

UCD LIBRARY

PHYSICAL
SCIENCES
LIBRARY



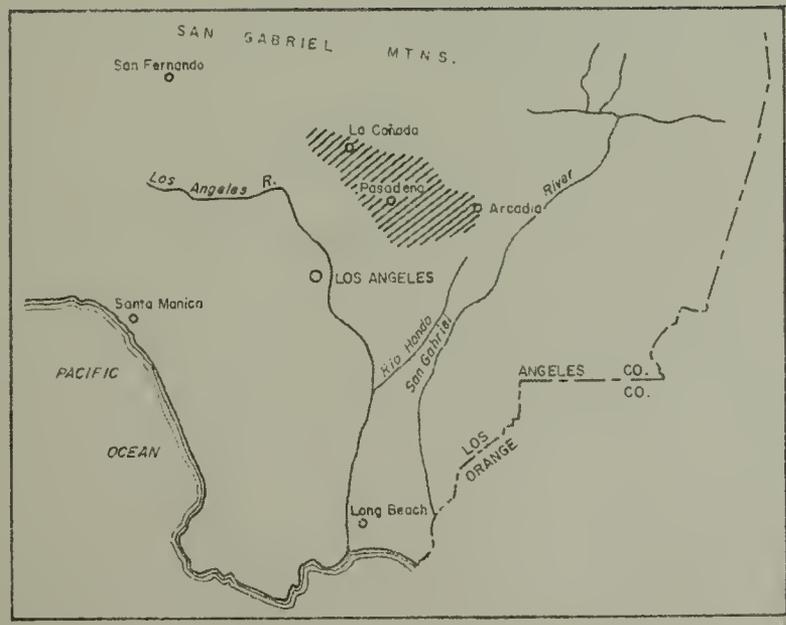
STATE OF CALIFORNIA
The Resources Agency

Department of Water Resources

BULLETIN No. 178-71

JUL 19 1972

WATERMASTER SERVICE
IN THE
RAYMOND BASIN
LOS ANGELES COUNTY



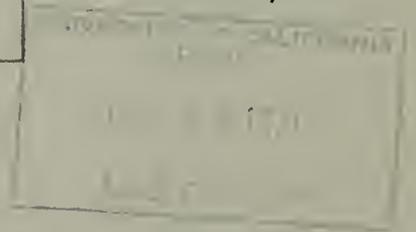
FOR PERIOD
JULY 1, 1970
THROUGH
JUNE 30, 1971

AUGUST 1971

NORMAN B. LIVERMORE, JR.
Secretary for Resources
The Resources Agency

RONALD REAGAN
Governor
State of California

WILLIAM R. GIANELLI
Director
Department of Water Resources



STATE OF CALIFORNIA

The Resources Agency

Department of Water Resources

BULLETIN No. 178-71

WATERMASTER SERVICE

IN THE

RAYMOND BASIN

LOS ANGELES COUNTY

FOR PERIOD

JULY 1, 1970 THROUGH JUNE 30, 1971

AUGUST 1971

NORMAN B. LIVERMORE, JR.

Secretary for Resources
The Resources Agency

RONALD REAGAN

Governor
State of California

WILLIAM R. GIANELLI

Director
Department of Water Resources

ABSTRACT

Below normal precipitation and runoff prevailed throughout the entire Raymond Basin area during the 1970-71 water year. As expected, water levels in the vicinity of Arroyo Seco spreading grounds and in the Eastern Unit decreased. No water rights were permanently transferred during the year. The Exchange Pool was used to temporarily transfer 40 acre-feet.

Item	: 1969-70 : Fiscal Year	: 1970-71 : Fiscal Year	: Percent of change from : previous fiscal year
Parties, number of	21	21	0
Active pumpers, number of	21	21	0
Active nonparties, number of	2	2	0
Watermaster expenses	\$24,080.38	\$29,113.84	+ 21
Watermaster expenses, per acre-foot pumped	\$ 0.74	\$ 0.94	+ 27
Valley rainfall, in inches	13.44	17.44	+ 30
Runoff, in acre-feet			
Inflow	10,718	8,315	- 22
Outflow	12,396	14,838	+ 20
Spreading operation, in acre-feet	3,521	2,807	- 20
"Decreed Right 1955", in acre-feet	30,622	30,622	0
Extractions inside basin, in acre-feet	32,577	30,990	- 5
Diversions, in acre-feet	8,102	5,140	- 37
Imports, in acre-feet	21,888	26,843	+ 23
Exports, in acre-feet	<u>-10,166</u>	<u>-11,272</u>	<u>+ 11</u>
Net Water Use, in acre-feet	52,401	51,701	- 1

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES

Ronald Reagan, Governor
Norman B. Livermore, Jr., Secretary for Resources
William R. Gianelli, Director, Department of Water Resources
John R. Teerink, Deputy Director

SOUTHERN DISTRICT

James J. Doody District Engineer and Watermaster

Mitchell L. Gould Chief, Operations Branch and Deputy Watermaster

Watermaster service in this area was conducted
and report prepared under the direction

of

Clyde B. Arnold Chief, Contracts Administration Section

by

Carlos Madrid Deputy Watermaster

assisted by

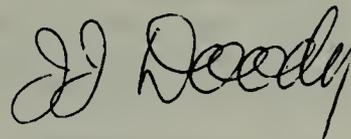
Gabriel V. Valenzuela Water Resources Engineering Associate
Cesar Garza Assistant Civil Engineer
Morton B. Graham Water Resources Technician II
Joseph F. Scott Water Resources Technician II
Henry B. Whitney Water Resources Technician I
Allan M. McDonagh Water Resources Technician I
Edward E. Brammer Engineering Aid I
Larry S. Brudner Clerk II

FOREWORD

The Watermaster presents this annual report as a comprehensive review of water conditions in the Raymond Basin during the past water year. It was prepared for the Superior Court, County of Los Angeles, and for the parties to that certain Judgment made and entered December 23, 1944, in the Superior Court of the State of California in and for the County of Los Angeles. The action is identified as Case No. Pasadena C-1323, entitled "City of Pasadena, a municipal corporation, Plaintiff, vs. City of Alhambra, a municipal corporation et al, Defendants".

The Raymond Basin, established as a watermaster service area under Part 4, Division 2, of the California Water Code, is monitored by the California Department of Water Resources. The basin has been operated for several years under a well-defined management plan, one phase of which limits ground water extractions.

This report covers the scope of the Watermaster's work, conditions of ground water supply, water use, ground water replenishment, variations from guidelines in the Judgment, and a complete financial report for the past fiscal year.



James J. Doody
District Engineer
Southern District
and Watermaster
Reg. C. E. No. 6500

CONTENTS

	<u>Page</u>
ABSTRACT	2
ORGANIZATION	2
FOREWORD	3
I. THE RAYMOND BASIN	7
Activities of the Watermaster	7
II. WATER SUPPLY	9
Precipitation	9
Ground Water Recharge	11
Salvage Credit for City of Sierra Madre	11
Runoff	13
Ground Water Elevations	14
Water Well Numbering in the Raymond Basin	19
III. WATER USE	23
Ground Water Extractions	23
Surface Water Diversion	23
Use of Imported Water	23
Ground Water Exports	23
Nonparty Ground Water Extractions	25
Exports of Sewage	26
IV. ADMINISTRATION OF THE JUDGMENT	27
Exchange Pool	27
Annual Variation in Extraction	29
Five-Year Variation in Extraction	29
Variations from Safe Yield	29
V. ADMINISTRATIVE COSTS	31
Costs of Determining Salvage Credit for City of Sierra Madre	32
APPENDIXES	
A: Mean Daily Discharge at Surface Runoff Stations Operated by the Watermaster, 1970-71 Watermaster Year	33
B: Ground Water Extraction Data for Individual Wells	38

CONTENTS (continued)

List of Figures

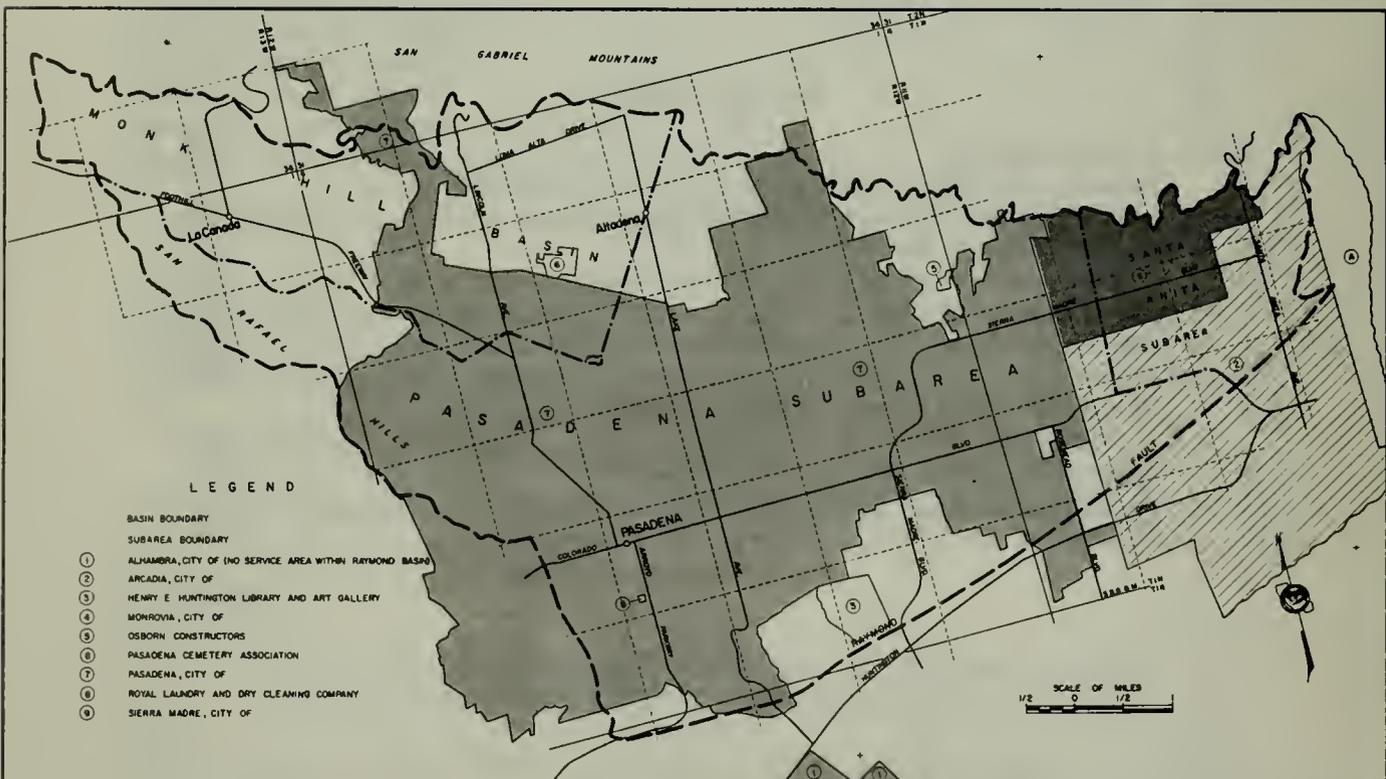
		<u>Page</u>
1	Water Service Areas of Parties to Watermaster Service, June 1971	6
2	Rainfall Characteristics of Valley Stations, 1896-1971.	8
3	Precipitation Stations and Spreading Grounds	10
4	Stream Gaging Stations	13
5	Lines of Equal Elevation of Ground Water, Fall 1970.	14
6	Lines of Equal Elevation of Ground Water, Spring 1971.	15
7	Lines of Equal Change of Ground Water Elevation, Fall 1969 to Fall 1970	15
8	Fluctuation of Water Levels at Wells in the Pasadena Subarea	16
9	Fluctuation of Water Levels at Wells in Monk Hill Basin.	18
10	Fluctuation of Water Levels at Wells in the Santa Anita Subarea	18
11	State Well No. 1N/12W-25Q01S	19
12	Well Locations	20
13	Climatic Conditions and Water Use	22
14	Sewage Gaging Stations	26

List of Tables

1	Precipitation	9
2	Credit for Water Spread by City of Sierra Madre	10
3	Water Spread for Ground Water Recharge	11
4	Raymond Basin Runoff	12
5	Summary of Water Use in 1970-71 Watermaster Year	24
6	Gross Water Supply	25
7	Exchange Water Pool Transactions	27
8	Annual and Five-Year Variation from Decreed Right	28
9	Variation of Average Annual Extractions from Safe Yield	29
10	Approved Budget for 1970-71 Season	31
11	Apportionment of Shares in 1970-71 Budget	31
12	Statement of 1970-71 Income and Expenditures	32



(MUTUAL AND PUBLIC UTILITY)



(MUNICIPAL AND INDIVIDUAL PRODUCERS)

Figure 1. WATER SERVICE AREAS OF PARTIES TO WATERMASTER SERVICE, JUNE 1970

I. THE RAYMOND BASIN

A reliable source of potable ground water is a valuable asset to any community. The Raymond Basin, located in the north-west corner of the San Gabriel Valley, is such a source for the cities of Alhambra, Arcadia, Monrovia, Pasadena, San Marino, Sierra Madre, and the communities of Altadena and La Canada. Watermaster Service provided by the California Department of Water Resources helps to protect the rich supply of ground water for the residents and industries. Figure 1 depicts water service areas of the parties.

The Raymond Basin is a small, triangular ground water reservoir flanked by mountains on the north and west. The southern side is bounded by a seven-mile-long impervious dike formed by the Raymond Fault, which effectively separates the Raymond Basin from the San Gabriel Valley Basin.

Ground water has always had an impact on the people who live and work in the Raymond Basin. Most of the Basin's 40-square-mile area supports an urban-suburban population. The cities overlying the area use large amounts of fresh water daily, a substantial portion of which is pumped directly from the Basin. [The Basin's supply totals 30,622 acre-feet of water.]

Some years ago, when the ground water supply was endangered by rapidly falling water levels, timely legal action by interested water users halted the over-draft and prevented serious damage to the Basin. To prevent eventual depletion of ground water, the Judgment limited each party to a specific annual extraction. Certain variations were permitted but no variance could prevail beyond a five-year period. In 1955, provisions in the original Judgment were modified and variations from decreed right were restated, increasing water

rights. Since then, these have been referred to as the "Decreed Right 1955".

Presently, all water used in the Basin, particularly ground water, is monitored by a court-appointed Watermaster who reports all significant water-related events occurring in the Basin to the Superior Court and parties to the Judgment.

Activities of the Watermaster

Accurate measurement of ground water extractions is absolutely essential to the success of the Basin's management plan. The Watermaster field staff calibrates the water meter on every active water well at least once every two years and uses every available means, including system efficiency tests, to confirm water meter test results. Inaccurate meters must be repaired within 30 days. Follow-up tests on repaired meters and initial tests on new wells are scheduled whenever necessary.

Once a month the Watermaster receives ground water extraction reports from ground water pumpers and updates each water right account by computing the amounts pumped during the previous month and the current fiscal year. From this data he establishes the amount of water that may legally be extracted by each pumper during the rest of the year.

The Watermaster measures depth to static ground water level in about 115 wells situated throughout the Basin in the spring and fall and prepares fall and spring contour maps of the ground water surface and a "fall-to-fall" map showing lines of equal elevation change in a one-year period. The Watermaster also operates nine stream gaging stations to measure surface flow.

The Watermaster began a sewage outflow measurement program during the 1968-69 season, using F-type water stage recorders on 12 major sewage trunk lines leaving the Raymond Basin. The measuring program was continued during the 1970-71 season.

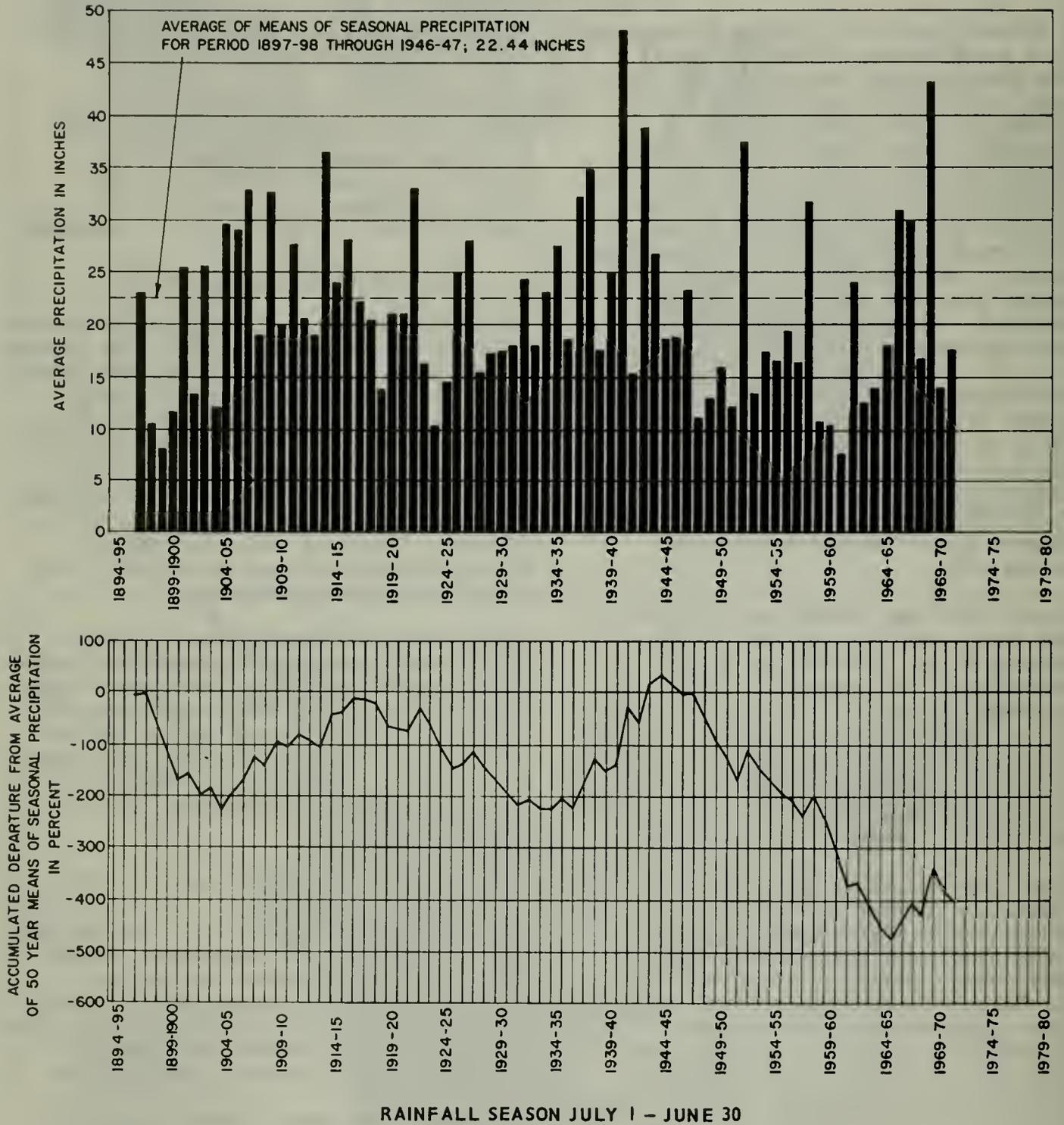


Figure 2. RAINFALL CHARACTERISTICS OF VALLEY STATIONS, 1896 - 1971

II. WATER SUPPLY

Southern California's urban economy is supplied by the Colorado and Owens Rivers, mountain runoff, ground water, reclaimed wastewater, and desalinated water. These sources contribute to one of the world's largest water supply systems.

Precipitation

The ground water supply of the highly permeable Raymond Basin could be considerably influenced by local precipitation. Natural replenishment of ground water occurs easily when water has time to percolate into a storage zone. Unfortunately, most of the Basin is urban and much of its surface is paved with asphalt and concrete that

channels the runoff before it can penetrate the ground and replenish the ground water supply.

Long-term precipitation trends appear in Figure 2, in which a downward slope indicates a continued dry period and an upward slope indicates an above normal increase in precipitation. The curve of cumulative departures from the mean shows the relative magnitude of the drought that began in 1944.

