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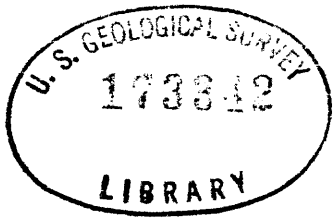
U. S. GEOLOGICAL SURVEY

WATER LEVELS IN OBSERVATION WELLS IN SANTA BARBARA COUNTY, CALIFORNIA, IN 1955-57

by

Robert E. Evenson

58-36



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WATER LEVELS IN OBSERVATION WELLS IN SANTA BARBARA COUNTY, CALIFORNIA, IN 1957

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INTRODUCTION

Investigation of the ground-water resources of Santa Barbara County was continued during 1957 by the Geological Survey in cooperation with the Santa Barbara County Water Agency. Monthly water-level measurements were made in 203 wells, in 7 of which automatic water-level recorders were operated. Earlier measurements, covering the period 1941 through 1955, have been published in Geological Survey Water-Supply Papers; those for 1956 have been released locally in duplicated form. Water-Supply Paper 1068 contains tabulated descriptions of 2,246 wells in existence in 1942 in the various ground-water basins of the county. The same publication also contains many water-level measurements made prior to 1942 by the city of Santa Barbara, Santa Maria Valley Water Conservation District, San Joaquin Power Division of the Pacific Gas and Electric Co., Union Sugar Co., Union Oil Co., and other organizations and individuals.

Comprehensive reports on the geology and ground-water resources of the Santa Ynez River basin (Upson and Thomasson, 1951), the south-coast basins (Upson, 1951), the Santa Maria Valley area (Worts, 1951), and the Cuyama Valley (Upson and Worts, 1951) have been published as Water-Supply Papers 1107, 1108, 1000, and 1110-B respectively. A report on stream runoff and Ground-water storage capacity of the Santa Ynez River valley (Troxell and

Wilson, 1952) was released to the open file in October 1952. A report appraising the ground-water resources of the Santa Ynez River valley (Wilson, 1957) has been mimeographed and released locally.

In addition to the water-level measurements made by the Geological Survey in 1957, measurements made by the Santa Maria Valley Water Conservation District are included in this report. Not included in this report are miscellaneous measurements made by the Geological Survey in approximately 108 selected wells adjacent to the Santa Ynez River between Cachuma Dam and Rucker Crossing.

The following table shows the scope of the observation-well program in Santa Barbara County in 1957.

Distribution of observation wells in Santa Barbara County in 1957

Area	Number of observation wells: Established	Discontinued	at 1/ year end	Number of recording gages
Carpinteria Basin	0	0	22	0
Goleta Basin	4	5	31	2
Santa Ynez River valley	1	2	80	5
San Antonio Valley	1	0	5	0
Santa Maria Valley	0	2	46	0
Cuyama Valley	3	0	19	0
Total	9	9	203	7

1/ Includes wells equipped with recording gages.

GENERAL HYDROLOGIC CONDITIONS

The climate in Santa Barbara County is characterized by a short rainy season in the winter, and a long dry season in the summer when nearly all the streams are dry. The extended lack of rainfall during the summer requires the use of supplemental water to sustain the crops of the valleys. Nearly all the water used for irrigation is pumped from the ground-water reservoirs which lie beneath the agricultural lands. In most areas domestic supplies also are obtained from these underground reservoirs, although the city of Santa Barbara and the Montecito County Water District depend largely upon surface storage accumulated behind Gibraltar and Juncal Dams in the headwaters of the Santa Ynez River. Emergency wells, however, are used by these communities during periods of extended drought.

Replenishment of the ground-water reservoirs is dependent almost entirely on winter precipitation. Between 1945 and 1951 precipitation was below normal and, as a result, replenishment of most of the basins of the county was insufficient to meet requirements. Ground-water levels during this period were drawn down substantially, but the above-average rainfall of the winter of 1951-52 caused a temporary cessation of the downward trend (see pls. 1 and 2).

The south-coast communities have united to solve their particular water problem with the building of the Cachuma dam and distribution system for the conservation of floodwaters of the Santa Ynez River. In 1957 water from Cachuma Reservoir was supplied to the south-coast communities to help augment their water supplies.

A plan for the construction of Twitchell Dam on the Cuyama River in the Santa Maria Valley has been approved. Regulated releases of floodwaters impounded by this dam will be used to recharge the ground-water reservoir that lies beneath the Santa Maria plain.

PRECIPITATION

Precipitation in Santa Barbara County occurs principally as rainfall, which differs greatly from place to place because of the alinement of the several mountain ranges with respect to storm movements. The county has an average annual precipitation ranging from about 6 inches in the Cuyama Valley to 30 inches or more in the higher parts of the Santa Ynez and San Rafael Mountains.

Data obtained from the U. S. Weather Bureau indicate below-average precipitation during the water year ended September 30, 1957. At Santa Barbara, in the southeast corner of the county, 13.86 inches (4.05 inches below the 90-year average) was recorded; and at Santa Maria, in the northwest corner of the county, 9.01 inches (4.87 inches below the 72-year average) was recorded.

Plates 1 and 2 show precipitation at 3 stations, water-level fluctuations in 10 wells, and the cumulative departure from normal precipitation at Santa Maria. These graphs illustrate the relation of ground-water levels to precipitation. During "wet" years water levels rise and indicate ground-water replenishment. During "dry" years water levels decline and indicate ground-water depletion.

FLUCTUATIONS OF WATER LEVELS

From about 1945 through 1951 water levels throughout Santa Barbara County declined steadily as a result of increased water use and below-average precipitation. Ground-water depletion during the years 1945-51 was more serious in some basins than in others, depending upon the magnitude of the difference between withdrawals and replenishment. In the winter of 1951-52 above-average precipitation wholly or almost wholly replenished those basins in which overdraft was small, whereas in the basins of large overdraft only a small part of the depleted storage was restored. Precipitation and streamflow were below-average in 1953, 1954, and 1955, and water levels in Santa Barbara county generally resumed the downward trend that prevailed during 1945-51. In the winter of 1955-56 precipitation over Santa Barbara County ranged from near normal to above normal, and ground-water levels in general reflected these differences in precipitation. Below-normal precipitation in the winter of 1956-57 was followed by a generally downward trend of water levels.

The following discussion of water-level fluctuations is by ground-water basins, because the basins are separated hydrologically. Plates 3 to 9 show the location of observation wells in Santa Barbara County.

Carpinteria Basin

Water levels in the Carpinteria basin generally declined from the spring of 1956 to the spring of 1957. The decline of piezometric levels

in the area of confined water that underlies the central and western part of the basin ranged from about 1 to 7 feet, and averaged about 5 feet. In the area of recharge along the base of the foothills water levels in the spring of 1957 ranged from about 9 feet higher to 15 feet lower than in the spring of 1956. The hydrograph of well 4/25-27Q2 (pl. 1) is indicative of water-level fluctuations in the area of confined water. Plate 3 shows the location of observation wells in the Carpinteria Basin.

During 1957 the collection of water samples for chloride determination as an indication of sea-water contamination was continued. The analyses of samples collected from four wells showed no significant increase in chloride concentration from 1956 to 1957.

Goleta Basin

Water levels in the Goleta Basin rose in 1957. In the confined-water area that underlies nearly all the central alluvial plain water levels in the spring of 1957 averaged about 2 feet higher than in the spring of 1956. Within the recharge area along the base of the foothills, water levels in the spring of 1957 ranged from about 6 feet higher to 4 feet lower than in the spring of 1956, and averaged about 3 feet higher. In the western end of the Goleta Basin, an area that is hydrologically separate from the rest of the basin, the water levels in the spring of 1957 averaged 10 to 12 feet higher than in the spring of 1942. Although water levels in the central part of the Goleta Basin rose in 1957, they were still about 13 feet lower than in the spring of 1942.

The hydrographs of wells 4/28-17H11 and 4/28-9A3 (pl. 1) show water-level fluctuations in the area of confined water and the area of recharge, respectively. Plate 4 shows the location of observation wells in the Goleta Basin. In this basin, as in the Carpinteria Basin, periodic sampling of water from selected wells along the coast revealed no increase in chloride concentration from 1956 to 1957.

Santa Ynez River Valley

Because the Santa Ynez River valley has several distinct hydrologic units, the discussion of water-level fluctuations will be given for these units.

In general, water levels beneath the Santa Ynez River valley declined from the summer of 1945 through most of 1951. The downward trend was interrupted by a sharp rise in water levels as a result of above-average precipitation during the winter of 1951-52 and ground water in storage beneath the Lompoc plain and the alluvial deposits adjacent to the river was replenished to near capacity. From 1952 through 1955 water levels again declined until above-average precipitation during the winter of 1955-56 reversed this trend. Below-average precipitation during the winter of 1956-57 once again resulted in a downward trend of water levels.

The well locations in the Santa Ynez River valley are given on two illustrations: Plate 5 shows the Lompoc plain and a short stretch of the alluvial deposits adjacent to the river upstream from Robinson Bridge, and plate 6 shows the remainder of the alluvial deposits upstream to San Lucas Bridge and also the Santa Ynez upland.

Lompoc Plain

In the spring of 1957 water levels beneath the Lompoc plain ranged from about 1 foot higher to 6 feet lower than in the spring of 1956. Water levels in the recharge area at the eastern end and along the southern fringe of the Lompoc plain show an average decline of about 1 foot during this period. In the area of confined water the levels declined an average of about 1 foot from the spring of 1956 to the spring of 1957.

The hydrographs of wells 7/35-26J3 and 26J4 (pl. 1) show water-level fluctuations in the area of confined water and those of wells 7/34-27F4 and 27L1 (pl. 1) shows fluctuations in the area of recharge.

Collection of water samples for the determination of chloride concentration as an indication of sea-water contamination was continued during 1957, and the analyses showed no increase; in fact, the chloride concentration has not changed appreciably over the past 16 years of record.

Alluvial Deposits

Between San Lucas Bridge and Robinson Bridge

In the spring of 1957 water levels in wells near the river between San Lucas Bridge and Robinson Bridge ranged from about 1 foot higher to 4 feet lower than in the spring of 1956 and averaged about 1 foot lower.

Santa Ynez Upland

Water levels in the observation wells on the Santa Ynez upland (pl. 6) declined, on the average, about 3 feet from the spring of 1956 to the spring of 1957. Net changes in water levels ranged from no change at the southern end of the upland to a decline of about 6 feet in the central part. The hydrograph of well 6/30-6A1 (pl. 1), considered to be representative for the upland, shows the water level declined about 3 feet from the spring of 1956 to the spring of 1957. Water levels in the spring of 1957 were, on the average, about 33 feet lower than the levels in the spring of 1942.

San Antonio Valley

In general, water levels measured in wells in the central part of the San Antonio Valley (pl. 7) showed a slight decline of about 1 foot from the spring of 1956 to the spring of 1957. Smaller declines were observed farther west, where the water level in well 8/32-23B1, near Harris, declined only a fraction of a foot.

Santa Maria Valley

The Santa Maria Valley area (pl. 8) is the largest agricultural district in Santa Barbara County. It consists of the broad alluvial plain adjacent to the Santa Maria River, the elevated terrace areas to the north and south

of this plain, and the relatively small alluvial plain adjacent to the Sisquoc River.

In the confined-water area, which underlies the western half of the Santa Maria plain, water levels declined an average of about 2 feet in 1957. The average water levels in this area in the spring of 1957 were about 24 feet lower than the levels in the spring of 1942. The hydrograph of well 10/35-7F1 (pl. 2) is typical of the wells along the seaward edge of the confined-water area and shows that water levels in this part of the area have not changed significantly for the period of record.

The water levels in the remainder of the plain (recharge area) in the spring of 1957 ranged from about 7 feet higher to 8 feet lower than in the spring of 1956 and averaged about 3 feet lower. Water levels in the recharge area in the spring of 1957 were 44 feet lower than they were in the spring of 1942. The hydrographs of wells 9/33-2A1, 10/34-14E2, and 14E3 (pl. 2) are typical of the wells in the recharge area. Beneath the Sisquoc plain, upstream from Fuglers Point, the water-level declines were slightly greater than in the recharge area as a whole and averaged about 4 feet for the year.

The chloride content of well waters at the western end of the Santa Maria Valley remained essentially the same as in previous years and averaged less than 100 ppm. Water levels near the coast remained above sea level, and consequently there was no immediate threat of sea-water encroachment.

Cuyama Valley

The Cuyama Valley (pl. 9) is a broad semiarid valley in the extreme northeastern part of Santa Barbara County. Prior to 1946 there was no electric power in the valley, and this tended to restrict intensive irrigation. Consequently, water levels in the principal agricultural area near the western end of the valley remained fairly static until heavy withdrawals began in 1946. A hydrograph for wells 10/25-30F1 and P1 (pl. 2) shows the start of the decline in water level and its continuation in subsequent years because of the increased irrigation demands and subnormal precipitation.

The subnormal precipitation in 1957, coupled with increased pumping, resulted in a continued lowering of the water table. From the spring of 1956 to the spring of 1957 water-level fluctuations ranged from a rise of about 2 feet at the downstream end of the valley to a decline of about 5 feet near Ozena at the upstream end; the average change in water level from the spring of 1956 to the spring of 1957 was a decline of about 2 feet. Since 1946, when electric power was brought into the Cuyama Valley, water levels in observation wells have declined on the average about 29 feet.

REFERENCES

Troxell, H. C., and Wilson, H. D., Jr., 1952, Stream runoff and ground-water storage capacity, Santa Ynez River, Santa Barbara County, California: U. S. Geol. Survey open-file report.

