.0	3.9	50.0	136.0	2.8	0.5	0.1	1.2	1.0	0.1
25	1.8	1.0	8.7	2.8	50.0	110.0	2.8	0.5	0.1	1.2	0.7	0.1
26	1.5	1.0	111.0	2.8	54.0	78.0	2.8	0.7	0.5	1.0	0.2	+
27	1.2	1.2	78.9	2.8	54.0	58.0	2.8	0.5	1.0	1.2	0.5	+
28	1.2	1.2	393.0	2.8	920.0	38.0	2.8	0.5	1.0	1.2	0.7	0.1
29	1.2	1.0	12.1	2.8		26.0	2.8	0.5	1.2	1.0	1.2	0.1
30	1.5	1.2	2.5	2.8		18.8	2.8	0.5	1.2	0.7	1.5	0.1
31	1.5		1.2	2.3		14.0		0.1		0.7	1.5	
Total	54.1	46.8	707.0	1210.7	5997.8	4182.0	171.9	33.2	7.7	36.1	24.0	10.9
Mean Daily Discharge	1.8	1.2	22.8	39.1	214.2	134.9	5.7	1.1	0.3	1.2	0.8	0.4
Max. Mean Daily Discharge	2.5	9.8	393.0	261.0	1700.0	683.0	14.0	7.3	1.2	1.5	1.5	1.5
Min. Mean Daily Discharge	0.5	0.7	1.0	0.7	1.0	14.0	2.8	0.1	+	0.7	0.2	+
Runoff in Acre-feet	108.0	73.0	1402.0	2401.0	11896.0	8295.0	341.0	66.0	15.0	72.0	48.0	22.0

Maximum Stage 4.51 feet at 0200 on February 10, 1978 Discharge 9820 second-feet Total acre-feet 1977-78 24,739