During the 1970-71 season, precipitation was about 78 percent of the long-time mean at valley stations and about 76 percent of the mean at mountain stations (Table 1). The below-normal precipitation during the past season continued the downward slope.

Table 1. PRECIPITATION

Station	:	:	July through June, in inches			
Name	Type	Period	:			
:	Valley	Moun-	of record	1969-70	1970-71	50-year mean
:	:	tain	in years	:	:	:
Altadena Golf Course	X		74	14.76	17.74	23.11
Highland Park	X		76	10.24*	13.36	18.52
La Canada	X		59	12.16	18.76	23.20*
Mt. Wilson Airways		X	37	20.36	25.20	36.40*
Oakwilde		X	44	11.02	16.37	28.19*
Opid's Camp		X	54	24.78	32.76	41.19*
Pasadena Chlorine Plant		X	55	12.43*	18.73	23.40*
Sierra Madre	X	X	76	16.63	19.72	25.00
Switzer's Camp		X	44	16.26	22.43	27.72*
Upper Haine's Canyon		X	53	15.34	26.09	30.06*
Seasonal Average	X			13.45	17.40	
		X		16.69	23.11	

*Estimated

Table 2. CREDIT FOR WATER SPREAD BY CITY OF SIERRA MADRE

Season	Water spread for salvage				(5)	(6)	(7)
	(1)	(2)	(3)	(4)			
Salvage water at beginning of year	Amount	Lost through natural percolation	Water stored (2)-(3)=(4)	Salvage water lost to subsurface outflow	Salvage water extracted	Salvage water at end of year (1)+(4)-(5)-(6)=(7)	
1951-52	0	1,937.0	526.9	1,410.1	124.4	449.4	836.3
52-53	836.3	258.0	94.6	163.4	243.1	334.9	421.7
53-54	421.7	580.0	4.6	575.4	115.4	596.1	285.6
54-55	285.6	341.0	21.5	319.5	15.1	559.1	30.9
55-56	30.9	429.0	90.9	338.1	9.6	128.0	231.4
56-57	231.4	331.0	167.1	163.9	42.1	62.0	291.2
57-58	291.2	3,409.0	811.9	2,597.1	278.8	0.0	2,609.5
58-59	2,609.5	1,308.0	521.0	787.0	945.1	37.5	2,413.9
59-60	2,413.9	45.0	10.4	34.6	705.6	208.2	1,534.7
1960-61	1,534.7	51.0	16.0	35.0	214.1	1,116.3	239.3
61-62	239.3	1,283.0	445.6	837.4	43.1	292.9	740.8
62-63	740.8	1,121.0	554.4	576.6	241.7	253.9	821.8
63-64	821.8	699.0	164.4	534.6	180.2	451.3	724.9
64-65	724.9	904.0	208.0	696.0	142.8	837.3	440.2
65-66	440.2	4,233.0	979.0	3,254.0	553.9	433.1	3,140.3
66-67	3,140.3	4,537.0	945.1	3,591.9	1,204.6	0.0	5,527.6
67-68	5,527.6	2,625.0	1,069.2	1,555.8	1,749.8	0.0	5,333.5
68-69	5,333.5	2,984.0	371.9	2,612.1	1,590.4	0.0	6,355.2
69-70	6,355.2	1,529.3	932.2	597.1	1,535.3	0.0	5,417.0
70-71	5,417.0	1,145.3	369.7	775.6	1,316.3	0.0	4,876.3
TOTALS		29,749.6	8,294.4	21,445.2	11,251.4	5,760.0	

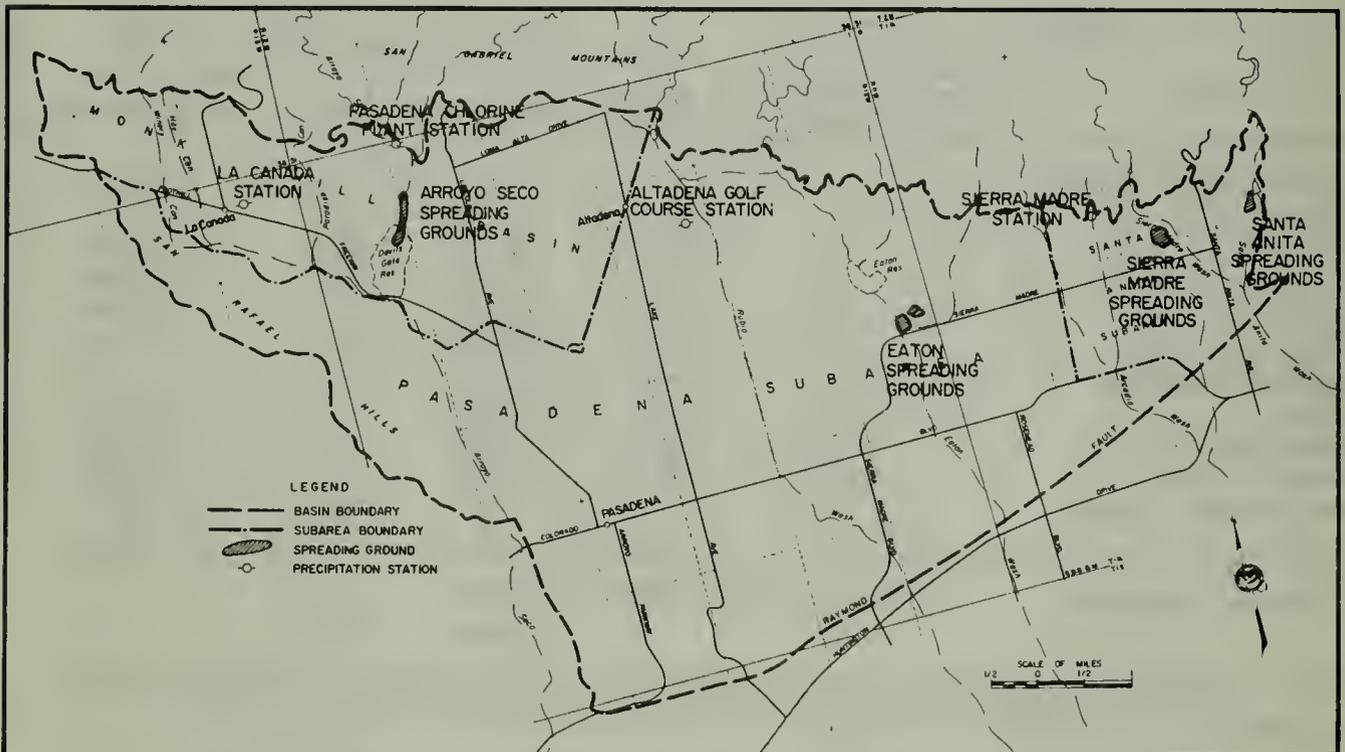


Figure 3. PRECIPITATION STATIONS AND SPREADING GROUNDS

Ground Water Recharge

Overdraft occurs when water is extracted from a ground water basin more rapidly than it is replaced naturally. Ground water aquifers usually recharge themselves so slowly that a few years of concentrated pumping may upset a balance that took centuries to establish. This is the situation that existed in the Raymond Basin several years ago.

Today, several methods of artificial recharge are being used to reestablish and maintain nature's balance. One of these is water spreading. Areas are flooded with water that will percolate into aquifers and supplement the natural supply. Large quantities of water can be returned to the ground by water spreading, but the process is limited by the space available for spreading and the capacity of the ground water basin to accept the water.

The Los Angeles County Flood Control District (LACFCD) operates three spreading grounds in the Raymond Basin--Arroyo Seco, Eaton Wash, and Santa Anita Grounds (figure 3). Another project, Sierra Madre Grounds, is operated by the City of Sierra Madre. Since the spread water is added directly to the Raymond Basin, water levels

near the spreading grounds, especially the Eastern Unit and Monk Hill Basin, reflect the additions quickly. Water spreading thus benefits all parties in the Basin considerably. (Table 3.)

Salvage Credit for City of Sierra Madre

The City of Sierra Madre spreads local street runoff and water diverted from Santa Anita Creek and Sierra Madre Wash in its spreading grounds. Essentially, the City uses the Eastern Unit as a storage facility, a privilege it obtained several years ago through an agreement with Arcadia. The Watermaster determines the total quantity of water spread in the Sierra Madre Grounds and credits the City with the portion of the spreading that is not part of the natural replenishment of the Eastern Unit. This water is called "salvage credit" water. It may not be pumped by the City until both its exchange water purchase, if any, and decreed right are fully used. Salvage credit remaining at the end of each season since 1951 is summarized in Table 2. The City did not pump any of its salvage credit water during the past season. It did, however, lose some of the stored water through subsurface outflow.

Table 3. WATER SPREAD FOR GROUND WATER RECHARGE

Spreading Grounds	Source	Acre-feet
<u>Los Angeles County</u>		
<u>Flood Control District</u>		
Arroyo Seco	Arroyo Seco	644
Eaton Wash	Eaton Canyon	583
Santa Anita	Santa Anita Canyon	435
<u>City of Sierra Madre</u>		
Sierra Madre	Santa Anita Canyon, Little Santa Anita Canyon, and street runoff	<u>1,145</u>
	TOTAL	2,807

Table 4. RAYMOND BASIN RUNOFF

Watermaster Stream Gaging Stations		:	Flow in acre-feet
No. :	Name	:	
<u>Monk Hill Basin Flow into Devil's Gate Reservoir</u>			
62190	Flint Wash		2,119
62985	West Altadena Drain		516
TOTAL INTERNAL FLOW			2,635
<u>Inflow to Raymond Basin</u>			
62250	Arroyo Seco ^{a/}		1,389
	City of Pasadena diversions		2,301
Subtotal			3,690
75360	Eaton Wash ^{a/}		804
	City of Pasadena diversions		737
Subtotal			1,541
b/	Sierra Madre Dam ^{a/}		266
b/	Santa Anita Dam ^{a/}		2,818 ^{c/}
TOTAL INFLOW			8,315
<u>Outflow from Raymond Basin</u>			
b/	Devil's Gate Dam		4,535
62150	Seco Drain		808
75135	Broadway Drain		2,440
75220	Rubio Drain		2,527
75300	Eaton Creek near Pasadena		1,020
75450	Arcadia Wash		1,587
b/	Santa Anita Wash		1,921
TOTAL OUTFLOW			14,838

a/ Includes water diverted to spreading grounds within the basin.

b/ Operated by Los Angeles County Flood Control District.

c/ Estimate.

Runoff

Thirteen stream gaging stations are used to determine the volume of surface water moving through the Raymond Basin. The Watermaster operates nine, and the Los Angeles County Flood Control District operates the remaining four. The

location of each station is shown in Figure 4. Appendix A summarizes the information collected at gaging stations operated by the Watermaster. The seasonal summary of "measured" flow at each gaging station appears in Table 4.

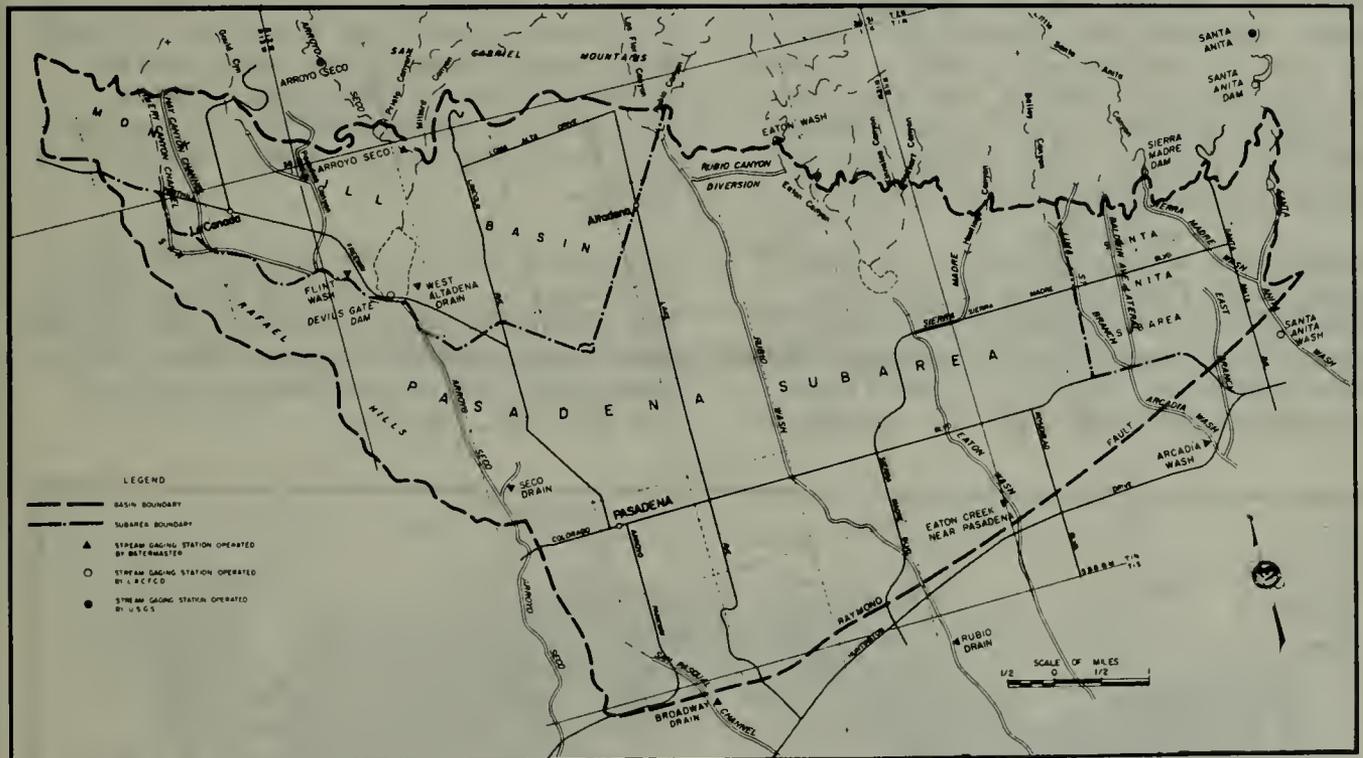


Figure 4. STREAM GAGING STATIONS

Ground Water Elevations

During the past season, the Watermaster collected and processed data to determine prevailing ground water conditions in the Raymond Basin. Results of this study appear on Figures 5, 6, and 7.

Figure 5 shows the elevations of the ground water table that existed during the fall of 1970. Figure 6 represents the water table that existed in the spring of 1971 at the end of the rainy season and shows the conditions resulting from the dry winter. Figure 7 shows the changes in elevation that occurred in the water table between the 1969 and 1970 fall seasons. Any significant change is easily detected.

Hydrographs depicting historical ground water table fluctuations in selected wells in the Raymond Basin are shown on Figures 8, 9, and 10. The sites of these wells appear on Figure 12. Many more hydrographs are available for inspection

at the Watermaster's Office.

The hydrograph of the City of Arcadia's Orange Grove No. 4 well (Figure 10) is one of the Arcadia group of wells whose performance governs the limitation of pumping in the Eastern Unit of the Raymond Basin. The limitation is imposed if the water surface at the Arcadia group of wells drops below an elevation of 500 feet above sea level. The limitation reduces the annual extraction from the Eastern Unit during the following season from 5,290 acre-feet to 3,261 acre-feet. Because the water surface was above the 500-foot limit during spring 1971, the limitation of pumping will not be in effect during the 1971-72 season.

An examination of the hydrographs also indicates that the 1970-71 rainy season and extensive water spreading has brought about a very slight rise of water levels throughout the entire Eastern Unit and the Monk Hill Basin.