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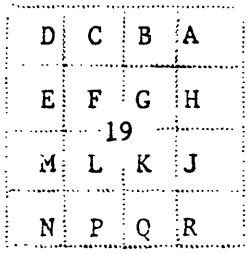
Wilson, H. D., Jr., 1957, Ground-water appraisal of the Santa Ynez River basin, Santa Barbara County, California: U. S. Geol. Survey open-file report.

Worts, G. F., Jr., 1951, Geology and ground-water resources of the Santa Maria Valley area, California, with a section on surface-water resources by H. G. Thomasson, Jr.: U. S. Geol. Survey Water-Supply Paper 1000.

RECORDS OF WATER LEVELS

The following records of water levels in observation wells in Santa Barbara County are arranged in numerical order within each of the groundwater basins. The well numbers indicate their locations according to the rectangular system of subdivision of public land.

For example, in the number 4/25-19F4, the part of the number preceding the bar indicates the township (T. 4 N.), the part between the bar and the hyphen shows the range (R. 25 W.), the digits between the hyphen and the letter indicate the section (sec. 19), and the letter indicates the 40-acre subdivision of the section as shown in the accompanying diagram.



Within each 40-acre tract the wells are numbered serially, as indicated by the final digit of the number. Thus, well 4/25-19F4 is the fourth well to be listed in the SE¼NW¼ sec. 19, T. 4 N., R. 25 W.

All water-level measurements in the following records are expressed in feet below land-surface datum, which is a fixed plane of reference for each well and approximates the average land surface at the well.

Water levels near month end, 1957: The actual dates of U. S. Geological Survey water-level measurements [1/] in the several valleys in 1957 are listed below.

Month	Carpinteria	Goleta	Santa Ynez	San Antonio	Santa Maria	Cuyama
Jan.	28	25	29, 31	31	31	30
Feb.	25	25	26, 27	28	28	26
Mar.	18	25	20, 21	20	20	21
Apr.	29	26	26, 30	23	23	24
May	31	31	28, 29	29	29	28
June	28	28	25, 26	26	26	25
July	24	24	24, 26	25	25	24
Aug.	29	30	27, 28	22	22	21
Sept.	Oct. 2	Oct. 1	23, 27	27	27	26
Oct.	28	28	29, 30	31	31	29
Nov.	25	25	25, 26	26	26	27
Dec.	31	31	27, 30	27	27	26

1/ Water-level measurements by the Santa Maria Valley Water Conservation District (g) are made on the first of the month (Jan., Apr., July, and Oct.)

Table 1.--Records of water levels in 1957

All water-level measurements in the following records are expressed in feet below land-surface datum, which is a fixed plane of reference for each well and approximates the average land surface at the well.

Depth: Depths of wells given in whole feet were reported by owners, drillers, or others; depths given in feet and tenths were measured below land surface by the Geological Survey.

Use: Dm domestic, Ir irrigation, Ps public supply, S stock, Ob observation, Id industrial, Un unused.

Altitude: Altitudes given in whole feet were interpolated from U. S, Geological Survey topographic maps having 10-, 20-, or 50-foot contour intervals. Altitudes given to the nearest tenth of a foot were determined by spirit leveling.

Footnotes:

a Pumping.
b Pumped recently.
c Nearby well being pumped.
d Nearby well pumped recently.
e Estimated.
f Dry.
g Measured by Santa Maria Valley Water Conservation District.
h Tape measurement.
j Recharging.
k Record from water-level recorder.
m Electric sounder.

Table 1.--(Continued) Water levels near month end, 1957

CARPINTERIA

Well No.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
T. 4 N., R. 25 W.												
19F4	99.20	97.86	96.25	94.94	93.90	94.43	96.53	99.78	102.20	102.70	101.66	99.48
J5	66.46	63.89	62.91	60.97	59.22	64.41	c69.71	74.48	75.49	72.54	69.07	66.64
20L4	125.90	122.87	113.83	113.45	111.06	123.13	c127.84	135.16	c144.00	131.02	130.81	124.57
21N3	66.48	65.60	64.26	63.25	62.66	c69.85	67.91	73.83	79.74	72.36	71.04	67.21
R1	113.93	113.70	-	-	110.90	109.94	111.79	113.08	116.80	114.45	114.30	114.21
22R1	104.64	101.20	97.61	94.74	c103.39	c112.67	c113.45	c116.60	c118.46	109.34	c114.06	113.75
25L1	13.52	8.04	6.83	6.25	14.04	10.20	11.29	56.67	-	-	57.83	21.65
26A1	322.14	-	314.77	-	310.39	c315.09	319.01	322.25	323.31	322.75	320.89	317.69
C2	316.34	-	311.48	-	305.16	308.29	309.81	316.00	316.32	315.61	315.01	-
27O2	147.16	146.70	145.58	144.53	143.50	-	145.46	c147.68	c148.95	148.81	144.83	150.18
R2	159.55	157.09	155.40	154.80	b156.58	b160.71	-	-	b175.24	169.78	161.85	159.35
28J1	-	-	117.18	104.63	104.07	-	116.87	-	-	-	114.63	111.40
M1	73.02	70.74	69.38	67.02	66.34	84.10	70.87	90.83	87.08	86.05	83.17	73.23
29D1	30.93	28.90	27.00	27.12	23.87	31.50	32.90	41.88	42.39	42.26	39.41	30.01
L1	21.62	19.05	17.45	17.79	17.08	26.69	27.96	35.33	33.56	26.35	22.99	20.45
R1	50.21	44.84	47.33	-	44.28	57.72	64.71	c66.17	c64.53	51.71	49.09	46.36
30D1	-	-	11.22	7.74	6.62	13.90	9.50	18.22	18.50	16.25	14.09	11.58
D2	19.92	18.08	16.69	15.44	14.41	26.26	20.52	25.41	25.96	23.60	21.30	19.35
34F2	143.09	143.14	143.68	143.08	143.28	142.93	143.01	143.76	143.90	144.04	144.00	143.86
35B1	119.75	-	120.74	107.54	116.23	115.09	115.77	131.28	132.43	131.98	130.71	122.70
M5	186.26	184.71	184.18	185.62	185.18	-	-	-	-	-	-	185.70
T. 4 N., R. 26 W.												
23A2	50.26	49.79	49.84	50.73	51.27	54.38	56.17	60.84	53.38	53.60	50.11	49.59

Table 1.--(Continued) Summary of data on observation wells

CARPINTERIA

Well No.	Owner or user	Depth (feet)	Use	Altitude (feet)	Year first measured	Years of record	Highest water level: Date Mo-Yr	Highest water level: Water level	Lowest water level: Date Mo-Yr	Lowest water level: Water level
T. 4 N., R. 25 W.										
[illegible]	M. F. Lewis	250	Dm, Ir	106	1941	17	5-43	77.10	3-50	123.40
J5	Lyman and Young	100	Un	55	1941	17	4-42	39.41	9-51	92.95
[illegible]	Carp. County Wtr. Dist.	264	Ps	111	1949	9	3-55	95.90	9-51	153.17
[illegible]	E. S. Pillsbury	305	Ir	59	1941	6	6-41	29.62	11-54	90.70
P1	Ben Moore	468	Un	127	1941	17	6-45	64.47	11-51	126.08
22B1	H. E. Pruner	130	Un	211	1941	8	4-44	11.26	12-57	113.75
25L1	Solari and Schweizer	124	Un	227	1941	8	4-57	6.25	12-49	82.54
26A1	Moses Mesa Assoc. Co.	480	Un	420	1946	12	2-46	230.09	11-55	387.00
C2	Shepard Mesa Mut. Wtr. Co.	450	Un	432	1946	12	5-46	226.10	11-51	353.99
27Q2	A. F. Heimlich	198	Un	127	1941	17	4-45	92.86	9-51	175.42
R2	W. H. Yule	421	Ir	132	1941	17	4-45	94.96	9-51	182.23
28J1	W. C. and C. A. Catlin	175	Dm, Ir	89	1919	22	6-19	23.00	11-53	124.64
M1	Mrs. A. Baylor	96	Un	57	1941	17	4-45	19.84	8-51	Dry
29D1	H. W. Sturmer	147	Dm, Ir	17	1928	20	4-42	1.48	9-51	57.28
L1	A. P. Salzgeber	110	Un	18	1950	8	5-56	9.83	9-51	51.24
R1	Carp. Union High School	176	Un	32	1941	17	4-42	8.67	8-55	68.85
30D1	Sandyland Beach Club	210	Dm	7	1938	18	5-38	Flowing	11-51	48.73
D2	Calif. Highway Dept.	93	Un	18	1949	9	5-56	9.95	9-51	41.39
34F2	H. R. Hirsch	563	Un	154.1	1949	9	6-49	125.50	9-56	146.70
35b1	E. R. Dickover	140	Dm	193	1941	17	3-45	19.18	9-51	134.18
M5	Jack Rose	542	Dm, Ir	215	1949	5	5-49	164.90	11-56	194.49
T. 4 N., R. 26 W.										
23A2	Frank Wymond	330	Dm, Ir	63	1941	12	4-50	45.44	4-51	85.00

Table 1.--Continued

Water levels near month end, 1957

GOLETA

Well No.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
T. 4 N., R. 27 W.												
6Q9	-	246.82	245.81	245.95	245.48	-	245.02	245.55	245.53	245.26	244.36	245.17
7J2	95.25	90.27	90.10	91.19	97.80	91.63	91.75	-	97.70	96.11	95.18	93.71
N1	-	-	-	-	-	-	-	-	-	129.79	124.34	120.13
P1	109.91	108.52	108.15	107.90	108.77	111.37	111.59	116.39	111.86	Destroyed	-	-
18R2	39.87	38.17	-	-	-	37.93	-	46.72	-	-	-	42.17
21B1	49.23	47.19	48.33	50.38	57.54	62.86	66.44	68.10	69.65	70.08	62.09	57.54
T. 4 N., R. 28 W.												
2E1	k10.88	k11.05	k10.48	k10.53	k10.46	k10.51	k10.55	h10.68	h11.06	h11.26	h11.16	h11.13
N2	37.75	39.14	25.16	21.30	18.90	25.23	26.55	35.27	37.33	38.71	38.28	40.27
3E2	15.96	14.13	15.09	14.27	14.22	22.57	19.79	c21.43	c22.34	15.48	c21.79	14.51
J3	36.93	37.00	36.97	37.94	38.53	39.53	40.23	40.89	41.20	39.59	39.40	38.89
M3	106.87	109.68	108.97	109.56	109.43	108.68	109.92	110.24	110.60	110.76	111.20	110.81
Q2	138.48	137.56	136.27	136.32	138.00	-	c142.35	c144.95	141.10	c139.41	c139.71	c138.5
4F4	51.19	51.09	50.26	49.89	49.13	48.80	48.54	48.16	48.45	47.89	48.01	47.27
K1	-	42.00	Discontinued -		-	-	-	-	-	-	-	-
Q2	-	97.31	95.86	94.27	91.02	93.91	93.00	93.79	95.99	94.78	95.62	93.32
5K3	k9.67	h8.18	k9.36	k9.46	k9.46	k9.73	k9.95	k10.12	k10.22	h10.01	h9.95	h9.77
N3	36.66	36.65	35.41	35.50	34.18	36.78	36.60	37.33	37.43	c37.02	35.49	33.81
R4	-	-	70.50	70.55	69.43	72.97	73.79	69.45	68.89	68.61	67.98	67.09
8N3	43.99	43.53	43.20	42.82	42.26	42.40	43.84	44.86	-	-	-	43.81
9A3	58.59	59.30	59.51	59.60	56.75	57.00	57.51	59.86	63.15	63.10	63.30	62.61
E1	72.31	-	70.84	71.18	69.78	71.83	72.10	72.13	71.98	72.18	71.22	70.76
10A1	128.13	132.05	Discontinued -		-	-	-	-	-	-	-	-
F1	98.07	88.80	85.56	85.50	77.98	-	79.33	79.27	79.03	79.25	78.45	78.05

Table 1.--(Continued) Summary of data on observation wells

GOLETA

Well No.	Owner or user	Depth (feet)	Use	Altitude (feet)	Year first measured	Years of record	Highest water level: Date Mo-Yr	Highest water level: Water level	Lowest water level: Date Mo-Yr	Lowest water level: Water level
[illegible] N., R. 27 W.										
[illegible]9	D. J. Davis	Unknown	Un	325	1954	4	11-57	244.36	11-54	248.72
7J2	Allen E. Rogers	187	Ir	230	1941	3	4-56	84.39	9-56	99.10
[illegible]1	La Cumbre Estates Corp.	Unknown	Un	185	1957	1	12-57	120.12	10-57	129.79
[illegible]1	John Reinesto	250	Un	167.98	1937	5	4-38	42.14	8-56	119.78
18K2	Hillside House Fndn.	Unknown	Dm	110	1956	2	5-56	36.21	3-56	47.98
21L1	City of Santa Barbara	454	Un	68	1948	10	2-48	37.04	10-51	99.58
[illegible] N., R. 28 W.										
[illegible]1	Marble Ranch Co.	Unknown	Ir	194	1955	3	1-56	k8.00	12-55	k13.62
[illegible]2	Santa Barbara County	100	Un	177.65	1943	15	4-54	12.94	11-51	61.34
3E2	Peter Cavaletto	75	Un	116.73	1941	17	4-41	8.57	10-48	45.17
[illegible]3	Hollister Estate	194	Un	137	1955	3	1-56	35.09	11-55	42.04
[illegible]3	L. W. Fowler	171	Un	118.40	1947	11	1-57	106.87	9-49	145.24
[illegible]2	A. J. Haverland	360	UN	120.57	1943	15	1-48	84.69	9-51	154.64
4F4	W. C. Laird	Unknown	Un	145	1955	3	12-57	47.27	1-55	63.75
K1	Joe Sexton	Unknown	Ir	109.06	1945	4	1-45	33.81	10-55	52.40
[illegible]2	R. S. Rowe	325	Un	88.45	1941	17	4-45	61.24	6-50	117.92
5K3	Leno Mostachetti	24.5	Un	113	1941	4	1-56	k5.38	9-57	k10.22
[illegible]3	Sellar Bullard	278	Un	83.40	1941	5	5-57	34.18	9-41	60.08
[illegible]4	F. J. Ewing	154	Ir	57.15	1937	7	6-37	40.00	9-54	78.70
8N3	Shrode-Nelson Produce	Unknown	Id	28	1955	3	5-57	42.26	4-55	51.00
9A3	L. M. Cavaletto	125	Un	84.10	1941	17	3-43	38.60	9-54	71.51
[illegible]1	A. T. Spaulding	310	Dm	43.58	1941	16	6-41	27.64	10-54	78.66
[illegible]A1	John S. Greene	154	Un	121.59	1941	17	5-44	93.30	6-53	142.55
[illegible]1	J. S. Edwards	459	Dm, Ir	79.90	1932	21	4-43	56.44	7-56	103.27