1977-78
DAILY DISCHARGE OF LOS ANGELES RIVER AT TUJUNGA AVENUE
In second-feet

Station F 300-B

Day	October	November	December	January	February	March	April	May	June	July	August	September
1	1.5	1.5	1.1	4.0	8.0	10700.0	950.0	205.0	18.1	16.7	17.9	29.0
2	1.5	1.5	1.4	2.0	7.6	5530.0	810.0	162.0	16.2	14.4	23.1	29.8
3	1.4	1.4	1.4	258.0	7.2	2710.0	810.0	135.0	15.9	14.4	24.5	29.0
4	1.4	1.1	1.3	1550.0	7.0	19200.0	824.0	115.0	17.5	16.4	22.3	27.2
5	1.3	15.4	1.0	72.7	1100.0	8540.0	810.0	98.9	19.6	15.4	21.2	649.0
6	1.3	5.5	0.9	887.0	358.0	3970.0	1030.0	84.8	19.9	13.5	20.3	157.0
7	1.3	2.0	1.5	27.5	1010.0	2640.0	847.0	72.8	17.3	13.2	18.8	21.2
8	1.3	1.5	1.5	10.0	861.0	1680.0	810.0	61.5	19.3	13.0	12.9	14.1
9	1.3	1.4	1.4	1580.0	7930.0	1390.0	810.0	51.4	18.5	13.7	11.2	12.0
10	1.3	1.4	1.5	2340.0	13800.0	1050.0	810.0	43.6	20.3	16.4	10.9	13.0
11	1.3	1.4	1.8	79.3	1980.0	814.0	810.0	35.8	16.2	13.8	12.0	12.8
12	1.3	1.4	1.9	21.9	3520.0	754.0	796.0	28.3	18.1	14.6	11.1	14.0
13	1.3	1.3	1.3	11.8	1310.0	740.0	824.0	22.4	18.9	59.1	11.1	13.2
14	1.4	1.3	1.3	1710.0	649.0	740.0	852.0	17.2	17.8	13.2	11.6	12.6
15	1.3	0.8	1.4	1640.0	532.0	740.0	2040.0	20.5	15.9	11.8	11.5	277.0
16	1.8	1.0	1.4	3300.0	435.0	768.0	860.0	37.1	18.0	12.1	11.3	680.0
17	1.4	1.3	136.0	601.0	250.0	782.0	782.0	25.0	15.9	11.3	10.4	66.3
18	1.3	1.6	120.0	271.0	181.0	782.0	782.0	29.8	15.9	11.6	10.2	54.7
19	1.4	1.4	3.3	561.0	146.0	782.0	782.0	24.4	16.7	11.1	17.5	47.4
20	1.4	1.0	1.9	80.9	132.0	782.0	782.0	21.2	15.9	11.6	23.7	41.4
21	0.9	1.1	13.3	32.5	118.0	951.0	782.0	23.3	16.2	11.3	22.1	32.8
22	0.9	1.3	21.0	19.2	106.0	2270.0	782.0	21.7	16.4	11.7	20.9	31.0
23	1.4	2.0	4.2	14.7	223.0	810.0	782.0	20.8	16.4	12.0	20.0	31.0
24	1.9	2.4	1.9	10.9	112.0	782.0	768.0	54.4	16.4	13.0	22.0	31.3
25	1.5	1.8	71.5	8.9	21.2	782.0	712.0	124.0	16.7	14.2	23.4	32.5
26	1.3	1.8	1600.0	15.2	41.3	782.0	614.0	82.8	17.0	14.7	26.3	32.9
27	2.2	1.3	482.0	8.0	47.1	782.0	516.0	19.5	17.2	22.7	26.2	32.5
28	1.1	1.0	2790.0	7.2	4300.0	782.0	424.0	54.1	22.1	14.4	25.8	31.3
29	0.9	1.1	41.5	7.2		782.0	352.0	72.5	24.8	13.8	25.8	30.6
30	1.1	1.4	15.5	7.6		916.0	286.0	47.9	24.0	13.7	28.5	29.4
31	1.4		4.8	8.0		1620.0		18.4		14.3	27.6	
Total	42.4	80.4	5329.0	15148.5	39192.4	78353.0	23899.0	1831.1	539.1	473.1	580.5	2516.0
Mean Daily Discharge	1.4	2.7	172.0	489.0	1400.0	2460.0	795.0	59.1	18.0	15.3	18.7	83.9
Max Daily Discharge	2.2	15.4	2790.0	3300.0	13800.0	19200.0	2040.0	205.0	24.8	59.1	27.6	680.0
Min. Daily Discharge	0.9	0.8	0.9	2.0	7.0	740.0	286.0	17.2	15.9	11.1	10.2	12.0
Runoff in Acre-feet	84.1	159.4	10569.9	30046.6	77737.0	151444.0	47284.0	3631.9	1069.1	938.4	1151.4	4990.4

Maximum Stage 12.32 feet at 0132 on February 10, 1978 Discharge 30,100 second-feet Total acre-feet 1977-78 329,106.4