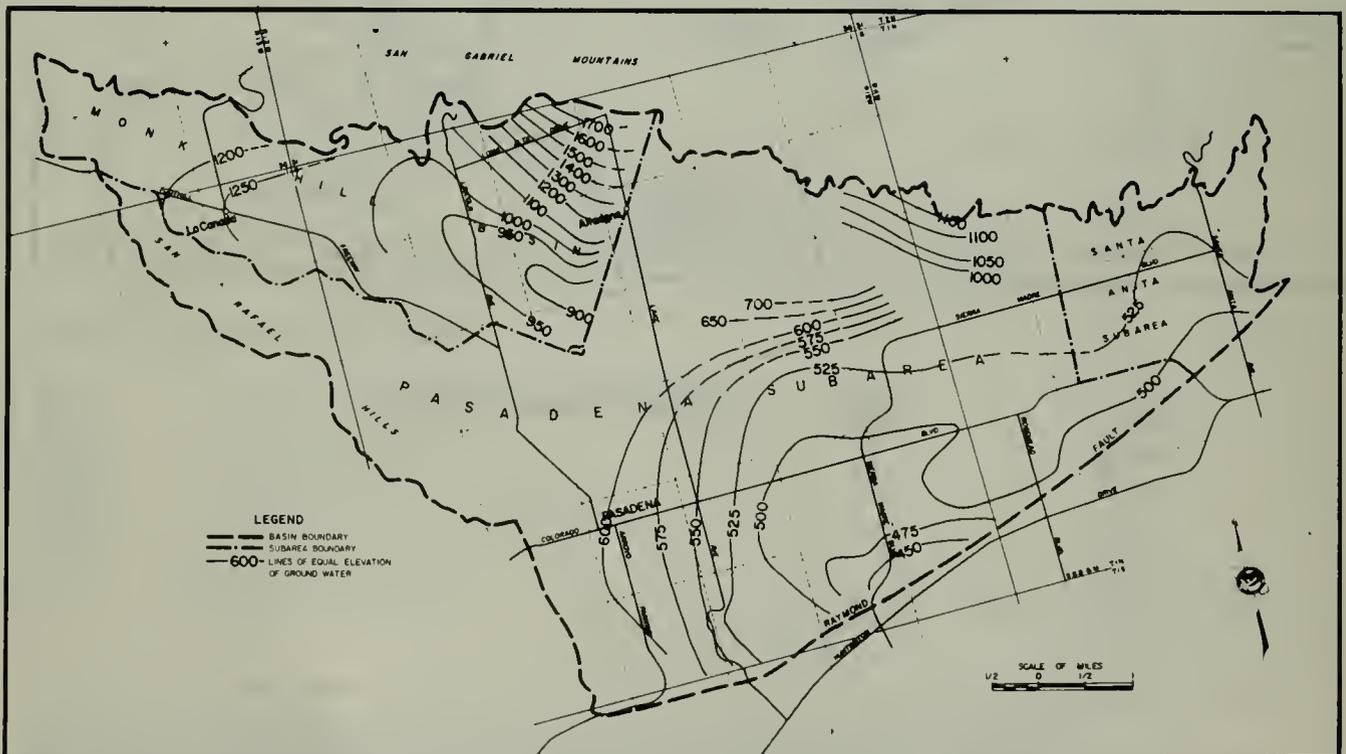


Figure 5. LINES OF EQUAL ELEVATION OF GROUND WATER, FALL 1970

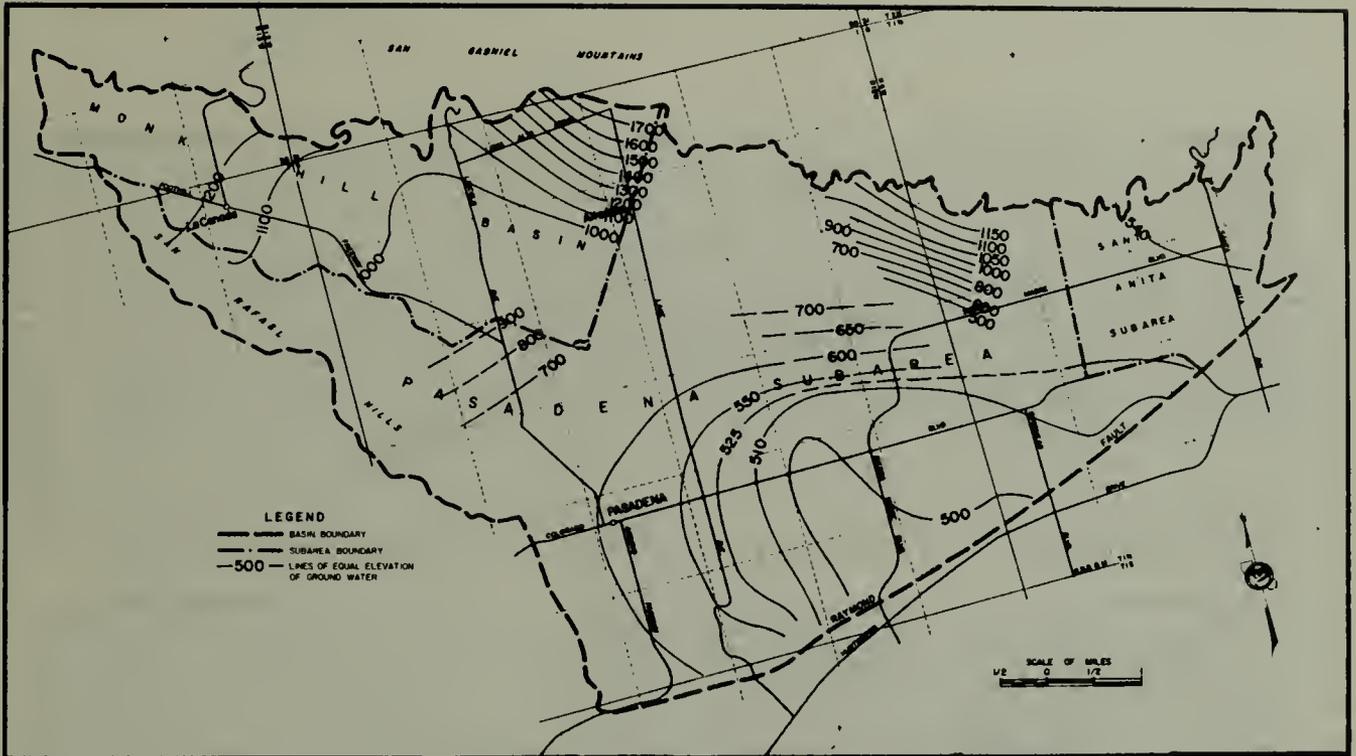


Figure 6. LINES OF EQUAL ELEVATION OF GROUND WATER, SPRING 1971

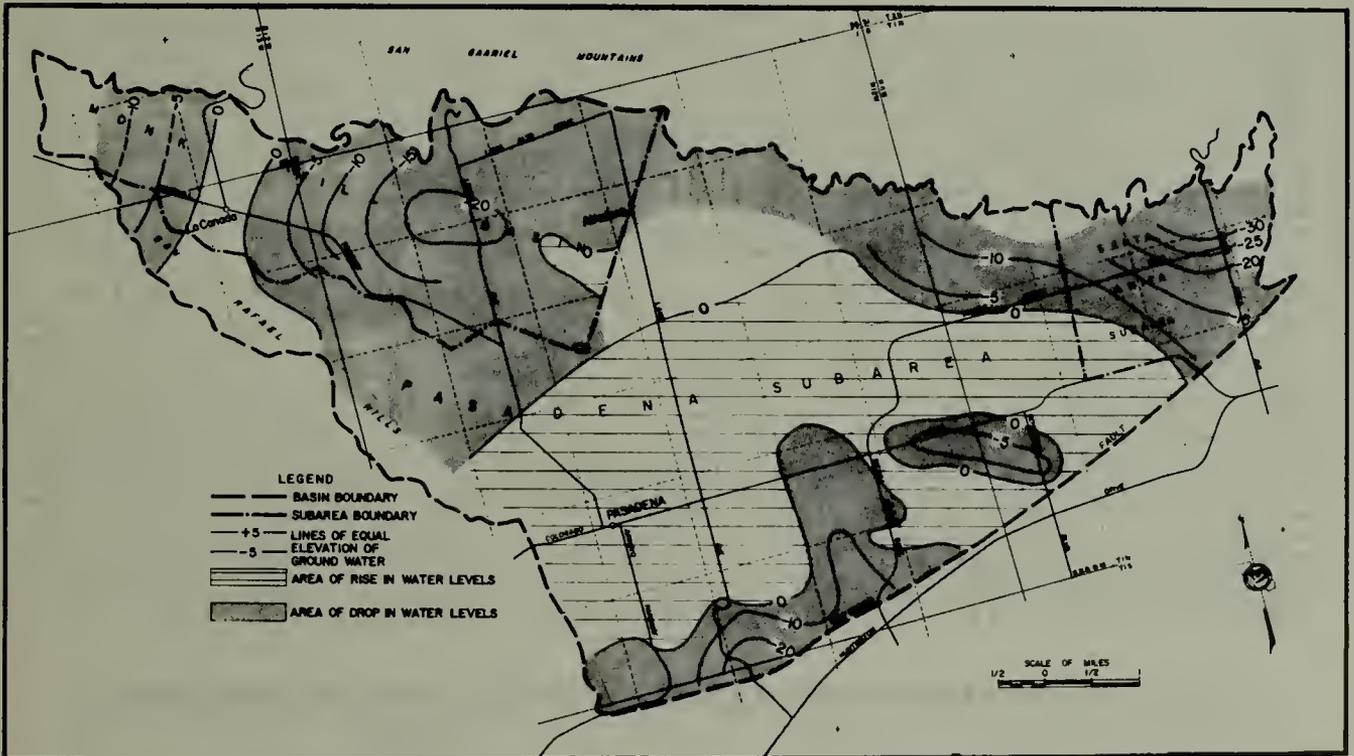


Figure 7. LINES OF EQUAL CHANGE OF GROUND WATER ELEVATION, FALL 1969 TO FALL 1970

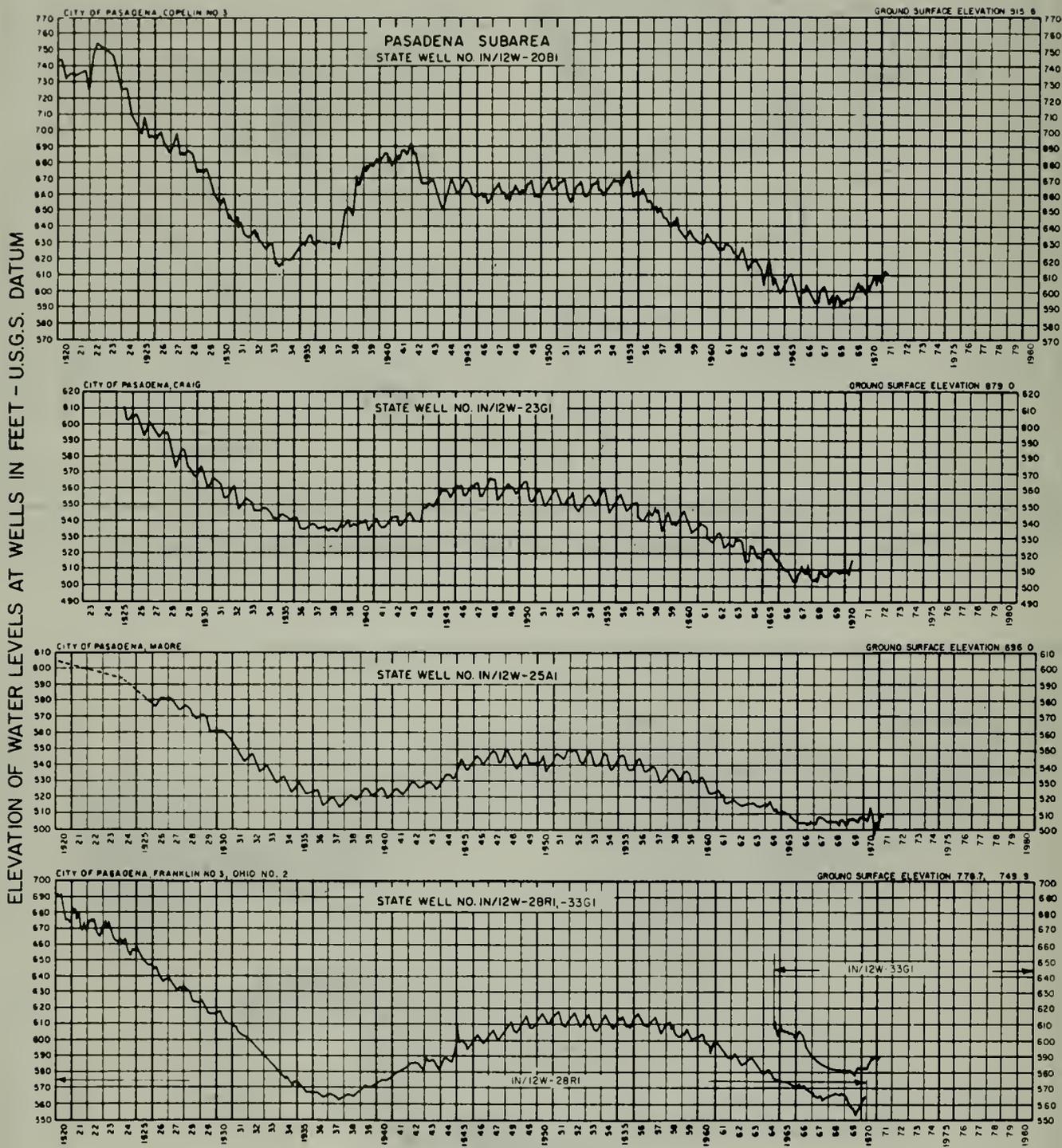


Figure 8. FLUCTUATION OF WATER LEVELS AT WELLS IN THE PASADENA SUBAREA

ELEVATION OF WATER LEVELS AT WELLS IN FEET - U.S.G.S. DATUM

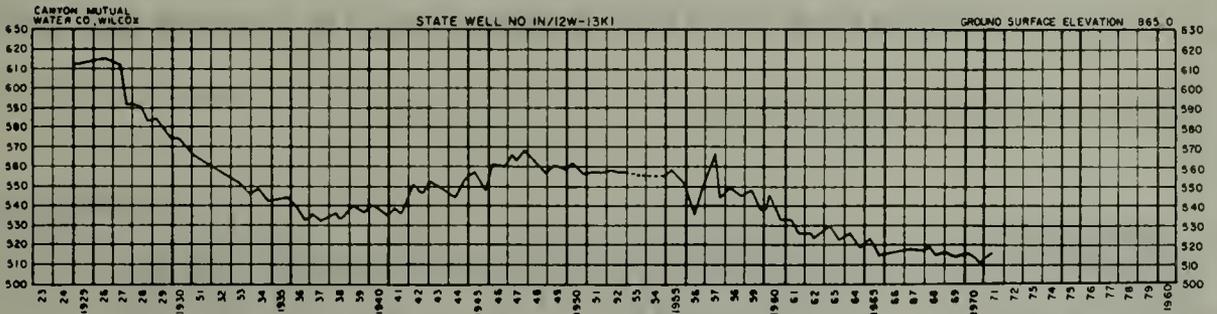
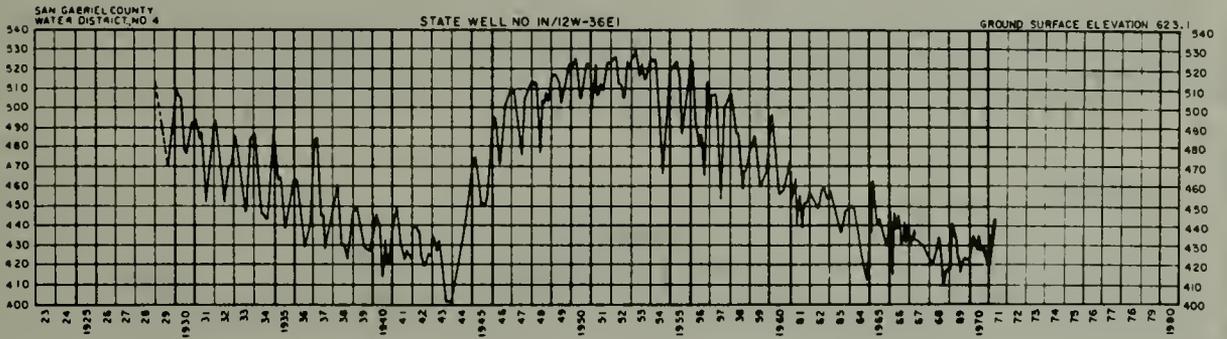
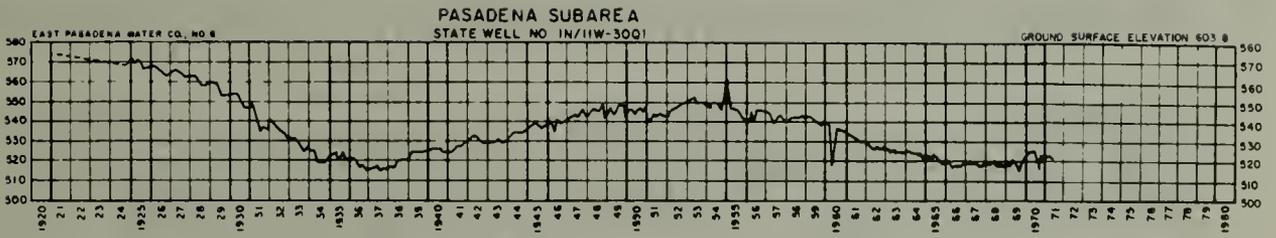


Figure 8. (continued)

ELEVATION OF WATER LEVELS AT WELLS IN FEET - U.S.G.S. DATUM

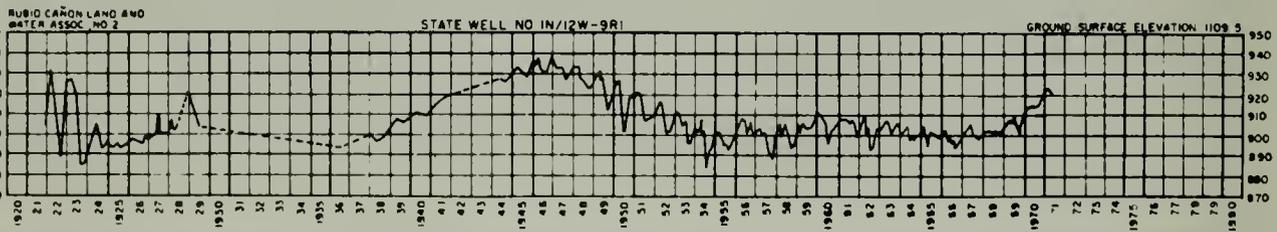
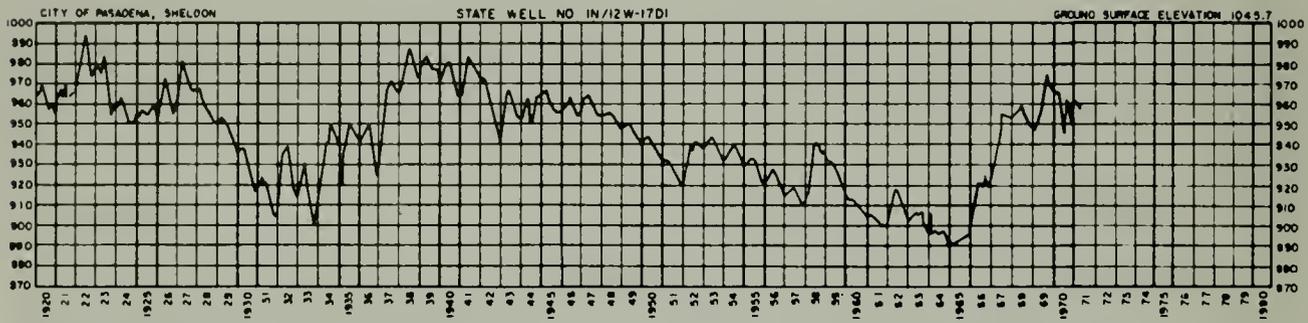
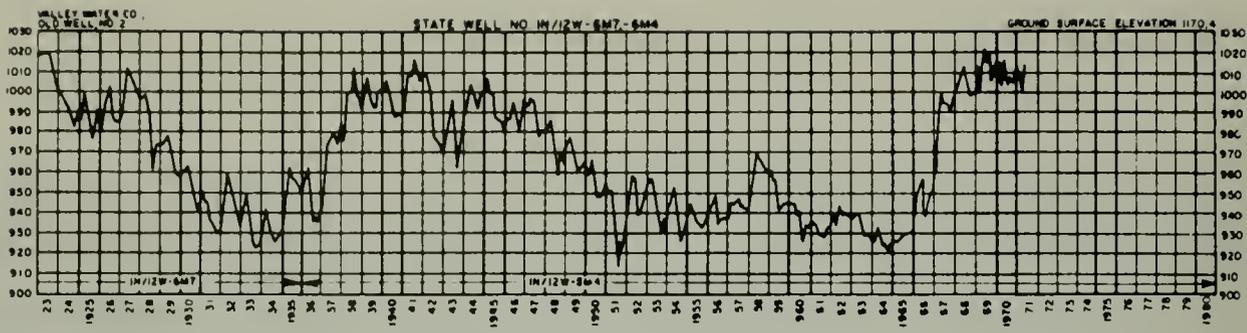


Figure 9. FLUCTUATION OF WATER LEVELS AT WELLS IN THE MONK HILL BASIN

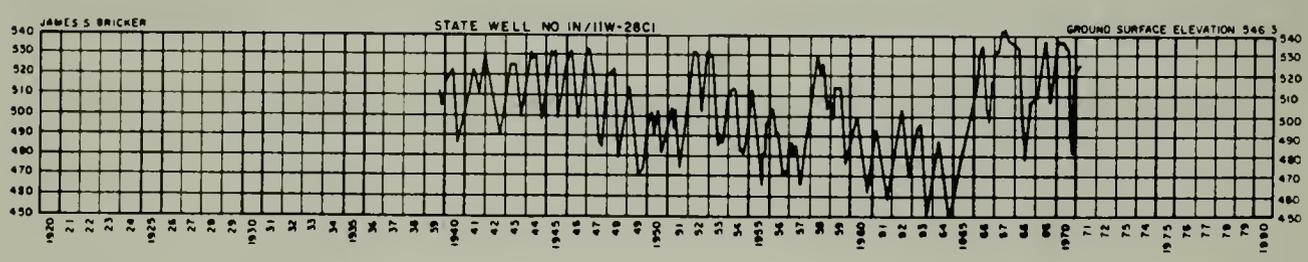
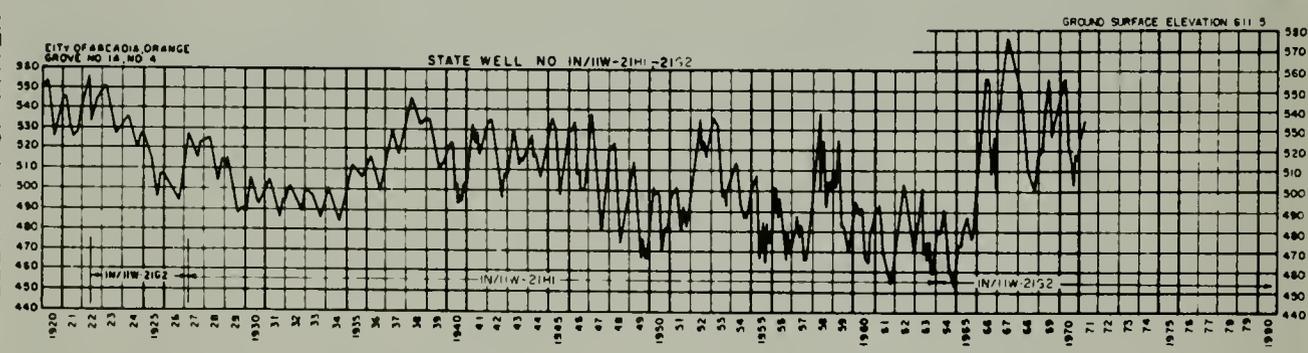


Figure 10. FLUCTUATION OF WATER LEVELS AT WELLS IN THE SANTA ANITA SUBAREA

Water Well Numbering in the
Raymond Basin

In the 1970-71 season, the Raymond Basin contained 132 existing wells, 66 of which were active. Two new wells were drilled and two existing wells were destroyed.