Table 1.--(Continued) Water levels near month end, 1957

GOLETA--(Continued)

Well No.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
T. 4 N., R. 28 W.--(Continued)												
11K4	109.11	108.25	-	108.75	106.40	112.03	-	-	-	-	-	106.41
12B1	133.98	133.44	132.88	133.10	132.59	133.34	133.83	135.39	135.41	135.50	134.87	132.30
P4	202.21	205.67	205.70	-	-	-	-	-	-	217.85	214.19	e208+
14C1	74.47	73.40	73.05	73.00	71.37	71.86	71.67	70.93	70.80	70.68	69.88	69.43
16J2	69.16	68.38	68.82	71.61	-	b83.37	-	-	b90.02	75.32	74.12	67.46
L1	-	-	-	-	-	-	-	-	-	50.86	49.41	43.86
17H11	-	-	30.81	30.80	Destroyed	-	-	-	-	-	-	-
R1	k15.03	k13.43	k13.37	k13.44	k13.27	k13.71	k15.11	h16.59	h16.37	k15.33	k15.05	k13.81
R2	k30.89	k30.55	-	k29.42	k29.10	k31.14	h33.87	k34.87	k33.91	k32.61	k31.27	h29.15
18G2	7.39	7.15	6.74	6.38	5.92	5.24	5.72	5.53	5.32	5.18	5.08	4.83
T. 4 N., R. 29 W.												
13G3	50.10	49.61	Discontinued-		-	-	-	-	-	-	-	-
K2	32.91	32.25	32.02	32.49	30.28	31.30	31.84	30.79	30.22	29.99	29.61	29.90
14A3	64.39	63.80	-	62.60	63.51	65.86	66.09	65.04	-	-	-	-

Table 1.--(Continued) Summary of data on observation wells

GOLETA--(Continued)

Owner or user	Depth (feet)	Use	Altitude (feet)	Year first measured	Years of record	Highest water level: Date Mo-Yr	Highest water level: Water level	Lowest water level: Date Mo-Yr	Lowest water level: Water level
N., R. 28 W.--(Continued)									
Giovanni Cavalli	297	Ir	67	1947	11	3-47	67.72	8-54	119.95
St. Vincent's School	189	Dm, Ir,S	203	1941	5	1-42	75.41	11-55	139.34
La Cumbre Mut. Wtr. Co.	550	Ps	100	1953	4	2-56	192.81	10-57	217.85
do	524	Ps	40	1944	4	1-44	57.01	4-56	83.10
J. Ciampi & Sons	458	Ir	26	1946	5	5-46	39.45	11-54	96.49
Oakley-Bonnetti	276	Dm, Ir	22	1954	4	12-57	43.86	11-54	61.39
do	119	Dm, Ir	10	1941	17	4-42	9.97	9-51	44.67
USGS, Pac. Light. Gas Sup.	158	Ob	4.91	1955	3	5-57	k13.27	9-55	k19.00
do do	155	Ob	7.87	1955	3	5-57	k29.10	8-55	k39.83
T. B. Bishop Co.	395	Un	7	1941	17	12-57	4.83	8-45	45.99
N., R. 29 W.									
T. B. Bishop Co.	189	Ir	41	1951	7	2-57	49.61	11-51	72.59
do	378	Un	24	1941	15	11-57	29.61	9-50	55.59
Ben Romer	160	Dm, Ir	51	1941	17	4-57	62.60	7-51	87.46

Table 1.--(Continued) Water levels near month end, 1957

SANTA YNEZ RIVER VALLEY

Well No.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
T. 6 N., R. 30 W.												
3A1	-	118.72	118.46	121.58	129.86	137.38	130.74	124.32	-	124.54	123.57	122.10
6A1	88.39	87.24	86.24	91.65	94.16	-	-	-	105.30	96.82	-	91.84
7K6	49.09	48.44	48.15	48.38	48.87	49.40	50.40	51.09	50.83	50.73	50.39	50.83
9N1	39.43	38.20	39.50	39.03	39.57	39.59	39.57	39.77	39.80	39.86	39.76	39.82
15A1	-	13.96	13.91	14.25	17.02	-	14.10	14.14	14.17	14.22	14.24	14.23
21B2	16.11	16.20	15.94	15.99	16.63	17.11	23.05	22.15	11.06	13.52	13.86	14.28
29E1	k22.62	k22.66	k22.09	k21.93	k21.71	k22.24	k22.82	k23.31	k23.66	k17.51	k19.16	k17.82
T. 6 N., R. 31 W.												
2K1	48.16	47.19	45.40	47.74	-	51.17	50.72	-	52.42	49.80	49.14	-
13D1	117.88	117.91	a121.33	118.44	119.13	119.36	119.60	120.26	120.24	120.84	120.33	119.83
15A5	18.44	19.59	16.30	19.48	19.70	20.62	-	-	26.60	-	20.45	19.32
16N2	14.28	12.82	12.78	13.24	14.07	-	21.29	23.82	24.39	13.90	14.70	12.96
17F1	25.49	24.53	c24.39	a23.51	26.55	25.84	30.70	31.90	30.53	25.37	24.89	23.21
21H1	13.84	13.52	13.29	13.58	13.30	14.48	15.41	a14.89	a15.84	15.90	15.88	15.37
T. 6 N., R. 32 W.												
2O1	-	b58.68	58.36	58.71	59.79	b63.30	59.10	b58.85	58.68	58.39	57.41	58.12
6K1	21.20	-	a25.57	20.93	-	21.12	-	21.30	-	-	-	-
9A1	-	32.81	-	33.84	-	34.20	36.75	37.23	37.20	34.39	-	-
11N1	36.51	35.24	34.65	-	33.29	34.03	b32.43	33.19	35.67	36.24	35.99	35.56
16P3	-	43.53	-	-	43.89	-	-	47.21	-	-	-	-
18H1	38.68	33.23	32.65	-	-	-	35.97	36.47	b37.89	-	35.04	33.33

Table 1.--(Continued) Summary of data on observation wells

SANTA YNEZ RIVER VALLEY

Well No.	Owner or user	Depth (feet)	Use	Altitude (feet)	Year first measured	Years of record	Highest water level: Date Mo-Yr	Highest water level: Water level	Lowest water level: Date Mo-Yr	Lowest water level: Water level
T. 5 N., R. 30 W.										
[illegible]1	L. Hourihan	407	Ir	720	1954	4	3-55	108.58	6-57	137.38
[illegible]1	Sam Torrence	262	Ir	665.29	1942	16	4-43	42.02	9-57	105.30
7K[illegible]	Valley Pump & Supply Co.	100	Un	611	1950	6	3-52	40.44	9-56	51.99
[illegible]1	San Lucas Ranch	160	S	660.01	1941	17	9-44	30.71	1-56	41.54
15M1	Pox Clark	35+	S	600	1942	5	1-42	10.87	5-57	17.02
21E2	Bryant Myers	70	Ir	498.75	1952	6	10-57	11.01	9-57	25.15
29F1	Rancho Juan y Lolita	52	Un	465.02	1933	25	3-41	7.90	5-51	k24.00
T. 6 N., R. 31 W.										
2K1	Sam de la Cuesta	75	Dm, Ir	627	1942	12	1-42	23.02	9-57	52.42
13D1	Mrs. W. E. Parker	170	Dm	608	1941	17	3-42	102.58	10-55	120.95
15A5	Louis Janin	160	Ir	652.94	1950	8	3-52	6.96	9-57	26.60
16N2	H. G. Petersen	47	Ir	366.29	1941	11	5-41	5.93	9-57	24.39
17F1	John K. Orton	43	Dm	362.90	1930	28	4-41	14.80	8-57	31.90
[illegible]1	Petan Corporation	60	Dm	399.34	1941	10	1-42	6.28	3-54	18.25
T. 6 N., R. 32 W.										
7L1	Wallace Dine	115	Dm	359.46	1949	9	4-52	56.20	3-51	59.91
[illegible]1	Manuel P. Domingos	74	Dm, S	383.55	1932	20	7-32	10.50	10-53	22.90
[illegible]1	Owen E. Hollister	58	Dm	307.67	1932	26	1-42	26.20	1-56	39.55
[illegible]1	Doty and Mercer	50	Dm	332.74	1932	11	4-52	24.77	12-54	36.80
[illegible]1	Channing Peake	70	Ir	293.18	1941	17	2-43	41.82	10-51	50.18
[illegible]	T. J. Donovan	50	Dm, S	267.09	1932	20	10-41	25.80	11-51	40.16

Table 1.--(Continued) Water levels near month end, 1957

SANTA YNEZ RIVER VALLEY--(Continued)

Well No.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
T. 6 N., R. 33 W.												
8J1	44.11	43.20	42.82	43.87	44.65	45.15	46.17	47.00	47.35	46.99	46.89	51.65
9P1	41.30	40.60	40.10	-	-	47.94	47.94	48.07	46.71	44.34	-	46.09
11M1	11.12	8.42	8.50	-	9.57	-	13.38	13.56	12.78	11.70	11.61	8.70
T. 6 N., R. 34 W.												
1F1	39.57	45.42	39.13	-	-	-	-	-	-	44.49	-	43.55
2A6	37.97	37.82	37.92	37.83	39.92	-	-	-	-	-	Discontinue	
4F3	45.38	44.58	44.16	47.84	50.97	49.55	51.72	50.63	49.78	49.19	49.57	48.08
6C2	57.37	56.29	56.94	-	-	-	-	65.33	-	-	-	-
T. 7 N., R. 30 W.												
33M2	172.33	173.34	170.18	172.55	174.08	c177.19	180.30	181.48	181.70	180.46	177.78	175.38
T. 7 N., R. 31 W.												
23P1	58.37	56.71	56.00	59.66	-	-	-	-	b77.84	-	80.29	81.2[illegible]
25L1	98.80	100.65	98.74	99.45	99.25	-	-	100.49	101.60	101.58	-	-
36L2	62.84	-	60.05	62.32	64.42	73.66	75.35	80.85	b76.93	74.38	-	69.7[illegible]
T. 7 N., R. 33 W.												
30C1	-	-	-	-	-	-	-	158.43	158.40	158.77	158.56	158.71
T. 7 N., R. 34 W.												
9H3	12.12	12.03	11.40	11.72	11.72	11.71	11.77	-	-	12.18	12.10	-
12E1	k305.08	-	-	k304.88	k305.06	k305.09	k305.03	k305.16	k305-15	-	k305.32	k305.12
14F1	-	-	199.94	200.09	-	-	200.38	201.17	-	201.58	201.64	198.30
21E1	k20.22	k19.67	k20.13	k21.70	k21.84	k22.70	k23.73	k23.71	k23.29	k23.01	k23.05	-
22H1	29.21	29.57	Destroyed	-	-	-	-	-	-	-	-	-

Table 1.--(Continued) Summary of data on observation wells

SANTA YNEZ RIVER VALLEY--(Continued)

Well No.	Owner or user	Depth (feet)	Use	Altitude (feet)	Year first measured	Years of record	Highest water level: Date Mo-Yr	Highest water level: Water level	Lowest water level: Date Mo-Yr	Lowest water level: Water level
6 N., R. 33 W.										
[illegible]	Hollister Estate	62	Un	200.57	1941	11	3-52	40.76	9-51	52.14
[illegible]	Do	83	Un	203.03	1932	26	4-41	21.80	11-50	54.61
[illegible]	William Rennie	65	Ir	203.82	1947	10	2-50	4.29	11-51	16.39
6 N., R. 34 W.										
[illegible]	Hollister Estate	164	Ir	150.37	1949	9	3-52	36.46	2-57	45.42
[illegible]	Hattie Madsen	185	Ir	129.96	1948	10	12-52	36.40	7-49	44.72
[illegible]	City of Lompoc	81	Un	95	1950	8	1-54	43.44	4-51	58.17
[illegible]	Bank of America	185	Dm, S	99.80	1930	25	2-43	47.88	4-51	76.78
[illegible] N., R. 30 W.										
[illegible]	J. B. Kelley	318	Un	746.35	1953	5	3-54	160.21	9-57	181.70
[illegible] N., R. 31 W.										
[illegible]	F. L. Mattei	141	Dm, Ir	821.86	1942	16	8-42	8.09	12-57	81.22
[illegible]	Richter and Lee	200	Dm	806	1942	16	4-44	55.83	9-57	101.60
[illegible]	D. B. Kilbourne	230	Dm, Ir	720.62	1942	16	4-43	16.54	8-57	80.85
[illegible] N., R. 33 W.										
[illegible]	John Valla	183	Un	235.24	1941	17	2-46	150.41	10-57	158.77
7 N., R. 34 W.										
[illegible]	USGS, Union Oil Co.	103	Ob	275	1948	10	10-48	9.32	8-56	12.81
[illegible]	Do do	385	Ob	385.83	1949	9	6-49	301.70	11-57	305.49
[illegible]	Walter F. Ziesche	250	Un	268.32	1947	11	10-47	194.94	10-57	201.58
[illegible]	USGS, Dept. of the Army	145	Ob	82	1948	10	4-49	17.97	8-51	25.02
[illegible]	H. E. Harris	208	Dm	97	1941	14	3-41	20.80	7-56	32.97