1977-78

MEAN DAILY DISCHARGE OF PACOIMA DAM FLUME IN PACOIMA CANYON

In second-feet

Station F118**K**

Day	October	November	December	January	February	March	April	May	June	July	August	September
1	+	+	+	+	+	392.7	130.5	57.3	60.2	6.0	6.0	6.0
2	+	+	+	+	+	481.8	94.0	39.6	59.3	6.0	6.0	6.0
3	+	+	+	+	4.8	531.3	94.0	39.6	58.4	14.1	5.5	6.0
4	+	+	+	+	13.1	723.8	94.0	40.2	56.6	20.0	5.5	5.5
5	+	+	+	+	11.1	940.0	82.4	60.5	53.7	18.8	5.1	5.1
6	+	+	+	+	9.2	936.7	98.0	75.7	55.7	18.8	5.1	5.1
7	+	+	+	+	+	544.0	98.0	75.7	55.7	9.4	5.1	5.1
8	+	+	+	+	+	341.0	98.0	75.7	53.0	4.6	5.1	4.6
9	+	+	+	+	16.0	340.0	98.0	75.7	52.1	4.6	5.1	4.6
10	+	+	+	+	871.3	197.6	98.0	46.2	51.1	92.9	5.1	4.6
11	+	+	+	+	697.1	95.0	98.0	29.6	51.1	155.0	5.1	5.1
12	+	+	+	44.6	373.2	111.0	98.0	30.4	51.1	150.9	5.5	5.1
13	+	+	+	40.1	327.7	154.6	98.0	31.2	50.4	148.2	5.5	5.1
14	+	+	+	18.8	235.8	169.6	98.0	31.2	49.6	52.9	6.0	5.1
15	+	+	+	217.1	137.4	168.6	121.4	32.0	49.6	0.3	6.0	5.5
16	+	+	+	140.4	112.5	168.6	100.1	32.8	49.6	0.3	6.0	5.5
17	+	+	+	122.1	290.2	130.7	86.4	33.6	49.6	0.3	6.0	5.5
18	+	+	+	131.4	98.0	94.0	88.1	32.8	49.6	4.6	6.0	5.5
19	+	+	+	111.4	98.0	94.0	88.1	34.4	20.8	8.9	5.5	5.5
20	+	+	+	65.6	98.0	94.0	88.1	34.4	6.6	8.2	5.5	5.5
21	+	+	+	20.1	81.3	94.0	88.1	35.2	12.1	7.7	5.5	5.5
22	+	+	+	70.1	64.3	94.0	88.1	35.2	12.1	8.2	6.0	5.5
23	+	+	+	51.1	64.3	94.0	88.1	36.0	11.5	8.2	6.0	5.5
24	+	+	+	16.7	77.6	94.0	88.1	36.0	10.8	8.9	6.0	5.1
25	+	+	+	26.1	100.0	92.0	88.1	36.8	9.5	8.8	6.0	6.0
26	+	+	+	+	66.4	92.0	88.1	36.8	7.7	6.6	6.0	6.2
27	+	+	+	+	79.4	92.0	88.1	36.8	7.7	6.6	6.0	6.2
28	+	+	+	+	432.9	92.0	88.1	36.8	7.1	6.6	6.0	3.7
29	+	+	+	+		92.0	88.1	36.8	6.6	6.6	5.0	3.3
30	+	+	+	+		92.0	88.1	52.8	6.6	6.6	5.0	3.3
31	+	+	+	+		154.2		60.2		6.6	5.0	
Total	+	+	+	1215.8	4381.6	7811.2	2830.2	1347.6	1078.4	811.7	173.2	150.9
Mean Daily Discharge	+	+	+	39.2	155.8	252.0	94.1	43.5	35.9	26.2	5.6	5.0
Max. Mean Daily Discharge	+	+	+	237.1	871.3	950.0	130.4	75.7	60.2	155.0	6.0	6.0
Min. Mean Daily Discharge	+	+	+	+	+	92.0	82.4	29.6	6.6	0.3	5.0	3.3
Runoff in Acre-feet	+	+	+	2411.0	8651.0	15493.0	5614.0	2673.0	2139.0	1610.0	344.0	299.0

Maximum Stage (calv.) feet at 1200 on Feb. 10, 1978 Discharge 1300 second-feet Total acre-feet 1977-78 39,234.0