Each water well in the Raymond Basin can be found by its state well number. A state well numbering system based on the U.S. Public Land Survey was adopted a number of years ago. Each well number consists of township, range, and section numbers; a letter to identify the 40-acre tract in which the well is located;

a sequence number to show the chronological order in which the well was identified; and a letter to represent the base and meridian. The letter "S" is sometimes omitted because all wells in the Raymond Basin are situated in relation to the San Bernardino base and meridian. The parts of state well number 1N/12W-25Q01S are illustrated in the following breakdown:

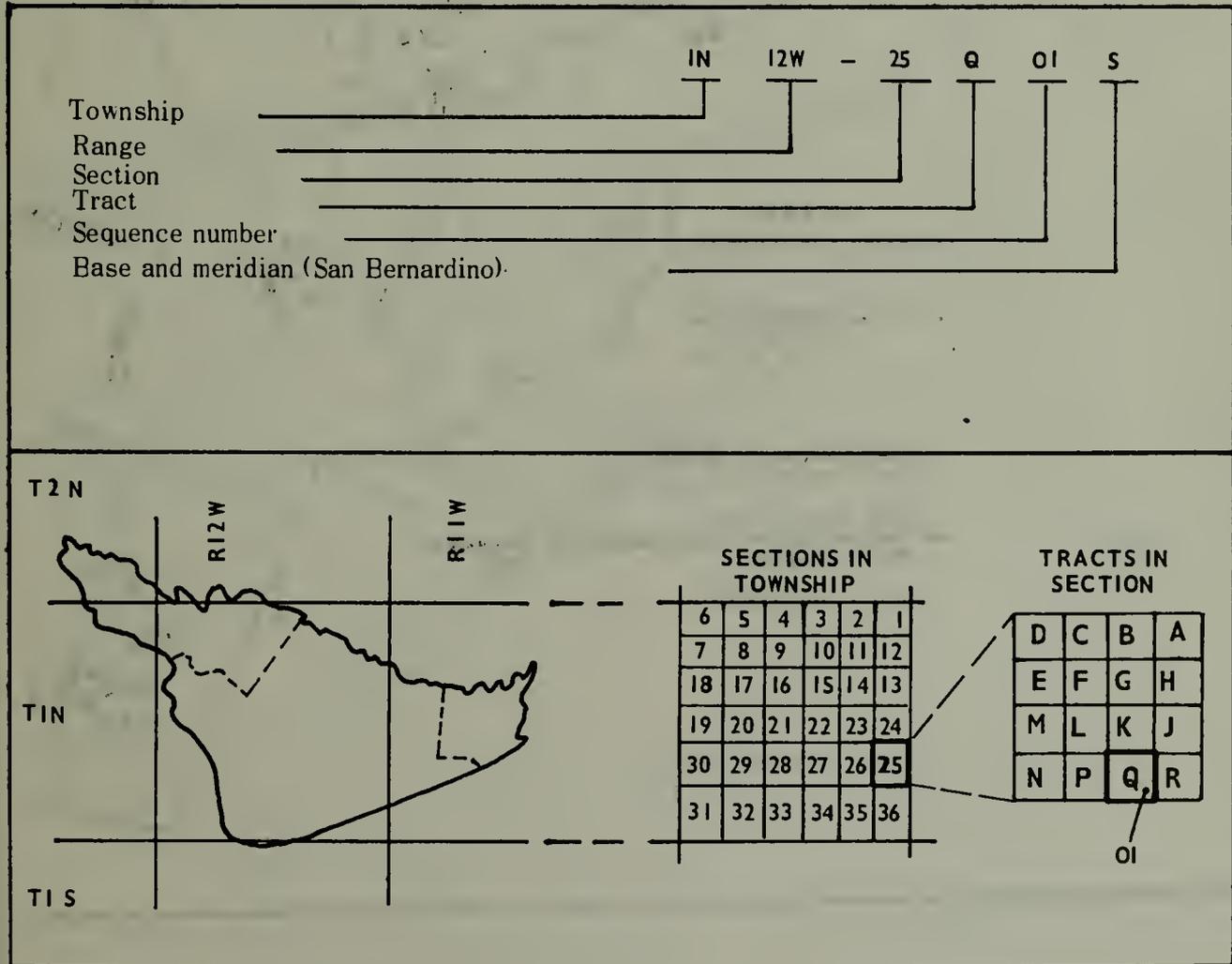
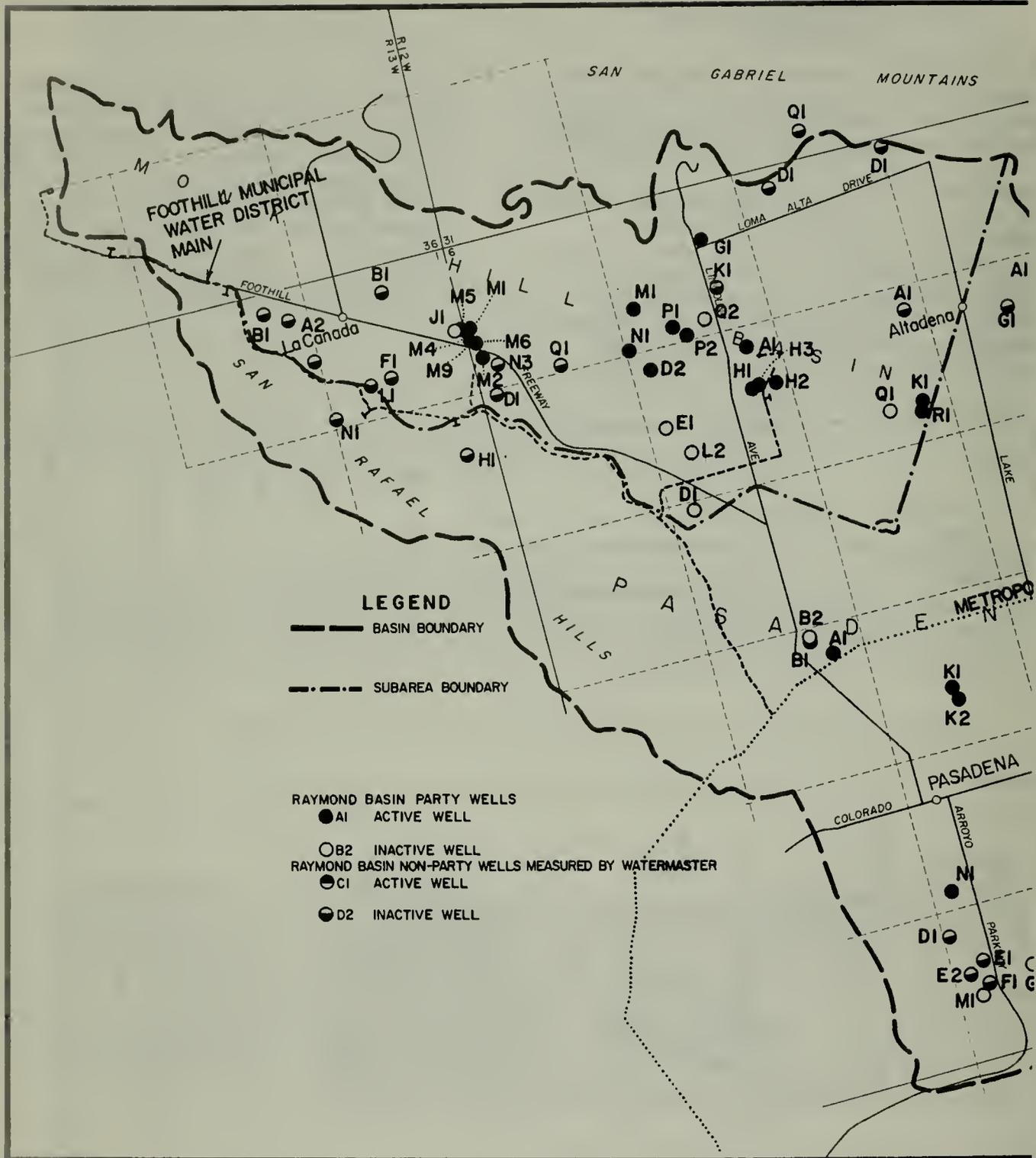


Figure 11. STATE WELL NO. 1N12W-25Q01S



LEGEND

— BASIN BOUNDARY

- - - SUBAREA BOUNDARY

RAYMOND BASIN PARTY WELLS

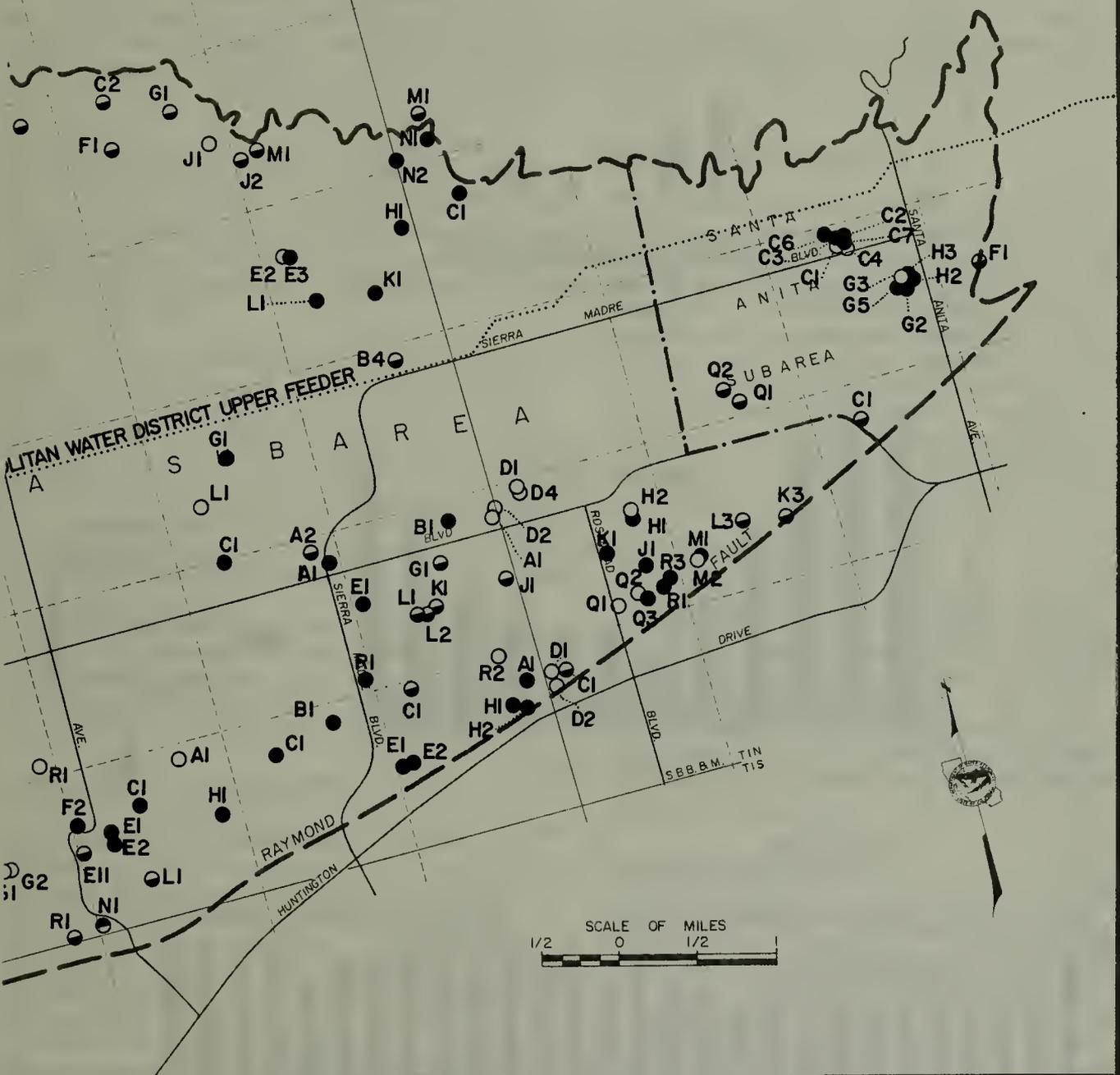
- A1 ACTIVE WELL
- B2 INACTIVE WELL

RAYMOND BASIN NON-PARTY WELLS MEASURED BY WATERMASTER

- C1 ACTIVE WELL
- D2 INACTIVE WELL

36 31
6 T2N
T1N

RIM
RIZM



SCALE OF MILES
1/2 0 1/2



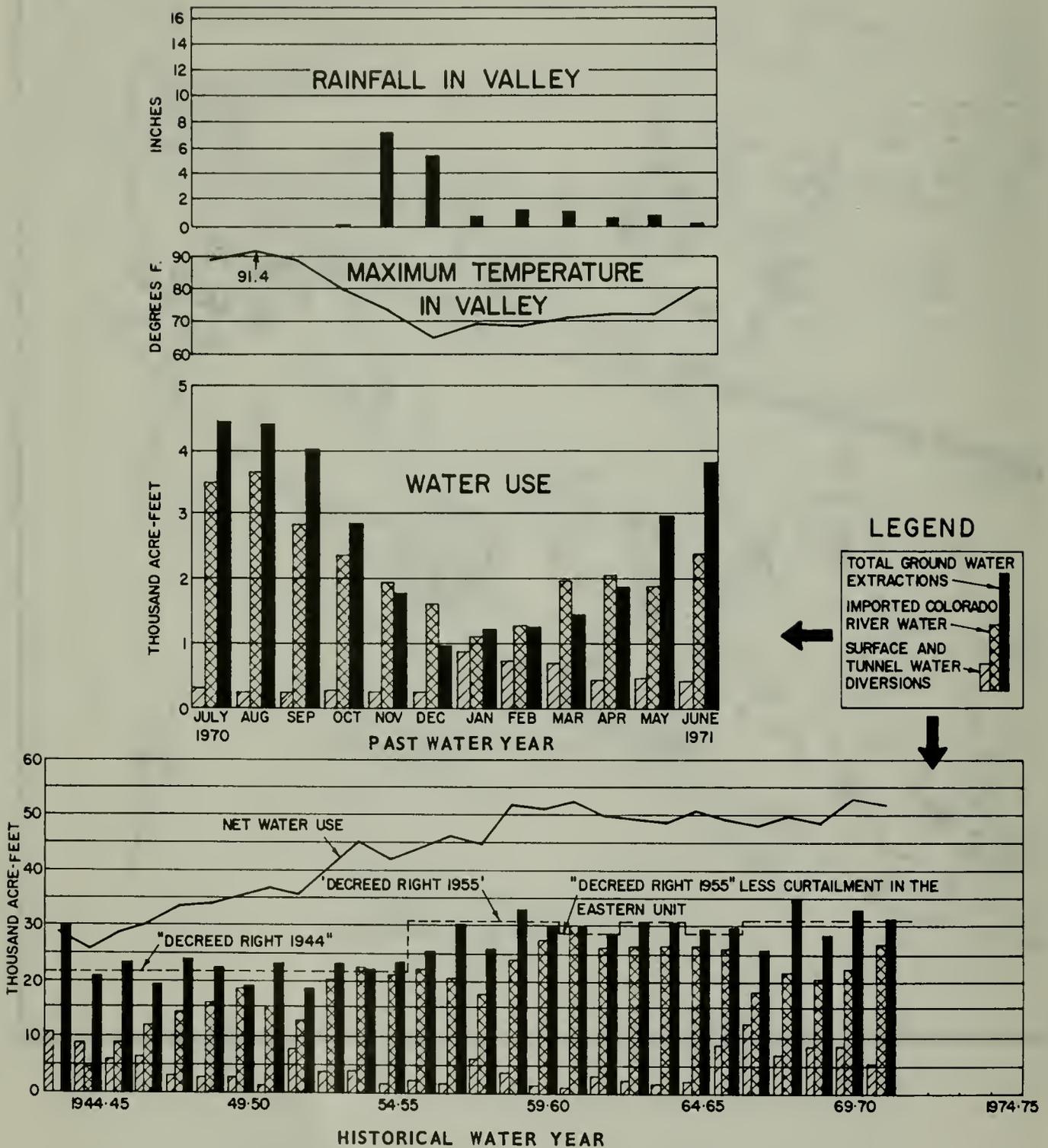


Figure 13. CLIMATIC CONDITIONS AND WATER USE

III. WATER USE

Net water use is the sum of ground water extractions, salvage water extractions (City of Sierra Madre), surface water diversions tributary to the Raymond Basin, and water imported to the basin, minus the exports from the basin. Water which is diverted for spreading is not included in the net water use computations (Table 5).

Rapid population growth between 1944 and 1958 caused a substantial increase in net water use by parties. Despite greater numbers of people, use of local ground water supplies has been held to the decreed rights since 1944. Population growth has leveled off since 1959.

Most of the increased water requirement has been met by Colorado River water imports. Historical water use and the correlation between current climatic conditions and monthly water use are presented on Figure 13. Rainfall values are based on valley station records (Table 1), and temperature values are based on the average temperatures at the Cities of Pasadena and Sierra Madre.

The bar graphs on Figure 13 are striking proof that climate is one of the most important phenomena that regulate water use. For example, as rainfall increases and temperatures fall, water use declines.

Ground Water Extractions

The Raymond Basin Judgment limits the amount of ground water that each party can extract annually from the basin or can release to the Water Exchange Pool for pumping by other parties. Recipients of exchange water may pump the amount released to them in addition to their "Decreed Right 1955."

The metered ground water production from each active well in the basin is listed by party in Appendix B, which shows the total ground water production reported by each party.

The gross water supply includes all sources of water necessary to supply each party's total water requirement. A report on the gross water supply of all parties appears in Table 6. Several parties that extracted ground water from the basin adjacent to the Raymond Basin are also shown in Table 6.

Surface Water Diversion

The Judgment allows certain parties to divert surface water tributary to the Raymond Basin. Parties also divert and import nontributary surface water. Two types of diversions are used: surface and tunnel. Surface diversions collect surface water, such as streams or springs. Tunnel diversions collect subsurface water in their horizontal or vertical galleries. In both cases, the water is diverted to a reservoir, treatment plant, or service facility. (See Table 6.)

Use of Imported Water

Colorado River water was first available in June 1941 to the City of Pasadena. However, the city did not begin to use this water continuously until June 1945. The amount of Colorado River water imported last season by each party connected with the Foothill Municipal Water District and by the City of Pasadena is shown in Table 6.

Ground Water Exports

The Watermaster assumes that parties with service areas both inside and outside the basin export ground water only if their water sales in the basin are less than the sum of water pumped, diverted, and purchased in the basin. Since the City of Pasadena's supply of water comes from several sources, its total export contains Colorado River water, diverted surface water, and ground water. (See Table 6.)