Table 1.--(Continued) Water levels near month end, 1957

SANTA YNEZ RIVER VALLEY--(Continued)

Well	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
T. 7 N., R. 34 W.												
22J1	-	30.80	30.81	c34.23	36.05	c33.67	34.86	34.04	32.49	32.22	31.80	31.66
C4	16.70	16.80	16.69	16.53	16.42	17.70	16.42	16.50	16.92	17.25	17.55	17.73
24E2	108.90	108.79	108.43	109.35	111.95	109.85	110.24	-	111.74	115.75	-	-
N1	59.90	59.64	-	-	61.78	-	-	-	63.01	-	-	-
26H3	k42.56	k42.19	k44.09	k44.52	k44.28	k45.24	k46.16	h46.73	k46.22	h47.78	h45.55	h45.01
27A5	12.54	12.67	11.14	9.78	10.60	11.11	12.17	12.67	13.34	13.72	14.06	13.80
F4	35.20	34.94	34.33	-	37.43	37.89	-	-	39.89	39.38	39.44	38.87
28H2	30.81	30.29	32.46	36.15	33.34	37.55	-	37.33	38.11	35.86	34.72	33.87
R1	11.14	10.55	13.20	17.48	15.16	17.17	20.18	17.20	17.18	16.50	16.04	14.18
R2	11.92	11.65	11.47	12.78	13.37	14.25	14.41	15.21	15.35	15.40	14.92	15.32
29E4	25.99	27.56	22.28	33.90	33.16	32.05	34.98	33.32	26.97	26.14	28.00	26.29
E5	21.32	20.96	20.88	22.46	22.93	24.33	23.42	23.57	23.27	23.17	22.98	22.92
30L3	18.96	17.87	18.06	22.57	22.39	22.95	23.66	23.58	22.37	21.93	21.91	20.94
L4	17.32	-	19.84	30.19	26.28	26.66	-	26.65	22.57	22.04	-	21.18
31C2	20.79	19.95	21.85	32.89	-	31.87	-	29.25	27.85	25.49	29.85	22.74
C3	18.82	17.79	18.80	14.01	15.81	15.14	16.19	-	-	-	-	-
32A1	28.75	-	-	48.97	-	-	-	33.96	-	38.34	38.10	-
A4	28.11	c27.94	c27.83	29.00	28.13	27.88	27.69	27.42	c27.37	27.47	27.82	27.97
P5	30.38	29.95	30.06	31.81	31.10	31.77	30.40	30.60	30.05	30.11	30.29	30.21
34H1	k45.20	k43.95	k41.96	k43.98	k45.36	k47.01	k48.73	k50.12	k50.17	k50.28	k50.40	k49.69

...-(Continued) Summary of data on observation wells

SANTA YNEZ RIVER VALLEY--(Continued)

Well No.	Owner or user	Depth (feet)	Use	Altitude (feet)	Year first measured	Years of record	Highest water level: Date Mo-Yr	Highest water level: Water level	Lowest water level: Date Mo-Yr	Lowest water level: Water level
...E., R. 34 W.--(Continued)										
...3	Santa Barbara County	73.3	Un	98.92	1941	2	3-41	21.04	5-57	36.05
...	USGS, A. Scolari	24	Ob	82.72	1947	11	4-57	12.26	8-50	(f)
...2	J. F. de Costa	191	Ir	178.25	1938	7	11-38	103.17	10-57	115.75
...1	State of California	183	Ir	130.4	1930	12	5-30	51.2	9-57	63.01
2cn3	E. C. Lilley	123	Un	112.92	1950	8	3-50	h40.13	10-57	h47.78
...5	USGS, L. H. Schuyler	19	Ob	79.19	1955	3	5-56	8.35	12-55	15.78
...4	J. Maxwell Wilson	178	Ir	96.79	1952	6	2-43	31.91	1-52	40.68
...2	Tom M. Parks	78	Un	89.55	1930	26	3-43	21.74	5-51	43.14
...1	W. A. Burpee	146	Un	69.68	1930	28	4-41	2.09	3-51	24.31
...2	USGS, W. A. Burpee	16	Ob	69.50	1943	15	3-44	2.70	12-51	(f)
...4	W. H. Sanor	176	Ir	67.71	1945	13	12-46	18.48	3-51	42.26
...5	USGS, W. H. Sanor	27	Ob	67.74	1945	13	10-45	18.21	6-51	(f)
...3	USGS, Union Sugar Co.	27	Ob	58.79	1945	13	12-46	15.83	5-51	(f)
...4	Union Sugar Co.	190	Ir	59	1951	7	1-53	16.56	3-53	36.10
...2	Do	Unknown	Ir	64.72	1941	12	4-41	8.56	9-48	46.38
...3	USGS, Union Sugar Co.	28	Ob	64.68	1947	11	4-53	12.24	12-51	21.97
...1	Mrs. May Clemens	180	Ir	79.99	1939	15	4-41	7.6	4-57	48.97
...4	USGS, O. F. Benn	31	Ob	79.28	1947	11	12-47	24.21	7-50	(f)
...5	USGS, J. Bodger & Sons	37	Ob	77.60	1947	11	2-49	24.47	5-51	35.50
...1	Johns-Manville Corp.	160	Un	112.10	1941	17	5-41	33.46	7-51	56.71

Table 1.--(Continued) Water levels near month end, 1957

SANTA YNEZ RIVER VALLEY--(Continued)

Well No.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
T. 7 N., R. 34 W.--(Continued)												
35F2	25.94	22.90	21.93	c18.60	23.88	c25.25	c28.53	c30.02	c30.13	c30.17	c31.03	30.8
F6	46.55	-	40.42	43.37	45.31	47.22	50.08	(f)	(f)	(f)	(f)	(f)
F16	46.97	43.85	41.42	44.71	46.54	49.47	51.94	52.72	54.74	52.89	53.54	52.71
P1	42.10	36.46	38.30	39.18	42.13	50.67	-	-	-	-	-	-
T. 7 N., R. 35 W.												
20J1	7.73	10.93	7.97	8.62	10.60	10.11	9.72	10.70	11.10	10.42	9.96	8.83
22J1	9.87	9.86	10.36	-	-	-	15.65	16.33	-	13.75	-	11.72
M1	-	-	5.94	8.71	-	-	-	10.07	10.15	10.78	-	7.85
23E2	14.31	13.89	14.05	18.33	-	19.56	-	18.70	17.38	17.57	17.83	16.07
E4	16.45	16.45	16.30	16.58	16.56	16.64	c18.09	18.14	18.13	18.15	18.20	18.55
J2	14.26	-	16.10	23.55	19.13	-	b28.43	-	18.62	-	18.37	-
J3	17.18	16.12	15.59	19.79	19.82	-	21.68	22.16	21.15	c20.50	20.12	19.75
24J1	26.42	26.48	26.15	26.34	26.89	26.84	27.24	27.58	27.87	c27.81	27.83	28.03
K2	19.67	-	23.05	27.37	-	-	-	-	25.58	24.58	-	-
25F5	-	-	-	-	20.74	-	25.86	26.89	-	-	-	-
F6	11.69	10.72	11.55	9.18	10.20	11.30	12.67	13.60	13.68	14.00	-	13.06
26F1	8.82	8.27	9.11	c15.17	13.34	-	17.44	c21.69	12.10	11.98	12.25	10.16
F3	7.72	7.39	7.67	7.15	7.99	9.04	9.05	8.97	8.92	9.28	9.51	9.01
J4	9.13	7.98	13.76	17.91	16.30	22.72	19.54	26.15	14.55	13.62	18.17	10.37

Table 1.-- (Continued) Summary of data on observation wells

SANTA YNEZ RIVER VALLEY--(Continued)

Well No.	Owner or user	Depth (feet)	Use	Altitude (feet)	Year first measured	Years of record	Highest water level: Date Mo-Yr	Highest water level: Water level	Lowest water level: Date Mo-Yr	Lowest water level: Water level
T. 7 N., R. 34 W.--(Continued)										
35F2	Valla Bros.	140	Un	100.33	1930	28	3-41	9.53	11-51	32.92
F6	USGS, M. Schuyler	55	Ob	119.46	1943	15	2-44	35.91	8-45	(f)
F16	M. Schuyler	173	Ir	119.5	1947	11	12-52	39.42	7-51	61.15
H1	W. P. & N. L. Robinson	51	Un	121.3	1931	25	3-41	29.32	3-48	51.90
T. 7 N., R. 35 W.										
20J1	Dept. of the Army	108	Un	19.07	1930	28	3-52	4.91	7-30	31.27
22J1	Union Sugar Co.	185	Ir	32.04	1930	21	4-41	6.80	4-51	24.03
M1	Dept. of the Army	180	Ir	28.84	1947	11	3-52	2.87	7-50	18.51
23E2	Union Sugar Co.	212	Ir	36.59	1930	22	3-52	11.86	7-49	33.06
E4	USGS, Union Sugar Co.	28	Ob	36.90	1947	11	3-52	12.22	7-48	22.67
J2	Union Sugar Co.	158	Ir	43.58	1947	11	1-53	11.94	7-50	31.11
J3	USGS, Union Sugar Co.	32	Ob	43.43	1947	11	1-53	14.28	10-51	26.56
24J1	Tom M. Parks	171	Un	59.40	1941	14	5-41	18.26	4-48	35.83
K2	A. B. Henning	180	Ir	51	1941	10	5-41	14.59	3-56	28.23
25F5	Union Sugar Co.	180	Ir	47.44	1944	9	1-53	10.13	3-55	27.51
F6	USGS, Union Sugar Co.	19	Ob	47.70	1945	13	5-46	6.09	11-51	15.90
25J1	Union Sugar Co.	186	Ir	36.84	1941	12	4-41	0.32	7-49	27.09
F3	USGS, Union Sugar Co.	18	Ob	34.70	1947	11	1-53	6.19	7-49	13.29
J4	Santa Barbara County	141	Ps	40.86	1947	11	1-53	7.50	7-51	33.63

Table 1.--(Continued) Water levels near month end, 1957

SANTA YNEZ RIVER VALLEY--(Continued)

Well No.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
T. 7 N., R. 35 W.--(Continued)												
27C3	6.49	7.99	5.94	9.43	7.54	15.02	12.63	10.07	9.83	10.60	9.07	7.
28H2	4.44	1.96	a4.85	a2.46	-	-	5.81	a6.59	4.19	3.44	-	-
35A3	10.88	9.95	8.84	12.09	13.14	-	14.11	16.19	-	13.13	12.32	10.
A4	8.10	7.23	8.32	9.81	11.18	c12.37	10.72	11.96	12.80	12.82	9.35	7.
C4	2.23	2.14	2.30	2.96	2.81	4.21	4.57	2.49	3.98	3.63	4.44	4.
36J3	k21.80	h19.97	h19.80	k24.48	k25.89	k27.20	k29.31	k26.16	k24.90	h24.21	k24.96	k2
J6	20.91	20.18	20.54	26.75	28.08	27.00	32.11	27.38	25.88	23.21	25.74	2
J7	20.80	20.29	20.06	23.52	24.26	23.97	27.54	26.06	24.74	23.88	23.63	1

Table 1.--(Continued) Summary of data on observation wells

SANTA YNEZ RIVER VALLEY--(Continued)

Well No.	Owner or user	Depth (feet)	Use	Altitude (feet)	Year first measured	Years of record	Highest water level: Date Mo-Yr	Highest water level: Water level	Lowest water level: Date Mo-Yr	Lowest water level: Water level
T. 7 N., R. 35 W.--(Continued)										
27C3	County Nat'l Bank & Trust	158	Un	28.42	1932	12	4-41	0.64	6-39	24.14
28H2	Dept. of the Army	67	S	38.55	1930	11	1-53	Flowing	4-31	22.45
35A3	Gus Aquistapace	100	Ir	45.58	1947	11	2-56	8.33	7-50	25.81
A4	USGS, Gus Aquistapace	23	Ob	45.88	1947	11	1-56	1.58	10-51	16.95
C4	USGS, Dept. of the Army	9	Ob	36.68	1947	11	3-54	1.65	10-55	4.82
36J3	Ted Holden	102	Ob	58.76	1930	18	4-41	4.56	4-55	k35.05
J6	Do	102	Ir	58.50	1947	11	2-46	19.85	7-50	38.15
J7	USGS, Denholm Seed Co.	32	Ob	58.50	1947	11	12-57	19.00	7-50	31.32

Table 1.--(Continued) Water levels near month end, 1957

SAN ANTONIO

Well No.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
T. 8 N., R. 32 W.												
30K2	11.08	10.40	9.92	16.96	24.43	c27.71	-	31.92	24.52	19.10	17.17	17.20
35Q1	-	-	-	-	-	-	-	-	-	-	159.82	168.38
T. 8 N., R. 33 W.												
20K1	30.76	30.41	30.54	30.99	30.80	31.80	35.45	35.91	32.29	32.07	32.07	31.82
R1	-	28.85	28.92	30.10	-	-	31.39	-	-	-	30.80	-
T. 8 N., R. 34 W.												
23B1	c17.50	c17.32	c17.31	20.10	c18.96	c19.65	c23.07	c19.85	c19.28	c18.85	c18.74	c18.52