1977-78

MEAN DAILY DISCHARGE OF BURBANK-WESTERN STORM DRAIN AT RIVERSIDE DRIVE

In second-feet

Station E 285-R

Day	October	November	December	January	February	March	April	May	June	July	August	September
1	11.9	11.9	10.6	9.1	10.6	542.0	152.0	54.5	11.9	13.1	13.1	13.1
2	11.9	11.9	10.6	10.6	10.6	265.0	129.0	41.7	11.9	10.6	13.1	13.1
3	11.9	10.6	10.6	30.0	10.6	242.0	101.0	21.2	11.9	10.6	13.1	13.1
4	11.9	10.6	10.6	131.0	10.6	1260.0	92.2	13.1	10.6	11.9	13.1	14.6
5	11.9	12.6	11.9	11.9	83.5	364.0	92.2	13.1	11.9	11.9	13.1	42.4
6	11.9	9.1	11.9	76.0	23.0	249.0	119.0	13.1	11.9	11.9	13.1	24.3
7	11.9	9.1	11.9	10.6	107.0	235.0	152.0	13.1	10.6	11.9	14.6	11.9
8	11.9	9.1	11.9	10.6	90.4	215.0	114.0	13.1	11.9	11.9	13.1	11.9
9	11.9	9.1	11.9	56.4	480.0	169.0	96.6	13.1	11.9	11.9	11.9	10.6
10	11.9	11.9	11.9	134.0	790.0	129.0	83.4	13.1	10.6	11.9	11.9	10.6
11	11.9	10.6	10.6	11.9	235.0	96.6	72.0	13.1	10.6	11.9	11.9	10.6
12	11.9	10.6	10.6	10.6	261.0	68.5	61.5	13.1	10.6	11.9	11.9	9.1
13	11.9	10.6	10.6	10.6	234.0	47.5	54.5	13.1	10.6	11.9	11.9	11.9
14	11.9	10.6	10.6	192.0	222.0	32.6	44.0	13.1	10.6	11.9	11.9	11.9
15	11.9	10.6	10.6	83.1	195.0	23.5	237.0	13.1	10.6	11.9	11.9	11.9
16	11.9	11.9	11.9	257.0	164.0	17.1	158.0	13.1	11.9	11.9	11.9	11.9
17	11.9	11.9	17.5	18.3	129.0	13.1	129.0	11.9	13.1	13.1	13.1	11.9
18	11.9	11.9	29.6	11.9	101.0	9.1	110.0	11.9	13.1	13.1	13.1	11.9
19	11.9	11.9	10.6	39.2	87.8	5.6	92.2	11.9	13.1	13.1	11.9	11.9
20	11.9	10.6	10.6	10.6	75.5	3.9	79.0	11.9	13.1	13.1	11.9	10.6
21	11.9	11.9	11.9	10.6	65.0	55.6	65.0	11.9	13.1	13.1	13.1	10.6
22	11.9	11.9	11.9	10.6	54.5	368.0	51.0	13.1	13.1	14.6	13.1	10.6
23	11.9	10.6	11.9	10.6	47.5	181.0	37.2	11.9	13.1	14.6	15.7	11.9
24	11.9	10.6	10.6	11.9	41.7	146.0	30.3	10.6	13.1	14.6	14.6	18.5
25	11.9	10.6	19.4	13.1	34.9	129.0	77.0	11.9	13.1	13.1	14.6	17.9
26	11.9	11.9	179.0	13.1	30.3	114.0	158.0	11.9	14.6	13.1	13.1	10.6
27	11.9	11.9	72.1	11.9	25.8	105.0	129.0	10.6	13.1	14.6	13.1	10.6
28	11.9	10.6	387.0	11.9	375.0	92.2	105.0	10.6	13.1	14.6	13.1	10.6
29	11.9	10.6	21.3	10.6		83.4	87.8	13.1	13.1	14.6	13.1	10.6
30	11.9	10.6	10.6	10.6		77.8	72.0	11.9	14.6	11.9	14.6	10.6
31	11.9		10.6	11.9		200.0		11.9		13.1	13.1	
Total	368.9	328.3	993.0	1252.2	3995.3	5539.5	2980.9	464.7	366.4	392.0	402.7	401.7
Mean Daily Discharge	11.9	10.9	32.0	40.4	143.0	179.0	99.4	15.0	12.2	12.6	13.0	13.4
Max. Mean Daily Discharge	11.9	12.6	387.0	257.0	790	1260	237.0	54.5	14.6	14.6	15.7	42.4
Min. Mean Daily Discharge	11.9	9.1	10.6	9.1	10.6	3.9	30.3	10.6	11.6	10.6	11.9	9.1
Runoff in Acre-feet	732.0	651.0	1970.0	2484.0	7924.0	10987.0	5912.0	922.0	727.0	777.0	799.0	797.0

Maximum Stage 6.28 feet at 0133 on Feb. 10, 1978 Discharge 12,300 second-feet. Total acre-feet 1977-78 34,882.0