Table 5. SUMMARY OF WATER USE IN 1970-71 WATERMASTER YEAR

Party	(1) "Decreed Right 1955"	(2) Total amount pumped 1970-71	(3) Balance 6-30-71 excluding carryover from 1969-70	(4) Overextraction in percent of "Decreed Right 1955", exclud- ing carryover from 1969-70	(5) Carryover from 1969-70	(6) Overextraction in percent of "Decreed Right 1955", exclud- ing carryover from 1969-70	(7) Balance 6-30-71 excluding carryover from 1969-70
			(1)-(2)=(3)	(3);(1)÷100=(4)		(7);(1)÷100=(6)	(1)-(2)+(3)=(7)
WESTERN UNIT							
Monk Hill Basin							
La Canada Irrigation District	100.00	10.50	89.50		+ 77.83		167.33
Las Flores Water Company	249.00	231.82	17.18		+ 9.55		26.73
Lincoln Avenue Water Company	567.00	558.51	8.49		- 88.07	14.04	- 79.58
Pasadena Cemetery Association	91.00	109.37	- 18.37	20.19	+ 51.22		32.85
Pasadena, City of	4,464.00	5,569.44	- 1,105.44	24.76	+ 2,520.56		1,415.12
Rubio Canon Land and Water Association	1,221.00	1,134.65	86.35		- 105.46	1.57	- 19.11
Valley Water Company	797.00	672.49	124.51		102.64		227.15
Subtotals	7,489.00	8,286.78	- 797.78		2,568.27		1,770.49
Pasadena Subarea							
Alhambra, City of	1,031.00	1,139.79	- 108.79	10.55	1,282.90		1,174.11
Arcadia, City of	1,167.00	1,421.47	- 254.47	21.81	203.77	4.34	- 50.70
California-American Water Company	2,299.00	2,268.59	30.41		- 81.76	2.23	- 51.35
Canyon Mutual Water Company	127.00	50.16	76.84		612.04		688.88
East Pasadena Water Company	515.00	502.33	12.67		627.41		640.08
Henry E. Huntington Library and Art Gallery	262.00	302.19	- 40.19	15.34	272.28		232.09
Kinneloa Irrigation District	189.00 ^{a/}	89.84 ^{b/}	99.16		1,397.40		1,496.56
Mira Loma mutual Water Company	148.00	80.49	67.51		405.10		472.61
Monrovia, City of	951.00	1,177.16	- 226.16	23.78	14.21	22.29	- 211.95
Osborn Constructors	12.00	30.72	- 18.72	156.00	418.71		399.99
Pasadena, City of	8,343.00	7,157.76	1,185.24		- 2,385.97	14.21	- 1,200.73
Royal Laundry and Dry Cleaning Company	150.00 ^{c/}	154.82	- 4.82	4.38	- 5.79	9.65	- 10.61
San Gabriel County Water District	1,091.00	1,105.03	- 14.03	1.29	- 2.91	1.55	- 16.94
Sunny Slope Water Company	1,558.00	1,611.24	- 53.24	3.42	- 5.43	3.77	- 58.67
	17,843.00	17,091.59	751.41		2,751.96		3,503.37
TOTALS - WESTERN UNIT	25,332.00	25,378.37	- 46.37		-5,320.23		5,273.86
Recapitulation for City of Pasadena (WESTERN UNIT)	12,807.00	12,727.20	79.80		+ 134.59		214.39
EASTERN UNIT							
Santa Anita Subarea							
Arcadia, City of	3,526.00	3,712.80	- 186.80	5.30	57.58	3.66	- 129.22
Sierra Madre, City of	1,764.00	1,898.75 ^{d/}	- 134.75	7.64	801.91		667.16
TOTALS - EASTERN UNIT	5,290.00	5,611.55	- 321.55	6.08	859.49		537.94
GRAND TOTALS	30,622.00	30,989.92	- 367.92		6,179.72		5,811.80

a/ Decreed Right (229 acre-feet) less 40 acre-feet released to Exchange Pool.
b/ Includes 24.00 acre-feet extracted pursuant to Francis P. Graves decreed right.
c/ Decreed Right (110 acre-feet) plus 40 acre-feet received from Exchange Pool.
d/ Value equal to total water pumped. No salvage water was pumped during 1970-71.

**Table 6. GROSS WATER SUPPLY
In acre-feet**

Party	Total ground water : extractions		Total : surface water diversions		Total water		Net water use within the basin
	Inside basin	Outside basin ^{a/}	Tributary to Raymond Basin	Nontributary to Raymond Basin ^{a/}	Imported	Exported	
Alhambra, City of	1,139.79	(10,182.02)				-1,139.79	0.00
Arcadia, City of	5,134.27	(9,032.79)				-1,205.91	3,928.36
California-American Water Company	2,268.59	(4,448.13)			371.96 ^{c/}		2,640.55
Canyon Mutual Water Company	50.16						50.16
East Pasadena Water Company	502.33	(1,547.65)				-60.56	441.77
Henry E. Huntington Library and Art Gallery	302.19						302.19
Kinneloa Irrigation District	89.84		268.72				358.56
La Canada Irrigation District	10.50			(264.61)	2,087.65		2,098.15
Las Flores Water Company	231.82		90.46		551.94		874.22
Lincoln Avenue Water Company	558.51		633.67		1,318.24		2,510.42
Mira Loma Mutual Water Company	80.49		113.10				193.59
Monrovia, City of	1,177.16	(5,650.33)	0.00	(650.87)		-1,177.16	0.00
Osborn Constructors	30.72						30.72
Pasadena Cemetery Association	109.37						109.37
Pasadena, City of	12,727.20		3,038.44		19,243.00	-5,089.53	29,919.11
Royal Laundry and Dry Cleaning Company	154.82						154.82
Rubio Canon Land and Water Association	1,134.65		307.18		990.61		2,432.44
San Gabriel County Water District	1,105.03	(5,307.13)				-1,105.03	0.00
Sierra Madre, City of	1,898.75		688.78 ^{d/}				2,587.53
Sunny Slope Water Company	1,611.24	(2,574.36)				-1,494.68	116.56
Valley Water Company	672.49				2,280.00		2,952.49
TOTALS	30,989.92		5,140.35		26,843.40	-11,272.66	51,701.01

a/ Used by parties in areas outside the Raymond Basin.

b/ Colorado River water except as noted.

c/ Ground water from outside basin.

d/ Does not include 1,145.33 acre-feet diverted for spreading to recharge the ground water.

Nonparty Ground Water Extraction

The Watermaster continues to monitor non-party ground water extractions. Two non-party pumpers in the Western Unit continue to extract ground water:

Huntington-Sheraton Hotel 16 acre-
State Well No. 1N/12W-34N1 feet

Las Encinas Hospital
State Well No. 1N/12W-25K1 83 acre-
State Well No. 1N/12W-25L2 feet

The hotel extractions were estimated by the plant engineer. The hospital based its water use on water meter readings. California Consumers Corporation did not pump water in the past year because of continued problems with its water well.

Exports of Sewage

In the 1967-68 season, to measure sewage outflow, the Watermaster selected key stations on large sewage trunk lines leaving the basin across the Raymond Fault, and was granted temporary permission to install recorders at each. Next season, the Watermaster installed F-type water stage recorders in 12 trunk lines for one week. See Figure 14 for locations.

During the past water year F-type water stage recorders were again installed in the trunk lines for one week during the month of April.

The sewage outflow appears to be increasing yearly. The records show two previous estimates as: 1938-39 -- 5,900 acre-feet; 1951-52 -- 9,500 acre-feet. The computed outflow for the 1968-69 and 1970-71 seasons are 20,000 acre-feet and 21,000 acre-feet, respectively.

It is planned to continue this study by measuring the outflow by the use of F-type water stage recorders during the spring of the year.

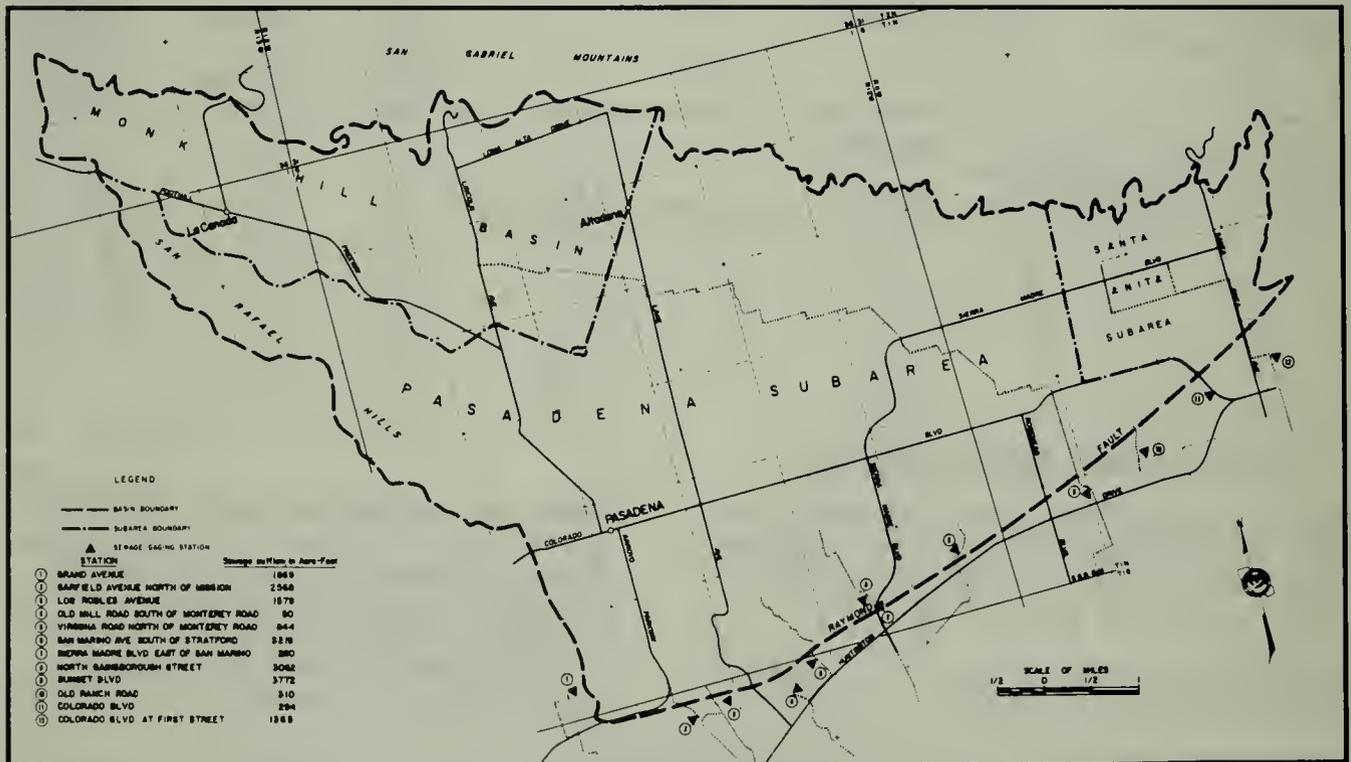


Figure 14. SEWAGE GAGING STATIONS

IV. ADMINISTRATION OF THE JUDGMENT

The Raymond Basin Advisory Board created by the Los Angeles County Superior Court assists and advises the Watermaster on matters of policy and budget preparation. The members are:

- K. A. Johnson, Chairman, City of Pasadena
- E. D. Richards, Secretary, Monk Hill Basin
- L. Magoffin, Pasadena Subarea
- J. A. Grivich, Santa Anita Subarea
- B. Westcamper, Santa Anita Subarea

Messrs. Grivich and Westcamper alternate annually; Mr. Grivich serves in odd-numbered years and Mr. Westcamper serves in even-numbered years.

To manage the Basin effectively, the Board initiated a cooperative water resources management study during fiscal year 1967-68. Begun under an agreement signed March 21, 1968, by the Department of Water Resources and the City of Pasadena for all parties, the program has as its objective the design of a mathematical model of the Basin to simulate the dynamic behavior of a ground water basin and surface water facilities under various operations plans. The Basin was divided into 79 subzones so that the ground water level information gained would be sufficiently detailed for long-range planning.

Before projections could be made, the model's accuracy had to be verified against historic hydraulic data. Numerous alternative plans for using ground and surface water together were then imposed on the model. With the data thus obtained, a wide range of operational and economic information is being developed for management planning. The analysis was completed during the 1970-71 fiscal year and the findings of the investigation were published as Bulletin No. 104-6, dated June 1971.

Use of the model is expected to add greater flexibility to the control of ground water extractions and provide for ground water recharge programs.

Exchange Pool

The Exchange Water Agreement authorized by the Court created an Exchange Pool to provide additional water rights for parties who lacked supplementary supplies. Membership in the pool is voluntary, and any party can join by signing the Agreement.

The Agreement was important during the first years of the Judgment when only Pasadena had access to Colorado River water through the facilities of the Foothill Municipal Water District. Now six parties receive such water and the importance of the Pool has declined considerably. The history of Exchange Pool transactions appears in Table 7.

Table 7. EXCHANGE WATER POOL TRANSACTIONS

Season	Quantity of water purchased, in acre-feet				Average cost, per acre-foot	
	Western Unit	Eastern Unit	Raymond Basin	Western Unit	Eastern Unit	
	Monk Hill	Pasadena	Santa Anita	Basin	Basin	
1944-45	925	53	0	978	\$ 29.88	\$
45-46	550	82	600	1,232	17.49	4.00
46-47	2,750	64	300	3,114	29.39	4.00
47-48	3,150	142	0	3,292	29.88	
48-49	5,150	115	0	5,265	32.16	
49-50	3,782	160	300	4,242	34.77	15.00
1950-51	3,938	96	700	4,734	31.82	15.00
51-52	3,929	100	0	4,029	35.55	15.00
52-53	3,929	72	0	4,001	31.62	
53-54	3,929	67	0	3,996	35.29	
54-55	3,929	215	0	4,144	34.35	
55-56	2,850	41	0	2,891	34.14	
56-57	1,700	10	0	1,710	27.89	
57-58	1,050	0	0	1,050	26.67	
58-59	0	70	0	70	20.00	
59-60	0	45	0	45	25.00	
1960-61	0	25	0	25	20.00	
61-62	0	40	600	640	18.00	31.00
62-63	0	25	0	25	17.00	
63-64	0	30	0	30	17.00	
64-65	0	35	200	235	17.00	64.55
65-66	0	25	300	325	17.00	37.58
66-67	0	0	0	0		
67-68	0	10	0	10	10.00	
68-69	0	40	0	40	25.00	
69-70	0	50	0	50	25.00	
70-71	0	40	0	40	25.00	
TOTALS	41,561	1,652	3,000	46,213		

Table 8. ANNUAL AND FIVE-YEAR VARIATION FROM DECREED RIGHT ^{a/}
In acre-feet

Party	Year					Five-year variation
	1966-67	1967-68	1968-69	1969-70	1970-71 ^{b/}	
WESTERN UNIT						
(Monk Hill Basin)						
La Canada Irrigation District	+ 9.27	- 135.29	+ 29.85	+ 56.32	+ 89.50	+ 49.65
Las Flores Water Company	+ 7.06	- 5.29	+ 56.74	- 46.92	+ 17.18	+ 28.77
Lincoln Avenue Water Company	+ 119.01	- 173.30	- 62.64	+ 3.54	+ 8.49	- 104.90
Pasadena Cemetery Association	- 1.87	- 17.35	- 8.08	- 23.06	- 18.37	- 68.73
Pasadena, City of	+1,776.18	+1,092.58	- 995.10	- 526.94	-1,105.44	+ 241.28
Rubio Canon Land and Water Association	+ 423.14	- 287.09	- 145.24	- 266.64	+ 86.35	- 189.48
Valley Water Company	+ 60.57	- 44.66	+ 216.55	- 129.17	+ 124.51	+ 227.80
Subtotals	+2,393.36	+ 429.60	- 907.92	- 932.87	- 797.78	+ 184.39
(Pasadena subarea)						
Alhambra, City of	- 108.32	+ 739.47	- 1.67	+ 261.98	- 108.79	+ 782.67
Arcadia, City of	- 55.90	- 30.65	+ 53.89	+ 189.19	- 254.47	- 97.94
California-American Water Company	- 570.78	- 187.03	- 41.03	+ 22.70	+ 30.41	- 745.73
Canyon Mutual Water Company	+ 100.15	+ 94.02	+ 95.85	+ 72.66	+ 76.84	+ 439.52
East Pasadena Water Company	+ 166.38	- 117.70	+ 154.73	+ 75.97	+ 12.67	+ 292.05
Huntington Library and Art Gallery	+ 63.57	+ 3.03	+ 46.80	- 20.65	- 40.19	+ 52.56
Kinneloa Irrigation District	+ 149.78	+ 73.32	- 2.45	+ 94.77	+ 99.16	+ 414.58
Mira Loma Mutual Water Company	+ 35.18	+ 89.77	+ 19.46	+ 44.83	+ 67.51	+ 256.75
Monrovia, City of	- 92.61	- 2.46	- 39.27	- 99.31	- 226.16	- 459.81
Osborn Constructors	+ 44.16	- 10.87	- 7.08	- 15.33	- 18.72	- 7.84
Pasadena, City of	+ 914.02	-2,699.10	+2,041.14	-1,468.97	+1,185.24	- 27.67
Royal Laundry and Dry Cleaning Company	- 24.38	- 49.95	- 0.18	+ 9.16	- 4.82	- 70.17
San Gabriel County Water District	- 29.77	- 21.64	+ 38.39	- 14.92	- 14.03	- 41.97
Sunny Slope Water Company	+ 10.65	- 20.77	+ 4.71	- 19.40	- 53.24	- 78.05
Subtotals	+ 602.13	-2,140.56	+2,363.29	- 867.32	+ 751.41	+ 708.95
TOTALS - WESTERN UNIT	+2,995.49	-1,710.96	+1,455.37	-1,800.19	- 46.37	+ 893.34
Recapitulation for City of Pasadena	+2,690.20	-1,606.52	+1,046.04	-1,995.91	+ 79.80	+ 213.61
EASTERN UNIT						
(Santa Anita Subarea)						
Arcadia, City of	+1,551.14	-1,782.66	+ 565.32	- 332.61	- 186.80	- 185.61
Sierra Madre, City of ^{c/}	+ 370.20	+ 41.36	+ 212.91	+ 177.44	- 134.75	+ 667.16
TOTALS - EASTERN UNIT	+1,921.34	-1,741.30	+ 778.23	- 155.17	- 321.55	+ 481.55
GRAND TOTALS	+4,916.83	-3,452.26	+2,233.60	-1,955.36	- 367.92	+1,374.89

a/ Difference between extractions and decreed rights as shown in past reports. Carryover balances are not accounted for in this tabulation. Overextractions are shown as negative (-) values.

b/ Values from Column (3), Table 5.

c/ Excludes salvage water pumped.

Each April the Watermaster mails an Exchange Pool form to all parties, opening the Pool to inter-member water right leasing. This year, the Royal Laundry and Dry Cleaning Company leased 40 acre-feet of water for \$25 per acre-foot from the Kinneloa Irrigation District. The total cost of the water was \$1,000.

Water Rights may also be leased or sold outright. No sale agreements were made this year among the parties.

Annual Variation in Extraction

The annual amount extracted by each party and the percentage variation from the "Decreed Right 1955" are shown in Table 5 (page 24). Exchange water sold or bought is accounted for in the Decreed Right. Barring emergencies, the Judgment prohibits annual extractions

Table 9. VARIATION OF ANNUAL EXTRACTATIONS FROM SAFE YIELD

July 1 through June 30	Annual extractions					Raymond Basin Area
	Monk Hill Basin	Pasadena Subarea	Subtotal	Cemetery Unit ^{a/}	Basin	
1950-51	7,098	13,418	20,516	2,861	23,377	
51-52	5,903	10,750	16,653	2,041	18,694	
52-53	5,973	12,471	18,444	4,535	22,979	
53-54	6,283	11,765	18,048	4,163	22,211	
54-55	6,420	12,783	19,203	4,399	23,602	
Average annual extractions	6,363	11,683	18,046	3,639	21,685	
Safe yield 1938 ^{b/}	6,039	11,621	17,660	3,791	21,451	
Average difference ^{c/}	+ 324	+ 62	+ 386	- 152	+ 234	
1955-56	6,319	14,060	20,379	4,687	25,066	
56-57	7,057	17,474	24,531	5,685	30,216	
57-58	5,916	16,054	21,970	3,823	25,793	
58-59	8,160	18,027	26,187	7,018	33,205	
59-60	7,992	16,428	24,420	4,858	29,278	
1960-61	7,141	18,796	25,937	3,342 ^{d/}	29,279	
61-62	6,742	18,419	25,161	3,496 ^{d/}	28,657	
62-63	8,084	16,630	24,714	5,268	29,982	
63-64	7,937	17,469	25,406	4,778	30,184	
64-65	7,450	17,682	25,132	3,599 ^{d/}	28,731	
65-66	6,583	19,397	25,980	3,388 ^{d/}	29,368	
66-67	5,096	17,241	22,337	3,369	25,706	
67-68	7,059	19,984	27,043	7,031	34,074	
68-69	8,397	15,490	23,887	4,511	28,398	
69-70	8,422	18,710	27,132	5,445	32,577	
70-71	8,287	17,091	25,378	5,612	30,990	
Average annual extractions	7,290	17,435	24,725	4,744	29,469	
Safe yield 1952 ^{e/}	7,489	17,843	25,332	5,290	30,622	
Average difference ^{c/}	- 199	- 408	- 607	- 546	- 1,153	

- a/ Excludes salvaged water pumped by City of Sierra Madre.
b/ Effective 1944-45 through 1954-55 and excludes nonparty pumpage.
c/ Extractions greater than safe yield: (+)
Extractions less than safe yield: (-).
d/ Reduction in extraction by order of Watermaster.
e/ Effective 1955-56 through present and excludes nonparty pumpage.

that exceed 120 percent of the "Decreed Right 1955", plus or minus exchange water. Four parties -- Pasadena Cemetery Association, City of Arcadia, City of Monrovia, and Osborn Constructors -- appeared to exceed this limitation. In reality, the balances carried from the previous season canceled any over-extractions for all except the City of Monrovia.