Table 1.--(Continued) Summary of data on observation wells

SAN ANTONIO

Well No.	Owner or user	Depth (feet)	Use	Altitude (feet)	Year first measured	Years of record	Highest water level: Date Mo-Yr	Highest water level: Water level	Lowest water level: Date Mo-Yr	Lowest water level: Water level
T. 8 N., R. 32 W.										
30K2	John Parma	100	Un	555	1943	5	2-44	+1.16	8-55	-34.00
35Q1	Frank F. Barham	250	S	740	1943	2	12-43	118.46	12-57	168.38
T. 8 N., R. 33 W.										
20K1	Virginia Barca Estate	351	Un	410	1943	15	2-44	4.27	4-47	38.15
R1	Do	75	Dm	410	1943	15	1-47	21.20	9-50	36.32
T. 8 N., R. 34 W.										
23B1	Josephine Harris Estate	150	Un	310	1943	15	2-44	12.19	3-53	20.30

Table 1.--(Continued) Water levels near month end, 1957

SANTA MARIA VALLEY

Well No.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
T. 9 N., R. 32 W.												
7N1	g100.90	-	99.40	100.84	-	-	108.19	108.49	-	g99.35	97.81	97.58
17G1	42.40	-	-	41.38	-	42.21	54.70	53.19	53.86	53.66	-	-
18H1	67.71	-	-	66.50	-	67.31	71.70	72.60	b82.88	80.61	79.69	77.71
T. 9 N., R. 33 W.												
2A1	80.91	80.07	79.09	80.50	-	-	bg88.50	-	-	-	-	-
T. 9 N., R. 34 W.												
3N1	c181.86	c180.73	c181.10	c181.67	c181.71	c182.93	c181.87	c182.09	c182.27	c182.98	c181.31	c182.24
6K2	c89.44	89.00	c88.75	c89.90	c90.04	-	c91.48	91.39	90.59	89.76	c91.13	90.39
8H1	-	-	135.17	-	-	-	-	-	-	-	-	-
T. 10 N., R. 33 W.												
7P1	117.80	-	-	118.12	-	-	-	-	-	125.22	126.30	124.58
R1	120.89	-	121.12	121.27	121.98	123.82	125.19	125.77	125.96	125.16	125.96	124.30
18G1	g123.65	-	-	bg122.78	-	-	bg125.30	-	-	bg127.58	-	-
19B1	115.89	115.50	116.05	120.18	120.51	-	128.00	-	128.26	154.10	151.59	150.30
21N2	-	-	-	-	-	-	-	-	-	-	-	
27G1	g79.80	-	-	g81.90	-	-	g86.25	-	-	g96.92	-	
K2	-	-	-	86.26	-	-	-	-	99.29	98.66	98.06	97.11
28A1	87.99	88.30	-	90.47	91.45	92.42	g91.57	-	101.78	bg101.56	-	98.77
30G1	g185.00	-	-	bg185.09	-	-	bg197.10	-	-	g193.60	-	-
H1	g180.00	-	-	bg177.50	-	-	bg183.00	-	-	g186.00	-	-
L1	g188.99	-	-	g187.66	-	-	g198.00	-	-	g197.80	-	-
R1	g175.40	-	-	g175.30	-	-	g179.33	-	-	g182.00	-	-
33H1	225.21	225.30	224.80	225.70	-	226.29	-	-	227.11	226.96	226.51	225.90

Table 1.--(Continued) Summary of data on observation wells

SANTA MARIA VALLEY

Well No.	Owner or user	Depth (feet)	Use	Altitude (feet)	Year first measured	Years of record	Highest water level: Date Mo-Yr	Highest water level: Water level	Lowest water level: Date Mo-Yr	Lowest water level: Water level
T. 9 N., R. 32 W.										
7N1	Valerio Tognazzini	204	Ir	422	1924	24	4-44	24.62	10-51	113.95
17G1	J. A. Waugh	107	Dm	447	1941	17	4-43	11.22	6-50	66.33
18R1	M. L. Gracia	456	Ir	443	1950	4	4-55	64.29	12-50	81.27
T. 9 N., R. 33 W.										
2A1	Santa Maria Realty Co.	168	Ir	378.72	1930	25	6-51	23.62	1-52	83.50
T. 9 N., R. 34 W.										
3N1	City of Santa Maria	248	Un	258	1932	11	6-37	g142	9-55	181.89
6K2	Associated Oil Co.	139	Un	161	1942	8	3-42	59.22	8-57	91.39
8H1	Richfield Oil Corp.	200	Dm	222	1955	3	3-57	135.17	11-56	141.53
T. 10 N., R. 33 W.										
7P1	P. T. Bonetti	365	Ir	260	1951	7	10-52	112.76	10-51	132.72
R1	Do	200	Un	270	1942	4	2-42	78.45	9-57	125.96
18G1	La Brea Securities Co.	436	Ir	273	1939	19	7-43	g66.75	4-51	132.10
19B1	Owen T. Rice	307	Ir	275	1927	30	9-43	73.31	6-51	157.46
21N2	Frank Costa Jr.	215	Dm	307	1930	14	6-44	67.14	9-51	140.92
27G1	L. H. Adam	272	S, Ir	338	1923	26	7-38	g26.00	7-51	g119.50
K2	Newhall Land Co.	255	Ir	344	1941	5	9-41	51.27	12-50	108.74
28A1	Joe Soares	374	Ir	325	1929	29	7-38	g31.99	9-51	114.52
30G1	Lillian Cook	676	Ps	320	1951	7	1-53	g170.42	10-57	g193.60
H1	Do	758	Ir	310	1951	7	4-52	g151.51	4-56	g188.00
L1	Hancock Oil Co.	500	Id	310	1951	7	1-53	g174.00	7-57	g198.00
R1	Sheehy Bros.	544	Ir	335	1951	7	1-53	g165.38	10-51	g184.00
33H1	E. L. Sargent	290	Dm, S	402	1947	11	1-47	179.50	11-56	227.80

Table 1.--(Continued) Water levels near month end, 1957

SANTA MARIA VALLEY--(Continued)

Well No.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
T. 10 N., R. 34 W.												
2R1	124.51	123.60	123.65	127.15	-	137.76	133.78	-	-	137.65	-	142.50
4R1	131.29	130.22	-	-	-	-	-	138.70	138.51	137.92	137.30	137.72
6N1	bg100.10	-	-	g98.30	a105.98	-	g102.85	-	-	bg105.20	-	-
9F1	g129.26	-	-	g126.27	-	-	g129.70	-	-	g135.32	-	-
14E2	157.74	156.52	155.83	156.74	158.07	160.01	-	e164	e166.6	162.94	162.40	161.43
20H1	-	-	129.40	-	-	-	-	-	-	122.68	-	121.41
22R1	147.50	146.30	145.71	g147.69	-	149.83	g150.25	-	-	g154.04	153.29	150.61
23H1	157.30	156.28	155.48	g157.26	-	155.05	158.41	-	152.38	151.53	151.18	147.89
24K2	g126.75	-	-	g127.96	-	-	g132.50	-	-	g145.40	-	-
29N1	124.40	123.81	123.55	124.20	-	-	-	-	126.99	127.38	127.86	126.11
T. 10 N., R. 35 W.												
7F1	12.72	9.59	14.73	17.62	-	-	bg27.50	-	-	g23.36	-	14.29
G3	-	-	18.61	21.55	c23.79	c25.17	c39.23	c39.91	c38.56	c36.97	c34.46	24.91
9F1	46.00	45.50	42.83	g45.53	-	-	59.05	59.91	56.54	53.14	-	45.73
N1	bg50.60	-	-	g45.30	-	-	bg47.80	-	-	bg59.80	-	-
12M1	g87.35	-	-	bg85.87	-	-	bg91.40	-	-	bg93.70	-	-
21B1	bg45.30	-	-	bg41.20	-	-	g42.10	-	-	bg38.97	37.86	36.36
24B1	86.78	85.88	86.76	89.66	-	-	g96.30	-	97.64	g99.24	c95.19	91.25

Table 1.--(Continued) Summary of data on observation wells

SANTA MARIA VALLEY--(Continued)

Well No.	Owner or user	Depth (feet)	Use	Altitude (feet)	Year first measured	Years of record	Highest water level: Date Mo-Yr	Highest water level: Water level	Lowest water level: Date Mo-Yr	Lowest water level: Water level
T. 10 N., R. 34 W.										
2R1	Gracio Apalatequi	294	Ir	230	1929	23	6-43	69.16	12-57	142.50
4R1	Gerald Donovan	186	Ir	192	1930	15	3-45	72.89	8-57	138.70
6N1	Grisingher & Signorelli	190	Ir	152	1930	24	4-43	g48.40	7-57	g102.85
9F1	Mrs. Annie E. Preisker	224	Ir	189	1942	16	4-44	g70.62	10-57	g135.32
14E2	City of Santa Maria	182	Ps	225	1942	4	1-42	104.10	10-57	162.94
20H1	Leo Tognazzini	246	Ir	182	1930	16	3-45	66.57	8-56	148.50
22R1	George J. Wheat	252	Id	217	1931	22	3-45	93.19	10-57	g154.04
23H1	Marion B. Rice	218	Ir	242	1929	23	4-43	g100.65	11-56	160.35
24R2	Union Oil Co.	760	Id	244	1946	7	6-46	g63.00	10-57	g145.40
29N1	Pat Mahoney	117	Dm, Ir	170	1956	2	6-56	123.65	11-57	127.86
T. 10 N., R. 35 W.										
7F1	M. J. Ellis	249	Dm, Ir	48	1929	28	12-43	Flowing	7-56	g24.55
G3	John Jenkins	286	Un	53	1942	16	2-44	3.24	7-56	35.09
9F1	Waller Flower Seed Co.	198	Ir	88	1930	24	5-42	13.61	8-57	59.91
N1	Agnes F. King	285	Ir	87	1930	21	4-45	g13.30	10-51	g51.35
12M1	E. and G. Le Roy	210	Ir	138	1924	25	1-24	23.43	1-57	g87.35
21B1	Mathison & Shaw	310	Ir	94	1938	20	2-44	7.85	8-55	57.66
24B1	Union Sugar Co.	290	Ir	144	1934	21	2-44	42.55	9-55	109.10

Table 1.--(Continued) Water levels near month end, 1957

SANTA MARIA VALLEY--(Continued)

Well No.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
T. 11 N., R. 34 W.												
19C1	m253.63	m252.83	-	-	-	m255.4	-	-	-	-	254.53	-
30Q1	g96.60	-	92.38	g94.75	-	-	g95.00	-	-	g99.50	-	-
34J2	104.27	-	-	-	-	-	-	-	-	103.16	102.29	102.87
T. 11 N., R. 35 W.												
20E1	14.11	11.19	10.27	g16.20	-	-	g22.60	-	-	g22.00	-	18.75
25H1	67.12	67.34	67.90	67.72	67.67	67.70	67.56	67.61	83.27	-	84.13	77.43
26M2	60.49	58.75	61.23	62.75	c72.27	c78.63	c80.06	c81.17	c79.73	66.98	67.12	63.34
28M1	g40.05	-	-	g39.00	-	-	g55.70	-	-	g46.73	-	-
33G1	50.90	50.10	49.29	g49.22	-	-	g57.03	-	-	53.01	53.15	51.33
35A1	g78.05	-	-	g72.50	-	-	bg78.25	-	-	g83.35	-	-

Table 1.--(Continued) Summary of data on observation wells

SANTA MARIA VALLEY--(Continued)

Well No.	Owner or user	Depth (feet)	Use	Altitude (feet	Year first measured	Years of record	Highest water level: Date Mo-Yr	Highest water level: Water level	Lowest water level: Date Mo-Yr	Lowest water level: Water level
T. 11 N., R. 34 W.										
19Q1	Frank Silva	315	Dm	305	1947	11	1-47	h223.77	6-57	m255.4
30Q1	Mary Bolton	180	Ir	148	1930	23	5-41	34.59	10-57	g99.50
34J2	Leon Loerness	214	Ir	148	1955	3	7-55	97.59	11-55	104.42
T. 11 N., R. 35 W.										
20E1	Union Sugar Co.	525	Ir	49	1938	20	2-44	Flowing	7-56	g31.40
25H1	M. J. Mendoza	129	Un	135	1942	17	6-44	33.42	11-57	84.13
26M2	Sam Tognazzini	324	Un	106	1930	15	11-44	28.92	11-57	67.12
28M1	Union Sugar Co.	376	Ir	77	1934	21	12-43	11.09	7-57	g55.70
33G1	H. E. Pezzoni	141	Ir	91	1930	23	2-44	16.49	9-56	57.26
35A1	Elmer A. Runels	195	Ir	123	1925	22	2-25	24.50	10-57	g83.35

Table 1.--(Continued) Water levels near month end, 1957

CUYAMA

Well No.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
T. 7 N., R. 24 W.												
13C2	32.82	32.39	31.71	-	32.43	b33.00	34.52	-	34.85	35.52	34.66	36.80
T. 8 N., R. 24 W.												
8L1	147.33	147.80	146.97	c149.96	c145.02	-	c156.56	c141.63	c143.61	146.29	145.57	151.82
T. 9 N., R. 24 W.												
19C1	79.86	78.53	77.97	78.46	78.67	80.02	79.44	80.15	80.36	80.31	80.30	80.32
33M1	189.93	190.14	189.35	189.73	191.05	191.34	191.69	192.08	192.38	193.21	193.15	193.42
T. 9 N., R. 25 W.												
2N1	-	139.69	139.99	140.41	140.87	141.19	147.98	147.86	147.71	146.61	145.17	145.89
13B1	106.73	-	-	-	-	-	109.47	-	-	106.58	105.82	106.12
T. 9 N., R. 26 W.												
4J1	289.39	287.75	m286.0	m286.4	m286.8	m286.9	-	-	-	-	-	-
T. 10 N., R. 25 W.												
8P1	-	-	-	-	-	-	-	-	-	80.88	80.18	81.20
21G1	151.98	-	-	-	-	-	-	-	-	-	Discontinued	-
24E1	225.99	225.80	226.20	226.27	226.59	227.08	227.45	227.61	227.86	228.07	229.17	229.23
29P1	145.56	146.09	146.69	-	-	-	-	-	-	-	152.38	-
30P1	109.55	112.34	113.97	117.54	117.99	118.30	c129.02	c130.08	118.15	118.16	117.29	c116.00
T. 10 N., R. 26 W.												
4R1	-	-	-	-	-	-	-	-	-	50.33	49.29	-
16Q1	40.51	40.05	41.38	45.70	47.67	47.41	53.88	52.17	53.56	50.30	47.77	45.56
22A1	17.38	19.18	21.80	24.87	32.16	31.45	36.10	35.06	32.72	23.71	20.09	19.56

Table 1.--(Continued) Summary of data on observation wells

CUYAMA

Well No.	Owner or user	Depth (feet)	Use	Altitude (feet)	Year first measured	Years of record	Highest water level: Date Mo-Yr	Highest water level: Water level	Lowest water level: Date Mo-Yr	Lowest water level: Water level
T. 7 N., R. 24 W.										
13C2	Ventura County	165	Dm	3,418	1950	8	5-52	18.92	5-51	47.23
T. 8 N., R. 24 W.										
8L1	Hickey Bros. Land Co.	290	Un	3,050	1950	8	9-53	122.19	12-57	151.82
T. 9 N., R. 24 W.										
19Q1	Sam Knittle	90	Un	2,784.19	1941	17	5-44	16.13	9-57	80.36
33M1	Walter C. Barnes	233	Un	3,049	1950	8	5-50	170.81	12-57	193.42
T. 9 N., R. 25 W.										
2N1	Julius Broden	254	Un	2,550	1953	5	3-53	139.14	7-57	147.98
13B1	William B. Farry	120	Dm	2,700	1952	6	7-52	101.82	10-56	110.84
T. 9 N., R. 26 W.										
4J1	J. G. James	327	Un	2,575	1946	4	8-46	185.00	4-55	312.27
T. 10 N., R. 25 W.										
8P1	Hub Russell	Unknown	Dm, S	2,393	1942	3	6-42	31.34	12-57	81.20
21G1	E. H. Mettler & Sons	657	Ir	2,357	1947	11	1-47	77.41	1-57	151.98
24E1	Do	600	Un	2,470	1950	7	5-50	198.00	10-55	239.11
29P1	Oscar Schaeffer	403	Ir	2,370	1952	6	2-53	122.36	11-57	152.38
30P1	Kirschenmann & Presseler	400	Un	2,340	1955	3	1-57	109.55	6-57	118.30
T. 10 N., R. 26 W.										
4R1	Russell Bros.	Unknown	Dm, Ir	2,110	1955	2	4-55	18.60	10-57	50.33
16Q1	H. S. Russell	Unknown	Un	2,205	1954	4	2-54	33.33	9-55	71.50
22A1	William C. Ramelli	423	Un	2,200	1941	17	3-44	+0.51	8-54	-37.40

Table 1.--(Continued) Water levels near month end, 1957

CUYAMA--(Continued)

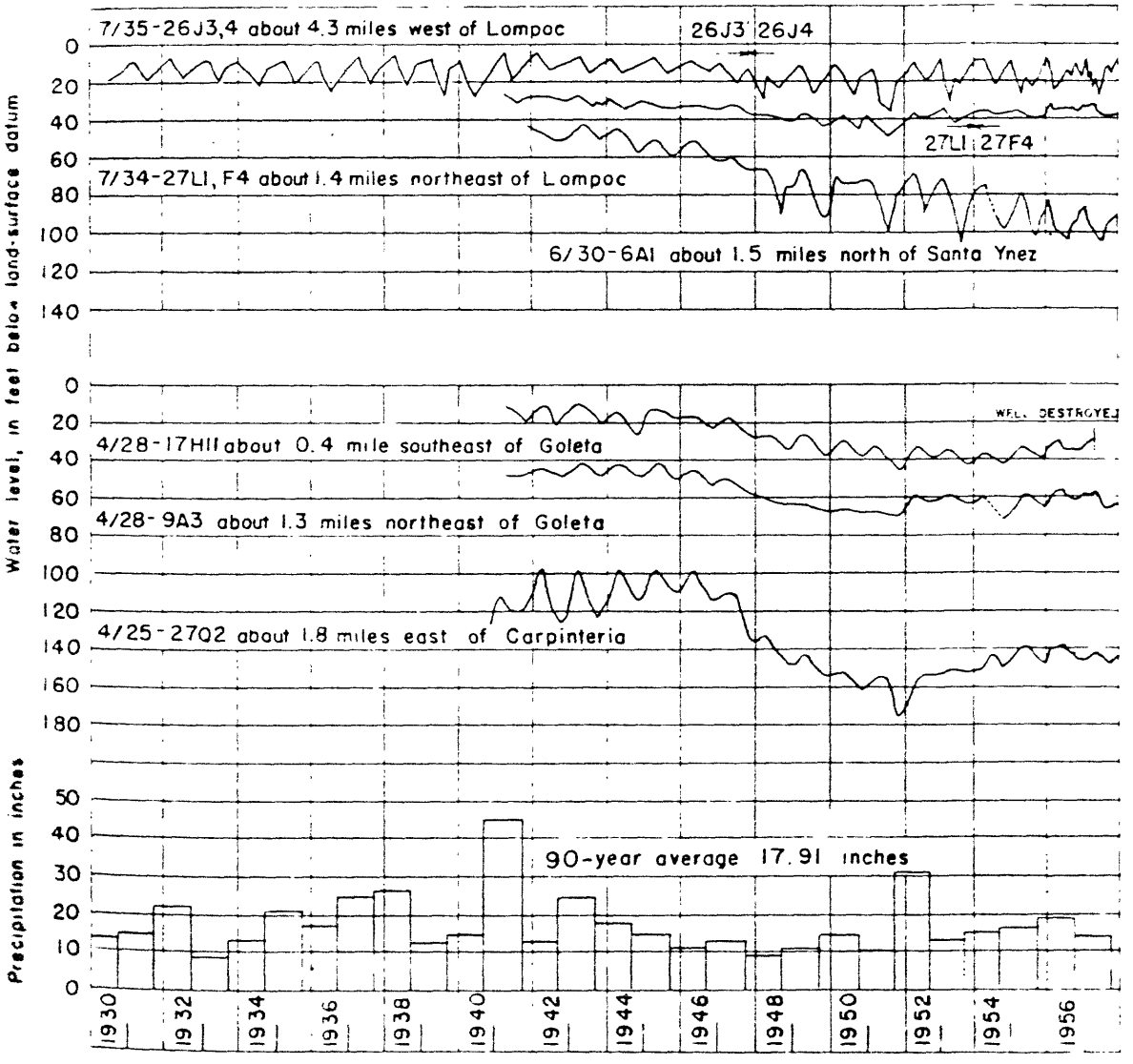
Well No.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
T. 10 N., R. 27 W.												
11A2	-	24.51	c51.59	c51.60	c51.90	c52.26	c54.67	c55.93	c56.18	c52.55	c52.11	c52.03
C1	30.60	25.76	-	-	-	-	-	-	34.96	-	32.94	-
H1	31.88	30.17	-	-	-	-	-	-	-	-	-	-
12R1	54.80	54.74	54.20	54.65	59.89	60.43	c62.73	61.99	62.17	60.22	60.16	57.84

Table 1.--(Continued) Summary of data on observation wells

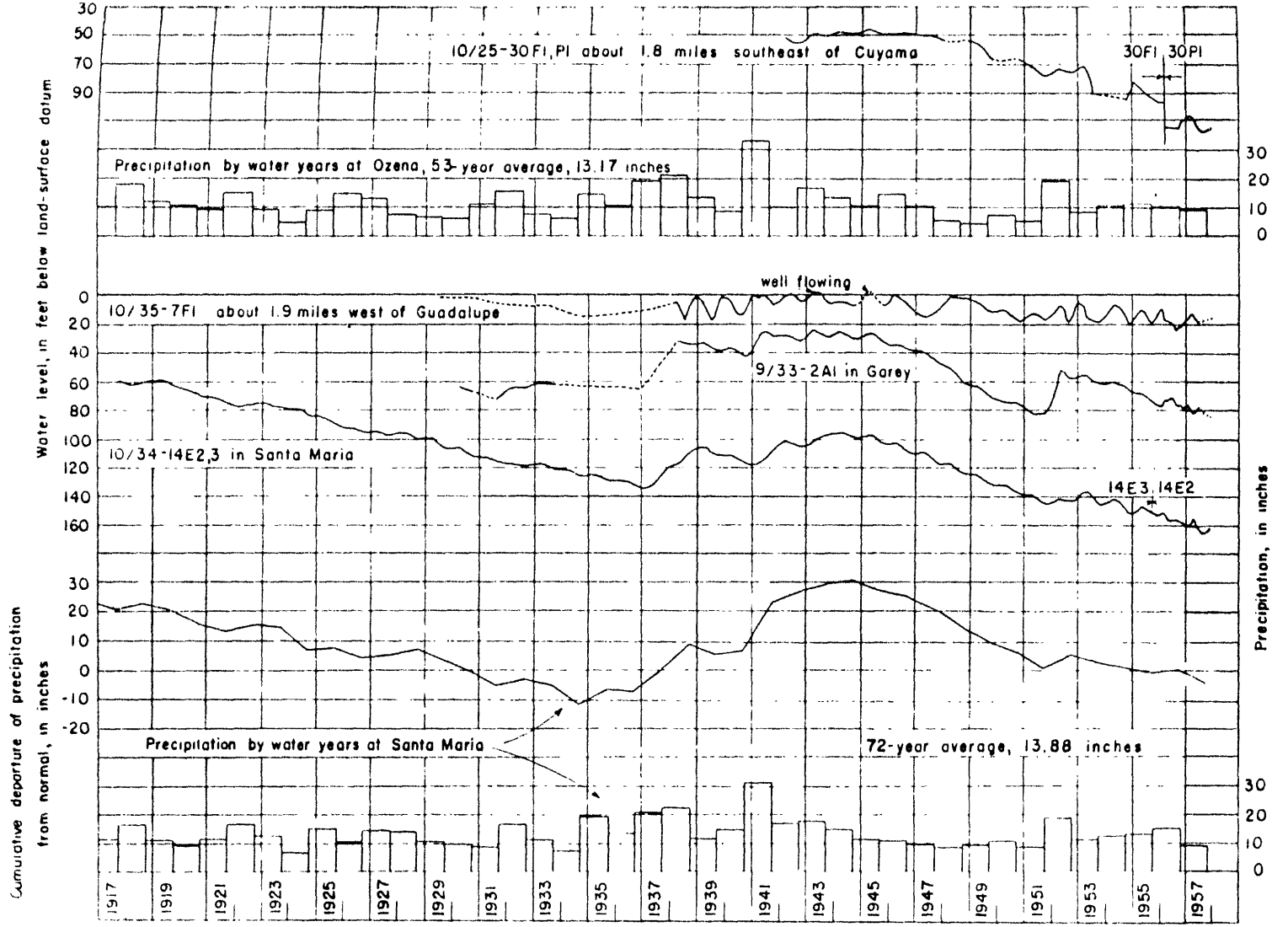
CUYAMA--(Continued)

Well No.	Owner or user	Depth (feet)	Use	Altitude (feet)	Year first measured	Years of record	Highest water level: Date Mo-Yr	Highest water level: Water level	Lowest water level: Date Mo-Yr	Lowest water level: Water level
T. 10 N., R. 27 W.										
11A2	Walt Smith	533	Un	1,980	1956	2	2-57	24.51	2-57	24.51
C1	Do	378	Dm, Ir	1,963	1942	12	6-42	23.94	9-54	41.38
H1	Do	Unknown	Ir	1,995	1954	4	2-54	21.14	10-56	35.29
12R1	Wm. Kirschenmann Estate	131	Dm, Ir	2,036	1941	17	4-42	38.58	9-56	62.72