Table 5 also shows the amount extracted by the City of Pasadena in the Monk Hill Basin and the Pasadena Subarea. However, the City's "Decreed Right 1955" is the total volume of water that it can take from the Western Unit; this, therefore, is separately recapitulated.

Five-Year Variation in Extraction

The Judgment also states that the total amount pumped or taken by any party in any 60 consecutive months (five years) cannot exceed the amount released to it by the Exchange Agreement and five times the Party's decreed right. Thus, the limit for all parties in the Monk Hill Basin, Pasadena Subarea, and the Santa Anita Subarea equals five times the "Decreed Right" 1955". Table 8 summarizes annual variation from the "Decreed Right 1955" and the cumulative five-year variation.

Variations from Safe Yield

Table 9 summarizes annual extractions from 1950-51 to the present and compares average annual extraction with safe yield. It also shows years in which extractions exceeded safe yield. At present, average annual extractions in each subarea are less than safe yield, an occurrence that is undoubtedly aided by the above-average precipitation and runoff in three years of the last five years preceding this report period.

V. ADMINISTRATIVE COSTS

Under the provisions of Section 4201, California Water Code, the cost of watermaster service is shared equally by the State and the parties to the Judgment.

Before each December 15, the Watermaster in cooperation with the Raymond Basin Advisory Board, prepares the budget for the fiscal year beginning the next July 1. The 1970-71 budget, approved by the Board on November 5, 1969, is shown in Table 10.

The Raymond Basin budget contains two sections (Table 11). Part "A" supports the cost of administering the Raymond Basin Judgment. Each party's share of that cost is directly proportionate to the party's "Decreed Right 1955". Part "B" supports

Table 10. APPROVED BUDGET FOR 1970-71 SEASON

<u>PART "A" - Cost Other Than Exchange Water Program</u>	
Salaries and wages	\$18,583
Operating expenses	4,631
Retirement and compensation plus administration	4,939
Total Amount	\$28,153
One-half payable by State	\$14,077
One-half payable by parties	14,076
Less estimated carryover from 1969-70	0
Total collectible from parties	\$14,076
<u>PART "B" - Cost of Exchange Water Program</u>	
Salaries and wages	\$ 79
Retirement and compensation plus administration	21
Total Amount	\$ 100
One-half payable by State	\$ 50
One-half payable by participants in release and receipt of water	50
TOTAL ESTIMATED COST OF Watermaster Service - July 1, 1970 through June 30, 1971	\$28,253

Table 11. APPORTIONMENT OF SHARES IN 1970-71 BUDGET
Part "A"

Party	"Decreed Right 1955", in acre-feet	Apportionment paid
Alhambra, City of	1,031	\$ 473.92
Arcadia, City of	4,693	2,157.23
California-American Water Company	2,299	1,056.78
Canyon Mutual Water Company	127	58.38
East Pasadena Water Company, Ltd.	515	236.73
Henry E. Huntington Library and Art Gallery	262	120.43
Kinneloa Irrigation District	229	105.26
La Canada Irrigation District	100	45.97
Las Flores Water Company	249	114.46
Lincoln Avenue Water Company	567	260.63
Mira Loma Mutual Water Company	148	68.03
Monrovia, City of	951	437.15
Osborn Constructors	12	5.52
Pasadena Cemetery Association	91	41.83
Pasadena, City of	12,807	5,886.98
Royal Laundry and Dry Cleaning Company	110	50.56
Rubio Canon Land and Water Association	1,221	561.26
San Gabriel County Water District	1,091	501.50
Sierra Madre, City of	1,764	810.86
Sunny Slope Water Company	1,558	716.16
Valley Water Company	797	366.36
TOTALS	30,622	\$ 14,076.00
Part "B"		
Party	Amount of water exchanged, in acre-feet	Amount paid
Kinneloa Irrigation District	40	\$ 25.00
Royal Laundry and Dry Cleaning Company	40	25.00
TOTALS		\$ 50.00

the cost of operating the Raymond Basin Exchange Pool. Only the parties that participated in the Pool were charged for that cost. Each party's share of the 1970-71 budget is shown in Table 11. No penalties were assessed for late payments.

Costs of Determining Salvage
Credit for City of Sierra Madre

On June 30, 1970, a balance of \$32.29 remained in the special account established to pay the cost of determining amounts of water salvaged by the City of Sierra Madre. Delayed charges reduced this balance to \$30.77. During the 1970-71 season, on request, the City deposited \$400 to this account. Expenditures during this season totaled \$437.77. A debit balance of \$7.00 remained in the account on June 30, 1971.

Income and expenditures under both parts of the budget appear in Table 12. Credit or Debit balances shown there are carried forward into the next fiscal year, as directed by Sections 4358 and 4406 of the State Water Code and Paragraph XIII of the Judgment.

Table 12. STATEMENT OF 1970-71 INCOME AND EXPENDITURES

Item	:	Parties	:	State	:	State and Parties
<u>Income</u>						
From Part "A" of the budget		\$14,076.00		\$14,077.00		\$28,153.00
From Part "B" of the budget		50.00		50.00		100.00
Carryover from 1969-70		<u>1,759.58^{a/}</u>		<u>0.00</u>		<u>1,759.58</u>
Total Income		\$15,885.58		\$14,127.00		\$30,012.58
<u>Expenditures</u>						
From Part "A" of the budget						
Salaries and wages		\$ 9,719.51		\$ 9,719.51		\$19,439.02
Operating expenses						
Miscellaneous indirect costs ^{b/}		2,488.64		2,488.64		4,977.28
Travel in State		28.54		28.54		57.08
Mobil Equipment rental		455.71		455.71		911.42
Printing plates and covers for annual report		60.36		60.36		120.72
Electronic machine computing		1,754.16		1,754.16		3,508.32
From Part "B" of the budget						
Salaries and wages		40.00		40.00		80.00
Operating expenses		<u>10.00</u>		<u>10.00</u>		<u>20.00</u>
Total expenditures		<u>\$14,556.92</u>		<u>\$14,556.92</u>		<u>\$29,113.84</u>
BALANCE		<u>\$ 1,328.66^{c/}</u>		<u>- \$ 429.92</u>		<u>\$ 898.74</u>

a/ Adjusted for 1969-70 delayed charges.

b/ Rent, utilities, auto rental, janitorial services, communications, retirement, employees' health plan, and workmen's compensation insurance.

c/ Subject to delayed charges and credits.

APPENDIX A: MEAN DAILY DISCHARGE AT SURFACE RUNOFF STATIONS OPERATED BY THE WATERMASTER, 1970-71 WATERMASTER YEAR

DAY	MEAN DAILY DISCHARGE in second-feet												DAY
	STATION: ARCADIA WASH												
	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	
1	.8	1.3	.6	.4	1.7	.6	.4	.3	.4	.9	2.5	1.2	1
2	.7	1.4	.6	.4	1.2	5.6	1.2	.4	.4	.8	2.3	1.6	2
3	.6	1.3	.4	.5	.8	.5	.4	.5	.4	1.0	1.5	1.7	3
4	.6	1.0	.2	.5	1.0	.6	.3	.5	.5	.8	1.4	2.4	4
5	1.0	.6	.4	.5	.9	.7	.2	.5	.3	1.5	1.7	4.7	5
6	1.0	.5	.5	.5	.6	.7	.3	.6	.4	1.3	9.5	7.0	6
7	.9	.8	.5	.7	.3	.6	.2	.6	.3	1.8	1.4	12.2	7
8	1.1	.6	.5	.6	.2	.6	.2	.5	.4	2.2	1.9	11.6	8
9	1.1	.6	.4	.7	.2	2.4	.2	.5	.7	2.6	1.6	9.1	9
10	1.0	.8	.5	.8	.2	.7	.2	.5	.5	2.3	3.7	8.4	10
11	1.0	.8	.6	.7	.2	.7	.2	.5	.5	2.2	1.7	6.7	11
12	1.0	.9	.5	.6	.2	.7	4.8	.5	1.1	2.4	2.0	3.8	12
13	1.4	.9	.6	.7	.4	.7	.5	.6	17.2	2.4	2.2	3.6	13
14	1.4	.9	.9	.7	.5	.6	.2	.5	.4	5.7	1.4	4.8	14
15	1.1	1.0	.8	.8	.4	.9	.2	.5	.4	1.2	1.3	3.5	15
16	.9	1.1	1.1	1.1	.4	2.4	.2	9.6	.4	3.6	1.2	3.5	16
17	1.0	1.3	1.1	1.1	.4	4.1	.2	10.9	.4	3.9	1.7	2.9	17
18	1.2	1.0	.7	1.4	.3	27.8	.2	.7	.3	1.1	1.9	1.9	18
19	1.3	1.1	.6	1.9	.3	28.2	.2	.7	.4	1.1	2.0	1.1	19
20	1.5	.9	.5	2.6	.4	6.0	.2	.7	.4	1.4	1.5	.7	20
21	1.4	.9	.5	2.4	.4	59.3	.2	.6	.4	1.5	1.1	1.0	21
22	1.5	.8	.4	3.7	.4	.9	.2	.6	.5	1.4	1.1	1.5	22
23	1.5	.5	.5	5.0	.3	.7	.2	.6	.4	1.6	1.1	1.4	23
24	1.3	.6	.5	4.9	.4	.7	.2	.6	.5	1.9	1.6	1.8	24
25	1.1	.8	.6	5.5	.4	.8	.2	.5	.6	2.1	2.2	1.5	25
26	1.1	.8	.4	5.8	.2	.6	.2	.6	.5	2.5	1.3	1.4	26
27	1.1	.9	.5	3.2	.1	.6	.2	.6	.7	2.9	2.7	1.1	27
28	1.1	.7	.7	2.5	59.7	.7	.2	.5	.7	4.2	7.3	1.6	28
29	1.1	.7	.9	2.8	120.7	.7	.1	.8	.8	3.2	2.0	1.9	29
30	1.0	.4	.8	1.9	1.1	.6	.1	.7	.7	2.7	1.1	2.4	30
31	1.1	.5		1.5		.5	.1		1.0		1.0		31
MEAN	1.1	.8	.6	1.8	6.5	4.9	.4	1.2	1.1	2.2	2.2	3.6	MEAN
MAX.	1.5	1.4	1.1	5.8	120.7	59.3	4.8	10.9	17.2	5.7	9.5	12.2	MAX.
MIN.	.7	.4	.2	.4	.1	.5	.1	.3	.3	.8	1.0	.7	MIN.
ACFT	68.0	52.0	35.3	111.6	385.9	299.5	24.3	68.5	64.7	128.3	133.5	215.0	ACFT

WATERMASTER YEAR SUMMARY

MEAN DISCHARGE	MAXIMUM					MINIMUM					TOTAL ACRE-FEET
	DISCHARGE	GAGE HT	MO	DAY	TIME	DISCHARGE	GAGE HT	MO	DAY	TIME	
2.20	353.50	1.32	11	29	1128	0	0	10	5	1331	1566.60

DAY	MEAN DAILY DISCHARGE in second-feet											DAY	
	STATION: ARROYO SECO												
	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY		JUNE
1	.0	.0	.0	.0	.0	14.4	8.2	.3	.0	.0	2.7	.0	1
2	.0	.0	.0	.0	.0	15.4	9.0	.4	.1	.0	2.8	.0	2
3	.0	.0	.0	.0	.0	7.6	8.6	.1	.2	.0	2.7	.0	3
4	.0	.0	.0	.0	.0	5.9	8.2	1.0	.1	.0	2.6	.0	4
5	.0	.0	.0	.0	.0	5.5	6.9	.2	.2	.0	1.9	.0	5
6	.0	.0	.0	.0	.0	5.5	6.5	.2	.1	2.2	2.6	.0	6
7	.0	.0	.0	.0	.0	5.5	3.4	.2	.1	4.3	4.1	.0	7
8	.0	.0	.0	.0	.0	5.5	.4	.1	.1	3.1	1.4	.1	8
9	.0	.0	.0	.0	.0	8.1	.3	1.1	.1	3.0	.2	.2	9
10	.0	.0	.0	.0	.1	7.9	.3	.2	.1	3.1	.1	.2	10
11	.0	.0	.0	.0	.0	7.5	.9	.2	.1	3.1	.0	.2	11
12	.0	.0	.0	.0	.0	6.0	1.1	.1	.1	3.2	.0	.2	12
13	.0	.0	.1	.0	.0	4.9	9.6	.1	15.2	3.3	.0	.2	13
14	.0	.0	.1	.2	.0	7.3	8.0	.0	6.9	3.3	.0	.2	14
15	.0	.0	.1	.1	.0	5.2	4.2	.0	6.0	3.3	.0	.2	15
16	.0	.0	.1	.0	.0	4.1	.3	1.8	3.3	3.2	.0	.2	16
17	.0	.0	.1	.0	.0	6.8	.3	15.9	.4	3.1	.0	.1	17
18	.0	.0	.0	.0	.0	7.6	.3	9.5	.4	3.2	.0	.1	18
19	.0	.0	.0	.0	.0	16.0	.3	8.1	.4	3.3	.0	.1	19
20	.0	.0	.0	.0	.0	9.2	.3	3.6	.4	3.3	.0	.2	20
21	.0	.0	.0	.0	.0	49.5	.7	.7	.4	3.3	.0	.2	21
22	.0	.0	.0	.0	.0	25.3	.2	.7	.4	3.3	.0	.2	22
23	.0	.0	.0	.0	.0	15.4	.2	.8	.5	3.3	.0	.2	23
24	.0	.0	.0	.0	.0	14.0	.2	.5	.2	3.3	.0	.2	24
25	.0	.0	.0	.0	.6	11.1	.1	.3	.1	3.5	.0	.2	25
26	.0	.0	.0	.0	2.0	9.5	.1	.3	.1	3.4	.0	.2	26
27	.0	.0	.0	.0	2.0	9.0	.2	.2	.0	3.2	.0	.2	27
28	.0	.0	.0	.0	5.1	9.0	.2	.3	.0	3.2	.0	.2	28
29	.0	.0	.0	.0	67.8	8.8	.1	.1	.1	3.2	.0	.1	29
30	.0	.0	.0	.0	30.1	8.6	.1	.1	.1	3.2	.0	.0	30
31	.0	.0		.0		6.4	.2		.1		.0		31
MEAN	0	0	0	0	3.6	10.5	2.5	1.7	1.2	2.7	.7	.1	MEAN
MAX.	0	0	.1	.2	67.8	49.5	9.6	15.9	15.2	4.3	4.1	.2	MAX.
MIN.	0	0	0	0	0	4.1	.1	.1	0	.1	0	0	MIN.
ACFT	.1	0	.9	.6	213.8	643.5	154.3	93.4	72.5	159.8	42.1	7.9	ACFT

WATERMASTER YEAR SUMMARY

MEAN DISCHARGE	MAXIMUM					MINIMUM					TOTAL ACRE-FEET
	DISCHARGE	GAGE HT	MO	DAY	TIME	DISCHARGE	GAGE HT	MO	DAY	TIME	
1.92	76.90	1.18	11	29	1236	0	0	7	1	0000	1388.90

APPENDIX A (continued)

STATION: BROADWAY DRAIN													STATION NO. 75135		WATERMASTER YEAR 1970-71	
MEAN DAILY DISCHARGE in second-feet																
DAY	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	DAY			
1	3.2	3.7	2.2	1.1	1.5	2.1	3.9	1.4	4.7	.3	1.4	2.9	1			
2	2.1	3.8	1.7	1.2	1.1	11.6	6.3	2.1	4.3	.8	1.8	1.3	2			
3	3.2	3.4	2.6	1.8	1.6	2.2	4.1	1.8	2.2	.5	2.3	1.4	3			
4	1.8	1.9	1.7	1.5	1.7	3.2	2.3	2.1	1.6	.3	2.0	1.8	4			
5	2.1	2.6	2.0	1.6	.7	5.2	1.6	1.8	1.3	.3	3.2	2.3	5			
6	2.4	2.0	1.8	1.2	3.2	5.1	1.1	1.9	3.1	.8	8.0	2.2	6			
7	1.9	1.6	1.4	1.4	2.4	6.0	.7	1.6	2.9	3.4	5.6	2.4	7			
8	2.1	3.2	1.9	1.3	1.1	5.2	.4	1.4	3.3	2.9	6.1	1.9	8			
9	2.2	4.0	2.1	1.5	.9	8.9	.3	1.4	2.4	3.1	4.8	2.0	9			
10	2.1	2.4	3.2	1.5	.6	3.8	.4	1.4	2.4	2.8	2.6	2.5	10			
11	1.9	1.8	2.9	1.2	.8	3.2	.6	2.2	2.3	3.1	4.4	1.9	11			
12	2.0	1.7	2.3	1.6	1.4	3.1	9.4	1.3	2.5	2.7	2.5	1.1	12			
13	2.0	1.6	2.2	1.5	1.9	4.2	3.5	1.2	13.0	3.4	4.4	1.0	13			
14	2.5	1.8	2.1	1.0	1.9	3.8	.9	1.4	1.2	8.4	3.8	1.4	14			
15	3.2	1.5	1.5	.9	1.5	4.2	.9	1.4	1.8	4.8	6.1	1.6	15			
16	5.1	.8	1.2	2.3	1.6	9.5	1.1	13.9	1.2	3.8	5.8	1.5	16			
17	3.8	1.6	.9	1.6	1.6	9.6	.9	12.6	2.0	5.2	2.3	1.8	17			
18	3.4	1.5	.9	.8	.9	39.2	.7	2.5	3.1	3.7	3.6	1.9	18			
19	3.2	1.1	1.0	.6	2.0	23.2	1.0	2.0	3.1	2.7	5.1	2.4	19			
20	2.3	.7	1.0	.4	1.5	10.1	.5	1.5	2.2	2.1	3.2	2.4	20			
21	1.8	.6	.9	.4	1.9	51.8	.4	1.7	2.2	2.1	5.1	1.8	21			
22	2.3	.8	1.1	.7	2.2	6.3	.6	2.3	3.6	2.2	3.5	.9	22			
23	1.7	.7	.7	.5	2.0	5.7	.5	2.9	4.1	2.0	3.6	3.6	23			
24	1.6	.8	.8	.5	2.3	4.0	.7	2.7	4.2	2.4	4.9	4.1	24			
25	1.7	1.5	1.0	.6	6.7	6.0	1.0	2.9	4.2	3.4	6.1	3.1	25			
26	1.8	1.5	.7	.8	4.8	5.8	.4	2.8	3.9	3.0	4.3	2.0	26			
27	1.7	1.7	.6	.5	2.4	5.4	.7	2.8	4.2	3.6	4.6	2.1	27			
28	1.9	1.3	.5	.5	51.3	5.7	1.1	3.6	4.2	3.8	9.1	2.8	28			
29	2.0	2.3	1.4	.9	127.2	5.4	.9	4.6	3.8	3.8	4.9	3.0	29			
30	2.1	2.1	.7	.7	4.5	5.4	1.5	4.6	2.6	2.6	4.3	2.7	30			
31	3.5	1.1		.6		5.4	2.4		3.0		3.6		31			
MEAN	2.4	1.8	1.5	1.1	1.8	6.8	1.6	2.8	3.3	2.8	4.3	2.1	MEAN			
MAX.	5.1	4.0	3.2	2.3	127.2	51.8	9.4	13.9	13.0	6.4	9.1	4.1	MAX.			
MIN.	1.6	.6	.5	.4	.6	2.1	.3	1.2	1.2	.3	1.6	.9	MIN.			
ACFT	148.9	113.1	89.5	65.2	465.2	580.3	101.0	156.7	205.6	164.7	263.9	126.3	ACFT			

WATERMASTER YEAR SUMMARY

MEAN DISCHARGE	MAXIMUM				MINIMUM				TOTAL ACRE-FEET
	DISCHARGE	GAGE HT	MO	DAY	DISCHARGE	GAGE HT	MO	DAY	
3.36	666.60	3.32	11	29	.20	.07	1	9	2439.50

STATION: EATON CREEK NEAR PASADENA													STATION NO. 75360		WATERMASTER YEAR 1970-71	
MEAN DAILY DISCHARGE in second-feet																
DAY	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	DAY			
1	.0	.7	.6	.7	.2	13.2	3.5	.2	.0	.0	.0	.0	1			
2	.0	.6	.4	.6	.3	13.6	3.2	.0	.0	.0	.0	.0	2			
3	.0	.3	.6	1.1	.3	12.3	3.7	.0	.0	.0	.0	.0	3			
4	.0	.5	.2	1.2	.3	10.1	3.1	.0	.0	.0	.0	.0	4			
5	.0	.3	.1	1.3	.3	6.3	2.8	.0	.0	.0	.0	.1	5			
6	.0	.3	.1	1.0	.5	7.7	2.3	.0	.0	.0	1.0	.1	6			
7	.0	.3	.1	1.1	.7	6.7	2.1	.0	.0	.0	2.5	.1	7			
8	.0	.3	.1	1.1	.8	6.1	1.9	.0	.0	.2	1.1	1.0	8			
9	.0	.5	.1	1.0	.5	5.9	1.4	.0	.0	.0	.7	1.0	9			
10	.0	.6	.2	1.0	.3	5.5	1.2	.0	.0	.0	.7	1.0	10			
11	.2	.6	.2	.9	.4	4.9	1.2	.0	.0	.0	.6	1.0	11			
12	.2	.6	.2	.8	.4	4.2	4.0	.0	.0	.0	.4	1.0	12			
13	.2	.7	.3	.8	.4	3.8	7.9	.0	4.8	.0	.4	1.0	13			
14	.2	.7	.3	.8	.2	3.5	6.8	.0	1.4	.6	.4	1.0	14			
15	.2	.8	.3	.8	.3	3.1	6.6	.0	1.0	.4	.3	1.0	15			
16	.2	.8	.6	.8	.3	2.6	6.6	.7	.8	.0	.3	1.0	16			
17	.4	.8	.9	.8	.2	3.2	6.6	4.7	.7	.0	.3	1.0	17			
18	.3	.7	.9	.8	.2	5.0	4.6	.9	.7	.0	.5	1.0	18			
19	.2	.6	.9	.8	.2	11.3	2.5	.5	.7	.0	.6	1.0	19			
20	.3	.6	1.0	.8	.2	14.7	2.5	.0	.6	.0	.7	1.0	20			
21	.4	.6	1.0	.8	.2	13.1	2.5	.1	.7	.0	.6	1.0	21			
22	.2	.6	1.0	.8	.2	15.2	2.0	.0	.6	.0	.6	1.0	22			
23	.1	.6	1.0	.8	.2	10.6	1.2	.1	.6	.0	.5	1.0	23			
24	.2	.6	1.1	.8	.3	10.2	1.1	.1	.2	.0	.3	1.0	24			
25	.6	.6	1.0	.8	.2	9.5	1.1	.1	.0	.0	.4	1.0	25			
26	.6	.5	.8	.8	.6	6.6	1.0	.1	.0	.0	.4	1.0	26			
27	.4	.5	.7	.7	.6	7.9	.9	.1	.1	.0	.4	1.0	27			
28	.5	.6	.7	.6	1.4	7.7	.7	.1	.0	.0	.3	1.0	28			
29	.5	.6	.7	.5	37.8	6.3	.4	.0	.0	.0	.3	1.0	29			
30	.4	.6	.8	.5	14.0	5.0	.3	.0	.0	.0	.3	1.0	30			
31	.5	.6		.5		4.1	.3		.0		.3		31			
MEAN	.2	.6	.6	.8	2.1	7.7	2.8	.3	.4	0	.5	.7	MEAN			
MAX.	.6	.8	1.1	1.3	37.8	15.2	7.9	4.7	4.8	.6	2.5	1.0	MAX.			
MIN.	0	.3	.1	.5	.2	2.6	.3	0	0	0	0	0	MIN.			
ACFT	13.9	35.4	33.1	50.5	126.1	675.7	189.8	16.7	25.4	2.4	38.0	88.6	ACFT			

WATERMASTER YEAR SUMMARY

MEAN DISCHARGE	MAXIMUM				MINIMUM				TOTAL ACRE-FEET
	DISCHARGE	GAGE HT	MO	DAY	DISCHARGE	GAGE HT	MO	DAY	
1.39	173.80	2.16	11	29	0	0	7	5	1920.14

APPENDIX A (continued)

STATION: EATON WASH				MEAN DAILY DISCHARGE in second-feet							STATION NO. 75300		WATERMASTER YEAR 1970-71		
DAY	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	DAY		
1	.2	.0	.0	.1	.0	1.0	.0	.1	.3	.4	.2	.1	1		
2	.1	.0	.0	.1	.1	6.8	2.5	.3	.3	.3	.3	.3	2		
3	.1	.0	.1	.0	.1	.5	.0	.1	.2	.3	.3	.0	3		
4	.1	.0	.2	.0	.1	.6	.1	.1	.2	.3	.2	.1	4		
5	.1	.0	.1	.0	.1	.3	.1	.1	.1	.3	.2	.1	5		
6	.1	.1	.1	.1	.4	.7	.1	.0	.2	.3	4.9	.1	6		
7	.1	.1	.1	.2	.0	4.8	.2	.1	.2	.3	1.1	.1	7		
8	.2	.0	.1	.1	.0	.9	.2	.1	.3	.3	.7	.1	8		
9	.2	.0	.2	.1	.0	4.0	.1	.1	.2	.3	.7	.1	9		
10	.2	.1	.1	.0	.0	.3	.1	.1	.3	.3	1.3	.2	10		
11	.2	.0	.1	.1	.0	.1	.1	.2	.2	.3	1.2	.3	11		
12	.2	.1	.1	.1	.0	.1	9.2	.1	.9	.6	1.1	.1	12		
13	.2	.1	.1	.0	.1	.0	2.6	.1	12.0	1.7	.8	.1	13		
14	.1	.3	.1	.1	.0	.1	.3	.1	.8	6.0	.8	.1	14		
15	.5	.0	.1	.1	.0	.1	.3	.1	.5	.7	.6	.1	15		
16	.1	.0	.1	.1	.0	2.5	.3	12.0	.5	3.4	.6	.0	16		
17	.1	.1	.1	.0	.1	3.5	.3	10.9	.4	2.2	1.2	.0	17		
18	.1	.1	.1	.0	.1	21.9	.3	.3	.5	.6	.5	.0	18		
19	.1	.3	.0	.1	.1	17.6	.3	.3	.3	.5	.5	.0	19		
20	.3	.2	.0	.1	.1	5.8	.3	.3	.4	.6	.5	.0	20		
21	.2	.1	.1	.1	.0	50.7	.3	.3	.5	.5	.8	.3	21		
22	.1	.0	.1	.1	.0	.2	.3	.3	.5	.5	.3	.1	22		
23	.1	.0	.1	.0	.0	.1	.4	.2	.5	.5	.3	.1	23		
24	.2	.0	.2	.0	.0	.0	.3	.3	.5	.4	1.1	.1	24		
25	.0	.0	.0	.0	2.0	.0	.3	.3	.3	.3	.4	.1	25		
26	.0	.1	.0	.1	1.9	.0	.3	.3	.4	.3	.5	.0	26		
27	.0	.0	.0	.1	.0	.0	.2	.3	.4	.3	.9	.1	27		
28	.0	.0	.0	.1	35.6	.0	.2	.3	.5	.3	1.4	.1	28		
29	.0	.1	.0	.1	101.7	5.5	.1	.1	.5	.3	.3	.1	29		
30	.2	.0	.0	.1	1.5	.3	.2	.1	.4	.3	.3	.1	30		
31	.1	.0	.0	.0	.0	.4	.3	.0	.5	.0	.3	.0	31		
MEAN	.1	.1	.1	.1	4.8	4.2	.6	1.0	.8	.8	.8	.1	MEAN		
MAX.	.5	.3	.2	.2	101.7	50.7	9.2	12.0	12.0	6.0	4.9	.3	MAX.		
MIN.	0	0	0	0	0	0	0	0	.1	.3	.2	0	MIN.		
ACFT	8.2	4.6	4.4	3.9	288.0	256.0	39.6	55.2	46.4	46.1	47.3	6.0	ACFT		

WATERMASTER YEAR SUMMARY

MEAN DISCHARGE	MAXIMUM					MINIMUM					TOTAL ACFE- FEET
	DISCHARGE	GAGE HT	MO	DAY	TIME	DISCHARGE	GAGE HT	MO	DAY	TIME	
1.13	698.80	1.98	11	29	1109	0	0	7	5	1414	803.70

STATION: FLINT WASH				MEAN DAILY DISCHARGE in second-feet							STATION NO. 62190		WATERMASTER YEAR 1970-71		
DAY	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	DAY		
1	.2	.1	.1	.1	.3	1.9	1.0	.8	.8	.5	1.1	1.1	1		
2	.2	.1	.2	.1	.3	36.5	2.6	.4	.7	.7	1.2	1.1	2		
3	.3	.1	.1	2.2	.3	1.3	.8	.4	.5	.8	1.1	1.4	3		
4	.2	.1	.1	.1	.4	.9	1.1	.4	.5	1.0	1.2	1.2	4		
5	.2	.1	.1	.2	.4	.8	1.0	.4	.7	.9	1.3	1.4	5		
6	.2	.1	.1	.2	4.6	.7	1.1	.5	.8	.7	6.8	1.1	6		
7	.2	.1	.1	.2	.5	.6	1.0	.5	.8	.5	2.5	1.1	7		
8	.2	.1	.1	.1	.4	.6	1.0	.5	.6	.4	1.1	1.1	8		
9	.2	.2	.1	.1	.4	12.2	1.0	.7	.5	.5	1.1	.5	9		
10	.2	.2	.1	.1	.4	1.0	1.0	.8	.8	.6	2.7	.8	10		
11	.1	.1	.1	.1	.4	.6	1.0	.7	.8	.5	1.2	.4	11		
12	.2	.2	.0	.1	.4	.8	35.9	.6	4.7	.8	1.3	.4	12		
13	.2	.2	.0	.1	.4	16.2	5.6	.8	43.8	.5	1.2	.4	13		
14	.2	.2	.2	.0	.4	2.2	1.5	2.5	.9	10.9	1.1	.3	14		
15	.1	.2	.0	.1	.3	.7	1.2	5.1	.9	.9	.9	.3	15		
16	.1	.3	.0	.2	.3	11.9	1.2	39.3	.8	.9	1.0	.4	16		
17	.2	.2	.0	.1	.3	13.3	1.1	52.4	.7	9.7	1.0	.3	17		
18	.2	.2	.0	.2	.3	94.1	1.3	.9	.7	1.0	1.1	.3	18		
19	.2	.3	.0	.3	.3	22.0	1.7	1.0	1.0	1.0	1.1	.3	19		
20	.1	.3	.0	.3	.3	9.6	1.8	.7	.7	1.1	1.1	.3	20		
21	.1	.3	.1	.2	.4	105.1	1.8	.8	.7	1.2	1.1	.3	21		
22	.2	.2	.2	.2	.4	5.7	1.5	.7	.8	1.1	1.1	.3	22		
23	.1	.2	.1	.2	.4	3.1	1.3	.7	.7	1.8	1.3	.4	23		
24	.1	.2	.1	.3	.3	2.2	1.2	.9	.8	1.6	1.3	.3	24		
25	.1	.1	.1	.2	3.0	1.8	1.1	.6	.8	1.1	1.3	.3	25		
26	.1	.2	.2	.3	2.9	1.4	.8	.5	.8	2.0	1.2	.3	26		
27	.2	.2	.2	.1	.4	1.4	.9	.7	.8	2.3	1.0	.3	27		
28	.2	.2	.2	.1	77.6	1.2	.9	.7	1.1	2.6	3.3	.4	28		
29	.1	.2	.1	.1	213.7	1.1	.9	.8	.8	1.8	1.1	.3	29		
30	.1	.2	.1	.1	8.8	1.1	.9	.7	.7	1.1	1.4	.3	30		
31	.1	.2	.0	.1	.0	1.2	.8	.0	.7	.0	1.1	.0	31		
MEAN	.2	.2	.1	.2	10.6	11.4	2.5	4.1	2.3	1.7	1.5	.8	MEAN		
MAX.	.3	.3	.2	2.2	213.7	105.1	35.9	52.4	43.8	10.9	6.8	1.4	MAX.		
MIN.	.1	.1	0	0	.3	.8	.8	.4	.5	.4	.9	.3	MIN.		
ACFT	19.4	10.7	6.4	13.2	633.2	700.2	121.1	227.5	136.9	100.0	92.2	34.5	ACFT		

WATERMASTER YEAR SUMMARY

MEAN DISCHARGE	MAXIMUM					MINIMUM					TOTAL ACFE- FEET
	DISCHARGE	GAGE HT	MO	DAY	TIME	DISCHARGE	GAGE HT	MO	DAY	TIME	
2.95	667.80	3.99	11	29	1124	0	.02	7	4	2050	2116.80

APPENDIX A (continued)

DAY	STATION: RUBIO DRAIN											DAY	
	MEAN DAILY DISCHARGE In second-feet												
STATION NO. 75220											WATERMASTER YEAR		
1970-71											1970-71		
JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE		
1	1.2	1.7	.6	.7	.4	6.5	.9	1.5	.1	.6	.7	1.2	1
2	1.3	1.2	.7	.8	.5	16.2	6.6	.9	.1	.8	.8	1.8	2
3	1.3	1.1	.7	.7	.6	1.9	1.1	.7	2.0	1.1	1.6	1.2	3
4	1.4	1.0	.7	.6	.4	.7	.7	.6	1.6	.9	.7	1.6	4
5	1.2	.9	.7	.6	.2	.9	.9	.5	1.6	.8	1.6	.9	5
6	1.1	.9	.6	.5	5.8	.8	.6	.4	1.5	.8	8.2	.9	6
7	1.0	.8	.5	.5	.3	.7	.8	.4	1.4	1.8	1.4	.8	7
8	1.3	.8	.5	.7	.4	.9	.3	.4	1.2	1.5	1.1	1.1	8
9	1.5	.6	.7	.7	.4	8.2	.4	.4	1.2	1.2	1.0	1.0	9
10	1.5	.9	.6	.8	.4	.9	.3	.5	1.5	1.3	1.2	1.1	10
11	1.5	.8	.8	.5	.4	.7	.4	.4	1.4	1.2	1.2	.8	11
12	1.3	.7	.7	.5	.3	.8	22.0	.4	2.5	1.4	.6	1.1	12
13	1.3	.6	.7	.5	.6	1.5	4.0	.4	38.8	1.1	1.0	.9	13
14	1.7	.7	.6	.5	.8	2.6	.8	.4	1.5	13.8	1.2	1.2	14
15	1.9	.9	.4	.5	.7	1.0	.6	.4	1.7	1.5	1.2	1.2	15
16	1.6	.8	.6	.7	.7	11.6	.4	44.3	1.8	2.7	1.1	1.2	16
17	1.6	.9	.8	.6	.8	15.2	.5	42.9	1.8	5.3	.9	1.0	17
18	1.5	.8	.6	.5	.8	85.6	.8	.5	2.0	1.8	.7	1.2	18
19	1.5	.9	.8	.6	.9	70.1	.6	.6	1.7	.9	1.0	1.2	19
20	1.3	.6	.5	.6	1.2	20.6	.6	.5	1.6	.9	1.6	1.2	20
21	1.4	.9	.5	.8	1.2	188.7	.6	.4	1.7	1.1	1.2	1.3	21
22	1.5	1.1	.5	.5	1.0	3.7	.4	.5	1.6	1.4	1.2	1.3	22
23	1.3	1.1	.4	.5	1.0	1.6	.7	.5	1.5	1.1	1.1	1.3	23
24	1.3	1.0	.7	.2	.8	1.3	1.0	.3	1.6	1.4	1.2	1.2	24
25	1.4	.9	.9	.4	7.6	.9	1.4	.3	1.5	1.0	1.1	1.2	25
26	1.5	.8	.8	.5	.6	.7	.7	.5	1.4	1.2	1.5	1.5	26
27	1.7	.7	.4	.6	.8	1.1	.8	.5	1.8	1.0	1.4	1.1	27
28	1.7	.8	.5	.5	99.9	1.2	1.1	.4	1.5	.9	3.4	1.1	28
29	1.7	.7	.3	.5	205.9	1.3	1.0	1.0	1.6	1.2	1.2	1.5	29
30	1.2	.4	.2	.3	7.6	1.4	1.0	1.0	1.5	1.3	.7	1.5	30
31	1.4	.8		.4		1.3	.9		1.5		.6		31
MEAN	1.4	.9	.6	.6	11.6	14.5	1.7	3.8	2.7	1.7	1.4	1.1	MEAN
MAX.	1.9	1.7	.9	.8	205.9	188.7	22.0	44.3	38.8	13.8	8.2	1.5	MAX.
MIN.	1.0	.4	.2	.2	.2	.7	.3	.1	.1	.6	.6	.8	MIN.
ACFT	86.9	54.1	35.2	34.1	692.0	894.0	107.4	209.2	168.2	103.1	83.7	67.8	ACFT

WATERMASTER YEAR SUMMARY

MEAN DISCHARGE	MAXIMUM					MINIMUM					TOTAL ACRE-FEET
	DISCHARGE	GAGE HT	MO	DAY	TIME	DISCHARGE	GAGE HT	MO	DAY	TIME	
3.48	1522.40	2.86	12	21	0512	0	0	8	12	0624	2526.90

DAY	STATION: SECO DRAIN											DAY	
	MEAN DAILY DISCHARGE In second-feet												
STATION NO. 62158											WATERMASTER YEAR		
1970-71											1970-71		
JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE		
1	.4	.0	.0	.0	.3	.2	.7	.0	.0	.3	.0	1	
2	.8	.2	.0	.3	.3	10.5	.2	.0	.0	.4	.0	2	
3	.6	.1	.0	.4	.6	.3	.0	.0	.1	.0	.4	3	
4	.5	.0	.0	.4	.6	.3	.0	.2	.0	.4	.6	4	
5	.5	.0	.0	.2	.3	.1	.4	.0	.0	.5	.4	5	
6	.5	.0	.0	.3	4.9	.2	.4	.1	.0	3.3	.3	6	
7	.9	.0	.0	.3	.7	.3	.4	.0	.2	.2	.8	7	
8	.4	.0	.0	.3	.7	.3	.4	.0	.1	.3	.4	8	
9	.2	.0	.0	.3	.7	4.7	.4	.0	.1	.6	.3	9	
10	.3	.0	.0	.3	.7	1.2	.5	.0	.1	1.0	.8	10	
11	.3	.0	.0	.4	.7	.2	.5	.0	.2	.6	.4	11	
12	.3	.0	.0	.4	.5	.1	13.6	.0	1.2	.4	.6	12	
13	.2	.0	.0	.4	.3	1.0	1.7	.0	13.4	.4	.6	13	
14	.3	.0	.0	.1	.2	.4	.3	.0	.0	5.0	.6	14	
15	.3	.0	.0	.1	.3	.3	.8	.0	.0	.5	.6	15	
16	.4	.0	.0	.1	.4	3.5	1.0	6.8	.1	.8	1.5	.5	16
17	.3	.0	.0	.0	.5	4.9	1.0	9.8	.3	2.7	1.6	.4	17
18	.3	.0	.0	.0	.6	31.3	1.3	.0	.2	.7	1.6	.4	18
19	.3	.0	.0	.1	.5	7.1	1.3	.0	.2	.3	1.2	.4	19
20	.3	.0	.0	.1	.6	6.3	1.3	.0	.2	.4	.7	.4	20
21	.3	.0	.0	.1	.8	39.5	1.3	.0	.2	.4	.6	.5	21
22	.1	.0	.0	.1	.8	.1	1.8	.0	.1	.4	.5	.2	22
23	.2	.0	.0	.1	.8	.4	1.5	.0	.3	.4	.1	.3	23
24	.3	.0	.0	.1	.6	.2	1.3	.0	.3	.4	.1	.1	24
25	.1	.0	.0	.1	2.8	.3	1.3	.1	.3	.4	.1	.1	25
26	.1	.0	.0	.1	3.4	.0	1.4	.0	.1	.5	.1	.1	26
27	.3	.0	.0	.0	1.3	.0	1.6	.0	.0	.5	.1	.1	27
28	.2	.0	.0	.1	34.1	.0	1.5	.0	.1	.6	.1	.4	28
29	.2	.0	.0	.0	91.8	.0	1.4	.0	.1	.6	.1	.4	29
30	.2	.0	.0	.1	.4	.0	1.3	.0	.1	.7	.1	.4	30
31		.0		.1		.0	1.3		.1		.1		31
MEAN	.3	0	0	.2	5.0	3.7	1.4	.6	.8	.8	.6	.4	MEAN
MAX.	.9	.2	0	.4	91.8	39.5	13.6	9.8	13.4	5.0	3.3	.6	MAX.
MIN.	.1	0	0	0	.2	0	0	0	0	.1	0	0	MIN.
ACFT	20.2	1.6	0	11.0	298.2	225.1	84.5	34.8	36.4	36.8	37.7	21.3	ACFT