U. S. GEOLOGICAL SURVEY PLATE 1



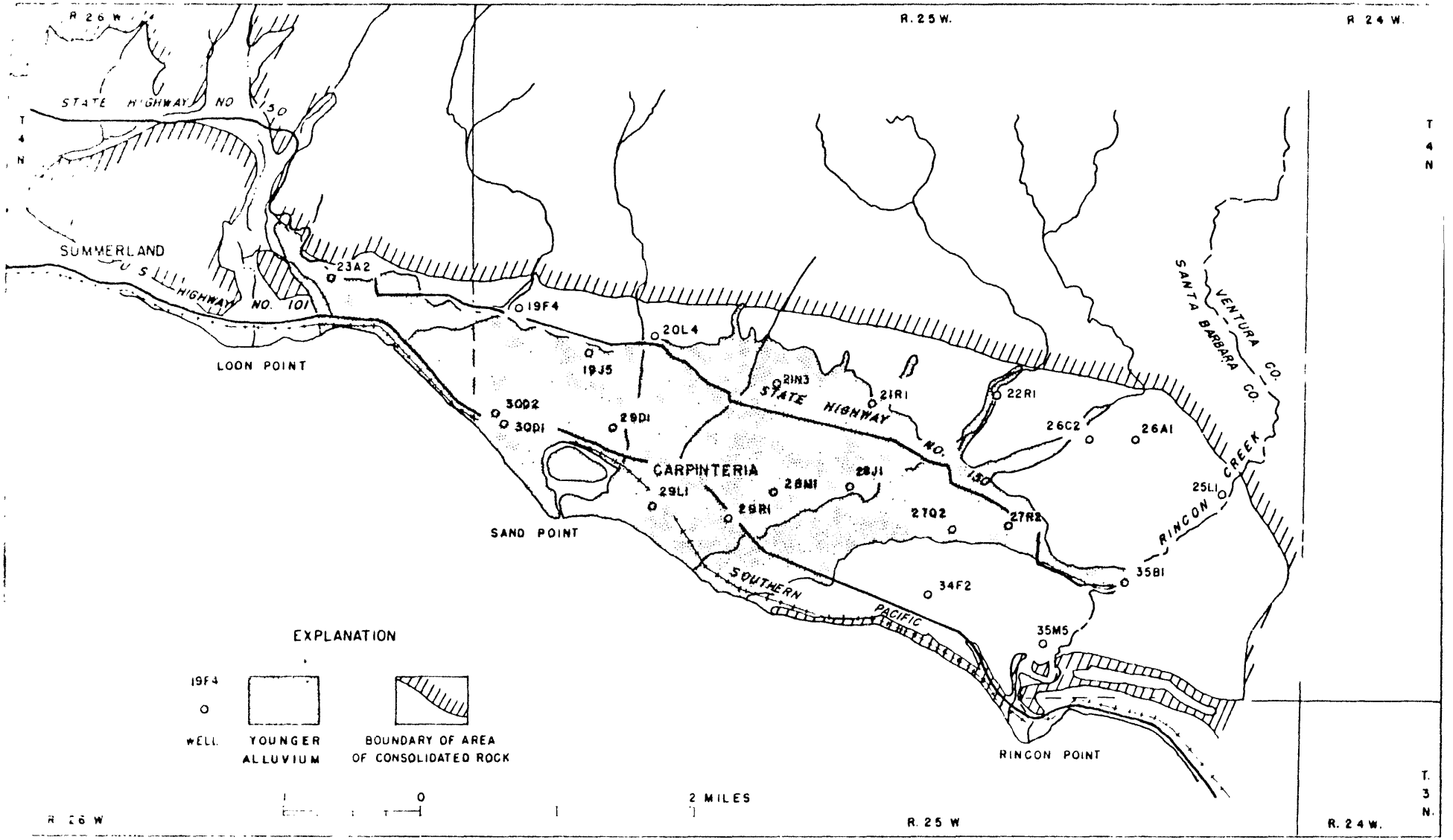
WATER-LEVEL FLUCTUATIONS IN SIX WELLS IN SANTA BARBARA COUNTY, CALIFORNIA, AND PRECIPITATION BY WATER YEARS AT SANTA BARBARA



FLUCTUATIONS OF WATER LEVELS IN FOUR WELLS IN SANTA BARBARA COUNTY, CALIFORNIA, AND PRECIPITATION BY WATER YEARS AT OZENA AND SANTA MARIA AND CUMULATIVE DEPARTURE OF PRECIPITATION FROM NORMAL AT SANTA MARIA