WATERMASTER YEAR SUMMARY

MEAN DISCHARGE	MAXIMUM					MINIMUM					TOTAL ACRE-FEET
	DISCHARGE	GAGE HT	MO	DAY	TIME	DISCHARGE	GAGE HT	MO	DAY	TIME	
1.12	493.40	2.47	12	21	0426	0	0	7	1	0000	807.60

APPENDIX A (continued)

STATION: WEST ALTADENA													STATION NO.		WATERMASTER YEAR	
MEAN DAILY DISCHARGE in second-feet													62985		1870-71	
DAY	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	DAY			
1	.3	.6	.1	.3	.6	.4	.3	.6	.6	.1	.1	.2	1			
2	.4	.4	.1	.5	.5	5.1	1.3	.1	.5	.2	.1	.3	2			
3	.5	.2	.1	.7	.6	.1	.8	.0	.1	.2	.1	.4	3			
4	.4	.0	.1	.5	.4	.3	.2	.0	.1	.0	.2	.4	4			
5	.4	.0	.0	.4	.4	.2	.1	.0	.2	.3	1.8	.3	5			
6	.4	.1	.0	.5	4.1	.1	.0	.0	.1	.0	4.3	.2	6			
7	.4	.1	.1	.5	.4	.0	.0	.0	.2	.3	1.5	.2	7			
8	.3	.1	.1	.3	.5	.0	.1	.0	.1	.3	1.1	.0	8			
9	.4	.0	.1	.2	.5	1.6	.1	.0	.2	.4	1.1	.2	9			
10	.6	.0	.2	.4	.5	.2	.2	.0	.1	.4	1.5	.3	10			
11	.5	.0	.1	.3	.5	.2	.2	.0	.0	.3	1.3	.1	11			
12	.5	.0	.0	.3	.2	.1	3.8	.0	.2	.1	.9	.1	12			
13	.5	.0	.1	.3	.1	2.1	1.0	.0	3.6	.3	.9	.1	13			
14	.3	.0	.0	.4	.2	.4	.5	.0	.1	2.0	1.0	.1	14			
15	.7	.0	.1	.4	.2	.2	.3	.0	.1	.2	1.0	.2	15			
16	.6	.1	.0	.4	.1	1.4	.5	6.6	.0	.5	.9	.1	16			
17	.5	.1	.0	.4	.1	3.6	.5	7.4	.0	1.2	1.0	.4	17			
18	.2	.0	.1	.3	.2	11.2	.5	.6	.1	.4	1.1	.1	18			
19	.2	.0	.1	.2	.3	3.7	.5	.5	.1	.4	1.0	.3	19			
20	.8	.0	.0	.2	.3	1.8	.4	.6	.1	.5	1.1	.3	20			
21	.2	.0	.0	.2	.4	22.6	.5	.5	.2	.5	.9	.3	21			
22	.4	.1	.0	.2	.2	.9	.5	.5	.0	.4	.9	.3	22			
23	.5	.1	.1	.2	.3	.8	.5	.2	.4	.4	.9	.1	23			
24	.6	.1	.1	.2	.3	.8	.5	.3	.4	.4	.9	.3	24			
25	.3	.0	.1	.3	1.0	.8	.4	.2	.1	.5	.9	.1	25			
26	.6	.0	.1	.4	.9	.8	.3	.4	.1	.8	.8	.2	26			
27	.6	.0	.2	.2	.3	.6	.5	.4	.3	.6	1.1	.2	27			
28	.5	.0	.1	.2	13.0	.5	.5	.3	.2	.3	1.9	.3	28			
29	.5	.0	.0	.3	43.5	.5	.5	.2	.2	.3	1.3	.3	29			
30	.4	.0	.0	.2	.8	.4	.6	.2	.2	.4	1.3	.2	30			
31	.3	.1		.2		.3	.6		.2		1.1		31			
MEAN	.4	.1	.1	.3	2.4	2.0	.5	.7	.3	.4	1.1	.2	MEAN			
MAX.	.8	.6	.2	.7	43.5	22.6	3.8	7.4	3.6	2.0	4.3	.4	MAX.			
MIN.	.2	0	0	.2	.1	0	0	0	0	0	.1	0	MIN.			
ACFT	27.6	4.6	4.3	19.6	142.1	122.2	33.0	38.3	17.4	25.7	67.4	13.4	ACFT			

WATERMASTER YEAR SUMMARY

MEAN		MAXIMUM					MINIMUM					TOTAL	
DISCHARGE	.71	DISCHARGE	GAGE HT	MO	DAY	TIME	DISCHARGE	GAGE HT	MO	DAY	TIME	ACHE-FEET	515.60
		254.00	2.39	11	29	1136	0	0	7	1	1928		

**APPENDIX B: GROUND WATER EXTRACTION DATA FOR
INDIVIDUAL WELLS - In acre-feet**

STATE WELL NUMBER	OWNERS DESIG- NATION	PRODUCTION												TOTAL	
		1970						1971							
		JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE		
WESTERN UNIT (MONK HILL BASIN)															
<u>LA CANADA IRRIGATION DISTRICT</u>															
1N/12W-06M055	RAYM	2.44	4.68	3.36	0	0	0	0	0	0	0	0	0	0	10.50
<u>LAS FLORES WATER COMPANY</u>															
1N/12W-08H025	00002	26.75	22.16	21.03	17.13	16.17	12.89	14.12	15.31	16.93	20.38	21.75	23.20	231.82	
<u>LINCOLN AVENUE WATER COMPANY</u>															
1N/12W-05P015	3	61.33	82.80	59.12	19.18	18.97	2.28	2.10	5.11	11.89	8.26	12.21	3.64	286.89	
1N/12W-05P025	2	19.94	16.20	9.48	.98	.91	0	0	0	6.13	66.21	4.50	3.88	128.23	
1N/12W-08A015	00004	8.91	90.10	21.01	6.41	11.54	5.42	0	0	0	0	0	0	143.39	
TOTALS		90.18	189.10	89.61	26.57	31.42	7.70	2.10	5.11	16.02	74.47	16.71	7.52	558.51	
<u>PASADENA CEMETERY ASSOCIATION</u>															
1N/12W-05G015	00004	4.26	4.70	3.93	2.92	1.01	.35	.29	.63	1.52	2.15	1.64	2.96	26.36	
1N/12W-09E015	2-3	12.72	13.12	12.71	7.20	5.26	.27	.29	2.12	3.59	11.52	6.46	8.04	83.01	
TOTALS		16.98	17.82	16.64	10.12	6.27	.62	.29	2.75	5.11	13.67	8.10	11.00	109.37	
<u>PASADENA, CITY OF</u>															
1N/12W-05M015	ARROY	231.21	318.65	297.19	283.68	284.73	307.95	251.07	140.67	52.58	263.72	284.69	314.41	3070.51	
1N/12W-05M015	VENTU	256.37	239.36	199.76	166.37	158.19	102.47	150.17	109.13	83.13	0	48.03	0	1512.98	
1N/12W-08D025	WINDSH	0	.25	71.03	86.84	59.16	60.36	77.52	102.80	131.21	122.58	141.35	132.85	985.95	
TOTALS		487.58	558.26	567.98	536.89	502.08	470.78	478.72	392.60	266.92	386.30	474.07	447.26	5569.44	
<u>RUBIO CANON LAND AND WATER ASSN</u>															
1N/12W-08H015	5	196.42	200.90	154.28	42.78	10.81	0	0	.03	.03	24.94	26.28	81.59	738.06	
1N/12W-08H035	00004	4.37	0	4.29	45.65	40.39	2.35	14.94	20.49	22.12	17.43	20.54	11.15	203.72	
1N/12W-09K015	00006	18.76	12.61	10.37	7.49	5.03	3.93	4.54	3.00	6.06	5.25	8.57	11.54	97.19	
1N/12W-09M015	2	9.26	12.41	10.88	8.16	8.19	4.95	6.17	7.41	6.63	8.52	5.96	7.18	95.68	
TOTALS		228.81	225.92	179.82	104.08	64.42	11.23	25.65	30.93	34.84	56.14	61.35	111.46	1134.65	
<u>VALLEY WATER COMPANY</u>															
1N/12W-06M015	00003	0	0	0	0	0	.03	.15	0	.22	0	0	0	.40	
1N/12W-06M045	00002	2.28	0	1.77	0	0	0	.14	0	.14	0	5.08	5.93	15.36	
1N/12W-06M065	00001	99.51	91.60	62.11	45.48	52.66	3.15	17.16	34.78	57.96	57.13	58.09	75.84	655.47	
1N/12W-06M095	4	0	0	0	0	0	0	0	0	0	0	0	1.26	1.26	
TOTALS		101.79	91.60	63.88	45.48	52.66	3.18	17.47	34.78	58.32	57.13	63.17	83.03	672.49	
<u>ALHAMBRA, CITY OF</u>															
(PASADENA SUBAREA)															
1N/12W-34E015	2	90.99	64.88	53.45	40.07	46.89	40.33	74.79	92.62	88.54	85.91	82.94	89.87	855.28	
1N/12W-34E045	6	44.79	26.63	27.76	22.21	20.65	24.73	24.13	23.51	18.51	14.01	14.52	21.06	284.51	
TOTALS		135.78	91.51	81.21	62.28	67.54	65.06	104.92	116.13	107.05	99.92	97.46	110.93	1139.79	
<u>ARCADIA, CITY OF</u>															
1N/11W-29M015	RCHBA	0	0	0	.16	.20	.18	.04	.10	.08	.11	.07	.05	1.03	
1N/11W-30R015	RCH06	86.82	84.63	83.89	66.85	.20	.27	2.73	.26	.24	.26	39.77	72.11	438.03	
1N/11W-30R035	MREID	187.28	184.50	181.73	125.51	.48	.53	.32	.02	.67	.64	129.75	170.98	982.41	
TOTALS		274.10	269.13	265.62	192.52	.88	.98	3.17	.38	.99	1.01	169.59	243.14	1421.47	
<u>CALIFORNIA-AMERICAN WATER CO</u>															
1N/12W-25E015	19218	90.82	66.96	57.83	12.81	18.15	1.07	35.59	4.02	16.19	30.62	44.27	22.89	401.22	
1N/12W-26A015	1928	68.50	56.85	39.30	6.35	13.42	.31	7.37	2.03	6.30	22.76	21.12	46.15	290.46	
1N/12W-26R015	1924	63.63	96.80	62.91	38.28	28.28	.39	11.94	29.83	16.88	53.56	47.17	43.99	493.66	
1N/12W-34C015	1923	40.55	43.93	42.39	24.18	7.10	0	5.27	6.06	6.68	9.11	18.33	23.01	226.61	
1N/12W-34E025	1921A	9.61	27.04	29.45	2.02	1.03	.11	.44	.47	.35	14.13	1.94	19.36	105.97	
1N/12W-35B015	1917	119.64	115.83	98.54	44.63	88.76	4.21	32.24	37.88	29.55	56.48	52.34	70.53	750.65	
TOTALS		392.75	407.41	330.42	128.27	156.74	6.09	92.01	40.29	75.95	186.66	185.17	225.93	2268.59	
<u>CANYON MUTUAL WATER COMPANY</u>															
1N/12W-13K015	WILCX	3.49	6.61	3.01	7.04	12.96	5.82	0	0	0	0	0	11.23	50.16	

APPENDIX B: (Continued)

STATE	WELL NUMBER	OWNER'S DESIGNATION	PRODUCTION												TOTAL
			1970					1971							
			JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	
FAST PASADENA WATER COMPANY															
IN/11W-70J015	00007		30.85	31.11	20.74	7.15	6.28	1.61	.15	7.70	7.09	4.99	8.24	20.63	146.54
IN/11W-70K015	8		49.03	47.36	40.14	22.74	12.33	24.93	28.12	52.39	17.07	15.91	14.84	28.67	353.53
IN/11W-700035	1		.03	.73	.83	.03	.04	.04	.04	.04	.04	.04	.05	.33	2.26
TOTALS			79.91	79.20	61.71	29.92	18.65	26.58	28.33	60.13	24.20	20.94	23.13	49.63	502.33
M E HUNTINGTON LIBRARY AND ART GALL															
IN/12W-74M015	CANYN		1.94	3.30	1.84	0	2.05	0	7.17	0	1.30	2.14	2.94	3.80	22.44
IN/12W-75C015	ORLOO		45.43	47.22	43.44	26.42	16.44	0	4.01	6.49	12.44	25.02	22.00	30.84	279.75
TOTALS			47.37	50.52	45.28	26.42	18.49	0	7.14	6.49	13.74	27.16	24.94	34.64	302.19
KINNELOA IRRIGATION DISTRICT															
IN/12W-13F035	00003		17.81	16.09	12.16	6.06	3.52	.22	9.89	9.34	.24	1.54	3.07	8.24	88.18
IN/12W-13L015	WGNER		.37	.22	.23	.10	.10	0	.02	.04	.06	.14	.18	.20	1.66
TOTALS			18.18	16.31	12.39	6.16	3.62	.22	9.91	9.38	.30	1.68	3.25	8.44	89.84
NIMA LONA MUTUAL WATER COMPANY															
IN/11W-67N015	GLEN		8.88	7.40	6.76	5.13	2.67	.08	n	0	0	0	0	2.19	33.11
IN/11W-67N025	BROWN		9.21	8.46	7.17	3.65	1.14	.92	.31	.85	0	1.61	2.06	4.18	39.56
IN/11W-18C015	SHAW		.16	1.75	1.42	1.45	1.35	.61	n	.10	0	.61	.37	0	7.82
TOTALS			18.25	17.61	15.35	10.23	5.16	1.61	.31	.95	0	2.22	2.43	6.37	80.49
MONROVIA, CITY OF															
IN/11W-70M015	CHAP6		110.30	115.93	76.89	68.80	110.72	105.56	115.87	103.03	115.04	61.90	85.10	108.07	1177.16
OSBORN CONSTRUCTORS															
IN/12W-13M015	FARPT		4.86	4.48	3.93	2.50	1.37	.46	.49	2.66	2.66	1.93	1.60	3.78	30.72
PASADENA, CITY OF															
IN/11W-700045	NCHAP		0	28.54	3.32	0	0	0	n	0	0	15.19	0	0	47.05
IN/12W-20A015	SUNST		155.84	95.88	134.82	79.68	74.21	0	n	15.26	113.77	31.01	107.44	155.28	963.19
IN/12W-20H015	COPO3		109.69	77.17	44.92	44.63	63.09	0	n	0	0	0	0	131.12	470.62
IN/12W-21K015	GARFD		152.14	77.53	140.45	87.67	92.76	0	n	0	0	63.11	148.15	151.52	933.33
IN/12W-21K025	VILLA		226.29	167.43	211.85	232.28	175.55	0	60.41	97.98	33.29	157.13	187.15	228.18	1777.54
IN/12W-25B015	JODAN		293.28	290.54	251.05	136.90	0	0	0	0	0	87.99	66.49	104.48	1230.73
IN/12W-26C015	WUARY		167.73	188.74	228.92	153.97	14.55	8.15	44.70	138.54	173.51	147.50	224.89	244.50	1735.30
TOTALS			1104.97	925.83	1015.33	735.13	420.16	8.15	104.71	251.78	320.57	521.93	734.12	1015.08	7157.76
ROYAL LAUNDRY AND DRY CLEANING CO															
IN/12W-28N015	SWELL		13.36	12.43	13.11	12.21	13.21	13.51	10.24	15.38	13.00	13.00	13.00	12.35	154.82
SAN GABRIEL COUNTY WATER DISTRICT															
IN/12W-76E015	VN004		0	0	.41	0	0	0	n	0	0	0	0	0	.41
IN/12W-76E025	VN003		85.91	92.90	107.70	121.02	118.31	113.96	107.27	17.98	33.48	74.94	119.47	116.68	1104.62
TOTALS			85.91	92.90	108.11	121.02	118.31	113.96	107.27	17.98	33.48	74.94	119.47	116.68	1105.03
SUNNY SLOPE WATER COMPANY															
IN/12W-76A015	00006		74.50	162.76	52.61	12.68	2.49	0	.24	8.45	66.07	27.58	50.76	136.58	594.72
IN/12W-76H015	00001		66.84	80.95	51.07	22.17	12.00	0	8.62	7.92	51.71	47.76	57.95	84.89	491.88
IN/12W-76H025	00003		48.57	0	60.01	19.70	16.78	0	4.05	7.89	116.91	61.04	94.65	95.04	524.64
TOTALS			189.91	243.71	163.69	54.55	31.27	0	12.91	24.26	234.69	136.38	203.36	316.51	1611.24
EASTERN UNIT (SANTA ANITA SUBAREA)															
ARCADIA, CITY OF															
IN/11W-21G025	OG01A		245.88	228.75	209.75	173.71	.38	1.26	.57	.48	.45	.45	217.33	230.64	1309.65
IN/11W-21G055	OG005		135.32	129.40	119.94	85.88	.18	.55	.71	.25	.24	.24	109.13	131.58	713.01
IN/11W-21H025	OG02A		215.36	208.81	193.98	139.67	.29	.86	.48	.37	.32	.33	150.06	202.53	1113.06
IN/11W-21M035	OG006		127.61	109.80	95.20	77.46	.19	.68	.74	.28	.25	.27	65.10	99.90	577.08
TOTALS			724.17	676.76	618.87	476.72	1.04	3.35	1.70	1.38	1.25	1.29	541.62	664.65	3712.80
SIERRA MADRE, CITY OF															
IN/11W-21C025	00004		114.60	93.71	1.46	73.36	0	0	n	0	98.45	0	2.29	89.34	473.21
IN/11W-21C035	3		0	44.10	126.99	4.57	73.47	24.26	n	0	6.94	115.72	35.96	0	434.01
IN/11W-21C065	00005		0	106.90	123.93	0	56.06	17.39	68.71	0	2.65	11.28	92.28	3.03	482.23
IN/11W-21C075	6		175.40	51.64	0	93.55	0	0	0	77.64	0	1.31	3.29	106.47	509.30
TOTALS			290.00	296.35	254.38	171.48	129.53	41.65	68.71	77.64	108.04	128.31	133.82	198.84	1898.75
GRAND TOTALS			<u>4447.84</u>	<u>4416.23</u>	<u>4011.64</u>	<u>2845.52</u>	<u>1782.67</u>	<u>899.40</u>	<u>1205.87</u>	<u>1249.34</u>	<u>1451.10</u>	<u>1887.36</u>	<u>2983.21</u>	<u>3809.74</u>	<u>30989.92</u>