U S GEOLOGICAL SURVEY

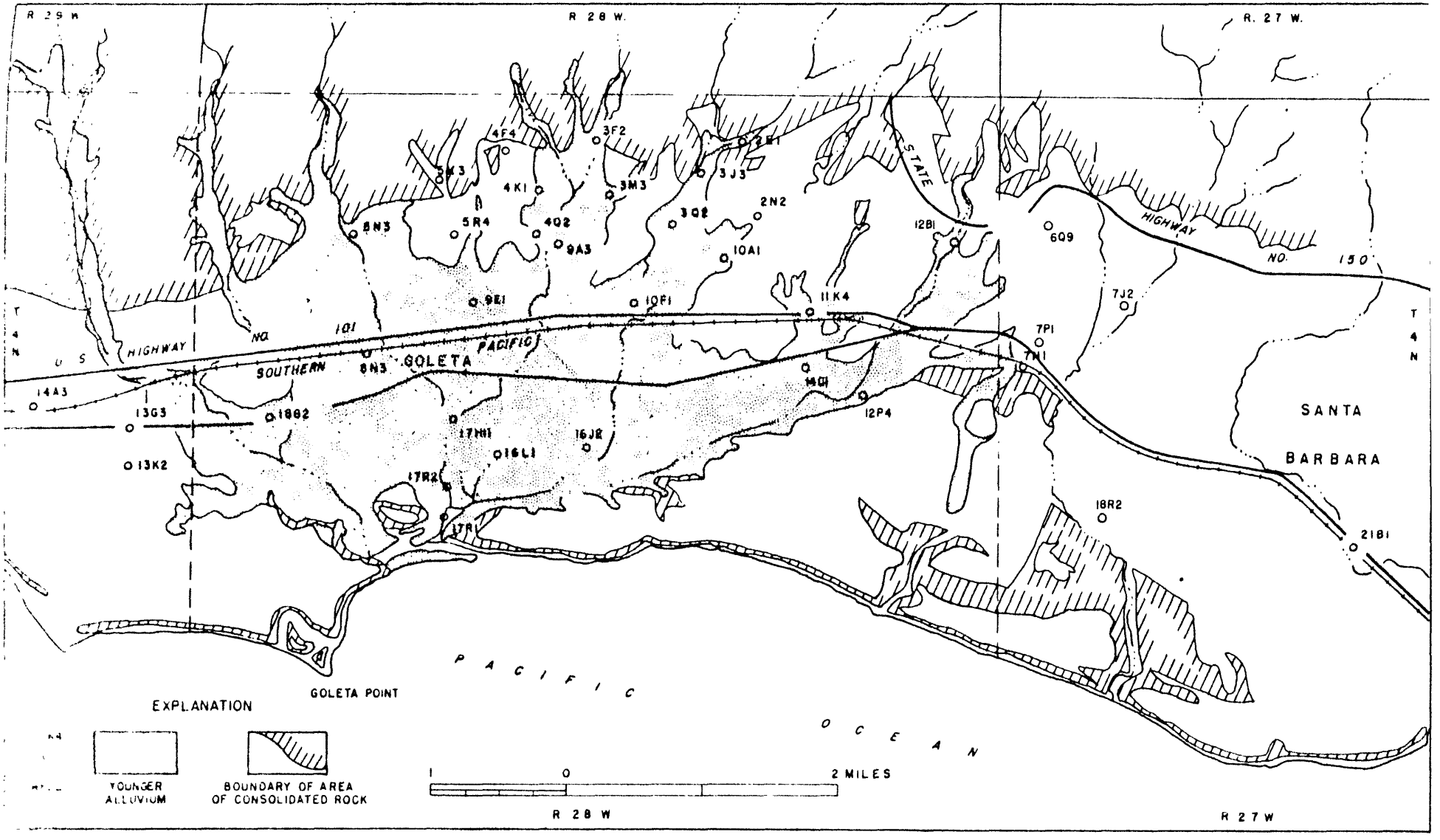
PLATE 3



MAP OF CARPINTERIA BASIN SHOWING LOCATION OF OBSERVATION WELLS, 1957

U S GEOLOGICAL SURVEY

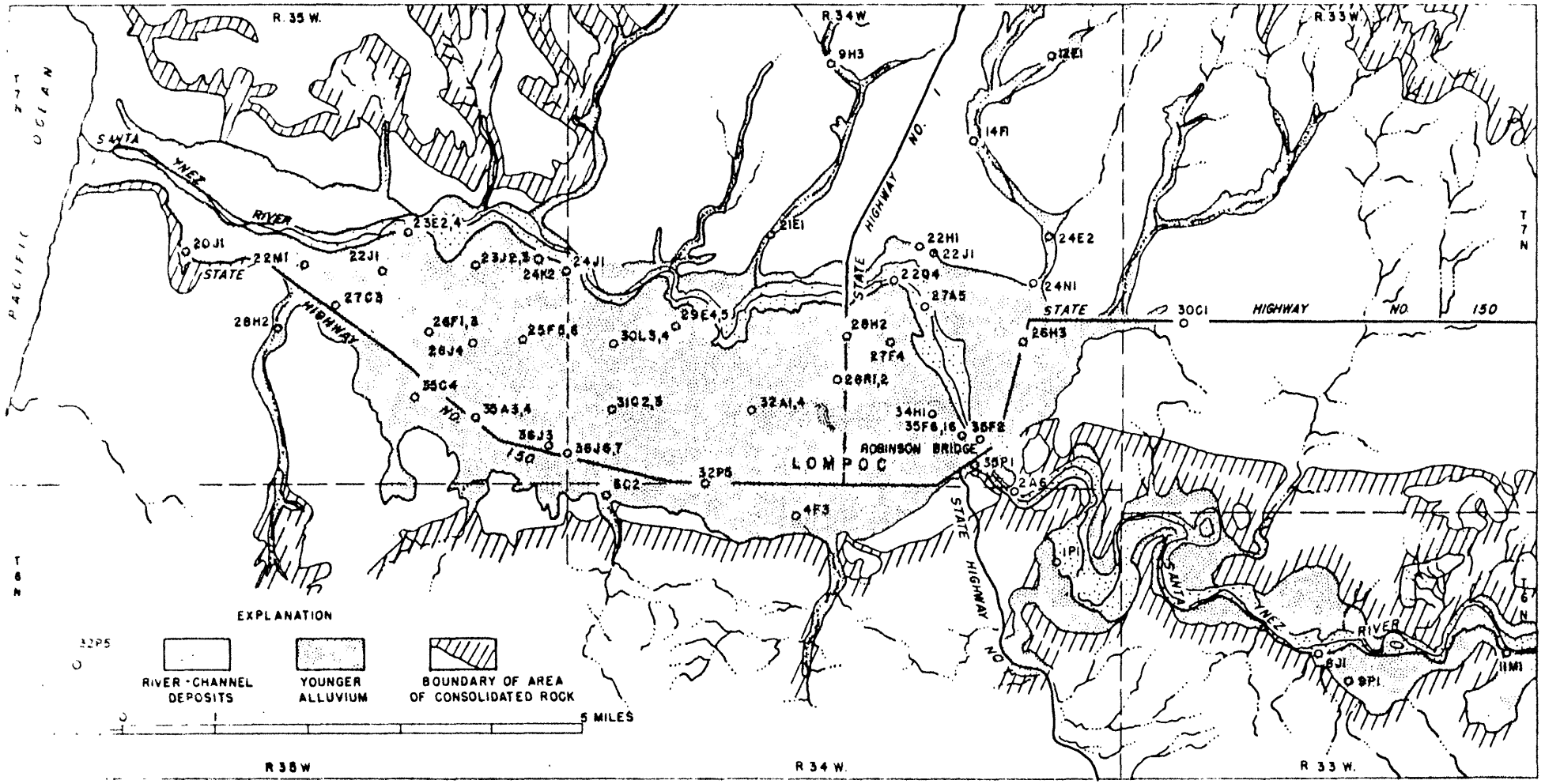
PLATE 4



MAP OF GOLETA BASIN SHOWING LOCATION OF OBSERVATION WELLS, 1957

U S GEOLOGICAL SURVEY

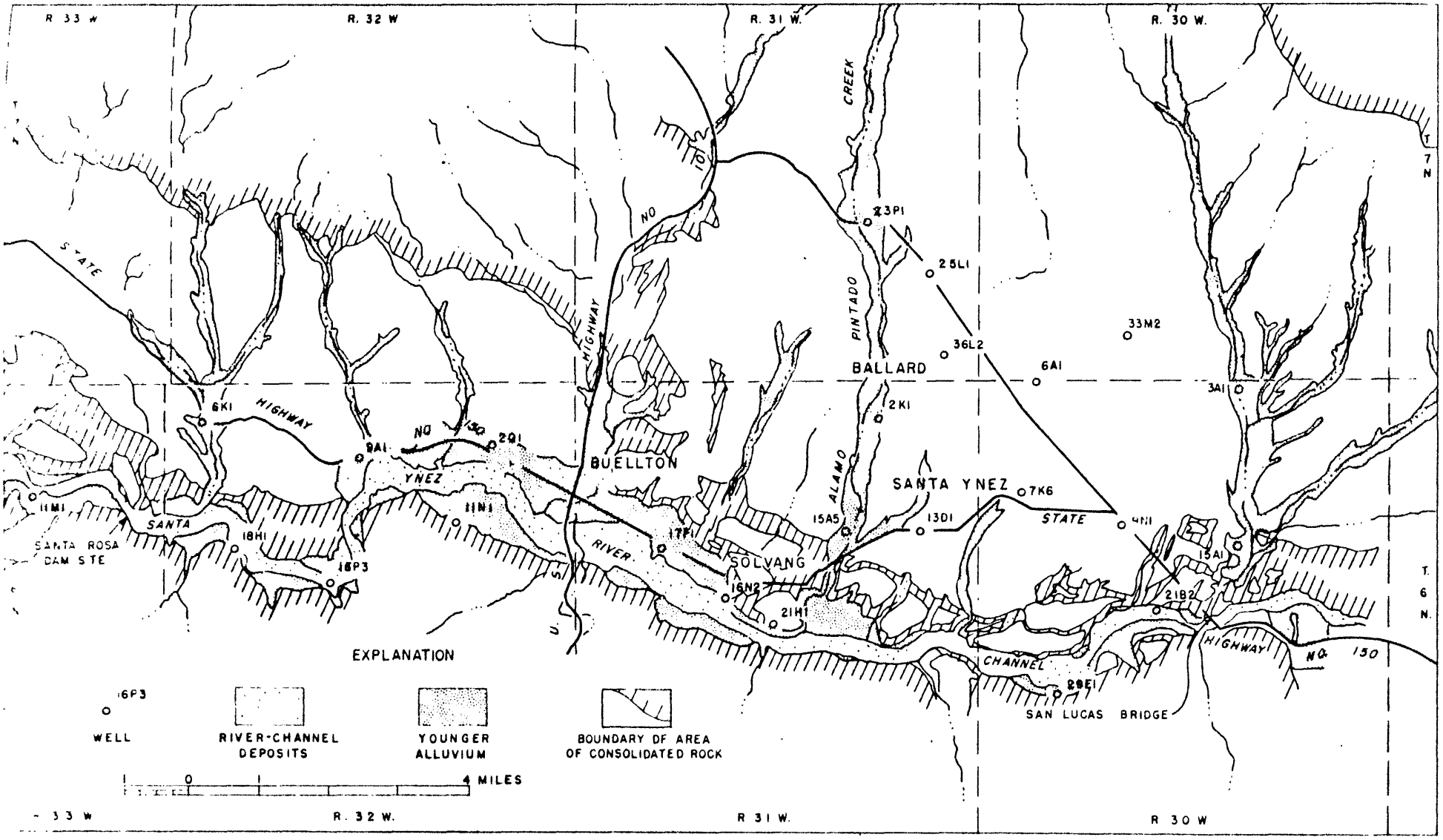
PLATE 5



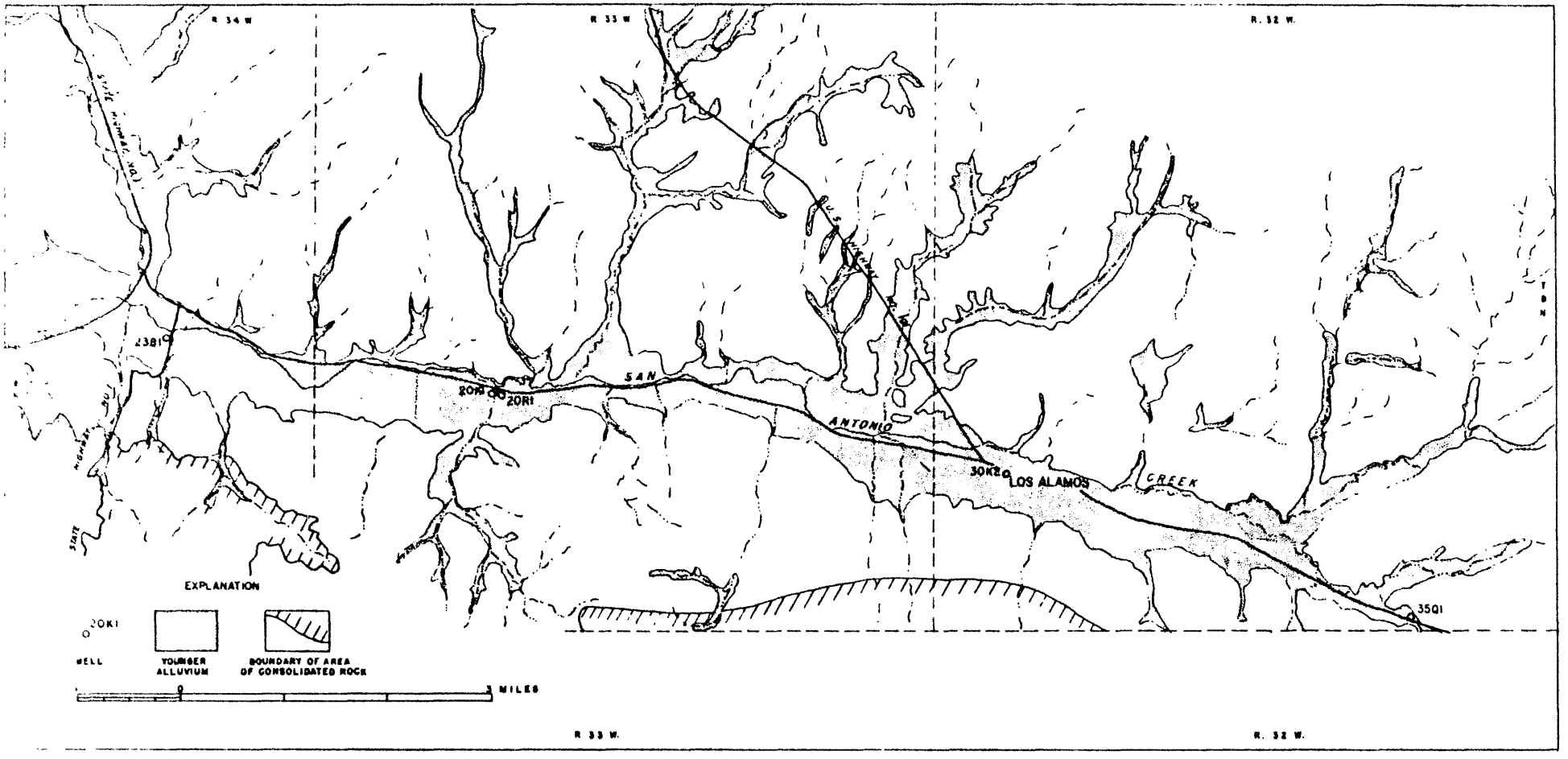
MAP OF LOMPOC PLAIN AND VICINITY SHOWING LOCATION OF OBSERVATION WELLS, 1957

U S GEOLOGICAL SURVEY

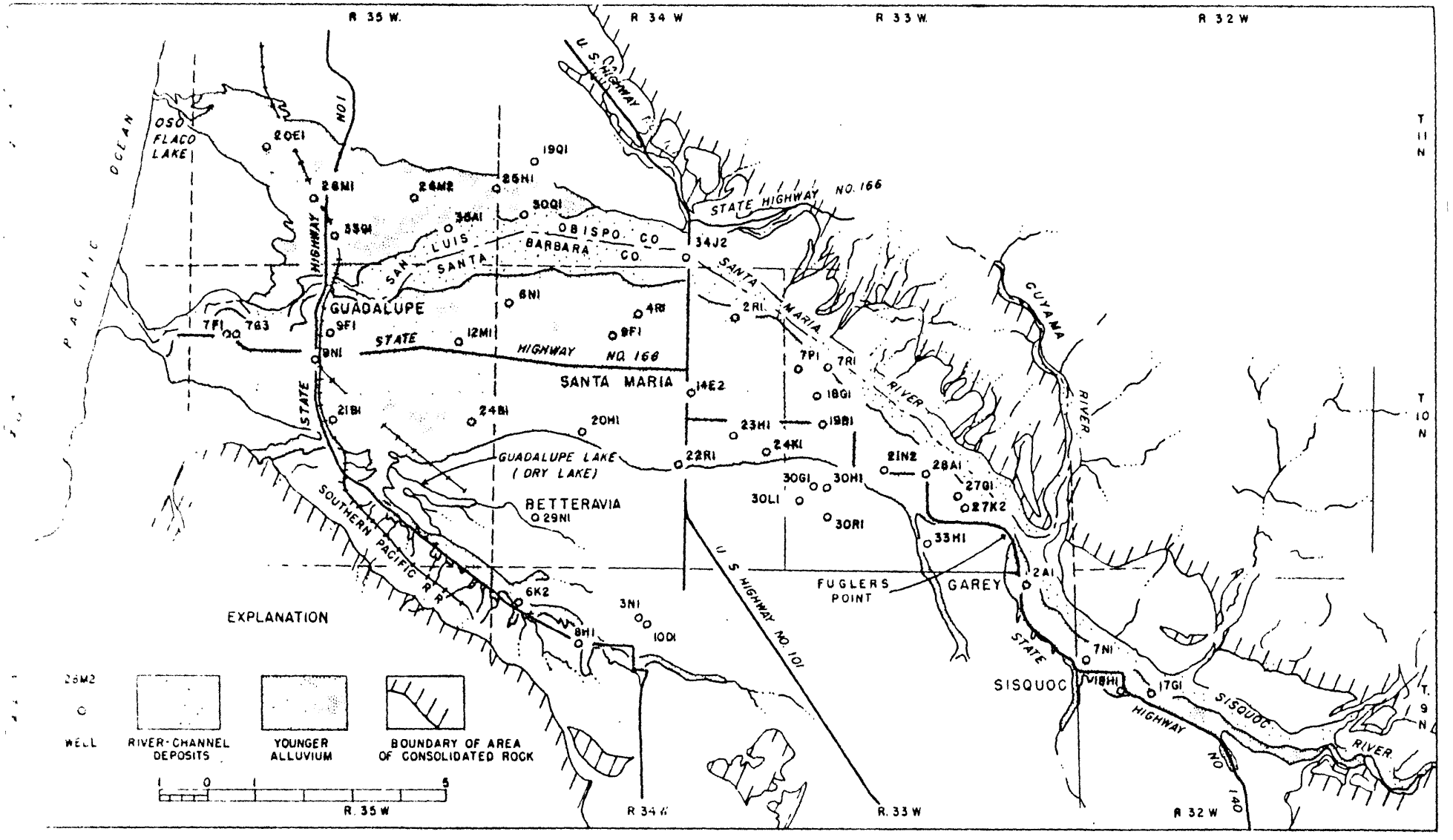
PLATE 6



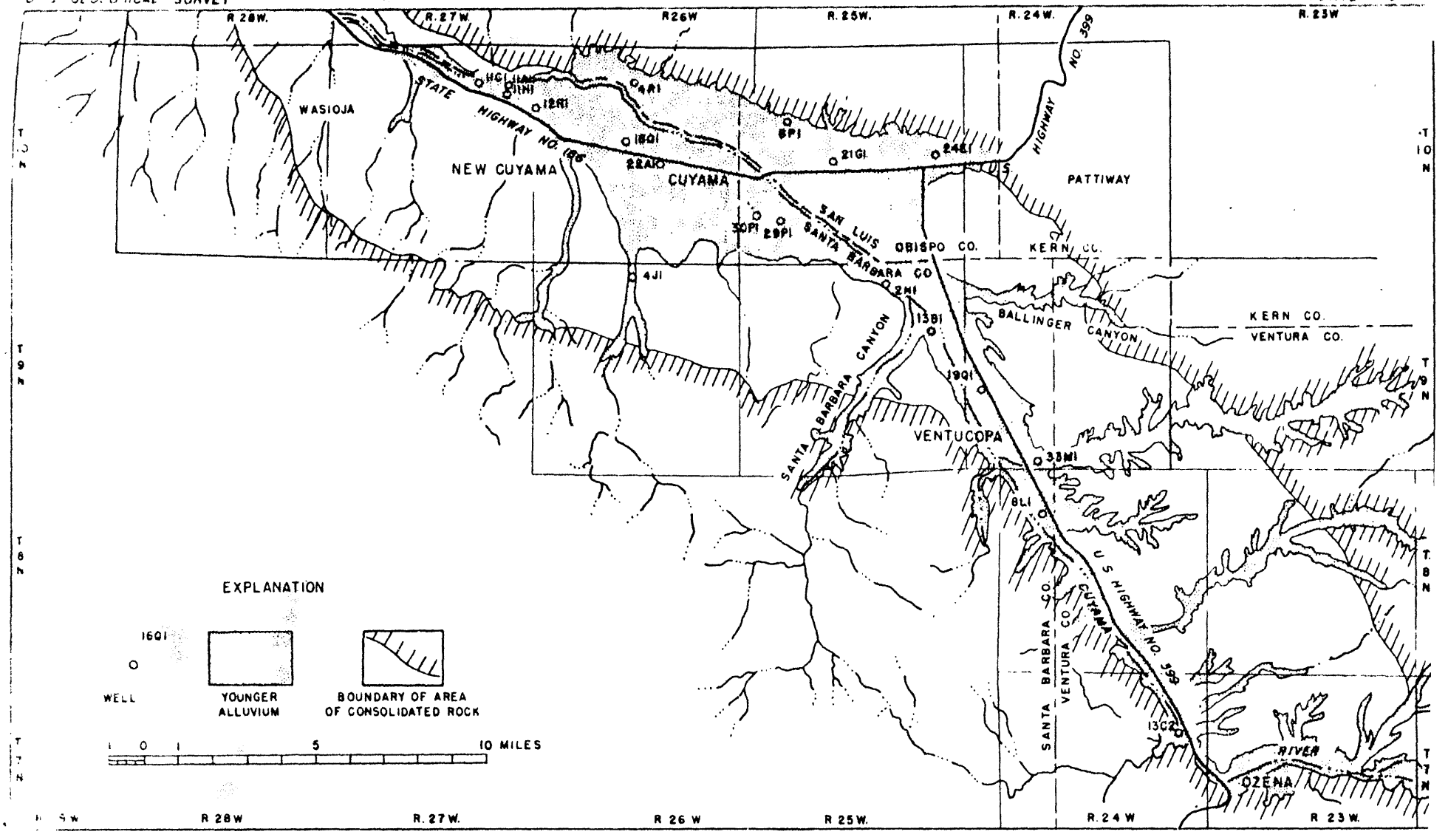
MAP OF SANTA YNEZ UPLAND AND ALLUVIAL DEPOSITS BETWEEN SAN LUCAS BRIDGE AND SANTA ROSA DAM SITE SHOWING LOCATION OF OBSERVATION WELLS, 1957



MAP OF SAN ANTONIO VALLEY SHOWING LOCATION OF OBSERVATION WELLS, 1957



MAP OF SANTA MARIA VALLEY AREA SHOWING LOCATION OF OBSERVATION WELLS, 1957



MAP OF CUYAMA VALLEY AND VICINITY SHOWING LOCATION OF OBSERVATION WELLS, 1957